



# U.S. NRC

United States Nuclear Regulatory Commission

*Protecting People and the Environment*



# STRATEGIC PLAN

## Fiscal Years 2014-2018



## ABSTRACT

The U.S. Nuclear Regulatory Commission (NRC or agency) is an independent agency established by the *Energy Reorganization Act of 1974* that began operations in 1975 as a successor to the Atomic Energy Commission. The agency's mission is to license and regulate the Nation's civilian use of radioactive materials to protect public health and safety, promote the common defense and security, and protect the environment. This strategic plan, covering the period 2014–2018, describes how the NRC plans to achieve its two strategic goals: (1) to ensure the safe use of radioactive materials and (2) to ensure the secure use of radioactive materials. The plan provides an overview of the NRC's responsibilities, describes how stakeholders participated in plan development, summarizes key challenges the agency will face during the planning period, and lays out the objectives, strategies, and key activities that will be used to achieve the agency's goals.



*NRC Headquarters*

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*New Reactor Construction Site*



### A Message from the Chairman

I am pleased to present the U.S. Nuclear Regulatory Commission's (NRC's) Strategic Plan for Fiscal Years (FY) 2014 -2018. The mission of the NRC is to license and regulate the Nation's civilian use of nuclear materials to protect public health and safety, promote the common defense and security, and protect the environment. The NRC's vision is to carry out its mission in a manner that ensures it remains a trusted, independent, transparent, and effective nuclear regulator. The NRC's Strategic Plan defines the strategic goals and objectives that will allow the agency to carry out its mission and identifies activities that will contribute to achieving these goals.

During the time period identified in the Strategic Plan, the NRC will continue to implement lessons learned from the 2011 Fukushima Dai-ichi accident to ensure safety in response to extreme natural events. The agency will also license and inspect the construction of new nuclear power reactors as well as new technologies, such as small modular reactors and other nuclear facilities and materials. In addition, I expect the agency will encounter emergent and unanticipated challenges. I am confident that the NRC Strategic Plan will allow for flexibility in meeting these challenges, while we continue to ensure the safe and secure operation of the existing licensed facilities and the safe and secure use of nuclear materials.

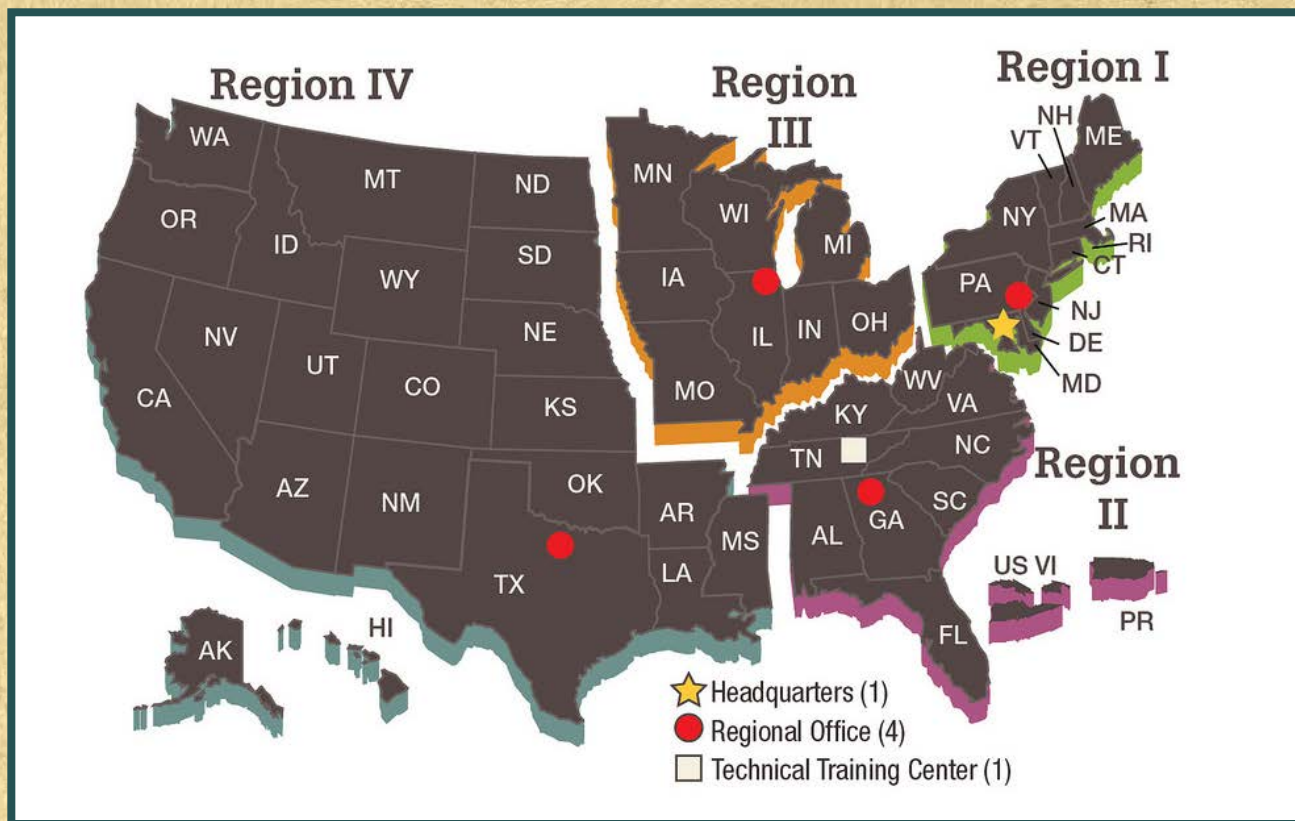
The globalization of nuclear technology requires that the NRC remain engaged with our international partners working to ensure nuclear safety, security, and safeguards around the world. Our agency will seek to continuously improve and remain a model for effective regulatory systems that are being developed globally. We will also learn from our international counterparts and benefit from their experience and insights.

In developing our Strategic Plan, the Commission benefited from receiving internal and external input, including comments from NRC staff, members of the public, the Congress, and the nuclear industry. I thank all who helped shape the Strategic Plan, as well as the NRC staff who worked diligently to produce a Strategic Plan that the Commission believes is comprehensive and clear. The Strategic Plan for FY 2014 - 2018 will guide how the NRC continues to fulfill its important safety and security responsibilities to the American people.



Allison M. Macfarlane  
Chairman  
September 4, 2014

## NRC REGIONS



### NUCLEAR POWER PLANTS

- Each regional office oversees the plants in its region except the Callaway plant in Missouri, which Region IV oversees.
- Region II handles construction inspectors' activities for new nuclear power plants in all regions.

### MATERIAL LICENSEES

- Region I oversees licensees and Federal facilities located geographically in Region I and Region II.
- Region III oversees licensees and Federal facilities located geographically in Region III.
- Region IV oversees licensees and Federal facilities located geographically in Region IV.

### NUCLEAR FUEL FACILITIES

- Region II oversees the commercial fuel processing facilities in all regions.
- Region II also handles construction inspectors' activities for new fuel cycle facilities in all regions.

Source: U.S. Nuclear Regulatory Commission



## ABOUT THE NRC

The *Energy Reorganization Act of 1974* created the U.S. Nuclear Regulatory Commission (NRC or agency) from a portion of the former Atomic Energy Commission to independently oversee—but not promote—the civilian use of radioactive materials. The agency began operations on January 18, 1975. The agency’s mission is to license and regulate the Nation’s civilian use of radioactive materials to protect public health and safety, promote the common defense and security, and protect the environment. Specifically, the NRC regulates commercial nuclear power plants; research, test, and training reactors; nuclear fuel cycle facilities; and the use of radioactive materials in medical, academic, and industrial settings. The agency also regulates the transport, storage, and disposal of

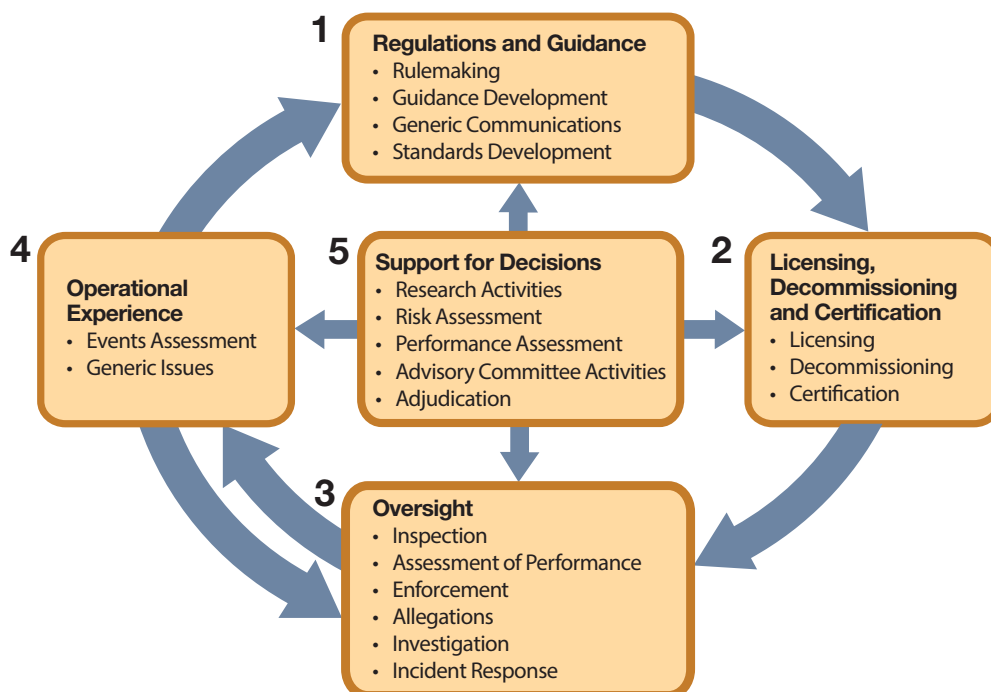
radioactive materials and waste. In addition, the NRC licenses the import and export of radioactive materials. The NRC works with agencies around the world to enhance global nuclear safety and security. The NRC is headed by five Commissioners appointed by the President of the United States, and confirmed by the U.S. Senate, to serve staggered 5-year terms. The President designates one of the Commissioners to serve as Chairman. The Commission as a whole formulates policies and regulations governing safety and security of nuclear facilities and radioactive materials, issues orders to licensees, and adjudicates legal matters brought before it.

To fulfill its responsibility to protect public health and safety, the NRC performs the following five principal regulatory functions:

- (1) Develops regulations and guidance for applicants, certificate holders, and licensees.

Figure 1

## HOW THE NRC REGULATES



# INTRODUCTION

- (2) Licenses or certifies applicants to use radioactive materials and operate or decommission nuclear facilities.
- (3) Inspects and assesses certificate holders, licensee operations, and facilities to ensure compliance with NRC requirements; investigates allegations of wrongdoing; responds to events and accidents involving licensed facilities and materials; and takes appropriate enforcement actions when necessary.
- (4) Evaluates domestic and international operational experience associated with licensed facilities and activities.
- (5) Conducts research, holds hearings, and obtains independent reviews to support regulatory decisions.

See Figure 1 for a graphical depiction of these functions and their interrelationships.

The NRC's regulations are designed to protect the public and workers (those individuals potentially exposed to radiation during the course of their professional duties) from radiation hazards resulting from regulated activities. Its licensees and certificate holders are responsible for the safety and security of radioactive materials, subject to the NRC's oversight programs, which are designed to ensure that they comply with the agency's requirements.

Figure 2 shows the NRC's organizational structure. The Executive Director for Operations (EDO) carries out the policies and decisions of the Commission and directs the activities of the program offices. The offices reporting to the EDO regulate the commercial use of radioactive materials in the United States to protect public health and safety and the environment. As part of the regulatory process, NRC staff from headquarters and the four regional offices conduct the agency's regulatory development, licensing, operating

experience, inspection, enforcement, and emergency-response programs.

The NRC currently regulates 100 commercial nuclear power plants; 31 research and test reactors; about 4,600 licensed reactor operators; four reactor early site permits; four reactor design certifications; 21 nuclear reactors in various stages of decommissioning; 69 independent spent fuel storage installations; 14 licensed fuel cycle facilities; 18 uranium-recovery sites; and approximately 2,900 research, medical, industrial, government, and academic materials licensees. In addition, the NRC has agreements with 37 States under which the States assume regulatory responsibility for the use of certain radioactive materials and oversee approximately 18,000 licenses.<sup>1</sup> The NRC works closely with these Agreement States to ensure that they maintain adequate and compatible regulatory programs.

The NRC also regulates the U.S. Department of Energy's (DOE's) activities associated with a potential high-level waste repository. In addition, upon DOE's request, the NRC provides consultation to DOE about disposal options for waste incidental to reprocessing. In Idaho and South Carolina, the NRC coordinates with the State to monitor DOE's disposal actions for waste incidental to reprocessing to assess compliance with certain aspects of the NRC's low-level waste regulations.

As part of its licensing activities, the NRC contributes to the protection of the environment through compliance with the *National Environmental Policy Act*, which includes consideration of impacts to the environment unrelated to the release of radiation. These environmental considerations can include

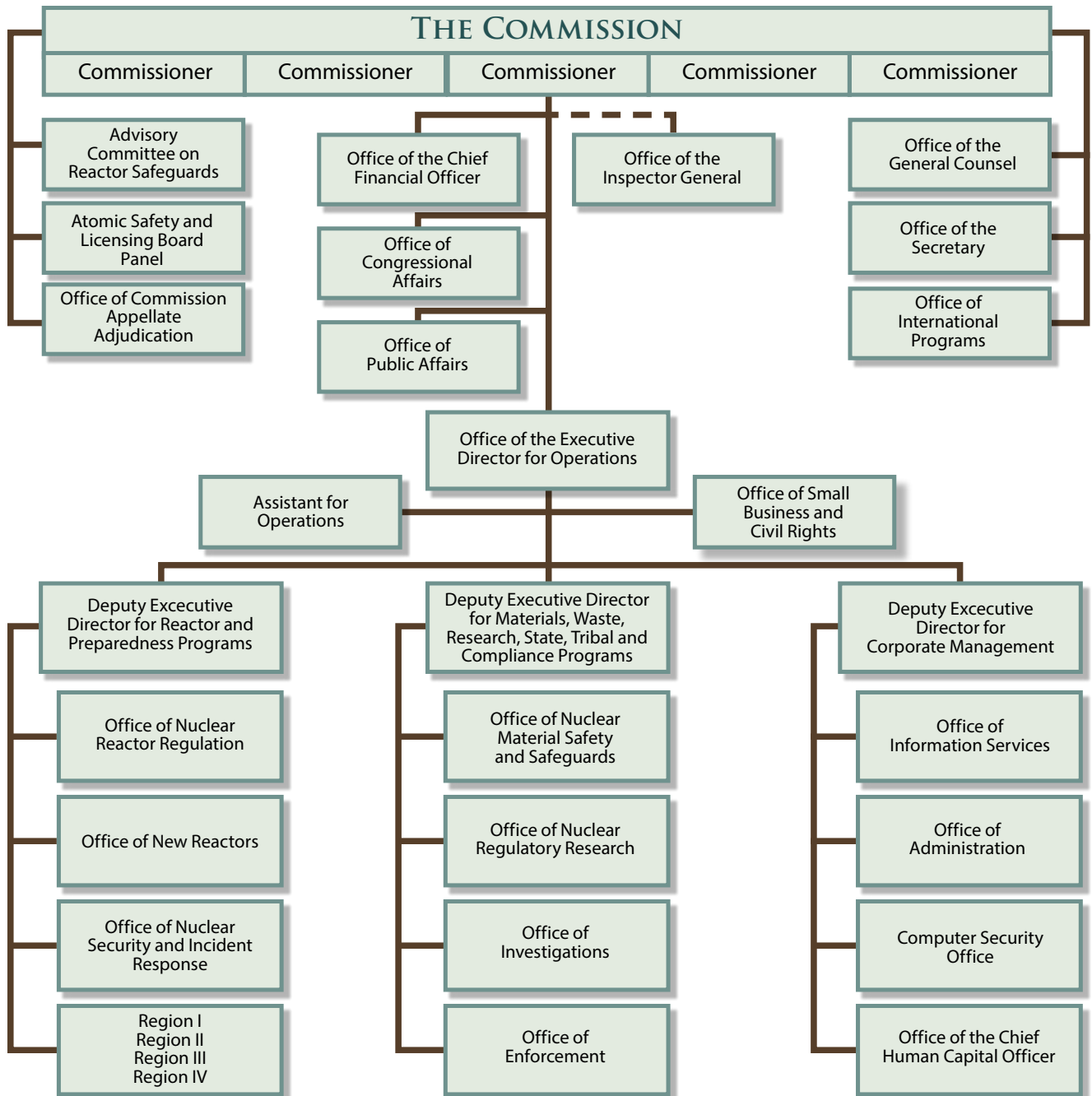
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<sup>1</sup> *U.S. Nuclear Regulatory Commission, 2013–2014 Information Digest, Facts at a Glance, August 2013.*



Figure 2

## NRC's ORGANIZATIONAL STRUCTURE



# INTRODUCTION

socioeconomic impacts and environmental justice, impacts to endangered species, and water rights and usage.

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.

## STAKEHOLDER ENGAGEMENT

In keeping with the agency's longstanding commitment to openness, the NRC solicited stakeholder input to develop this strategic plan. In February 2013, representatives of various stakeholder groups (including licensees, public interest groups, State governments, Federal agencies, and others) participated in an assessment of agency strengths and weaknesses, as well as an assessment of opportunities and threats facing the NRC during the upcoming planning period. The NRC also received input from members of Congress and solicited comments from the public. The input that the NRC received highlighted many of the challenges the agency faces and included strategies for addressing challenges as reflected later in this plan.

## KEY CHALLENGES

During the upcoming planning period, the NRC will face new challenges as it continues to operate in a dynamic environment. Key factors the agency has considered in developing this plan include the following:

- continued implementation of enhancements to improve nuclear safety based on insights arising from operating experience reviews and lessons learned from the 2011 nuclear accident at the Fukushima Dai-ichi nuclear facility in Japan;
- continual learning and adaptation of the regulatory framework to address knowledge of and response to the specific hazards, uncertainties, and risks associated with each nuclear site;
- continued readiness to review applications involving new technologies such as small modular reactors, medical isotope production facilities, and rapidly evolving digital instrumentation and control systems;
- changes in the demographics, experience, and knowledge of the workforce;
- continued awareness of and support to the development of nuclear safety and security regulations around the world;
- changing economic conditions in the energy market affecting current and planned applications to construct and operate new nuclear facilities or decommission existing ones;
- globalization of nuclear technology and the nuclear supply chain, driving the need for increased international engagement on the safe and secure use of radioactive material and the need for new oversight approaches, including ensuring that foreign components used in U.S. nuclear facilities are in compliance with NRC requirements; and
- continuous monitoring of the threat environment to ensure the security of facilities and accountability controls for radioactive materials.

These and other factors are discussed further in Appendix A, "Key External Factors."

To meet these challenges, the NRC must use its resources effectively and efficiently, enhance the regulatory framework as appropriate to address existing or emerging issues, and deploy effective and innovative strategies for maintaining staff competence and readiness. Even as the NRC works to address these



challenges, the agency's mission and organizational values remain unchanged. The agency will remain a strong, independent, stable, and effective regulator that places the highest priority on ensuring the safety and security of the nuclear facilities and radioactive materials it regulates.

## ORGANIZATION OF THE PLAN

This strategic plan describes the NRC's key strategic goals of safety and security—outcomes that the agency is striving to achieve. Each goal has objectives and strategies—the results that are needed to achieve the goals. Some of the strategies are specific to a particular safety or security objective, while other cross-cutting strategies apply to all of the safety and security

objectives. The plan also includes key management objectives that contribute to achieving its goals. See Figure 3 for a graphical depiction of these components and their interrelationships.

**Appendix A** covers key external factors that could affect the agency's ability to effectively execute this plan.

**Appendix B** discusses the research and program evaluations that were used in developing this plan.

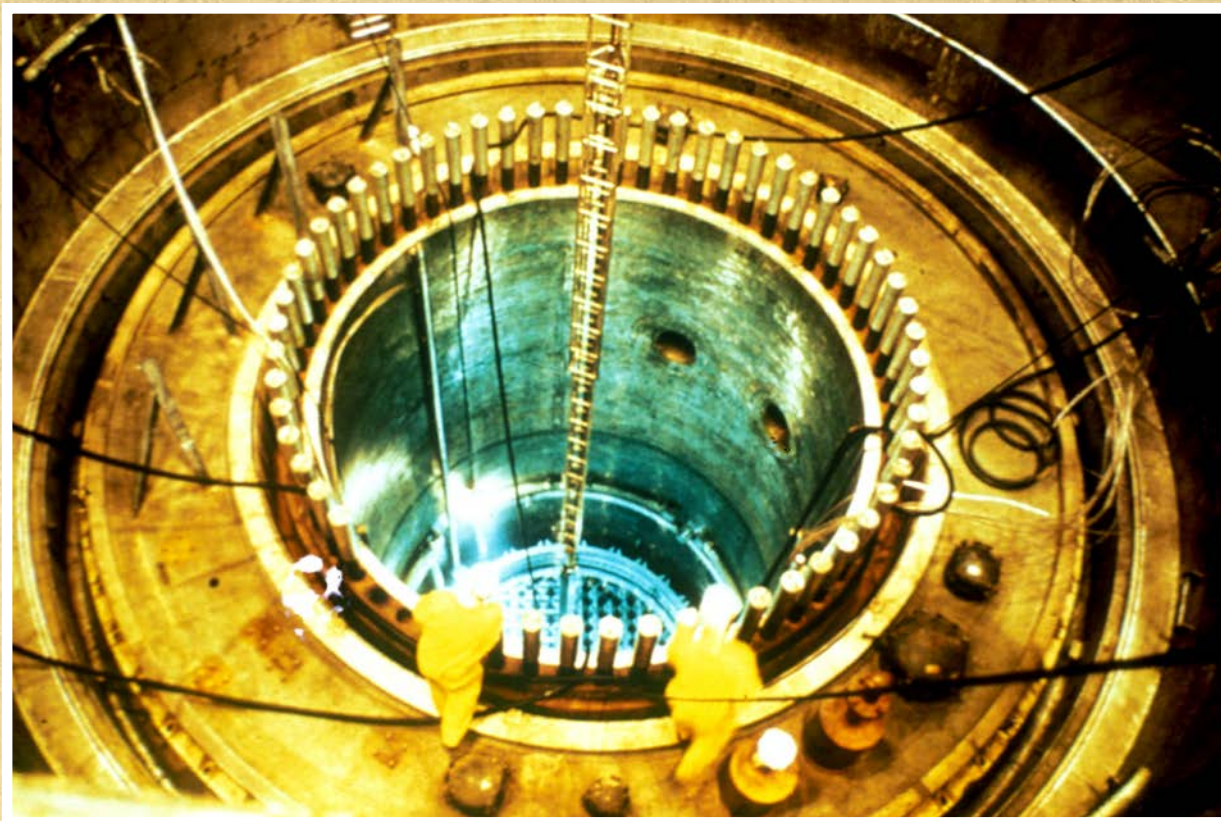
**Appendix C** provides the schedule of planned program evaluations that the agency will use to adjust and refine its performance.

**Appendix D** offers a glossary of terms used in the plan.

Figure 3

## GRAPHICAL DEPICTION OF PLAN COMPONENTS





*Nuclear Reactor Core*



## MISSION

The U.S. Nuclear Regulatory Commission licenses and regulates the Nation's civilian use of radioactive materials to protect public health and safety, promote the common defense and security, and protect the environment.

## VISION

A trusted, independent, transparent, and effective nuclear regulator

To be successful, the NRC must not only excel in carrying out its mission, but must do so in a manner that engenders the trust of the public and stakeholders. This vision is an outgrowth of the NRC operating in a manner consistent with its longstanding Principles of Good Regulation—independence, openness, efficiency, clarity, and reliability—and its organizational values (see box). These principles guide the agency—from how the NRC reaches decisions on safety, security, and environmental issues; to how the NRC performs administrative tasks; to how its employees interact with their fellow employees and other stakeholders.

By adhering to these principles and values, the NRC maintains its regulatory competence, conveys that competence to stakeholders, and promotes trust in the agency.

The next several sections of this plan lay out NRC's strategic goals, strategic objectives, and strategies for achieving them. To be consistent with the agency's vision, this material includes cross-cutting strategies that are focused on regulatory effectiveness and openness.

## STRATEGIC GOALS

**GOAL 1:** Ensure the safe use of radioactive materials.

**GOAL 2:** Ensure the secure use of radioactive materials.

The NRC's two strategic goals are the results the agency must achieve to successfully carry out its mission and are the foundation for the rest of the plan.

### NRC ORGANIZATIONAL VALUES

**Integrity** in our working relationships, practices, and decisions

**Service** to the public and others who are affected by our work

**Openness** in communications and decisionmaking

**Commitment** to public health and safety, security, and the environment

**Cooperation** in the planning, management, and performance of agency work

**Excellence** in our individual and collective actions

**Respect** for individuals' diversity, roles, beliefs, viewpoints, and work/life balance



*Nuclear Power Plant*



STRATEGIC  
GOAL*Ensure the safe use of  
radioactive materials.*

For this goal, a successful outcome is one in which the Nation can continue to use radioactive material for civilian purposes while avoiding radiation exposures and releases of radioactive material that harm people or the environment.

## OBJECTIVES

**SAFETY OBJECTIVE 1: PREVENT AND MITIGATE ACCIDENTS AND ENSURE RADIATION SAFETY.**

Minimizing the likelihood of accidents and reducing the consequences of an accident (should one occur) are the key elements for achieving the NRC's safety goal. Such accidents, particularly for large complex facilities like nuclear power plants, have the potential to release significant amounts of radioactive material to the environment and expose facility workers and the public to high levels of radiation. Even in the absence of accidents, radiological hazards exist during routine operations, and the NRC ensures that measures are in place to minimize exposure for workers and the public and prevent unintended releases of radioactive materials to the environment.

*Safety Strategy 1: Enhance the NRC's regulatory programs as appropriate using lessons learned from domestic and international operating experience and other sources.*

## CONTRIBUTING ACTIVITIES

- Enhance the NRC's regulatory programs by implementing safety improvements at nuclear power plants, at other nuclear facilities, and in other uses of

radioactive materials, based on lessons learned from the Fukushima Dai-ichi accident, in a manner that is consistent with their safety significance.

- Apply lessons learned from license reviews and construction of new reactors and fuel cycle facilities to enhance the effectiveness and efficiency of subsequent reviews and construction oversight.
- Apply lessons learned and best practices to the NRC's consultation and monitoring responsibilities under the *Ronald W. Reagan National Defense Authorization Act* for Fiscal Year 2005 related to the U.S. Department of Energy's (DOE's) disposal of waste incidental to reprocessing.
- Evaluate domestic and international operating events and trends for risk significance and generic applicability.
- Evaluate and implement, as appropriate, recommendations from the Inspector General, the Government Accountability Office, and internal assessments.

*Safety Strategy 2: Enhance the risk-informed and performance-based regulatory framework in response to advances in science and technology, policy decisions, and other factors.*

## CONTRIBUTING ACTIVITIES

- Maintain stable and predictable regulatory programs and policies.
- Conduct research activities to confirm the safety of operations and enhance the regulatory framework by addressing changes in technology, science, and policies.
- Develop and implement the regulatory infrastructure for the review of small modular reactors and other advanced reactor design certification and license applications.

- Implement the regulatory infrastructure to effectively and efficiently conduct licensing activities for applicants developing domestic medical isotope production.
- Develop the regulatory framework, analytical tools, and data needed to ensure safe and secure storage, transportation, and disposal of spent nuclear fuel and high-level radioactive waste.
- Consult with the NRC's regulatory partners in the Agreement States to ensure adequate protection of the public and compatibility with the National Materials Program.
- Participate in the development of domestic consensus codes and standards and international standards to ensure that they are soundly based and determine whether substantial safety improvements can be identified and incorporated in NRC requirements.
- Exchange information, expertise, operating experiences, and research with domestic and international counterparts to increase awareness of and respond to emerging technical issues; to participate in the development, evaluation, and implementation of harmonized standards; to seek common approaches to resolving technical issues; and to promote best practices.

*Safety Strategy 3: Ensure the effectiveness and efficiency of licensing and certification activities to maintain both quality and timeliness of licensing and certification reviews.*

## CONTRIBUTING ACTIVITIES

- Conduct new reactor preapplication activities and review applications for design certifications, early site permits, and combined licenses.

- Conduct quality reviews of licensing requests (e.g., amendments, power uprates, renewals, decommissioning and license termination) and issue timely decisions consistent with agency performance indicators.
- Ensure the availability of the regulatory and technical framework needed for review of reactor license renewal requests for periods beyond 60 years of operation.
- Conduct environmental reviews to ensure that actions comply with the *National Environmental Policy Act of 1969*.
- Implement recommendations for a licensing process-improvement initiative for spent fuel storage and transportation.

*Safety Strategy 4: Maintain effective and consistent oversight of licensee performance to drive continued licensee compliance with NRC safety requirements and license conditions.*

## CONTRIBUTING ACTIVITIES

- Continue to implement, review, and refine the Reactor Oversight Process—the principal program for overseeing nuclear power plant operation—to ensure timely identification of safety issues and to ensure that licensees take the actions necessary to maintain acceptable safety performance.
- Continue to ensure that licensees, certificate holders, and vendors are taking the actions necessary to prevent the presence of counterfeit, fraudulent, and suspect items that could cause safety risks in nuclear facilities or in the use of radioactive materials.



*Safety Strategy 5: Ensure the NRC's readiness to respond to incidents and emergencies involving NRC-licensed facilities and radioactive materials and other events of domestic and international interest.*

#### CONTRIBUTING ACTIVITIES

- Use operational experience and lessons learned from emergency-preparedness exercises to inform the regulatory activities.
- Coordinate with Federal, State, local, and Tribal partners to strengthen national readiness and response capabilities in accordance with the National Response Framework.
- Employ outreach before, during, and after emergency-preparedness exercises and increase collaboration and sharing of best practices and lessons learned after emergency-preparedness exercises and incidents.

*Safety Strategy 6: Ensure that nuclear facilities are constructed in accordance with approved designs and that there is an effective transition from oversight of construction to oversight of operation.*

#### CONTRIBUTING ACTIVITIES

- Conduct inspections of reactors under construction in accordance with established construction reactor oversight programs.
- Conduct inspections of fuel facilities under construction in accordance with the established inspection program.

*Safety Strategy 7: Ensure that the environmental and site safety regulatory infrastructure is adequate to support the issuance of new nuclear licenses.*

#### CONTRIBUTING ACTIVITIES

- Implement lessons learned insights from the combined license process for new reactors.
- Revise regulatory guides in light of knowledge gained from the lessons learned from the initial combined license reviews and construction activities and from research and licensing activities.
- Develop methodologies and tools to enhance site safety and environmental reviews in support of regulatory needs.
- Continue research activities, including interactions with international, academic, and other Federal agencies and incorporate insights gained into the regulatory infrastructure.



*U.S. NRC Operations Center*



STRATEGIC  
GOAL*Ensure the secure use of  
radioactive materials.*

For this goal, a successful outcome is to avoid instances in which radioactive materials are used in a hostile manner.

## OBJECTIVES

**SECURITY OBJECTIVE 1: ENSURE PROTECTION OF NUCLEAR FACILITIES AND RADIOACTIVE MATERIALS.**

Protecting nuclear facilities and radioactive materials are key elements for achieving the NRC's security goal. Nuclear facilities and materials are protected against hostile intent by two primary means: (1) control of access to facilities and materials and (2) accountability controls for radioactive materials. These controls are intended to prevent those with hostile intent from either: damaging a nuclear facility in such a way that a significant release of radioactive material to the environment occurs, or obtaining enough radioactive material for malevolent use.

*Security Strategy 1: Ensure the effectiveness and efficiency of the regulatory framework using information gained from operating experience and external and internal assessments and in response to technology advances and changes in the threat environment.*

**CONTRIBUTING ACTIVITIES**

- Evaluate domestic and international operating events and trends for security implications and enhance the regulatory framework as warranted.

- Evaluate and implement, as appropriate, recommendations from the Inspector General, the Government Accountability Office, and internal assessments.
- Assess the threat environment to maintain an adequate regulatory framework through cooperation and liaison with the intelligence and law enforcement communities, as well as with international partners.
- Conduct threat assessments, determine the consequences of a range of threats, and ensure protection of nuclear facilities and radioactive materials in ways consistent with existing safety, safeguards, and security requirements. Share the agency's results to the extent possible (in ways consistent with established protocols) to support integrated protection of the Nation's critical infrastructure.
- Coordinate with Federal, State, local, and Tribal partners to define, develop, and implement integrated response plans, so that responding agencies can coordinate effectively with licensees during an incident.

*Security Strategy 2: Maintain effective and consistent oversight of licensee performance to drive continued licensee compliance with NRC security requirements and license conditions.*

**CONTRIBUTING ACTIVITIES**

- Conduct inspections to assess licensees' security performance, including force-on-force exercises. Conduct followup reviews, inspections, investigations, and enforcement as needed.



*Plant Access Controls*

- Conduct security performance evaluations at each applicable nuclear facility to assess each licensee's protective strategy capabilities and to evaluate support functions provided by Federal, State, local, and Tribal law enforcement.

*Security Strategy 3: Support U.S. national security interests and nuclear nonproliferation policy objectives within NRC's statutory mandate through cooperation with domestic and international partners.*

## CONTRIBUTING ACTIVITIES

- Support and participate in international security activities, including International Atomic Energy Agency (IAEA) nonproliferation and guidance-development initiatives, as well as bilateral physical security initiatives undertaken with countries that receive special nuclear material and equipment from the United States.
- Participate with Agreement States, the Conference of Radiation Control Program Directors, and the DOE's

National Nuclear Security Administration in identification, location, and recovery of unwanted and uncontrolled radioactive materials, often referred to as "orphan sources."

- Support U.S. Government goals to secure radioactive materials internationally through bilateral agreements to support material control and accounting programs.

*Security Strategy 4: Ensure material control and accounting for special nuclear materials.*

## CONTRIBUTING ACTIVITIES

- As appropriate, update, consolidate, and integrate material control and accounting regulations and guidance to make them more risk-informed and performance-based.

*Security Strategy 5: Protect critical digital assets.*

## CONTRIBUTING ACTIVITIES

- Ensure that cyber security guidance for nuclear power reactors remains informed by operating experience and monitoring of the cyber security threat environment.
- Evaluate the need for cyber security requirements for fuel cycle facilities, spent fuel storage facilities, non-power reactors, nuclear facilities being decommissioned, and other materials licensees.

*Security Strategy 6: Ensure timely distribution of security information to stakeholders and international partners.*

## CONTRIBUTING ACTIVITIES

- Enhance communication tools and key information-technology investments for dissemination of sensitive security information.



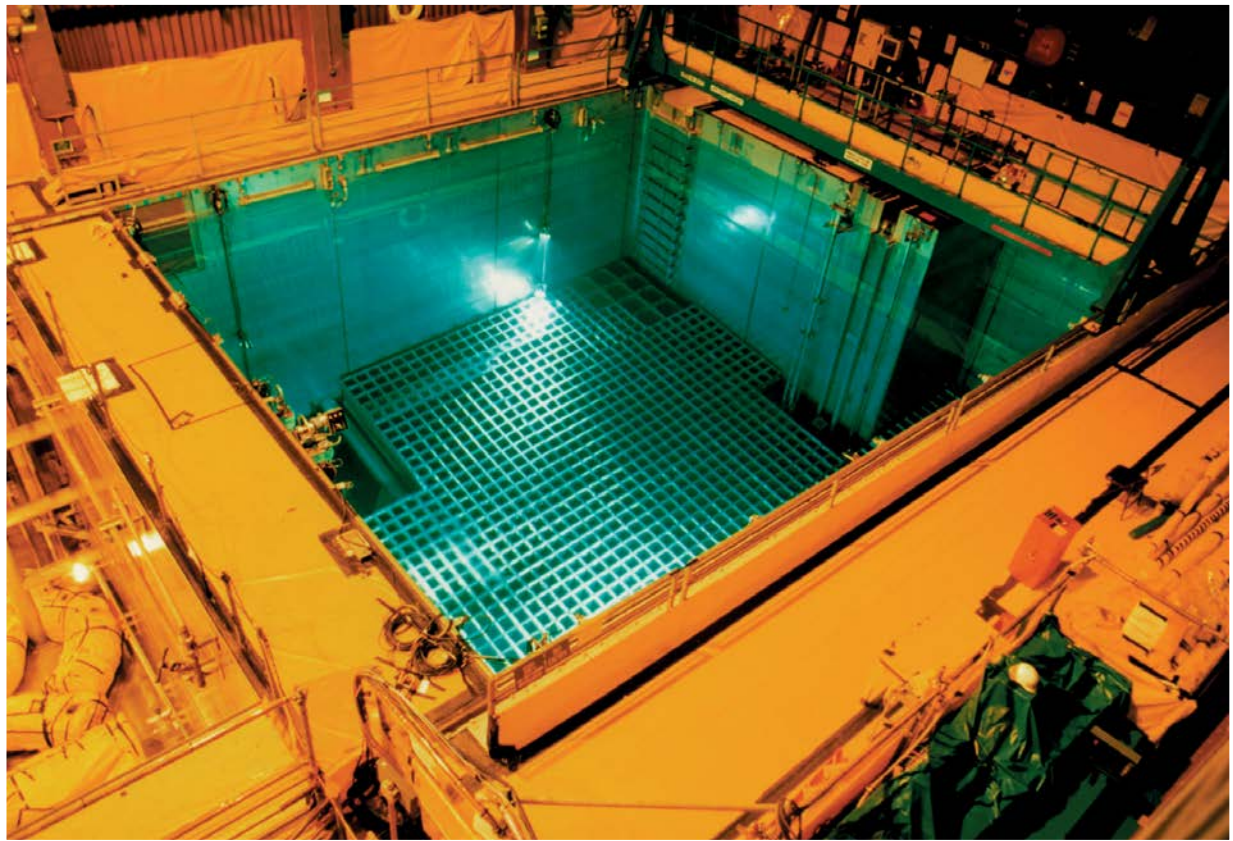
## SECURITY OBJECTIVE 2: ENSURE PROTECTION OF CLASSIFIED AND SAFEGUARDS INFORMATION

Protecting classified and Safeguards Information is another key contributor to achieving the agency's security goal. This is accomplished primarily by controlling access to this information to ensure that potential adversaries cannot use it for malevolent purposes, such as sabotage, theft, or diversion of radioactive materials.

*Security Strategy 7: Ensure that programs for the handling and control of classified and Safeguards Information are effectively implemented at the NRC and at licensee facilities.*

### CONTRIBUTING ACTIVITIES

- Coordinate with licensees to reduce the risks from insiders with access to systems or information that could assist in malevolent activity.
- Train NRC staff on the appropriate handling of classified and Safeguards Information, ensuring that the training is up-to-date and consistent with national policy.
- Apply the inspection and enforcement programs for classified information security.



*Spent Fuel Pool*



The agency's vision of itself—"A trusted, independent, transparent, and effective nuclear regulator"—highlights several attributes the agency views as critical to its success. To achieve this vision, the agency plans to use a number of strategies that crosscut and support the fulfillment of both the safety and security objectives. These strategies are grouped into two areas: (1) regulatory effectiveness and (2) openness.

## REGULATORY EFFECTIVENESS

The NRC's regulatory effectiveness strategies address key aspects of the way that the NRC conducts its regulatory activities to best achieve its goals and objectives. These strategies are:

***Regulatory Effectiveness Strategy 1:**  
Proactively identify, assess, understand,  
and resolve safety and security issues.*

### CONTRIBUTING ACTIVITIES

- Evaluate, communicate, and apply, as appropriate, insights from operational experience reviews and lessons-learned programs in a timely manner.
- Systematically assess and apply changes to the knowledge base concerning internal and external hazards such as seismic activity, flooding, age-related degradation of plant components, and physical and cyber attacks at nuclear facilities and on radioactive materials users.
- Resolve generic safety and security issues and ensure implementation of enhancements within timeframes commensurate with their risk significance.
- Conduct confirmatory and anticipatory research to resolve safety and security issues and confirm the safety and security bases for the use of radioactive materials.

- Emphasize the importance of developing and maintaining an effective nuclear-safety culture for all NRC-regulated activities and for activities regulated by the Agreement States.

***Regulatory Effectiveness Strategy 2:**  
Regulate in a manner that effectively  
and efficiently manages known risks and  
threats, clearly communicates requirements,  
and ensures that regulations are consistently  
applied, are practical, and accommodate  
technology changes in a timely manner.*

### CONTRIBUTING ACTIVITIES

- Use risk-informed and performance-based approaches, where appropriate, to enhance the effectiveness and efficiency of the regulatory framework, clarify expectations for the regulated community, modify or eliminate rules, and focus agency resources on activities most important to safety and security.
- Evaluate the NRC program to regulate the safe and secure management of spent fuel and apply risk insights from operational experience and probabilistic risk assessments for spent fuel dry storage.
- Apply regulatory tools (e.g., rulemaking, regulatory guides, and orders) consistently across and within agency program areas.
- Ensure the effectiveness, efficiency, and consistency of the licensing and oversight (inspection, assessment, and enforcement) processes.
- Engage with the regulated community, the public, and other interested stakeholders to ensure that diverse views are considered in regulatory decisionmaking.

- Use and adapt externally generated guidance to the extent feasible.
- Conduct long-term research to understand the risks of current and emerging technologies.
- Improve the regulatory infrastructure by using superior tools for systems analysis, phenomenological analysis, hazard analysis, risk assessment, and other regulatory needs to enhance the long-term effectiveness and efficiency of regulatory decisionmaking.
- Prepare to license emerging technologies by identifying and resolving policy, technical, and licensing issues and by making necessary modifications to the regulatory framework.



*Spent Fuel Dry Storage Casks*

***Regulatory Effectiveness Strategy 3:***  
***Integrate safety and security programs to identify and avoid unintended consequences.***

## CONTRIBUTING ACTIVITIES

- Understand and address the potential for adverse effects on safety and security before requiring changes to facility configurations or conditions.

- Coordinate and share information on the safety/security interface with Federal agencies; State, local, and Tribal governments; and with the international community, as appropriate.

## OPENNESS

As an independent regulatory agency, the NRC conducts its regulatory activities as openly as possible with meaningful stakeholder involvement. The NRC anticipates an increase in public interest and expectations across the range of its regulatory responsibilities for nuclear power, use of radioactive materials, decommissioning activities, and management of radioactive waste. The NRC considers public involvement in, and information about, its activities to be a cornerstone of strong, fair regulation of the nuclear industry. The NRC recognizes the public's interest in the proper regulation of nuclear activities and provides opportunities for citizens to be heard. For that reason, to be consistent with *The NRC Approach to Open Government*<sup>2</sup>, the agency is committed to providing opportunities for the public to participate meaningfully in the NRC's decisionmaking process. The avenues and resources for participation are fully described in the public participation section<sup>3</sup> of the agency's public Web site.

The NRC's openness strategies are focused on three elements: (1) transparency, (2) participation, and (3) collaboration.

Transparency promotes accountability by providing the public with information about the NRC's activities.

<sup>2</sup> U.S. Nuclear Regulatory Commission, "The NRC Approach to Open Government," available at <http://www.nrc.gov/public-involve/open.html> (accessed on May 30, 2014).

<sup>3</sup> U.S. Nuclear Regulatory Commission, "Public Participation," available at <http://www.nrc.gov/public-involve/open/public-participation.html> (accessed on May 30, 2014).



More specifically, this means that public stakeholders should have timely access to clear and understandable information about the NRC's role, processes, activities, and decisions.

Participation allows the public to contribute ideas and expertise so that the NRC can make regulatory decisions with the benefit of information from a wide range of stakeholders. These stakeholders should have a reasonable opportunity to participate meaningfully in the NRC's regulatory processes.

Collaboration improves the effectiveness of government by encouraging partnerships and cooperation within the Federal government; with State, local, and Tribal governments; and with international regulatory authorities.

***Openness Strategy 1—Transparency:**  
Make clear information about the NRC's responsibilities and activities accessible to stakeholders.*

## CONTRIBUTING ACTIVITIES

- Enhance the readability of NRC materials intended for the general public.
- Expand the use of plain language, to the extent possible, in communicating technical information, including the use of plain language summaries in technical documents of high public interest.
- Improve the completeness and accuracy of NRC electronic records and information.
- Provide up-to-date information and enhance ease of use of the NRC's public Web site.
- Expand mobile device access to NRC information of high public interest.

- Provide developer tools, such as Web application programming interfaces, to facilitate download and analysis of key agency information.

***Openness Strategy 2—Participation:**  
Enhance interaction with the public and other stakeholders through use of social media and further enable opportunities for meaningful participation in, and mutual understanding of, NRC regulatory processes.*

## CONTRIBUTING ACTIVITIES

- Use social media analytics to capture and better focus the reach of the NRC's social media platforms in order to further improve public communications.
- Engage the public in dialogue using social media.
- Improve the agency's Public Meeting Notification System to help members of the public be aware of and participate in the agency's public meetings.
- Provide electronic and mobile access to the Public Meeting Feedback System to make it easier for members of the public to provide feedback on the agency's public meetings.
- Interact with the public through all stages of the rulemaking process by holding public meetings, publishing draft guidance with proposed rules and final guidance with final rules, requesting specific comments on cumulative effects of regulation, and holding a public meeting on implementation during the final rule stage.
- Enable persons to remotely attend and participate in significant NRC public meetings and improve public meeting access for individuals in ways consistent with the *Americans with Disabilities Act*.

*Openness Strategy 3—Collaboration: Promote domestic and global nuclear safety and security by creating and taking advantage of opportunities to increase collaboration and share best practices with other Federal agencies, with State, local, and Tribal governments, and with the international regulatory community.*

## CONTRIBUTING ACTIVITIES

Collaboration with Federal, State, Local, and Tribal Governments

- Collaborate, as appropriate, with other Federal agencies in support of the NRC's regulatory responsibilities; and share and adopt best practices to improve operations across the Federal government.
- Identify and pursue opportunities to collaborate and interact with State and local governments in the agency's regulatory programs and processes.
- Identify and implement ways to enhance intergovernmental collaboration with Tribal governments concerning regulatory activities through government-to-government consultation, coordination, and general outreach.

Collaboration with the International Regulatory Community

- Provide assistance and training to countries embarking on nuclear-power and radioactive-materials programs to help them to build their regulatory infrastructure. Through this collaboration, build international partnerships that can result in new formal technical and cooperative arrangements.
- Through focused interactions with international counterparts, positively influence safety and security by creating opportunities to exchange mutually beneficial information; participating in the development, evaluation, and implementation of international standards; seeking common approaches to resolving technical issues; and promoting best practices.



*NRC Headquarters*



The agency has chosen two key management objectives for fiscal years (FY) 2014–2018 that focus on (1) human capital and (2) information management and information technology (IT) because of their high level of impact on the NRC’s safety and security goals. The selection of these particular objectives is consistent with the NRC Inspector General’s assessment of the agency’s top management challenges.

## KEY MANAGEMENT OBJECTIVE 1 – HUMAN CAPITAL

**OBJECTIVE: ATTRACT, DEVELOP, AND MAINTAIN A HIGH-PERFORMING, DIVERSE, ENGAGED, AND FLEXIBLE WORKFORCE WITH THE SKILLS NEEDED TO ADAPT TO WORKLOAD CHANGES AND EFFECTIVELY CARRY OUT THE NRC’S MISSION NOW AND IN THE FUTURE.**

*Human Capital Strategy 1: Maintain qualified and flexible staff and close skill gaps in mission-critical occupations.*

### CONTRIBUTING ACTIVITIES

- Conduct workforce assessments to identify skill gaps and use human capital strategies (e.g., recruitment, development, retention) to close them with diverse and qualified employees.
- Optimize the NRC’s organizational structure and staffing to align with and support the NRC’s mission.
- Use mission-critical occupation information to identify and plan activities and programs to train, retain, and recruit employees.
- Maintain critical technical expertise in regulatory areas such as licensing, inspection, and research.

## ADDITIONAL MANAGEMENT OBJECTIVES

More generally, the agency will continue to improve the performance of all of its internal support functions, with a focus on helping the staff to achieve the agency’s safety and security goals while making the most efficient use of agency resources.

**Acquisitions:** Acquire best-value goods and services in a timely manner to meet mission needs.

**Cyber and Information Security:** Prevent unauthorized disclosures or modifications of NRC information and minimize disruption of the NRC’s mission.

**Financial Management:** Improve the efficiency of financial systems and processes and the usefulness of the financial information they produce for management decisionmaking.

**Financial Stewardship:** Maintain appropriate accountability and controls to ensure effective use of government resources.

**Internal Customer Services:** Improve the accessibility, delivery, and utility of the services that employees and organizational units need to work effectively.

**Performance Management:** Increase the use of results-oriented performance indicators at all levels and improve the utility of performance data for agency decisionmaking.

**Space and Facilities Management:** Optimize the use of space to maintain the NRC’s regulatory effectiveness, operational efficiency, and emergency-response capability and provide a physically safe and secure work environment for personnel, information, facilities, and equipment.

# MANAGEMENT OBJECTIVES

- Encourage employee work/life balance by offering flexible work schedules, telework, and wellness services.
- Apply innovative and cost-effective strategies for recognizing, rewarding, and retaining top-performing employees.

*Human Capital Strategy 2: Hire the best talent to achieve a high-performing, diverse, and engaged workforce with the skills needed to carry out the NRC's mission now and in the future and close skills gaps in mission-critical occupations.*

## CONTRIBUTING ACTIVITIES

- Identify appropriate recruitment and staffing strategies and manage progress towards hiring and retaining the best talent.
- Fill skill gaps and mission-critical positions and participate in targeted outreach efforts.
- Engage U.S. universities and colleges to support relevant programs and pursue recruitment.

*Human Capital Strategy 3: Improve knowledge management by identifying and capturing critical knowledge from employees, transferring it to those who need it now, and making it accessible for the future.*

## CONTRIBUTING ACTIVITIES

- Provide innovative agency support structures for knowledge management.
- Create communities of practice that enable the sharing of relevant knowledge and critical skills among employees who perform the same job function.

- Capture operating experience, new information on safety and security issues, and knowledge gained from inspection, research, and licensing activities in regulatory guidance.
- Capture relevant critical knowledge from employees departing the agency, recapture knowledge from former employees where possible, communicate leadership expectations for knowledge sharing, formalize knowledge management values and principles, and incorporate knowledge management practices within agency work processes.

*Human Capital Strategy 4: Promote a strong NRC internal safety culture with an open, collaborative work environment.*

## CONTRIBUTING ACTIVITIES

- Ensure agency policy, procedures, self-assessment programs, and training programs encourage adherence to NRC values and foster an open and collaborative work environment, including the expression of differing views and raising mission-related concerns without fear of retaliation.
- Conduct self-assessments and apply organizational development principles to selected areas to address organization-specific challenges and enhance NRC safety culture.

*Human Capital Strategy 5: Enhance employee learning opportunities and optimize the use of training resources from an agencywide perspective to meet the agency's current and future critical skill needs.*

## CONTRIBUTING ACTIVITIES

- Improve awareness of courses offered internally to maximize employee development and the value of these resources to the agency.



- Optimize the development and delivery of training to build needed competencies, including the identification of courses that are suitable for conversion to online or blended delivery.
- Provide job-related training for staff before agency implementation of new regulations, guidance, or changes in technology.
- Apply a systematic approach for approving external training resources.
- Continuously improve development programs such as the Nuclear Safety Professional Development Program (NSPDP), Leadership Potential Program (LPP), and Senior Executive Service Candidate Development Program (SESCDP) to maximize their value to the participants and the agency.

### *Human Capital Strategy 6: Strengthen workforce diversity and inclusion.*

#### CONTRIBUTING ACTIVITIES

- Identify and eliminate barriers to recruitment, development, advancement, and retention of employees, including those in underrepresented groups.
- Promote diversity management and inclusion with the goal of enabling all employees to reach their full potential in pursuit of the organization's mission. This includes fostering an environment in which diversity and inclusion are commonplace and enhance execution of the agency's objectives.
- Hold managers accountable for making sound hiring and promotion decisions while ensuring a diverse and inclusive organization.

## KEY MANAGEMENT OBJECTIVE 2 – INFORMATION MANAGEMENT AND IT

**OBJECTIVE: MAKE IT EASIER FOR NRC STAFF TO PERFORM THEIR MISSION AND TO OBTAIN THE INFORMATION THEY NEED FROM AUTHORITATIVE SOURCES ANYTIME, ANYWHERE, ON ANY DEVICE, WHILE MANAGING THE RISK OF COMPROMISE OF SENSITIVE INFORMATION.**

*Information Management and IT Strategy 1: Enable the NRC's staff to easily find and use the information they need.*

#### CONTRIBUTING ACTIVITIES

- Centralize and organize the NRC's information repositories and Web sites to increase the currency and usefulness of information.
- Identify and require the use of authoritative data sources across the organization.
- Improve the life-cycle management of the agency's information and records to include the capture, usage, storage, and disposition of information.

*Information Management and IT Strategy 2: Develop a flexible technology infrastructure that provides the foundation to consistently deliver the IT solutions needed to further the agency's objectives and strategies.*

#### CONTRIBUTING ACTIVITIES

- Upgrade network capacity to meet increasing demand for data communication.

# MANAGEMENT OBJECTIVES

- Upgrade video teleconferencing and other meeting-support technologies to enhance meeting capabilities and reduce travel time and expenses.
- Explore implementing cloud-based data-center capabilities as a means to consolidate services and reduce costs.
- Reduce the number of NRC's data centers owned and operated by the NRC.
- Implement an effective cyber security program for protection of the NRC's IT assets while managing the risk of compromise.

*Information Management and IT Strategy 3: Improve the value of the NRC's IT solutions by providing the right products and services when and where needed to support the agency's mission.*

## CONTRIBUTING ACTIVITIES

- Implement mobile Web capabilities for NRC staff where needed; for example, tablet-based inspection capabilities for inspectors at licensee facilities and remote sites.
- Increase Web access to NRC information on any device.

- Improve IT systems supporting key agency functions, including operating reactor oversight, radioactive materials licensing and tracking, and agency resource management.
- Expand the use of common IT platforms to enhance agency processes.

*Information Management and IT Strategy 4: Improve enterprise IT planning, budgeting, and performance management to effectively manage IT resources and investments.*

## CONTRIBUTING ACTIVITIES

- Improve access to integrated IT investment information needed for decisionmaking from budget through operation.
- Improve project management and execution standards through evaluating how IT projects perform against approved budgets, schedules, and requirements.



## APPENDIX A—KEY EXTERNAL FACTORS

The ability of the U.S. Nuclear Regulatory Commission (NRC) to achieve its strategic goals and their associated strategic objectives is influenced by many external factors, including industry operating experience, national priorities, the threat environment, legislation, Federal court litigation, market forces, and resource availability. This appendix discusses the most significant of these factors for each strategic objective. The NRC will strengthen its ability to manage change and maintain its readiness to respond promptly to any agency priority shifts necessitated by factors that are beyond its control. The agency will also make efforts to influence those factors that enable the achievement of its strategic objectives.

### EXTERNAL FACTORS AFFECTING SAFETY OBJECTIVE 1: PREVENT AND MITIGATE ACCIDENTS AND ENSURE RADIATION SAFETY.

#### *Market Pressures on Operating Plants and License Applications*

Market forces result in pressures to reduce operating costs. As a result, the NRC needs to be prepared to address potential shutdowns of facilities before license expiration and to continue to ensure that oversight programs identify degrading facility safety and security performance. Conversely, the lower capital costs of small modular reactors (under 300 megawatts) may offer industry a more attractive option to add new capacity. Several entities are seeking to submit license applications for small modular reactors in the next several years. The Department of Energy is funding a program “to design, certify and help commercialize innovative small modular reactors (SMRs) in the

United States.” The NRC is developing a licensing framework for these as well as other advanced reactors.

#### *Significant Operating Incident at a Non-U.S. Nuclear Facility*

A significant incident at a nuclear facility outside the United States could cause the agency to reassess its safety and security requirements, which could change the agency’s focus on some initiatives related to its objectives until the situation stabilizes.

#### *Significant Operating Incident at a Domestic Nuclear Facility*

A significant incident at a U.S. nuclear facility could cause the agency to reassess its safety and security requirements, which could change the agency’s focus on some initiatives related to its objectives until the situation stabilizes. Because the NRC’s stakeholders are highly sensitive to many issues regarding the use of radioactive materials, even events of relatively minor safety significance could potentially require a response that consumes considerable agency resources.

#### *International Nuclear Standards Developments*

International organizations, such as the International Atomic Energy Agency (IAEA), will continue to develop and issue standards and guidance affecting global commitments to nuclear safety and security. To ensure that the best results are achieved both domestically and internationally, the NRC needs to proactively engage in these international initiatives and to provide leadership in a cooperative and collegial manner.

#### *International Treaties and Conventions*

As part of the international response to lessons learned from the Fukushima Dai-ichi nuclear accident in Japan, the international nuclear regulatory community is reviewing the Convention on Nuclear Safety. As one

of the contracting parties to the Convention, the NRC is a member of the working group that is reviewing the Convention. Likewise, the NRC participates in the Joint Convention on the Safety of Spent Fuel Management and on the Safety of Radioactive Waste Management.

### *Globalization of the Nuclear Technology and the Nuclear Supply Chain*

Components for nuclear facilities are increasingly manufactured overseas, resulting in challenges of providing effective oversight to ensure that these components are in compliance with NRC requirements. In addition, the continuing globalization of nuclear technology is driving the need for increasing international engagement on the safe use of radioactive material.

### **EXTERNAL FACTORS AFFECTING SECURITY OBJECTIVE 1: ENSURE PROTECTION OF NUCLEAR FACILITIES AND RADIOACTIVE MATERIALS.**

#### *Significant Terrorist Incident*

A sector-specific credible threat or actual significant terrorist incident anywhere in the United States would result in the Department of Homeland Security (DHS) raising the threat level under the National Terrorism Advisory System (NTAS). In turn, the NRC would similarly elevate the oversight and response stance for NRC-regulated facilities and licensees. Potentially, new or revised security requirements or other policy decisions might affect the NRC, its partners, and the regulated community. In a similar fashion, a significant terrorist incident at a nuclear facility or activity anywhere in the world would need to be assessed domestically and potentially lead to a modification of existing security requirements for NRC-regulated facilities and licensees.

### *International Treaties and Conventions*

The ratification by the United States of international instruments related to the security of nuclear facilities or radioactive materials could potentially impose binding provisions on the Nation and the corresponding governmental agencies, such as the NRC and the DOE.

### *Globalization of Nuclear Technology*

The continuing globalization of nuclear technology is driving the need for increased international engagement on the secure use of radioactive material.

### *Legislative and Executive-Branch Initiatives*

Congressional and Executive Branch initiatives concerning cyber security may potentially impact the NRC's regulatory framework for nuclear security. If the NRC were to become concerned about an aspect of a bill or policy initiative that had been introduced, the staff would consult the Commission to develop a strategy for making such concerns known.

### **EXTERNAL FACTORS AFFECTING SECURITY OBJECTIVE 2: ENSURE PROTECTION OF CLASSIFIED AND SAFEGUARDS INFORMATION.**

#### *Lost, Misplaced, Intercepted, or Delayed Information*

With the increased use of mobile devices and alternative storage options, the introduction of new communication technologies, and the increased use of telecommunication, there is a heightened risk that sensitive information held by the NRC or its licensees can be lost, misplaced, or intercepted and fall into the hands of unauthorized persons.



## APPENDIX B—EVALUATIONS AND RESEARCH

In developing this strategic plan, the U.S. Nuclear Regulatory Commission (NRC) used the following information from research and program evaluations to assess the efficacy of existing programs and to help shape the agency's objectives and strategies:

- The annual Abnormal Occurrence (AO) Report for Congress<sup>4</sup> documents unscheduled incidents or events, across all activities regulated by the NRC and by the Agreement States, that the NRC determines to be significant from the standpoint of public health or safety and of significant stakeholder interest.
- The NRC's Annual Industry Trends Report details the nuclear power industry's performance with respect to significant adverse trends in nuclear security and safety, including trends for significant events, radiation exposure, safety-system actuations, automatic control-rod insertions in nuclear power reactors, occurrence of reactor accident precursors, and safety-system failures.
- The Reactor Oversight Process (ROP) is a risk-informed, tiered approach for ensuring the safety of nuclear power plants. It includes collecting information about licensee performance, assessing the safety significance of the information, taking appropriate actions, and ensuring that licensees correct deficiencies.

- The Annual Report to the Commission on the Accident Sequence Precursor (ASP) Program<sup>5</sup> systematically evaluates U.S. nuclear plant operating experience to identify, document, and rank those operating events that were most significant in terms of the potential for inadequate core cooling and severe core damage.
- Integrated Materials Performance Evaluation Program (IMPEP) Reviews of NRC regional offices and Agreement States<sup>6</sup> are a structured process for evaluating the performance of NRC regional offices and Agreement States in overseeing the safe and secure use of radioactive materials.

Review of this information confirmed that the NRC has a strong, solid, and mature regulatory program as evidenced by the achievement of the strategic outcomes in past Strategic Plans and historical industry performance trends. The data demonstrates that licensees have made longterm improvements in nuclear safety and security. However, these reviews and significant external events revealed areas for continued improvement and regulatory vigilance.

Planned program evaluations for Fiscal Years (FY) 2014– 2018 appear in Appendix C.

<sup>4</sup> Abnormal Occurrence Reports are available at <http://www.nrc.gov/reading-rm/doc-collections/nuregs/staff/sr0090/>.

<sup>5</sup> The Accident Sequence Precursor Report for Fiscal Year 2013 is available at <http://www.nrc.gov/reading-rm/doc-collections/commission/secys/2013/2013-0107scy.pdf>.

<sup>6</sup> Information about the Integrated Materials Performance Evaluation Program and associated reports are available at <http://nrc-stp.ornl.gov/impeptools.html>.

## APPENDIX C—PLANNED PROGRAM REVIEWS

### ABNORMAL OCCURRENCE (AO) REPORT

**Expected Completion Date:** Annually.

**Objective:** To ensure that licensed activities are conducted safely, the Abnormal Occurrence Report provides a summary of the review of and response to industry operating experience.

**Scope:** The AO report helps to identify safety and security deficiencies and ensure that corrective actions are taken to prevent recurrence. Through the assessment, the U.S. Nuclear Regulatory Commission (NRC) and industry review and evaluate operating experience to identify safety concerns and the NRC responds to risk-significant issues through licensing reviews, inspections, and enhancements to its regulations.

### ACCIDENT SEQUENCE PRECURSOR (ASP) PROGRAM

**Expected Completion Date:** Annually.

**Objective:** The ASP Program systematically evaluates U.S. nuclear power plant operating experience to identify, document, and rank the operating events that are most likely to lead to inadequate core cooling and severe core damage (precursors) that would contribute to the likelihood of additional failures.

**Scope:** The annual assessment (1) provides a comprehensive, risk-informed view of nuclear power plant operational experience and a measure for trending core-damage risk at nuclear power plants, (2) provides a partial check on dominant core-damage scenarios predicted by probabilistic risk assessments, (3) provides feedback to regulatory activities, and (4) helps the

agency monitor performance against the safety goals established in the agency's Strategic Plan.

### CONSTRUCTION REACTOR OVERSIGHT PROCESS (CROP)

**Expected Completion Date:** Annually.

**Objective:** The annual cROP self-assessment has three objectives: (1) to determine whether the ongoing program is effective in supporting the achievement of the performance goals and the agency's strategic goals; (2) to provide timely, objective information to inform program planning and to develop recommended improvements to the cROP; and (3) to inform the Commission, NRC senior management, and the public of the results of the cROP self-assessment program, including any conclusions and resulting improvement actions.

**Scope:** At a minimum, the annual self-assessment includes (1) an evaluation of the construction inspection program; the construction significance-determination process; the closure-verification program for Inspections, Tests, and Acceptance Criteria (ITAAC); the construction enforcement program, and the construction assessment program; (2) discussions and assessments of cROP communications and cROP resource expenditures; and (3) updates on recent issues associated with ITAAC and recent domestic and international construction experience being incorporated in the NRC's programs.

### SUPPORT SERVICES

**Expected Completion Date:** Annually.

**Objective:** Each program evaluation will determine whether the NRC's support services (e.g., administrative services, human capital management, financial management (including contract management), and



information technology and information management) are being delivered in ways consistent with the agency's overall goals and whether internal and external customer needs and requirements are met.

**Scope:** The annual questionnaire, survey, or checklist will determine (1) whether the program area delivers the promised results, (2) the level of customer satisfaction, and (3) the program's strengths and weaknesses.

### INTEGRATED MATERIALS PERFORMANCE EVALUATION PROGRAM (IMPEP) REVIEWS OF NRC REGIONAL OFFICES AND AGREEMENT STATES

**Expected Completion Date:** Individual State and regional reviews usually conducted every 4 years; review of the National Materials Program conducted annually.

**Objective:** Each program evaluation will determine whether the regional offices and Agreement States are conducting programs that meet the objectives set out in [\*Management Directive 5.6, "Integrated Materials Performance Evaluation Program \(IMPEP\)"\*](#) dated February 26, 2004.

**Scope:** The evaluations include common criteria and criteria specific to the activities and responsibilities of the Agreement States and NRC regional offices. The staff factors any recommendations or good practices into future reviews of materials programs.

### OPERATOR LICENSING PROGRAM

**Expected Completion Date:** Annually.

**Objective:** The annual evaluation of the Operator Licensing Program ensures that the program is effective and consistently implements the requirements in Title 10, "Energy," of the *Code of Federal Regulations (10 CFR) Part 55*, "Operators' Licenses"; the guidance

in [\*NUREG-1021, "Operator Licensing Examination Standards for Power Reactors," Revision 2\*](#), issued July 2004; and other policy documents.

**Scope:** The annual evaluation of the Operator Licensing Program involves audits of one or two written examinations and operating tests in each NRC region to ensure consistent quality, level of difficulty, administration, and grading. The evaluation also includes a detailed review of the operator-licensing function of one regional office each year, so that each region is reviewed once every four years; during the other three years, the regions perform a similar self-assessment. The detailed reviews assess seven functional areas: (1) administrative requirements, (2) written examinations, (3) operating tests, (4) requalification-program oversight, (5) regional operations, (6) licensing assistant activities, and (7) resource use.

### REACTOR OVERSIGHT PROCESS (ROP)

**Expected Completion Date:** Annually.

**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 goals and (2) to provide timely, objective information to inform program planning and improvements.

**Scope:** At a minimum, the evaluation includes (1) the efficiency of the agency's baseline inspection program, (2) the effectiveness of the significance-determination process, (3) the usefulness of current performance indicators for enhancing agency planning and response, and (4) the effectiveness of the assessment program in prescribing appropriate regulatory oversight to those plants with performance deficiencies.

## APPENDIX D—GLOSSARY

**Agreement State:** A State that has signed an agreement with the U.S. Nuclear Regulatory Commission (NRC) authorizing the State to regulate certain uses of radioactive materials within the State.

**Byproduct Material:** As defined by NRC regulations, byproduct material includes any radioactive material (except enriched uranium or plutonium) produced by a nuclear reactor. It also includes the tailings or wastes produced by the extraction or concentration of uranium or thorium or the fabrication of fuel for nuclear reactors. Additionally, it is any material that has been made radioactive through the use of a particle accelerator or any discrete source of radium-226 used for a commercial, medical, or research activity. In addition, the NRC, in consultation with the U.S. Environmental Protection Agency (EPA), U.S. Department of Energy (DOE), U.S. Department of Homeland Security (DHS), and others, can designate as byproduct material any source of naturally occurring radioactive material, other than source material, that it determines would pose a threat to public health and safety or the common defense and security of the United States.

**Effectiveness:** The degree to which the outcome of an activity, process, or program contributes to achieving the agency's strategic goals, objectives, or strategies.

**Efficiency:** The degree to which the resources needed to produce an outcome can be minimized without reducing the outcome's effectiveness.

**High-Level Radioactive Waste (HLW):** The highly radioactive materials produced as byproducts of fuel reprocessing or of the reactions that occur inside nuclear reactors. HLW includes the following:

- irradiated spent nuclear fuel discharged from commercial nuclear power reactors
- the highly radioactive liquid and solid materials resulting from the reprocessing of spent nuclear fuel, which contain fission products in concentration (this includes some reprocessed HLW from defense activities and a small quantity of reprocessed commercial HLW)
- other highly radioactive materials that the Commission may determine require permanent isolation

**Nuclear Safety Culture (as it applies to the regulated community)<sup>7</sup>:** The core values and behaviors resulting from a collective commitment by leaders and individuals to emphasize safety and security over competing goals to ensure protection of people and the environment.

**Performance-Based Regulation:** A regulatory approach that focuses on desired, measurable outcomes rather than on prescriptive processes, techniques, or procedures. Performance-based regulation leads to defined results without specific direction regarding how those results are to be obtained. At the NRC, performance-based regulatory actions focus on identifying performance measures that ensure an adequate safety margin and offer incentives for licensees to improve safety without formal regulatory intervention by the agency.

**Radioactive Material:** As used within this strategic plan, this term refers to any substance that produces ionizing radiation and is regulated by the NRC. The

<sup>7</sup> *The NRC's Safety Culture Policy Statement, published in the Federal Register on June 14, 2011 at 76 FR 34773, is available at <http://www.gpo.gov/fdsys/pkg/FR-2011-06-14/pdf/2011-14656.pdf>.*

NRC regulates all civilian uses of material producing ionizing radiation, including use of such substances for nuclear power generation, all aspects of the nuclear fuel cycle, medical and government uses, and research and industrial applications.

**Regulatory Framework:** The interrelated elements that form the basis for the NRC's oversight of the use of radioactive materials, including (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* (10 CFR); (3) regulatory guides, review plans, and other documents that clarify and guide the application of NRC requirements and amplify agency regulations; (4) the licensing and inspection procedures used by NRC employees; and (5) the agency's enforcement guidance.

**Risk Assessment:** A systematic method for addressing the following three questions as they relate to the performance of a particular system: (1) What can go wrong? (2) How likely is it? and (3) What are the consequences?

**Risk-Informed:** An approach to decisionmaking 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 and ensure that that attention is commensurate with the importance of those issues to public health and safety.

**Risk-Informed Regulation:** An approach to regulation taken by the NRC that incorporates an assessment of safety significance or relative risk. This approach ensures that the regulatory burden imposed

by an individual regulation or process is appropriate to its importance in protecting the health and safety of the public and the environment.

**Risk-Informed Decisionmaking:** An approach to regulatory decisionmaking in which insights from probabilistic risk assessment are considered with other engineering insights.

**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.

**Source Material:** Uranium or thorium, or any combination thereof, in any physical or chemical form, or ores that contain, by weight, 1/20 of 1 percent (0.05 percent) or more of (1) uranium, (2) thorium, or (3) any combination thereof. Source material does not include special nuclear material.

**Special Nuclear Material:** Plutonium, uranium-233, or uranium enriched in the isotopes uranium-233 or uranium-235.

**Spent (Depleted or Used) Nuclear Fuel:** Nuclear reactor fuel that has been used to the extent that it can no longer effectively sustain a chain reaction.

**Stakeholders:** Members of the public; Federal, State, Tribal, and local agencies; and license applicants and licensees with a specific interest in a given topic.

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



# AVAILABILITY OF REFERENCE MATERIALS IN NRC PUBLICATIONS

## NRC REFERENCE MATERIALS

As of November 1999, you may electronically access NUREG-series publications and other NRC records at the NRC Library at <http://www.nrc.gov/reading-rm.html>.

Publicly released records include, to name a few, NUREG-series publications; *Federal Register* notices; applicant, licensee, and vendor documents and correspondence; NRC correspondence and internal memoranda; bulletins and information notices; inspection and investigative reports; licensee event reports; and Commission papers and their attachments.

NRC publications in the NUREG-series, NRC regulations, and Title 10, "Energy," of the *Code of Federal Regulations* may also be purchased from one of these two sources.

1. The Superintendent of Documents  
U.S. Government Printing Office  
Mail Stop SSOP  
Washington, DC 20402-0001  
Internet: [bookstore.gpo.gov](http://bookstore.gpo.gov)  
Telephone: 202-512-1800  
Fax: 202-512-2250
2. The National Technical Information Service  
Springfield, VA 22161-0002  
[www.ntis.gov](http://www.ntis.gov)  
1-800-553-6847 or, locally, 703-605-6000

A single copy of each NRC draft report for comment is available free, to the extent of supply, upon written request as follows:

Address: Office of Administration,  
Publications Branch  
U.S. Nuclear Regulatory Commission  
Washington, DC 20555-0001  
E-mail: [DISTRIBUTION.Resource@nrc.gov](mailto:DISTRIBUTION.Resource@nrc.gov)  
Facsimile: 301-415-2289

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## NON-NRC REFERENCE MATERIALS

Documents available from public and special technical libraries include all open literature items, such as books, journal articles, and translations, *Federal Register* notices, Federal and State legislation, and congressional reports. Such documents as theses, dissertations, foreign reports and translations, and non-NRC conference proceedings may be purchased from their sponsoring organization.

Copies of industry codes and standards used in a substantive manner in the NRC regulatory process are maintained at—

The NRC Technical Library  
Two White Flint North  
11545 Rockville Pike  
Rockville, MD 20852-2738

These standards are available in the library for reference use by the public. Codes and standards are usually copyrighted and may be purchased from the originating organization or, if they are American National Standards, from—

American National Standards Institute  
11 West 42nd Street  
New York, NY 10036-8002  
[www.ansi.org](http://www.ansi.org)  
212-642-4900

Legally binding regulatory requirements are stated only in laws; NRC regulations; licenses, including technical specifications; or orders, not in NUREG-series publications. The views expressed in contractor-prepared publications in this series are not necessarily those of the NRC.

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# NRC BIBLIOGRAPHIC DATA SHEET

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