

# TABLE OF CONTENTS

<b>A MESSAGE FROM THE CHAIRMAN</b> .....	iii
<b>CHAPTER 1 • MANAGEMENT’S DISCUSSION AND ANALYSIS</b> .....	1
Introduction .....	3
About the NRC .....	3
U.S. Nuclear Regulatory Commission Organization Chart .....	4
The NRC’s Regulatory Activities .....	6
The Nuclear Industry .....	6
FY 2014 Performance Results .....	9
Future Challenges .....	14
Data Completeness and Reliability .....	16
Financial Performance Overview .....	17
Management Assurances, Systems, Controls, and Legal Compliance .....	22
<b>CHAPTER 2: PROGRAM PERFORMANCE</b> .....	27
Measuring and Reporting .....	29
Nuclear Reactor Safety Programs .....	34
Nuclear Materials and Waste Safety Programs .....	46
Costing to Goals .....	53
Cross-Cutting Strategies .....	53
Management Objectives .....	57
International Activities .....	61
Program Evaluations .....	64
Data Sources, Data Quality, and Data Security .....	66
<b>CHAPTER 3: FINANCIAL STATEMENTS AND AUDITORS’ REPORT</b> .....	69
A Message from the Chief Financial Officer .....	71
Financial Statements .....	72
Notes to the Financial Statements .....	76
Required Supplementary Information .....	88
Inspector General’s Letter Transmitting Independent Auditors’ Report .....	90
Independent Auditors’ Report .....	93
Management’s Response to the Independent Auditors’ Report on the Financial Statements .....	98
<b>CHAPTER 4: OTHER INFORMATION</b> .....	99
Inspector General’s Assessment of the Most Serious Management and Performance Challenges Facing NRC .....	101
Summary of Financial Statement Audit and Management Assurances .....	143
Improper Payments Information Act and Recovery Audit Reporting Details .....	147
Schedule of Spending .....	151
Acronyms and Abbreviations .....	155
Bibliographic Data Sheet .....	161
Availability of Reference Materials in NRC Publications .....	165

CHAPTER 2  
PROGRAM  
PERFORMANCE





## MEASURING AND REPORTING

This chapter presents detailed information on the U.S. Nuclear Regulatory Commission's (NRC) performance in achieving its mission during fiscal year (FY) 2014. The agency's mission, strategic goals, objectives, and strategies are outlined in the FY 2014 – 2018 Strategic Plan. The chapter describes the NRC's performance results and program achievements in accomplishing its strategic goals. The NRC has recently completed the update of the agency's Strategic Plan, and is currently reviewing performance indicators to determine whether the agency can find more effective ways to measure and report our performance. The indicators and results will be reported in the FY 2016 Congressional Budget Justification.

The NRC 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 to protect the environment. The NRC's vision is to carry out the mission as a trusted, independent, transparent, and effective nuclear regulator. The agency's strategic goals are to ensure the safe use of radioactive materials and ensure the secure use of radioactive materials. The NRC's safety and security activities are carried out through two major programs: Nuclear Reactor Safety, consisting of Operating Reactors and New Reactors; and Nuclear Materials and Waste Safety, consisting of Fuel Facilities, Nuclear Material Users, Decommissioning and Low-Level Waste, and Spent Fuel Storage and Transportation.

The NRC's safety research program evaluates and resolves safety issues for nuclear power plants and other facilities and materials that the agency regulates. The research program assesses existing and potential safety issues; supplies independent expertise, information, and technical judgments to support timely and realistic regulatory decisions; reduces uncertainties in risk assessments; and develops technical regulations and standards. The NRC also engages in cooperative research with other government agencies, the nuclear industry, universities, and international partners when appropriate.

In addition, this chapter describes the agency's progress in achieving its Cross-Cutting Strategies of Regulatory Effectiveness and Openness, as well as its Information Technology and Information Management, and Human Capital Management Objectives. It also provides information on data sources, data quality, and completeness and reliability of performance data.

### STRATEGIC GOAL 1:

Ensure the safe use of radioactive materials.

#### STRATEGIC OBJECTIVE

Strategic objectives express more specifically the results that are needed to achieve a strategic goal. The strategic objective for Goal 1 is:

***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.

In FY 2014, the NRC demonstrated that it achieved the safety strategic objective by meeting the performance indicators listed in Table 3 below. The table shows the agency's annual Safety performance indicators and results for FYs 2009 - 2014.

Table 3 – FY 2014 SAFETY GOAL PERFORMANCE MEASURES

<b>1. Number of new conditions evaluated as red by the NRC's Reactor Oversight Process (ROP)<sup>1</sup></b>						
	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013	FY 2014
Target	≤ 3	≤ 3	≤ 3	≤ 3	≤ 3	≤ 3
Actual	0	0	1	1	0	0

<sup>1</sup> This indicator is the number of new red inspection findings during the fiscal year plus the number of new red performance indicators during the fiscal year. Programmatic issues at multi-unit sites that result in red findings for each individual unit are considered separate conditions for purposes of reporting for this indicator. A red performance indicator and a red inspection finding that are due to an issue with the same underlying causes are also considered separate conditions for purposes of reporting for this indicator. Red inspection findings are included in the fiscal year in which the final significance determination was made. Red performance indicators are included in the fiscal year in which the Reactor Oversight Process (ROP) external Web page was updated to show the red indicator.

<b>2. Number of significant accident sequence precursors<sup>2</sup> (ASPs) of a nuclear reactor accident</b>						
	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013	FY 2014
Target	0	0	0	0	0	0
Actual	0	0	0	0	0	0

<sup>2</sup> Significant Accident Sequence Precursor (ASP) events have a conditional core damage probability (CCDP) or ΔCDP of > 1 × 10<sup>-3</sup>. Such events have a 1/1000 (1 × 10<sup>-3</sup>) or greater probability of leading to a reactor accident involving core damage. An identical condition affecting more than one plant is counted as a single ASP event if a single accident initiator would have resulted in a single reactor accident.

<b>3. Number of operating reactors with integrated performance that entered the multiple/repetitive degraded cornerstone column or the unacceptable performance column of the Reactor Oversight Process Action Matrix, or the Inspection Manual Chapter 0350 process is ≤ 3 with no performance leading to the initiation of an Accident Review Group<sup>3</sup></b>						
	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013	FY 2014
Target	≤ 3	≤ 3	≤ 3	≤ 3	≤ 3	≤ 3
Actual	0	0	2	1	0	0

<sup>3</sup> This indicator is the number of plants that have entered the Manual Chapter 0350 process, the multiple/repetitive degraded cornerstone column, or the unacceptable performance column during the fiscal year (i.e., were not in these columns or process the previous fiscal year). Data for this indicator is obtained from the NRC external Web site's Action Matrix Summary page, which provides a matrix of the five columns with the plants listed within their applicable column and notes the plants in the Manual Chapter 0350 process. For reporting purposes, plants that are the subject of an approved deviation from the Action Matrix are included in the column or process in which they appear on the Web page. The target value is set based on the expected addition of several indicators and a change in the long-term trending methodology (which will no longer be influenced by the earlier data and will be more sensitive to changes in current performance).

<b>4. Number of significant adverse trends in industry safety performance is ≤ 1<sup>4</sup></b>						
	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013	FY 2014
Target	≤ 1	≤ 1	≤ 1	≤ 1	≤ 1	≤ 1
Actual	0	0	0	0	0	0

<sup>4</sup> Considering all indicators qualified for use in reporting.

Table 3 – FY 2014 SAFETY GOAL PERFORMANCE MEASURES (continued)

5. Number of events with radiation exposures to the public or occupational workers that exceed Abnormal Occurrence Criterion I.A.3 <sup>5</sup>		FY 2009	FY 2010	FY 2011	FY 2012	FY 2013	FY 2014
Reactors	Target	0	0	0	0	0	0
Reactors	Actual	0	0	0	0	0	0
Materials	Target	≤ 2	≤ 2	≤ 2	≤ 2	≤ 2	≤ 2
Materials	Actual	0	0	0	0	0	1
Waste	Target	0	0	0	0	0	0
Waste	Actual	0	0	0	0	0	0

<sup>5</sup> Releases for which a 30-day report requirement under Title 10 of the Code of Federal Regulations (10 CFR) 20.2203(a)(3) is required.

6. Number of radiological releases to the environment that exceed applicable regulatory limits <sup>6</sup>		FY 2009	FY 2010	FY 2011	FY 2012	FY 2013	FY 2014
Reactors	Target <sup>5</sup>	0	0	0	0	0	0
Reactors	Actual	0	0	0	0	0	0
Materials	Target	≤ 2	≤ 2	≤ 2	≤ 2	≤ 2	≤ 2
Materials	Actual	0	0	0	0	0	0
Waste	Target	0	0	0	0	0	0
Waste	Actual	0	0	0	0	0	0

<sup>6</sup> With no event exceeding AO Criterion I.B.

## FY 2014 SAFETY PERFORMANCE INDICATORS RESULTS

### 1. REACTOR OVERSIGHT PROCESS

The NRC reactor oversight process monitors nuclear power plant performance in three areas: (1) reactor safety, (2) radiation safety, and (3) security. Analysis of individual plant performance is based on both licensee-submitted performance indicators and NRC inspection findings. Each issue is evaluated and assigned one of four categories in order of increasing significance: green, white, yellow, or red. A red finding or performance indicator signals a significant reduction in the safety margin in the measured area. No red findings were issued in FY 2014.

### 2. REACTOR SIGNIFICANT PRECURSORS

The NRC evaluates “precursor events” that occur at reactor facilities using statistical measures to determine the likelihood of such events adversely impacting safety. A significant precursor is defined as any event that has a probability of 1 in 1,000 (or

greater) of leading to substantial damage to the reactor fuel. No significant precursors have been identified for FY 2014.

### 3. REACTOR PERFORMANCE

The conditions in this indicator show whether the NRC finds significant performance issues in a plant during an inspection or based on performance indicators under the Reactor Oversight Process (ROP). A degraded cornerstone for a reactor occurs when two or more white conditions or one yellow condition is identified. A multiple degraded cornerstone occurs when two or more cornerstones are degraded in any one quarter. A repetitive degraded cornerstone is for when more than four consecutive quarters three or more white conditions or one white and one yellow condition are identified. If any of the conditions in this indicator are met, the NRC will implement additional inspection oversight to ensure that plant safety is improved. The NRC continues to carefully monitor and assess the performance at these facilities. No operating reactor has met these conditions during FY 2013 and FY 2014. The indicators for each plant may be seen at [http://www.nrc.gov/NRR/OVERSIGHT/ASSESS/pi\\_summary.html](http://www.nrc.gov/NRR/OVERSIGHT/ASSESS/pi_summary.html).

#### 4. REACTOR SAFETY TRENDS

This indicator tracks trends for several key indicators of industry safety performance. These indicators provide insights into major areas of reactor performance, including reactor safety, radiation safety, and emergency preparedness. Statistical analysis techniques are applied to each indicator to calculate long-term trends. These trends represent industry averages rather than individual plant performance. More information on industry trends may be found on the NRC Web site at <http://www.nrc.gov/reactors/operating/oversight/industry-trends.html>. No significant adverse trends were identified during FY 2014.

#### 5. NUCLEAR MATERIAL RADIATION EXPOSURES

This indicator tracks the number of radiation exposures to the public and occupational workers that exceed Abnormal Occurrence (AO) Criterion I.A.3, which is defined as those events that produce unintended permanent functional damage to an organ or a physiological system, as determined by a physician. This indicator tracks both nuclear reactors and other nuclear material users, such as hospitals and industrial users. Only one such exposure took place during FY 2014, meeting the target. Incidents of this nature would be included in the NRC's annual report to Congress, "Report to Congress on Abnormal Occurrences," (NUREG-0090) <http://www.nrc.gov/reading-rm/doc-collections/nuregs/staff/sr0090/v36/>.

#### 6. NUCLEAR MATERIAL RELEASES TO THE ENVIRONMENT

This indicator indicates the effectiveness of the NRC's nuclear material environmental regulatory programs. Exceeding the applicable regulatory limits is defined as a release of radioactive material that causes a total effective radiation dose equivalent to individual members of the public greater than 0.1 roentgen equivalent man (rem) in a year, exclusive of dose contributions from background radiation. In FY 2014, there were no releases of this nature.

### STRATEGIC GOAL 2:

Ensure the secure use of radioactive materials.

#### STRATEGIC OBJECTIVES

Strategic objectives more specifically express the results that are needed to achieve a strategic goal. The strategic objectives for Goal 2 are:

***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 materials to the environment occurs, or obtaining enough radioactive material for malevolent use.

***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.

The strategic objectives specify the conditions that must be met for the agency to ensure the secure use of radioactive materials.

In FY 2014, the NRC demonstrated that it achieved the two security strategic objectives by meeting the performance indicators listed in Table 4 below. Indicators 1 – 4 address the first security objective. Indicator 5 addresses the second security objective. The table shows the agency's annual Security performance indicators and results for FYs 2009-2014.

Table 4 – FY 2014 SECURITY GOAL PERFORMANCE MEASURES

<b>1. Unrecovered loss of risk-significant<sup>1</sup> radioactive sources</b>						
	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013	FY 2014
Target	0	0	0	0	0	0
Actual	0	0	1 <sup>2</sup>	0	0	0

<sup>1</sup> "Risk-significant" is defined as any unrecovered lost or abandoned sources that exceed the values listed in Appendix P to 10 CFR Part 110 – Category 1 and 2 Radioactive Material. Excluded from reporting under this criterion are those events involving sources that are lost or abandoned under the following conditions: (1) sources abandoned in accordance with the requirements of 10 CFR 39.77(c); (2) recovered sources with sufficient indication that doses in excess of the reporting thresholds specified in AO Criteria I.A.1 and I.A.2 did not occur during the time the source was missing; (3) unrecoverable sources lost under such conditions that doses in excess of the reporting thresholds specified in AO Criteria I.A.1 and I.A.2 were not known to have occurred; (4) other sources that are lost or abandoned and declared unrecoverable; (5) for which the agency has made a determination that the risk-significance of the source is low based upon the locations (e.g., water depth) or physical characteristics (e.g., half-life, housing) of the source and its surroundings; (6) where all reasonable efforts have been made to recover the source; and (7) it has been determined that the source is not recoverable and will not be considered a realistic safety or security risk under this indicator. (This includes licenses under the Agreement States.)

<sup>2</sup> There were no losses and one theft of radioactive nuclear material that the NRC considered to be the risk significant during FY 2011.

<b>2. Number of substantiated<sup>3</sup> cases of actual theft or diversion of licensed, risk-significant radioactive sources or formula quantities<sup>4</sup> of special nuclear material; or attacks that result in radiological sabotage<sup>5</sup></b>						
	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013	FY 2014
Target	0	0	0	0	0	0
Actual	0	0	0	0	0	0

<sup>3</sup> "Substantiated" means a situation in which an indication of loss, theft, or unlawful diversion such as an allegation of diversion cannot be refuted following an investigation and requires further action on the part of the agency or other proper authorities.

<sup>4</sup> A formula quantity of special nuclear material is defined in 10 CFR 70.4, "Definitions."

<sup>5</sup> "Radiological sabotage" is defined in 10 CFR 73.2, "Definitions."

<b>3. Number of substantiated losses of formula quantities of special nuclear material or substantiated inventory discrepancies of formula quantities of special nuclear material that are judged to be caused by theft or diversion or by substantial breakdown of the Accountability System</b>						
	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013	FY 2014
Target	0	0	0	0	0	0
Actual	0	0	0	0	0	0

<b>4. Number of substantial breakdowns<sup>6</sup> of physical security or material control (i.e., access control, containment, or accountability systems) that significantly weakened the protection against theft, diversion, or sabotage</b>						
	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013	FY 2014
Target	≤ 1	≤ 1	≤ 1	≤ 1	≤ 1	≤ 1
Actual	0	0	0	0	0	0

<sup>6</sup> A "substantial breakdown" is defined as a red finding in the security cornerstone of the ROP, or any plant or facility determined to either have overall unacceptable performance or be in a shutdown condition (inimical to the effective functioning of the Nation's critical infrastructure) as a result of significant performance problems and/or operational events.

<b>5. Number of significant unauthorized disclosures<sup>7</sup> of classified and/or Safeguards information</b>						
	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013	FY 2014
Target	0	0	0	0	0	0
Actual	0	0	0	0	0	0

<sup>7</sup> "Significant unauthorized disclosure" is defined as a disclosure that harms national security or public health or safety.

## FY 2014 SECURITY PERFORMANCE INDICATORS RESULTS

### 1. UNRECOVERED LOSSES

This indicator tracks any loss or theft of radioactive nuclear sources that the NRC has determined to be of significant risk. The indicator tracks the agency's performance in ensuring the proper accounting for radioactive sources of significant risk that could be used for malicious purposes. No such instances took place during FY 2014.

### 2. THEFTS OR DIVERSION

This indicator tracks whether NRC-licensed facilities maintain adequate protective capabilities to prevent theft or diversion of nuclear material or sabotage that could result in substantial harm to the public health and safety. No thefts of this nature occurred during FY 2014.

### 3. LOSS OR INVENTORY DISCREPANCY

This indicator tracks whether special nuclear material is accounted for and verifies that formula-quantity losses of this material do not occur. Loss of material could lead to the creation of an improvised nuclear device or other type of nuclear device. The indicator also tracks whether the systems in place at NRC-licensed facilities maintain accurate inventories of the special nuclear material that the facilities process, use, or store. No such losses took place in FY 2014.

### 4. SUBSTANTIAL BREAKDOWNS OF PHYSICAL SECURITY

This indicator tracks any breakdowns in access control, containment, or accountability systems that significantly weakened the protection against theft, diversion, or sabotage for nuclear materials that the agency has determined to be of significant risk. In FY 2014, there were no incidents of this nature.

### 5. SIGNIFICANT UNAUTHORIZED DISCLOSURES

This indicator includes significant unauthorized disclosures of classified or Safeguards information (SGI) that cause damage to national security or public safety. This indicator tracks whether information that can harm national security (classified information) or cause damage to the public health and safety (SGI) has been stored and used in ways as to prevent its disclosure to the public, terrorist organizations, other nations, or personnel without a need to know. No significant unauthorized disclosures occurred in FY 2014.

## NUCLEAR REACTOR SAFETY PROGRAMS

The NRC regulates activities that provide for the safety and security of 100 operating reactors, test and research reactors, and new reactor construction. Following is a description of the safety and security activities during FY 2014 that resulted in achievement of the strategic goals, strategic objectives, and performance-indicator targets for the Operating Reactors and New Reactors business lines.

### OPERATING REACTORS

NRC-licensed nuclear reactors account for about 20 percent of U.S. net electric generation, providing roughly 770 billion kilowatt-hours of electricity. The agency monitors the safe and secure operation of the 100 operating power reactors. The NRC achieves its strategic goals through its licensing, oversight, rulemaking, research, international activities, event response, and generic homeland security functions.

The priorities for the Operating Reactors business line during FY 2014 were as follows:

1. Ensure safe and secure operation of the Nation's fleet of nuclear power plants by implementing the Reactor Oversight Process.
2. Resolve emergent technological and security issues in a safe and efficient manner.
3. Ensure special focus plants resolve safety, security, and technical issues discovered during routine inspections (i.e., Fort Calhoun, Browns Ferry, etc.).
4. Continue to move forward in implementing the recommendations relating to Fukushima in an efficient manner.

### OPERATING REACTORS LICENSING

#### *Licensing Activity*

The agency's nuclear reactor licensing activity ensures that any changes associated with the facilities, processes, or other aspects related to the operation of civilian nuclear power reactors and test and research reactors adequately protect public health and safety and the environment while safeguarding radioactive material used in nuclear reactors. Licenses establish specific technical and operating standards for individual licensees. During FY 2014, the NRC took action to address a backlog of operating reactor licensing actions caused by priority on the Fukushima enhancements.

On September 23, 2014, the agency received the San Onofre Nuclear Generating Station (SONGS) Post Shutdown Decommissioning Activity Report for review and publication in the *Federal Register*. The agency works with licensees to efficiently transition units into the decommissioning process and to process the exemptions and licensing actions received from the decommissioning plants. Interim staff guidance is being developed and issued for public comment in the areas of emergency planning and security in order to ensure that submittals can be worked on most effectively for the near-term reviews.

During FY 2014, the NRC continued to review the construction permit application for a medical radioisotope production facility from SHINE Medical Technologies, Inc., submitted in FY 2013. This is the first application submitted to the NRC for a facility intending to produce molybdenum-99 (Mo-99) utilizing low-enriched uranium (LEU) technology. The NRC also continued to review a license amendment submitted by Oregon State University (OSU) requesting approval to place LEU targets in the OSU TRIGA® reactor for the explicit purpose of demonstrating the production of Mo-99 in a small nuclear reactor. On October 8, 2013, the NRC granted an exemption to Northwest Medical Isotopes that would allow Northwest Medical Isotopes to submit a construction permit application for a medical radioisotope production facility in two parts. The agency also received letters of intent to produce Mo-99 from Precision Engineering Consultants, Inc., on March 24, 2014, Zevacor Molecular on June 18, 2014, and Niowave, Inc., on August 28, 2014. The NRC continued to hold public meetings with potential applicants, including Coqui Radiopharmaceuticals Corporation and Northwest Medical Isotopes in anticipation of construction permit applications to be submitted in FY 2015.

### *Power Uprates*

Since the 1970s, the Nation's utilities have sought power uprates as a way to generate more electricity from existing nuclear plants. By January 2013, the NRC had approved 156 power uprates, resulting in a gain of approximately 7,326 megawatts electric (MWe) at existing plants. The NRC evaluates nuclear reactor power uprate applications to determine whether licensees can safely increase the power output of their plants. The NRC review focuses on the potential impacts of the proposed power uprate on overall plant safety and confirms that plant operation at the increased power

level will be safe. In FY 2014, six operating units were uprated a total of 519 MW-thermal or approximately 170 MW-electric.

### *License Renewal*

The NRC grants reactor operating licenses for 40 years, which can be renewed for additional 20-year periods. The review process for renewal applications is designed to assess whether a reactor can continue to be operated safely during the extended period. To renew a license, the utility must demonstrate that aging will not adversely affect passive, long-lived structures or components important to safety during the renewal period. Additionally, the agency assesses the potential impacts of the extended period of operation on the environment. Inspectors travel to the nuclear reactor facility to verify the information in the license renewal application and confirm that aging management programs have been or are ready to be implemented. Following the safety review, the NRC prepares and makes available to the public a safety evaluation report.

On August 26, 2014, the NRC approved a final rule on the environmental effects of continued storage of spent nuclear fuel and lifted its suspension of final licensing actions on nuclear power plant licenses and renewals. With the lifting of the suspension, the NRC is once again making final decisions on license renewal applications. The resumption of licensing actions comes two years after the Commission's August 2012 decision not to make final licensing decisions until the agency responded to a June 2012 decision by the U.S. Appeals Court for the District of Columbia Circuit that struck down a provision in NRC regulations then known as "waste confidence." Waste confidence, now known as "continued storage," is a generic analysis-codified in the NRC's regulations-of the environmental impacts of the storage of spent nuclear fuel after the end of a reactor's license term. This generic analysis was conducted consistent with National Environmental Policy Act and assessed spent nuclear fuel storage. Following the court ruling, the Commission directed the staff to develop a new rule and a generic environmental impact statement detailing the environmental impacts of continued storage. The final rule, supported by a generic environmental impact statement, was approved by the Commission in August 2014, published in the *Federal Register* in September, and became effective on October 20, 2014. The rule does not authorize storage of spent fuel at reactor sites; it allows the NRC to proceed with environmental reviews of new reactors or reactor license renewal without considering the site-specific effects of spent fuel storage after the end of the reactor's license term in the environmental analysis.

### OPERATING REACTORS OVERSIGHT

#### *Nuclear Reactor Inspection*

The NRC provides continuous oversight of nuclear reactors through the ROP to verify that nuclear plants are operated safely and in accordance with the agency's rules and regulations. The NRC performs a rigorous program of inspections at each plant and might perform supplemental inspections and take additional actions to ensure that the plants address significant safety issues. The NRC has at least two full-time resident inspectors at each nuclear power plant site to ensure that facilities are meeting NRC regulations. Inspectors from NRC regional offices and headquarters are also used in the inspection program. The NRC has full authority to take action to protect public health and safety, up to and including shutting the plant down. The NRC also conducts public meetings with licensees to discuss the results of the agency's assessments of their safety performance.



*Clinton Power Station, Unit 1*

As part of its oversight activities to ensure safety for operating reactors during FY 2014, the NRC completed a number of significant actions. The agency completed the Confirmatory Action Letter (CAL) inspection at Browns Ferry Nuclear Station to evaluate completion of commitments made following the Inspection Procedure (IP) 95003 inspection. A CAL details the commitments the company has made to assure the NRC that it can safely operate the plant. The NRC also provided oversight and numerous inspection activities as part of the Fort Calhoun Station CAL closeout effort. This included continuous watch of control room activities during plant restart operations.

The agency conducted special inspections at Millstone (loss of offsite power and repeated failures of a turbine-driven auxiliary feedwater pump), Calvert Cliffs (loss of switchgear), Farley (solid state protection system), and Catawba (diesel generator); issued White findings of risk significance at LaSalle (operational procedures leading to reactor shutdown) and Duane Arnold (operability determination of reactor core isolation cooling), and issued an Augmented Inspection Team (AIT) follow-up inspection report with preliminary Red and Yellow Findings to Arkansas Nuclear One for the dropped stator event.

#### *Investigations and Enforcement*

Compliance with NRC requirements plays an important role in giving the agency confidence that safety is being maintained not only for operating reactors but for all areas that the agency regulates. NRC policies deter noncompliance and encourage prompt identification and timely, comprehensive corrective actions. Willful violations are of particular concern. Licensees, contractors, and their employees who do not achieve the high standard of compliance expected by the NRC are subject to enforcement sanctions. Each enforcement action depends on the circumstances of the case. The NRC will not permit licensees to continue to conduct licensed activities if they cannot achieve and maintain adequate levels of safety. In FY 2014, the NRC processed 37 escalated enforcement actions with 12 of the escalated actions supported through an investigation.

On June 23, 2014, a violation associated with two Yellow Significance Determination Findings was issued to Entergy Operations for an event that occurred on March 31, 2013. The 525-ton Unit 1 stator fell and caused extensive damage to portions of the plant, including safety-related equipment. As a result of the event, multiple personnel injuries and one fatality occurred.

The NRC issued a Confirmatory Order to Exelon resulting from an alternative dispute resolution (ADR) session regarding an apparent violation that involved the failure of several Dresden individuals to immediately inform a reviewing official of the questionable behavior of a now former Dresden Senior Reactor Operator.

During 2014, the NRC issued a renewed Facility Operating License for the Dow Chemical Company TRIGA® research reactor. The renewal license authorizes continued operation

of the reactor at power levels up to 300 kw for a period of 20 years.

On March 10, 2014, a Confirmatory Order (CO) was issued to V.C. Summer as a result of an ADR mediation session regarding two apparent violations of their access authorization program resulting from an individual inappropriately being granted unescorted access. In addition, an Order prohibiting licensed activities was issued to the individual.

### *Fukushima Regulatory Review*

The Japan Lessons Learned Division (JLD) leads the NRC's efforts to build upon and implement the recommendations issued in July 2011 by a task force convened shortly after the nuclear accident in Japan. The JLD's approximately 55 full-time employees work with NRC experts from across the agency to take action on what the agency learned from the events at Fukushima. The JLD is directed by a steering committee made up of NRC senior managers.

In FY 2014, the NRC reviewed integrated plans submitted by licensees for compliance with the requirements of Orders [EA-12-049](#) ("Mitigation Strategies"), [EA-12-051](#) ("Spent Fuel Pool Instrumentation"), and [EA-13-109](#) ("Severe Accident Capable Hardened Vents"). The NRC also reviewed seismic and flooding re-evaluations submitted by licensees, issued staff assessments regarding walkdowns performed for seismic and flooding protection features at all sites, and issued staff assessments regarding licensees' staffing and communication emergency preparedness activities.

### OPERATING REACTORS RULEMAKING

During FY 2014, the agency proposed one draft rule related to operating nuclear reactors and published one regulatory basis document for future proposed rulemaking. The NRC also reviewed and resolved three petitions to amend the regulations related to operating nuclear power reactors. In addition, the NRC has been working on new or revised rules related to release of radioactive material after an accident.

In March 2014, the NRC published a draft rule to amend the regulations that govern the Emergency Core Cooling System acceptance criteria. The rule would expand applicability to all cladding materials and fuel designs, incorporate recent research findings pertaining to previously unknown embrittlement mechanisms, replace prescriptive requirements with

performance-based requirements, address two petitions for rulemaking, and include a provision that would allow licensees to use a risk-informed alternative to address the effects of debris on long-term core cooling.

In October 2013, the NRC released a regulatory basis for amending onsite emergency response capability regulations, which is an action that stems from the NRC's lessons-learned efforts, associated with the March 2011 Fukushima Dai-ichi Nuclear Power Plant accident. In July 2014, the Commission directed the staff to consolidate this activity with the Station Blackout Mitigation Strategies rulemaking and elements of the NRC's Near-Term Task Force recommendations 9, 10, and 11 related to Emergency Preparedness.

### OPERATING REACTORS RESEARCH

The NRC research program supports the agency mission by providing independent technical advice, expertise, tools, and information for identifying and resolving safety issues, making regulatory decisions, and promulgating regulations and guidance for nuclear power plants and other facilities and materials regulated by the agency. In support of the licensing and oversight of operating reactors, the research program develops technical bases and information to support timely and realistic regulatory decisions and provides confirmatory research to verify licensee submittals independently. The research program also reduces uncertainties in risk assessments and coordinates the development of consensus and voluntary standards for agency use. In FY 2014, substantive research work was performed in the following technical areas.



*NRC Inspection Team*

### *Fire Safety Research*

The NRC has continued conducting collaborative research to develop state-of-the-art tools, methods, and data in support

of regulatory activities related to fire protection and fire risk analyses. In FY 2014, key fire research included: testing and expert elicitation to develop state-of-the-art advancements for determining the probability of circuit hot shorting as a result of unwanted fires in commercial nuclear power plants; evaluation of fire protection compensatory measures used in nuclear power plants; publication of a framework for conducting fire probabilistic risk assessment (PRA) at low power and shutdown conditions; improvements and advancements in fire PRA and human reliability analysis; fire modeling development and advancing the (a) verification and validation of select fire modeling, (b) continued study of electrical cable combustion, and (c) testing of Very Early Warning Fire Detection Systems; performing experiments to better understand the heat release rate from electrical enclosures; and leading a High Energy Arcing Fault project with the international community under a program with the Organisation for Economic Co-operation and Development.

### *Radiation Protection Research*

This research supports the agency in the areas of radiation protection, dose assessment, and assessment of human health effects for reactor licensing, emergency preparedness, and nuclear security activities.

In FY 2014, the planning was started for the pilot phase of the NRC-sponsored National Academy of Sciences Analysis of Cancer Risk Study. The purpose of this study is to assess whether cancer incidence and deaths are elevated around NRC-licensed nuclear facilities. Also in FY 2014, the NRC released an updated version of the Radiological Assessment System for Consequence Analysis (RASCAL) computer code version 4.3. This version of the code contains a number of new features and revisions to address lessons learned during the NRC's response to the events during the Fukushima accident in Japan.

### *Materials Degradation*

The NRC continues to research material degradation issues for currently licensed reactors and waste and decommissioning facilities. The purpose of this research is to identify component-specific degradation mechanisms and their implications for structural and component integrity of existing reactors as well as waste and decommissioning facilities. In FY 2014, in cooperation with the U. S. Department of Energy (DOE), the NRC advanced the technical basis by identifying gaps that need to be addressed for subsequent license renewal.

The NRC continued its ongoing scrutiny of the integrity of steam generators to support response to emergent issues and future needs. The NRC also supports the development of confirmatory tools incorporating uncertainty quantification to assess piping and reactor pressure vessel integrity for independent verification of licensee submittals.

### *Nondestructive Examination Research*

In accordance with Title 10 of the *Code of Federal Regulations* (10 CFR) Part 50.55(a), "Codes and Standards," licensees must inspect structures, systems, and components to ensure that the requirements of the American Society of Mechanical Engineers Boiler and Pressure Vessel Code (ASME Code) are met and that structures, systems, and components can continue to perform their safety functions. The NRC conducts research on nondestructive examination (NDE) of light-water reactor (LWR) components and structures and provides the technical basis for regulatory decision-making related to these requirements. The NRC program at Pacific Northwest National Laboratory (PNNL) is evaluating the ability to detect and characterize primary water stress-corrosion cracking in LWR components. In addition, the NRC-directed is directing research at PNNL on the inspection of coarse-grained austenitic alloys and welds. NDE of these components is especially difficult because of signal attenuation and reflections. Research findings will support appropriate inspection requirements for these components to ensure safety.

### *Digital Instrumentation and Control Research*

The NRC's research supports the licensing of new digital instrumentation and control systems intended for use in retrofits to operating reactors and for use in new and next generation reactors. Research topics include safety, security, and knowledge management aspects of digital instrumentation and control systems. The research involves hazard analysis and failure mode analysis to assess safety, reliability, and security and to support safety assurance of digital systems. The research supports development of technical bases for improved regulatory guidance for licensing reviews of digital systems. Knowledge management research includes technical collaborations with the Electric Power Research Institute (EPRI) and international entities and learning from operational experience.

### *Electrical Engineering Research*

NRC electrical engineering research supports specific technical licensing issues to ensure safer operation of nuclear

power plants (NPPs). Ongoing research is examining the reliability of onsite and offsite power systems, including station blackout mitigation, vital direct current system performance, environmental qualification of safety-related equipment, and Fukushima-related topics. Research into limitations of electrical cable condition monitoring and qualification was initiated to support license renewal and the potential for extended license renewal. Long-term research in this area includes impacts of smart grid implementation on NPP offsite power reliability. Electrical engineering research supports developing technical bases for regulatory guidance, confirmatory research, and assessing impacts of emerging technologies.

### *Probabilistic Risk Assessment*

The NRC continues to research the development of advanced models, methods, and tools for probabilistic risk assessment (PRA) activities to support risk-informed regulatory decision-making such as licensing, rulemaking, and oversight of licensee performance. Specific examples include continued investigation of PRA methods for digital instrumentation and control systems, improved PRA software calculational and modeling capabilities, and development of new fire and external hazard nuclear power plant risk models for agency use. In FY 2014, the NRC continued to work on a multi-year project to develop a new integrated site PRA study that will quantitatively estimate the consequences of severe accidents for all modes of operation, all significant hazard categories, and all significant radiological sources onsite (i.e., reactors and spent fuel in pool and dry cask storage). The agency also continues to support PRA standards to support risk-informed regulatory activities for both operating and new reactors.

### *Natural Hazards Research*

The NRC has a well-developed natural hazards research plan that has been broadly reviewed for both technical quality and programmatic elements. The current emphases of this research plan are to evaluate potential risks to U.S. nuclear plants from severe earthquakes, tsunamis and other flooding hazards and to assure the continued safety of new and operating U.S. nuclear power plants. The NRC research on natural hazards produces timely results and insights that are essential for the implementation of the Tier 1 recommendations from the Fukushima Near-Term Task Force (NTTF) on seismic and flooding reevaluations (recommendations 2.1 and 2.2).

### *Severe Accident and Consequence Research Analysis*

The NRC plans, develops, and manages research programs that create computer codes, models, and experimental databases for evaluating nuclear reactor and plant systems under severe accident conditions for current, new, and advanced reactors. State-of-the-art analytical techniques are used to develop realistic best estimates of the potential effects on (consequences for) the public of low-likelihood accidents involving nuclear power plants and spent fuel storage and transportation which could release radioactive material into the environment. Major projects in this area are detailed below.

The NRC continues to conduct research that addresses a number of NTTF recommendations. In FY 2014, research was completed to estimate the risk of potential radioactive releases and consequences of Mark I containment failure due to an extended loss of alternating power (ELAP) accident caused by a beyond-design-basis external event. Additional analytical work is being conducted for filtered containment venting strategies for boiling water reactors with Mark I and II containments NTTF Recommendation 5.1) to develop the technical basis for a filtering strategies rulemaking.

The NRC is participating in domestic research with DOE and the EPRI and international research with the Organisation for Economic Co-operation and Development (OECD) and other international bodies to better understand the accident progression and lessons learned from the multiple reactor units during the Fukushima Dai-ichi Nuclear Power Plant accident. Examples include OECD-led Fukushima accident benchmark exercise, a DOE/NRC joint effort on Fukushima accident reconstructions, and several Nuclear Energy Agency (NEA) studies on topics related to NTTF recommendations (e.g., NTTF 5.1 on filtered containment venting and NTTF 6 on hydrogen).

Through the State-of-the-Art Reactor Consequence Analyses (SOARCA) project, the NRC has developed an updated body of knowledge on the realistic outcomes of selected important severe reactor accidents for two pilot plants, Peach Bottom and Surry. The NRC recently completed an uncertainty analysis of one of the SOARCA scenarios, the Peach Bottom unmitigated long-term station blackout, to take an integrated look at uncertainties in the mature accident simulation tools (MELCOR) accident progression and MELCOR Accident Consequence Code System Version 2 (MACCS2) offsite consequence analyses. The results of the uncertainty

analysis show that the uncertainties studied do not change the overall SOARCA conclusions for this accident scenario. The analysis is publicly available and documented in draft [NUREG/CR-7155](#) (ML13189A145). This NUREG will be finalized in calendar year 2014. The SOARCA Best Practices for MELCOR ([NUREG/CR-7008](#)) and MACCS ([NUREG/CR-7009](#)) detail the modeling approach and parameter selections used in the SOARCA project. These NUREGs will also be published in calendar year 2014.

### *Human Reliability Analysis Research*

The NRC continues to conduct research to improve human reliability analysis (HRA) methods, data, and models. Based on research insights, the NRC is developing an improved HRA model for agency use and a standard agencywide expert elicitation process. Further, the NRC is collaborating with the nuclear power reactor industry and international partners to collect human performance data from simulator exercises to inform both the qualitative and quantitative analysis portions of HRA methods. The agency is also developing a standard agencywide expert elicitation process for use in many regulatory processes.

The NRC is creating updated human factors review guidance for the review of license applications for new and advanced reactors and is performing research in support of rulemaking activities on fatigue, technologies for drug and alcohol testing, and severe accident mitigation.

The agency continues to support the implementation of the agency's Safety Culture Policy Statement.

### *Generic Issues Program*

The NRC's Generic Issues Program enables the public and NRC staff to raise issues with potentially significant generic safety or security implications in order to ensure that those issues are assessed through an effective, collaborative, and open process and that pertinent information is appropriately disseminated. The agency is currently addressing four active generic issues and one proposed generic issue. In FY 2014, the NRC screened out two proposed generic issues associated with [Pre-GI-0001](#), "Multiunit Core Damage Events," and [Pre-GI-0014](#), "Man-Made External Hazards," because these issues are already being addressed in ongoing actions.

### *Collection and Analyses of Operating Experience Data*

The NRC continues to collect and analyze operating experience data from power reactors to support risk analysis tools that are used in regulatory decision-making. Sources of information include, for example, NRC inspection reports, licensee event reports, and voluntary information provided by nuclear plant licensees to the Institute for Nuclear Power Operations (INPO). The NRC purchases the right to access the INPO Consolidated Events System (ICES), formerly known as the Equipment Performance Information and Exchange (EPIX) system, to use this data to support updates to risk analysis tools, such as the Standardized Plant Analysis Risk models. Analysis of the operating experience data is used to improve the understanding of the uncertainty associated with component reliability and performance, common-cause failure parameters, and initiating event frequencies. Further, trending analysis of operating experience has led the NRC to initiate research into causal factors associated with equipment failures that have challenged the safe operation of nuclear power plants.

Collection and analysis of operating experience data also supports the NRC's ROP Significance Determination Process (SDP); NRC Incident Investigation Program; event assessment process; the Generic Issues Program resolution process; and the Accident Sequence Precursor (ASP) Program. Operating experience data also supports development of generic communications and informs inspections conducted under the ROP to review, e.g., equipment and performance issues related to age-related degradation of active components.

### *Thermal-Hydraulics Research and Analysis*

The NRC plans, develops, and manages research programs that develop computer codes, models, and experimental databases for evaluating coupled neutronic and thermal-hydraulic transient behavior of nuclear reactor and plant systems under normal, abnormal, and accident conditions for current, new, and advanced reactors. The agency also performs thermal-hydraulic and computational fluid dynamics (CFD) analytical analyses to support regulatory decision-making and safety assessments. The results of thermal-hydraulic research are also used to quantify margins, reduce unnecessary burden, and reduce uncertainties for areas of potentially high risk or safety significance. By working in partnerships with universities, laboratories, and other national and international research centers, the agency is able to leverage resources in

this area. During FY 2014, the agency released **TRACE/PARCS Version 5.0 Patch 4**. This version incorporates new features for confirmatory analysis of contemporary nuclear plant designs and design changes. During FY 2014, the updated code was used for modeling small modular reactors, simulating containment behavior, performing more accurate fuel rod behavior studies, and simulating plant transients such as Anticipated Transient Without Scram (ATWS), and Maximum Extended Load Line Limit Analysis Plus (MELLLA+).

### OPERATING REACTORS EVENT RESPONSE

The NRC's emergency preparedness and incident response activities ensure that adequate measures can and will be taken to mitigate plant events, to minimize possible radiation doses to members of the public, and to ensure that the agency can respond effectively to events at licensee sites.

In FY 2014, the new Headquarters Operations Center (HOC) in the Three White Flint North building was declared fully functional. The new center enhances the agency's ability to respond to any event under its regulatory oversight. The NRC successfully planned, executed, and evaluated four full participation exercises involving incident responders from various program offices, including three hostile-action based exercises. In addition, the NRC participated in one multi-day exercise with the Canadian Nuclear Safety Commission. The NRC completed all activities related to Eagle Horizon 2014, which is the biennial, externally evaluated continuity of operations (COOP) exercise. Activities conducted as part of Eagle Horizon 2014 included a limited-scope COOP deployment exercise, and a thorough external evaluation of the NRC's COOP Plan, procedures, and exercise. During Eagle Horizon 2014, the agency successfully demonstrated its capability to relocate, conduct its Primary Mission Essential Functions from a remote location, and create a scenario-specific plan to reconstitute the agency.

### OPERATING REACTOR SECURITY

The NRC conducts a robust security inspection program within the security cornerstone of the agency's ROP. The security cornerstone focuses on five key attributes of licensee performance: access authorization, access control, physical protection systems, material control and accounting, and response to contingency events. Through the results obtained from all oversight activities, including baseline security inspections and performance indicators, the agency determines

whether licensees comply with NRC requirements and can provide high assurance of adequate protection against the design basis threat for radiological sabotage.

The NRC carries out force-on-force inspections at commercial operating nuclear power plants and Category I fuel facilities at least once every three years as part of its comprehensive security program. The agency uses these inspections to evaluate the effectiveness of security programs to prevent radiological sabotage and theft or diversion of Category I material. Force-on-force inspections assess the ability of nuclear facilities to defend against the applicable design-basis threat, which characterizes the adversary against which licensees must design appropriate defenses, such as physical protection systems and response strategies. A force-on-force inspection includes tabletop drills and simulated combat between a mock commando-type adversary force and the site security force. During the attack, the adversary force attempts to reach and simulate damaging key safety systems and components at a nuclear power plant or simulate theft of material at a Category I fuel facility. In FY 2014, the agency completed 24 force-on-force inspections at nuclear power plants.

### *Integrated and Coordinated Security Activities*

The Integrated Response Program (IRP) is a partnership between the Federal Government (NRC, Federal Bureau of Investigation (FBI), and the Department of Homeland Security) and the nuclear power plant industry, which seeks to establish or leverage existing tactical law enforcement capabilities to respond to significant threats at a nuclear power plant effectively. One aspect of the IRP is the Contingency Response Tool (CRT), which is a computer-aided planning tool to assist tactical law enforcement in navigation and response planning inside nuclear power plants. The agency finalized a full schedule for CRT development in conjunction with the Nuclear Energy Institute and the FBI during FY 2014.

The NRC participated in many other nuclear sector activities under the National Infrastructure Protection Plan framework, the DHS's partnership model under the Government Coordinating Council, and the Critical Infrastructure Partnership Advisory Council. The NRC also contributed to national-level policy documents and initiatives such as the National Strategy for Transportation Security Base Plan and the Global Nuclear Detection Architecture Strategic Plan for 2014.



*Security Access Control at a Nuclear Power Plant*

### *Cyber Security*

To address plans by a number of licensees to extend the cyber security program implementation schedules, the NRC developed evaluation criteria to facilitate consistent reviews.

## NEW REACTORS

The NRC reviews applications for standard design certifications (DCs), early site permits (ESPs), limited work authorizations (LWAs), combined licenses (COLs), construction permits, and operating licenses. The current and anticipated applications for new reactors involve both large, light-water reactor facilities and small modular reactor facilities in a variety of projected locations throughout the United States. The NRC oversees construction activities for commercial nuclear power plants that include licensee performance assessment, investigation of allegations, and enforcement activities. This also includes the NRC's Vendor Inspection Center of Expertise, which develops and implements quality assurance and vendor inspection programs for both new and operating reactors.

The priorities for the New Reactors business line during FY 2014 were as follows:

1. Execute construction oversight at Watts Bar Unit 2 and four AP1000 units, including the construction inspection program, Inspections, Tests, Analyses, and Acceptance Criteria (ITAAC) closure verification reviews, and necessary license amendments that provide the regulatory basis to make a 10 CFR Part 52.103(g) finding, allowing a plant ready to operate.

2. Implement the agency's Vendor Inspection Program Plan including inspection, outreach, and communication to stakeholders, and self-assessments in support of both new reactor construction and operating reactor safety.
3. Develop an integrated transition plan that included all safety and security functions (e.g., licensing and oversight) in order to support effective regulatory programs during transition from construction to operations for those sites with the intent to commence operations during FY 2017 and FY 2018.
4. Complete the safety and environmental reviews for the active combined license, design certification, and early site permit applications for large light-water reactors.
5. Establish the regulatory, technical, and policy infrastructure necessary to support effective license reviews and construction oversight of small modular reactor (SMR) applications.
6. Establish a plan by 2016 for preparing the agency for the licensing of non-light-water reactors and associated fuel fabrication facilities.

## NEW REACTORS LICENSING

### *New Reactor Design Certifications*

The NRC reviews applications for standard DCs using 10 CFR Part 52, "Licenses, Certifications, and Approvals for Nuclear Power Plants." By issuing a DC, the NRC approves a nuclear power plant design independent of an application to construct or operate a plant. A DC is valid for 15 years from the date of issuance but can be renewed for an additional 10 to 15 years.

During FY 2014, the NRC completed its review of the DC application for the General Electric Economic Simplified Boiling Water Reactor (ESBWR) design. The NRC continued reviewing DC applications for the AREVA Evolutionary Power Reactor (EPR™) design and Mitsubishi's U.S. Advanced Pressurized Water Reactor (US-AWPR) design.

In October 2013, AREVA NP, Inc., issued a letter to the NRC communicating its plan to re-phase the U.S. EPR DC application review, thus extending the completion of the review. AREVA organized the safety review into three groups of issues (A, B, and C) identified in terms of short, medium, or long-

term closure and provided closure plans for each of the three groups. The NRC completed its safety evaluation report with no open items for the Group A chapters in FY 2014.

In November 2013, Mitsubishi Heavy Industries, Ltd. issued a letter informing the NRC of its plans to implement a coordinated slowdown of licensing activities related to the US-APWR DC application review. The NRC transitioned to a limited review of the US-APWR DC application beginning in March 2014, in accordance with the applicant's request.

On September 30, 2013, Korea Hydro and Nuclear Power Co., Ltd. (KHNP), and Korea Electric Power Corporation (KEPCO) submitted an application for a standard design certification of the Advanced Power Reactor 1400 (APR1400), pursuant to 10 CFR Part 52, "Licenses, Certifications, and Approvals for Nuclear Power Plants." The NRC's 60-day acceptance review of the DC application began on October 17, 2013, and concluded on December 17, 2013. By letter dated December 19, 2013, KHNP and KEPCO were informed of the agency's decision not to accept for docketing and regulatory review the DC application for the APR1400 standard plant design. The NRC expects KHNP/KEPCO to submit a revised APR1400 DC application in December 2014.

### *Early Site Permits*

As part of the licensing process, the NRC can issue an ESP to approve a site for a domestic nuclear power plant independent of an application for a COL. ESPs are valid for 10 to 20 years and can be renewed for an additional 10 to 20 years.

During FY 2014, the NRC continued its safety and environmental review of one ESP application submitted by PSEG Power, LLC for a site adjacent to the operating Salem and Hope Creek Generating Stations in Salem County, NJ. The draft environmental impact statement for the PSEG ESP application was completed in FY 2014.

### *Combined Licenses*

A COL authorizes construction and operation of a nuclear power plant through 10 CFR Part 52. The application for a COL is one option to receive a license, the other is through 10 CFR Part 50, "Domestic Licensing for Production and Utilization Facilities," which is a construction permit followed by

an operating license. The COL application must describe the ITAAC that are necessary to ensure proper construction and safe operation of the plan.

During FY 2014, the NRC supported the safe construction activities at the Vogtle and V.C. Summer COL sites by issuing seven license amendments with one exemption for Vogtle Units 3 and 4 and issuing four license amendments with three exemptions for V.C. Summer Units 2 and 3. The NRC also continued its review of nine COL applications to build and operate fourteen new reactors at sites throughout the United States, including Bell Bend, Calvert Cliffs, Comanche Peak, Fermi, Levy County, North Anna, South Texas Project (STP), Turkey Point, and Lee Station. The NRC issued the Final Environmental Impact Statement (FEIS) in December 2013 for the Lee Nuclear Station's COL application.

In January 2014, the applicant for the Bell Bend COL application requested that the NRC suspend the safety review for this application until further notice. The NRC has continued the environmental review for the Bell Bend application at the applicant's request. In March 2014, the NRC suspended its review of the Comanche Peak COL application until further notice at the applicant's request.

### *Construction Permits and Operating Licenses*

The NRC has continued the extensive inspection and licensing effort associated with the reactivation of the Tennessee Valley Authority (TVA) Watts Bar Unit 2 Nuclear Power Plant. The agency issued a construction permit for this unit in 1973; however, construction was suspended in 1985. Watts Bar Unit 1 received a full power operating license in early 1996 and is presently the most recent power reactor to be licensed in the United States. In August 2007, TVA informed NRC of its plan to resume construction of Watts Bar Unit 2. In FY 2011, the NRC continued its review of the operating license application, which TVA updated in March 2009, and assigned dedicated resident inspectors to monitor TVA's construction activities. The NRC continued its safety, physical security, and emergency preparedness reviews in FY 2014. The current schedule calls for the NRC to complete its review efforts in FY 2015, with inspection activities continuing into FY 2016 (startup testing).

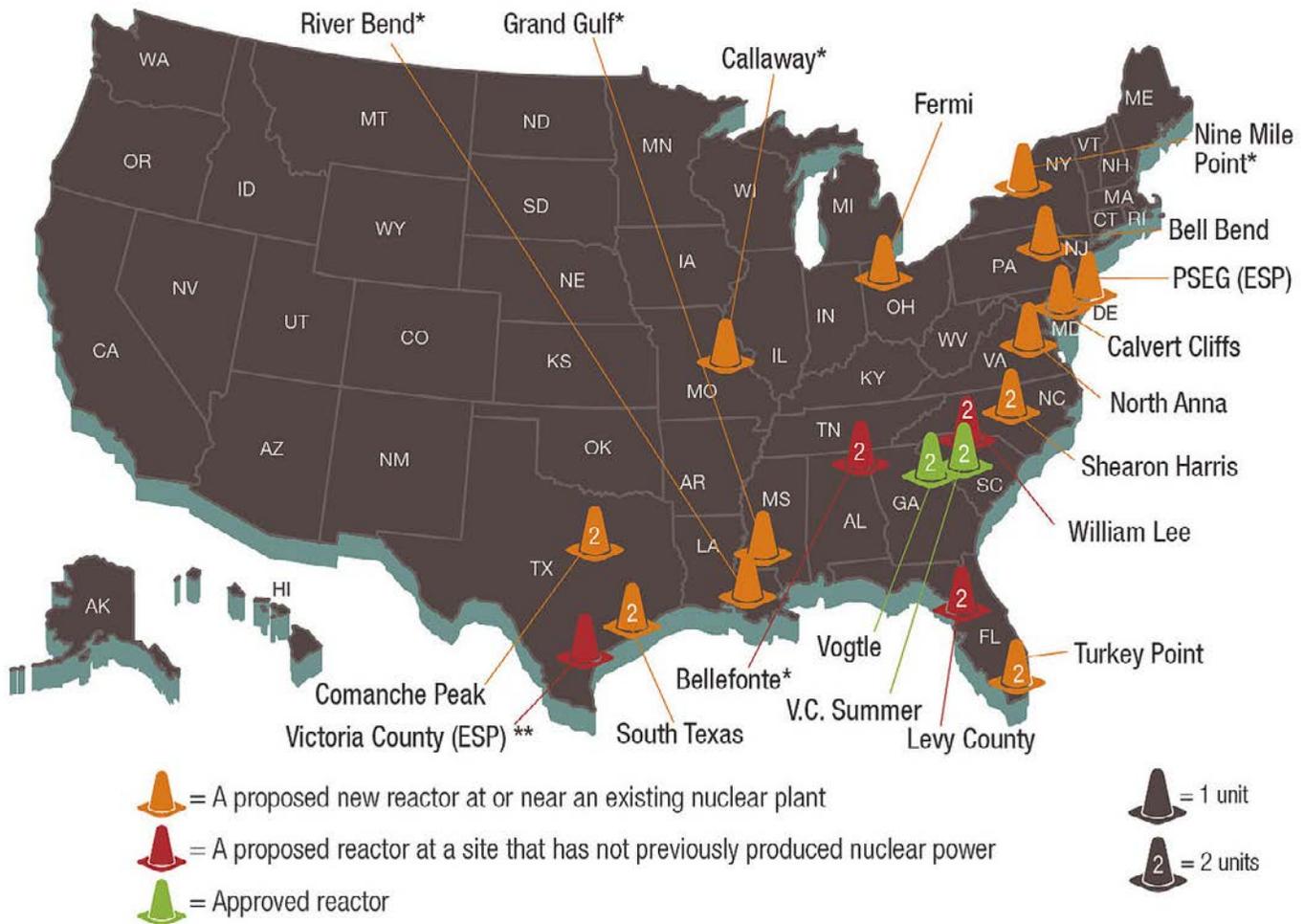
**Small Modular Reactors**

The NRC has completed draft or final sections of the design specific review standards (DSRS) for both the mPower design and NuScale design at a pace commensurate with industry progress. The agency also completed 36 Interim Staff Guidance documents and Standard Review Plan sections. This critical regulatory infrastructure will allow the agency to better assess new and advanced technologies when they are submitted.

The NRC continued to prepare for future reviews of SMR design and licensing applications, including development of

the regulatory framework to support reviews of these new designs and extensive outreach to external stakeholders. During FY 2014, the NRC held pre-application meetings with SMR vendors to discuss technical topics associated with these designs. The NRC also conducted reviews of both technical and topical reports submitted by SMR vendors. The agency issued Regulatory Issue Summary (RIS) 2013-18, “Licensing Submittal Information and Design Development Activities for Small Modular Reactor Designs.” This RIS is a forward-looking planning tool that allows the industry to show its intent to submit an application to the NRC.

**Figure 12 – LOCATIONS OF NEW NUCLEAR POWER REACTORS APPLICATIONS**



\* Review suspended \*\* COL application amended by applicant to ESP on March 25, 2010.  
 Note: Data is as of June 2012.

### NEW REACTORS OVERSIGHT

#### *Construction Inspection*

The NRC continues to perform construction inspection activities for the four AP1000 units at the Vogtle and Summer sites and for Watts Bar Unit 2, primarily through the Region II office in Atlanta, GA. In FY 2014, AP1000 construction activities were focused on the structural modules and concrete pours. The agency also inspected the Watts Bar Unit 2 open vessel testing which demonstrated that Emergency Core Cooling System components could satisfy their specified design injection safety functions. The tests established proper flow balances to the reactor vessel and yielded flow characteristics and vibration data for the charging, safety injection, and residual heat removal pumps.

The agency received and processed 14 ITAAC Closure Notifications. The NRC continues to refine the processes and guidance for ITAAC Closure, including facilitating several public workshops to solicit input, exchange views and reach consensus on issues such as developing additional examples of ITAAC Closure Notifications.

#### *Vendor Inspection*

In FY 2014, the NRC continued implementation of the Vendor Inspection Program, including conducting 36 vendor or quality assurance implementation inspections supporting both new and existing reactor licensees. One international inspection was an NRC-led multinational team inspection of a steam generator tube supplier. Several of the inspections were related to ITAAC for the AP1000 and others were specific to commercial grade dedication. The inspections were focused on the design, qualification and testing of safety-related structures, systems, components and services. Findings were reported in areas of inadequate design control and commercial grade dedication.

#### *Investigations and Enforcement*

Just as was the case for operating reactors, the NRC will not permit applicants for new licenses, nor their contractors and vendors, to continue to conduct licensed activities if they cannot achieve and maintain adequate levels of safety. In FY 2014, the NRC processed one escalated enforcement action, which was supported through an investigation.

### NEW REACTORS RULEMAKING

The NRC completed the ESBWR design certification final rule. This rule certifies the ESBWR design in the Commission's regulations. In addition to completing the ESBWR final rule, the agency was fully engaged in several other rulemakings. These rulemakings were the 10 CFR Part 50 Appendix I ("Numerical Guides for Design Objectives and Limiting Conditions for Operation to Meet the Criterion 'As Low as is Reasonably Achievable' for Radioactive Material in Light-Water-Cooled Nuclear Power Reactor Effluents") rule, the 10 CFR Part 21 ("Reporting of Defects and Noncompliance") rule, and a rule on financial qualifications for merchant plants.

### NEW REACTORS RESEARCH

Much of the technical work and research described earlier for operating reactors applies to new reactors as well. Over the past several years, the NRC has focused its new reactor regulatory research efforts on potential new light-water reactor facilities in order to prepare for and evaluate standard design certifications. The NRC research program addressed key areas that support the agency's safety mission. Some of the more important issues addressed include: radiation protection research; assessment of digital systems, including hazard analysis and failure mode effects analysis; development of advanced tools for probabilistic risk assessment activities that support risk-informed regulatory decision making; seismic and structural research; research on hazards from natural events, including seismic hazard issues, flooding, and tsunami events; thermal-hydraulic research and analysis; severe accident and consequence research and analysis; and human reliability analysis research. Research related to SMR concepts focuses on identifying phenomenological differences from large reactors and developing and validating tools for analyses to support potential licensing reviews.

## NUCLEAR MATERIALS AND WASTE SAFETY PROGRAMS

The NRC regulates activities that provide for the safe and secure production of nuclear fuel used in commercial nuclear reactors; the safe storage, transportation and disposal of high-level radioactive waste and spent nuclear fuel; and the transportation of radioactive materials regulated under the Atomic Energy Act. The agency also develops and implements rules and guidance for the safe and secure use of source, byproduct, and special nuclear material in industrial, medical, academic, and commercial activities, and at decommissioning, uranium recovery, and low-level waste sites. Ensuring safety and security involves licensing, inspection, assessment of licensee performance, events analysis, enforcement, research, and identification and resolution of generic issues.

The following sections describe the safety and security programs the NRC conducted during FY 2014 that resulted in the achievement of its strategic goals for Fuel Facilities, Nuclear Material Users, Spent Fuel Storage and Transportation, and Decommissioning and Low-Level Waste business lines.

### FUEL FACILITIES

The NRC licenses and inspects all commercial nuclear fuel facilities that process and fabricate uranium concentrates into the reactor fuel that powers the Nation's nuclear reactors. Licensing activities include detailed health, safety, safeguards, and environmental evaluations. Oversight involves reviews of licensee programs, procedures, operations, and facilities to ensure safe and secure operations.

The priorities for the Fuel Facilities business line during FY 2014 were as follows:

1. Ensure safety, security, and environmental protection through effective oversight of operating fuel facilities and facilities under construction.
2. Ensure safety, security, and environmental protection through effective management of licensing actions and other regulatory activities.
3. Support U.S. non-proliferation activities through implementation of international safeguards and domestic material control and accounting.

4. Maintain effective communications with stakeholders on staff approaches to emergent issues, rulemaking, guidance development, and other regulatory activities.

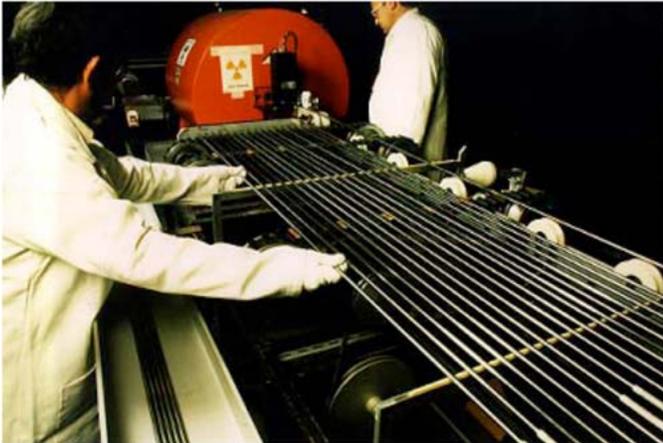
### FUEL FACILITIES LICENSING

The NRC's Report to Congress on the Paducah and Portsmouth Gaseous Diffusion Plants (GDPs), as required by Section 1701 of the *Atomic Energy Act* (AEA), was delivered in FY 2014. Having advised the agency in FY 2014 that it intended to cease operations at Paducah, the operating company has requested termination of its Certificate of Compliance, the basis under which the Paducah GDP was licensed and operated.

In FY 2014, the NRC planned for the conclusion of the Research, Development, and Demonstration program at United States Enrichment Corporation (USEC) Lead Cascade, potential expansion to the American Centrifuge Plant (ACP), and potential bankruptcy of USEC, Inc.

### FUEL FACILITIES OVERSIGHT

The agency developed a process during FY 2014 through which a fuel cycle facility's Corrective Action Program (CAP) will be reviewed and inspected to allow for the expanded use of non-cited violations. The agency continued to implement the Revised Fuel Cycle Oversight Process (RFCOP) Project Plan, including finalizing the Regulatory Guide for the Fuel Facility CAP. In parallel, the NRC reviewed the CAP proposed by Louisiana Energy Services (LES) and completed the piloting inspection procedure for CAP implementation at LES. The NRC issued a letter stating that the LES CAP is adequate, and authorized LES to use the new non-cited violation provision of the Enforcement Policy on March 4, 2014. LES is the first operating fuel cycle facility authorized to use the NRC Enforcement Policy provision. The new policy permits a fuel cycle facility licensee with an adequate CAP to treat NRC-identified greater-than-minor Severity-Level IV violations as non-cited violations. The agency has been committed to communicate frequently with stakeholders to ensure alignment on RFCOP activities.



*Fuel Rod Assembly*

In FY 2014, the agency completed unresolved items opened during post-Fukushima evaluations of Fuel Cycle Facilities for the treatment of natural phenomena hazards, and issued on August 8, 2014 a Generic Letter, “Treatment of Natural Phenomena Hazards in Fuel Cycle Facilities,” for public comment.

### **Investigation and Enforcement**

The NRC will not permit licensees to continue to conduct licensed activities if they cannot achieve and maintain adequate levels of safety. In FY 2014, the NRC did not process any escalated enforcement actions associated with fuel facilities.

Through use of a post enforcement conference, the NRC issued two cited severity level 4 violations to LES, which closed the potential escalated enforcement case for nuclear criticality safety issues identified at LES.

### **FUEL FACILITIES RULEMAKING**

The NRC published for public comment a draft regulatory basis to support the potential amendments to revise a number of existing security-related regulations relating to physical protection of special nuclear material at NRC-licensed facilities and in transit (10 CFR Part 73, “Physical Protection of Plants and Materials,” material attractiveness), as well as the fitness for duty programs (10 CFR Part 26, “Fitness for Duty Programs,” fatigue requirements) for security officers at certain fuel cycle facilities.

### **FUEL FACILITY SECURITY**

In FY 2014, the NRC resolved material control and accounting issues at the Nuclear Fuel Services facility in Erwin, TN. The agency also provided a Report to Congress on High-Enriched Uranium (HEU) exports.

The agency conducted site visits at four fuel cycle facilities to gather information and inform agency decisions on cyber security requirements.

### **NUCLEAR MATERIALS USERS**

The NRC licenses and inspects the commercial use of nuclear material for industrial, medical, and academic purposes. Commercial uses of nuclear materials include medical diagnosis and therapy, medical and biological research, academic training and research, industrial gauging and nondestructive testing, production of radiopharmaceuticals, and fabrication of commercial products (such as smoke detectors) and other radioactive sealed sources and devices. The agency currently regulates about 2,900 specific licensees for the use of radioactive materials. Under the NRC’s Agreement State program, 37 States have assumed regulatory responsibility for approximately 18,000 licenses for the industrial, medical, and other users of nuclear materials in their States. The agency reviews Agreement State programs as well as certain NRC licensing and inspection programs through the Integrated Materials Performance Evaluation Program.

Detailed health and safety reviews of license applications, as well as inspections of licensee procedures, operations, and facilities, provide reasonable assurance of safe operations and the production of safe products. The NRC routinely inspects nuclear material licensees to ensure that they are using nuclear materials safely, maintaining accountability of those materials, and protecting public health and safety. The agency also analyzes operational experience from NRC and Agreement State licensees and regularly evaluates the safety significance of events reported by licensees and Agreement States.

The priorities for the Nuclear Materials Users business line during FY 2014 were as follows:

1. Continue oversight of licensing and inspection activities.
2. Continue Agreement State Program oversight and enhancements.

3. Implement 10 CFR Part 37 (“Physical Protection of Category 1 and Category 2 Quantities of Radioactive Material”) including Working Group Activities.
4. Implement Integrated Source Management Portfolio (ISMP) 10-year plan and continue investment protection.
5. Continue to assess source security through completion of actions for Radiation Source Protection and Security Task Force and issue the report.
6. Continue rulemaking activities including the guidance development and publishing of the proposed 10 CFR Part 35 (“Medical Use of Byproduct Material”) rule and publication of the 10 CFR Part 20 (“Standards for Protection against Radiation”) advanced notice of proposed rulemaking.
7. Continue development of Tribal Program initiatives that support implementation of Tribal Policy Statement.

### NUCLEAR MATERIALS USERS LICENSING

The NRC completed self-assessments of the Sealed Source and Device Program and Exempt Distribution Licensing Program in preparation of the Integrated Materials Performance Evaluation Program (IMPEP) review to be conducted in October 2014.

The NRC managed the large amount of unanticipated work associated with Georgia’s Agreement State program being placed on probation late in FY 2013, requiring greater NRC oversight. Georgia implemented agreed upon improvements. In mid-FY 2014, the NRC reviewed the improvements and removed Georgia from probation. The agency also expedited the review and issuance of a license to a hospital in Montana authorizing possession and use of a gamma knife, the only unit in the State.

### NUCLEAR MATERIALS USERS OVERSIGHT

Throughout FY 2014, the NRC completed safety inspections of materials licensees. As a result of the inspections, the NRC issued penalties and Notices of Violation (NOVs). The violations noted included failure to properly secure a portable nuclear gauge, security-related violations associated with radioactive materials, failure to issue dosimeters to workers, and providing incomplete and inaccurate information to an NRC inspector.

The NRC performed a reactive inspection to investigate a potential overexposure to the hand of a cyclotron operator

in West Virginia due to failure of the individual to perform an adequate survey for workplace safety. Another reactive inspection in FY 2014 was to review significant safety concerns involving potential exposures to members of the public identified during a routine, unannounced inspection of Acuren USA’s operations in Kenai, AK. A CAL was issued confirming the licensee’s commitment to suspend radiography at a field station and conduct evaluations of doses that might have been received by members of the public resulting from past operational practices. Only one exposure exceeded Abnormal Occurrence Criterion 1.A.3. The details of this event can be found at <http://www.nrc.gov/reading-rm/doc-collections/event-status/event/2014/20140730en.html>.

The agency issued Regulatory Information Summary (RIS) 2014-03, “Notice of 10 CFR Part 37 Implementation Deadline for NRC Licensees,” to inform licensees and Agreement States about the implementation date for 10 CFR Part 37. The NRC also issued Enforcement Guidance Memorandum to address enforcement discretion from Part 37 for commercial reactor licensees with large components and robust structures containing Category 1 and 2 quantities of materials.

In FY 2014, to respond to a change in land jurisdiction, the agency completed a successful transition of regulatory oversight of a broad scope R&D licensee, Lovelace Respiratory Research Institute, from the NRC to the State of New Mexico.

### Investigation and Enforcement

The NRC will not permit licensees to continue to conduct licensed activities if they cannot achieve and maintain adequate levels of safety. In FY 2014, the NRC processed 43 escalated enforcement actions associated with nuclear materials users. Of these, 12 were supported through investigation.



*Gamma Knife*

### NUCLEAR MATERIALS USERS RULEMAKING

The agency issued an RIS to distributors of general licensed devices to remind them of the requirements for submitting proprietary information to the NRC. Also during FY 2014, the NRC published the Part 35 proposed rule and draft guidance for a 120-day public comment period. An advance notice of proposed rulemaking on Part 20 was also published in the *Federal Register*.

### NUCLEAR MATERIALS STATE AND TRIBAL PROGRAMS

The NRC completed five high profile IMPEP reviews for the States of Georgia, New York, North Carolina, Pennsylvania, and Texas to evaluate their adequacy and compatibility as part of NRC's oversight responsibility of the Agreement State Programs. The NRC also completed an internal IMPEP for the Region IV office and conducted a tabletop exercise for the return of an Agreement State program. The exercise included three scenarios, which identified areas for future enhancement of existing policy and procedures. The agency conducted an IMPEP training class in January 2014 for NRC and Agreement State staffs to ensure that an adequate number of reviewers are qualified and available for upcoming IMPEP reviews. Also during FY 2014, the NRC conducted a workshop to train NRC and Agreement State personnel on the registration process for sealed sources and devices.

The NRC staff sent the draft Tribal Policy Statement to the Commission for consideration. The agency continued to enhance staff familiarity with Tribal issues with a well-attended session on Tribal issues presented by the U.S. Forest Service. The agency also improved its Tribal Toolbox to include geographical information system overlays of Tribal boundaries, reactors, and uranium recovery facilities.

### NUCLEAR MATERIAL USERS SECURITY

The agency completed the Radiation Source Protection and Security Task Force (Task Force) report on August 8, 2014. This report, which addresses the security of Category 1 and 2 sources within the United States, was prepared by 14 partner agencies. In response to a previous recommendation by the Task Force, the agency issued **RIS 2014-04**, "National Source Tracking System (NSTS) Long-Term Storage Indicator," to encourage licensees to voluntarily submit additional information pertaining to sources identified in long-term storage in the NSTS to include the "use status" of their sealed sources.

The NRC issued Inspection Procedure (IP) 87137, 10 CFR Part 37, "Material Security Programs," to verify that materials licensees are effectively implementing the requirements of 10 CFR Part 37. The NRC also issued **NUREG-2166**, "Physical Security Best Practices for the Protection of Risk-Significant Radioactive Material," in response to the 2012 Government Accountability Office Audit on Medical Source Security. The guidance provides licensees and inspectors with information about developing and implementing physical protection systems for securing Category 1 and 2 materials.

### SPENT FUEL STORAGE AND TRANSPORTATION

The NRC conducts detailed technical reviews to ensure that storage, transportation, and domestic and international shipments of spent nuclear fuel and other risk-significant radioactive materials are safe and secure and comply with agency regulations. The NRC closely coordinates its transportation-related activities with those of the U.S. Department of Transportation and, as appropriate, DOE. The NRC inspects vendors, fabricators, and licensees that build and use storage systems and transportation packages. The NRC also inspects interim storage of spent fuel both at and away from reactor sites.

The priorities for the Spent Fuel Storage and Transportation business line during FY 2014 were as follows:

1. Complete Continued Storage Rule and **NUREG-2157**, "Generic Environmental Impact Statement".
2. Ensure safety, security, and environmental protection through efficient oversight of licensed facilities through effective management of licensing actions and other regulatory activities.
3. Conduct licensing reviews including frequent communication with internal and external stakeholders to identify technical and administrative issues and determine effective solutions in a manner that maintains safety and security margins and meets business line metrics.
4. Retain focus on establishing firm technical bases for intermediate and long-term waste management framework to support future licensing actions and the evolving national policy.

### SPENT FUEL STORAGE AND TRANSPORTATION LICENSING AND OVERSIGHT

During FY 2014, the NRC completed two key technical reviews for storage certification. Amendment No. 3 to Certificate No. 1029 for the Standardized Advanced NUHOMS® cask system added a new canister design and modified the storage module to incorporate high seismic and high burnup fuel. Amendment No. 2 to Certificate No. 1030, for the NUHOMS® HD Horizontal Modular Storage System added blended low enriched uranium fuel contents, increased the shielding effectiveness of the storage module, and clarified technical specifications. The final rules were effective in the third quarter of FY 2014.

The agency approved a high priority application to add liquid high-enriched uranyl nitrate to the Model No. NAC-LWT (Nuclear Assurance Corporation Legal Weight Truck) transportation package to support the DOE/National Nuclear Security Administration (NNSA) Global Threat Reduction Initiative. This is a first-of-its-kind approval for the requested quantity of fissile, liquid material. There is significant public interest in the proposed shipments.

In FY 2014, the NRC continued its review of independent spent fuel storage installation (ISFSI) license renewals. To facilitate these technical reviews and address the associated aging of related components important to safety over an additional 40-year license term, the NRC completed the development and rollout of a storage renewal approach. This included defining NRC expectations for component Aging Management Programs. The NRC engaged aggressively throughout FY 2014 with members of the public, industry, national laboratories, and DOE in numerous public meetings to gather input in order to make the approach as effective as possible in maintaining safety and security margins while allowing for changes to respond to new information received through inspections or monitoring of research and analysis activities.



*Nuclear Waste Storage*

### SPENT FUEL STORAGE AND TRANSPORTATION RULEMAKING

The agency completed a 98-day comment period on NUREG-2157, “Generic Environmental Impact Statement (Waste Confidence)” draft Generic Environmental Impact Statement and proposed rule. The NRC held one public commission meeting to discuss project status, and held 13 public meetings at NRC headquarters and around the country to give the public an opportunity to provide oral comments on the documents. The Commission approved the final rule on August 26, 2014. On September 19, 2014, the Environmental Protection Agency published the Notice of Receipt of the Final Generic Environmental Impact Statement, and the NRC published the Notice of Availability of this document in the *Federal Register*.

During FY 2014, the NRC published Direct Final Rule for Transnuclear, Inc.’s Certificate of Compliance (CoC) Amendment 11, “Standardized NUHOMS Horizontal Modular Storage Systems for Irradiated Nuclear Fuel” on Nov 1, 2013. The agency also published Direct Final Rule for Holtec’s CoC Amendment 9, “HISTORM 100 Cask System” on December 6, 2013 (79 FR 12362).

### SPENT FUEL STORAGE AND TRANSPORTATION RESEARCH

The NRC supports research on technical issues related to the safety of extended storage and transportation of dry spent fuel. Specific areas examined include the effects of concrete

degradation and stress corrosion cracking of metallic welds on storage cask integrity, the effects of climate change on cask performance, and transportability of fuel after long term storage. The need for an improved hazards assessment, including the potential impact of long-term storage on eventual disposal, is also being studied. In FY 2014, the NRC advanced the technical bases in all these areas. The NRC also continued research on the performance of metal and polymeric O-ring seals used in spent fuel shipping casks in beyond-design basis temperature excursions (e.g. extreme fires) and on the thermal behavior of storage casks. In addition, the NRC supports research associated with nuclear fuel burn-up and impacts of high burn-up credit and mixed oxide fuels.

### DECOMMISSIONING AND LOW-LEVEL WASTE

Decommissioning removes radioactive contamination from buildings, equipment, groundwater, and soil, achieving levels that permit the release of the property while protecting the public. The NRC terminates the licenses for decommissioned facilities after the licensees demonstrate that the residual onsite radioactivity is within regulatory limits and sufficiently low to protect the health and safety of the public and the environment. Completing decommissioning, environmental, and performance assessment activities provides assurance that residual radioactivity does not pose an unacceptable risk to the public.

Low-level radioactive waste includes items that are contaminated with radioactive material or have become radioactive through exposure to neutron radiation. Although the NRC regulates low-level waste (LLW) disposal, currently all commercial LLW disposal sites in the U.S. are in Agreement States. The NRC's LLW regulatory program includes: coordinating with, and providing technical assistance to, Agreement States on LLW issues; representing NRC in international waste management activities; reviewing LLW-related import/exporting requests; and consulting with Federal and State officials, Indian Tribes, and other entities to promote understanding of LLW issues and resolving concerns in a timely manner.

Under the Waste Incidental to Reprocessing (WIR) program, per Section 3116 of the *Ronald W. Reagan National Defense Authorization Act* for 2005, DOE consults with the NRC on incidental waste determinations in a Covered State (Idaho and South Carolina). If the DOE Secretary's final determination is that the waste is WIR, then the NRC monitors DOE disposal actions in coordination with the Covered State by assessing the DOE disposal actions to determine compliance with the performance objectives in 10 CFR Part 61, "Licensing Requirements for Land Disposal of Radioactive Waste."

Uranium recovery (UR), the processing of uranium ore, is also managed under the Decommissioning and Low-Level Waste business line. The NRC ensures that UR facilities are licensed, operated, decommissioned and monitored to protect the public and environment. This consists of oversight, inspection, and licensing of operating facilities; licensing of new sites or expansion of existing sites, and the management of legacy sites in decommissioning or long-term care.

The priorities of the Decommissioning and Low-Level Waste business line during FY 2014 were as follows:

1. Maintain oversight activities at unique complex and high-risk activity decommissioning sites.
2. Continue to focus on optimizing available resources for Licensing and Inspection Activities.
3. Conduct environmental reviews required by the *National Environmental Policy Act* (NEPA) and Tribal consultations required by Section 106 of the *National Historic Preservation Act* (NHPA) with efficiency gains, as applicable.
4. Continue efforts to complete high priority rulemaking (10 CFR Part 61).
5. Continue to monitor and review DOE's Waste Incidental to Reprocessing activities.
6. Continue to support the international community (i.e., Joint Convention, IAEA, and NEA).
7. Effectively address pending retirements while increasing knowledge management/transfer efforts (LLW Presentation Series).



### DECOMMISSIONING AND LOW-LEVEL WASTE LICENSING AND OVERSIGHT

In FY 2014, the NRC issued the Prairie Island Independent Spent Fuel Storage Installation License Renewal Draft Environmental Assessment for 30-day public comment period. The Prairie Island Indian Community (PIIC) is a cooperating agency under the NRC/PIIC Memorandum of Understanding, which allows the community to work with the NRC on the environmental review. PIIC is also an intervener under the hearing process for this review.

The NRC conducted environmental reviews required by NEPA and Tribal Consultations required by Section 106 of the NHPA for uranium recovery facilities and Independent Spent Fuel Storage Installations. To improve these reviews, the agency completed significant activities to improve the process for programmatic agreements under NEPA section 106 consultations. Specifically, the NRC hosted several Webinars and conference calls with Tribes, the Advisory Council on Historic Preservation (ACHP), Bureau of Land Management, Environmental Protection Agency (EPA), and the applicant for the development of both the Strata Ross and Dewey-Burdock programmatic agreements.

The NRC issued an Environmental Assessment and Finding of No Significant Impact for exemption from licensing for the Disposal of Low Activity Radioactive Waste from the Safety Light Corporation Superfund site. The timely completion of this licensing action allowed EPA to move ahead on a time sensitive disposal action.

Finally, the agency issued the Final Supplemental Environmental Impact Statements and Operating Licenses for the Dewey-Burdock and Strata Energy Ross UR applications and the programmatic agreement for Dewey-Burdock for ACHP signature.

The NRC continued its evaluation of the Dominion Energy Kewaunee’s request for exemptions to portions of 10 CFR 50.47 and Appendix E to Part 50 and submitted staff recommendations to the Commission. Based on the significantly reduced risk associated with the permanent cessation of operation and transfer of fuel from the reactor vessel to the spent fuel pool, the licensee has requested an exemption from the requirement for formal offsite radiological emergency plans and a reduction of onsite emergency response organization staffing. The licensee will still be required to maintain an onsite emergency plan capable of classifying an emergency, notifying and coordinating with offsite organizations, and responding to a spent fuel pool event.

### *Waste Incidental to Reprocessing*

The NRC issued several monitoring documents in support of WIR at the Savannah River Site (SRS), specifically the Saltstone Disposal Facility’s Monitoring Technical Review Report on Technetium Solubility, the H-Area Tank Farm Technical Review Report: Grout Documentation for Tanks 18/19, and an observation report for the F-Area Tank Farm.

### *Uranium Recovery*

In FY 2014, the agency issued a possession license under 10 CFR Part 40, “Domestic Licensing of Source Material,” to the U.S. Army for military use of depleted uranium at the Hawaiian Military Base Installation at Schofield Barracks and Pohakuloa Training Area. Subsequently, the NRC supported a public meeting via teleconference to discuss the recently issued U.S. Army license authorizing possession of depleted uranium from Davy Crockett munitions in Hawaii.

The NRC performed a preoperational inspection of the Uranerz Nichols Ranch in-situ uranium recovery facility in Wyoming. The inspection team determined that key licensee actions remain to be completed before the NRC-authorized startup of licensed activities. The NRC also performed inspections at the Willow Creek, Smith Ranch, and North Butte facilities.

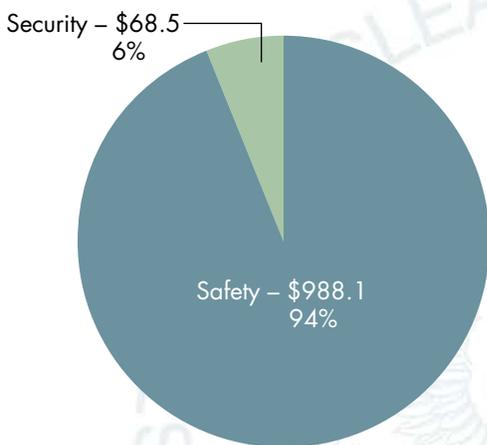
DECOMMISSIONING AND LOW-LEVEL WASTE RULEMAKING

During FY 2014, the agency worked to complete the 10 CFR Part 61 rulemaking, “Licensing Requirements for Land Disposal of Radioactive Waste.”

COSTING TO GOALS

The NRC is working to improve its cost management capabilities to better align its costs with desired outcomes. This year’s Performance and Accountability Report presents the full cost of achieving the Safety and Security goals for the agency’s major programs, Nuclear Reactor Safety and Nuclear Materials and Waste Safety. The total cost of achieving the agency’s strategic goals was \$1,056.6 million. The cost of achieving the agency’s Safety goal was \$988.1 million and the cost of achieving the agency’s Security goal was \$68.5 million. (see Figure 13).

Figure 13 – SAFETY AND SECURITY COSTS (In Millions)



CROSS-CUTTING STRATEGIES

The NRC has two cross-cutting strategies: Regulatory Effectiveness and Openness. In addition, the agency has management objectives. These strategies and objectives are critical components to carrying out the agency’s regulatory mandate to serve the American people.

The NRC received its thirteenth consecutive Certificate of Excellence in Accountability Reporting from the Association

of Government Accountants (AGA) for its FY 2013 Performance and Accountability Report. The NRC FY 2013 Performance and Accountability Report was also recognized for Best-In-Class for having the “Best Description of the Agency’s Constituency and How the Agency Operates.”

REGULATORY EFFECTIVENESS

The drive to improve performance in government, coupled with increasing demands on the NRC’s resources, requires the agency to become more effective, efficient, and timely in its regulatory activities. The NRC’s effectiveness initiatives sharpen the agency’s focus on safety and security and ensure that its available resources are optimally directed toward accomplishing the agency’s mission. The agency continued implementation of the changes identified in a 2011 comprehensive review of NRC overhead functions (e.g., administrative services, human capital, financial management, including contract management, information management (IM), and information technology (IT) to identify effective, efficient, and cost conscious business solutions and eliminate duplicative processes and functions.

NUCLEAR REACTOR SAFETY

Operating Reactors

In FY 2014, the NRC continued work on the ROP Baseline Inspection Enhancement Project. The goal of this project is to enhance the baseline inspection program to incorporate needed inspection areas based on operating experience, eliminate redundant or no longer applicable inspection areas, maximize efficient and effective use of agency resources, and incorporate flexibility where appropriate. This process should provide a validation of the basic philosophy and key principles of the baseline inspection program with allowances to implement needed changes.

New Reactors

The agency issued RIS 2013-18, “Licensing Submittal Information and Design Development Activities for Small Modular Reactor Designs,” requesting voluntary information regarding the intent to apply for construction permit, early site permit, combined license, design certification, standard design approval, or manufacturing license for a nuclear power plant that cites a small modular reactor design. The information obtained will help the agency to plan its resource needs for the future.

## CHAPTER 2 ■ PROGRAM PERFORMANCE

The agency conducted its annual self-assessment of the vendor inspection program to ensure that the agency continues to effectively identify emergent issues.

The NRC developed action plans and milestones in response to the Part 52 Implementation Working Group Report, dated July 22, 2013. These actions address findings from the agency's self-assessment and will help to improve the efficiency of the licensing and post-licensing implementation processes.

The NRC developed an integrated transition plan for the effective transition of regulatory oversight and licensing readiness as new reactors proceed from construction to operation. The plan identified a number of readiness issues and recommendations for how to address them.

### *Nuclear Materials and Waste Safety*

The NRC has implemented a program to address the Cumulative Effects of Regulation (CER) and facilitate interactions with stakeholders for regulatory activities that impact fuel cycle facilities. The agency has developed an Integrated Schedule of the major regulatory activities that impact fuel facilities, (e.g., rulemakings, guidance, generic issues). The document lists the major milestones for each regulatory initiative, the opportunities for stakeholder interactions, and references to relevant documentation. The information is maintained up to date and is available on the NRC public Web site (<http://www.nrc.gov/materials/fuel-cycle-fac/regs-guides-comm.html#cumeffects>).

## OPENNESS

The Openness objective explicitly recognizes that the public must be informed about, and have a reasonable opportunity to participate in the NRC's regulatory processes. The NRC is firmly committed to transparency, participation, and collaboration as key principles governing the agency's relationship with the public and other stakeholders. The agency has demonstrated its commitment to these openness principles through its longstanding efforts to keep stakeholders informed and involved in the NRC's regulatory process.

The NRC issued its FY 2014 – 2018 Strategic Plan in August 2014. In developing the plan, the agency requested and received input from various stakeholders and the public through a *Federal Register* Notice issued on March 5, 2014. The comments received from the draft Strategic Plan were considered by agency senior management. The disposition of

these comments may be found at <http://pbadupws.nrc.gov/docs/ML1416/ML14160A891.pdf>.

The agency remained committed to its Open Government Plan, first published in FY 2010 and available on the NRC Web site: <http://www.NRC.gov/public-involve/open.html>. On May 14, 2014, the agency published an addendum to its Open Government Plan outlining how its commitment to openness will be continued in 2014 and 2015. This addendum is available on the NRC Web site: <http://pbadupws.nrc.gov/docs/ML1410/ML14101A097.pdf>.



*2014 Regulatory Information Conference*

During FY 2014, the NRC continued to expand its use of social media as a vehicle to communicate with stakeholders. The NRC's statistics on the use of social media initiatives (Blog, Twitter, YouTube, Flickr, LinkedIn) reveal a high level of interest in NRC activities from stakeholders. For example, through July 2014, the agency posted 490 blog entries, approved nearly 4,300 comments, and attracted about 575,000 visits. The NRC counted about 5,000 Twitter followers, and sent more than 1,675 "tweets." The NRC also posted 120 video/audio clips to YouTube, had more than 525 regular subscribers, and counted about 70,000 visits. The NRC has nearly 1,900 images posted on Flickr, which have received more than 900,000 views. The agency launched its official Facebook page at the start of August 2014. In two months, there have been 55 NRC-published posts. The page has received 700 likes and over 7,600 views of the contents. The agency also enhanced public and agency stakeholders' ability to access information using mobile devices by launching a mobile version of the public Web site, and providing mobile search capability including NUREG search.

The agency continues to streamline public interactions with agency information systems by upgrading the security, Web browser compatibility, and process flows of the Electronic Information Exchange system that supports Criminal History Submission, General Forms, and Fitness for Duty Submissions. The annual Regulatory Information Conference (RIC) furthered the agency's commitment to openness by hosting a panel discussion: "Interacting with the Nuclear Regulatory Commission." In addition, the agency staffed two information tables at the conference: "Public Gateway to Nuclear Regulatory Information: The NRC Public Document Room," and "Using Public ADAMS."

The agency continued proactively posting information of interest to our stakeholders in the public Agencywide Document and Access Management System (ADAMS) database. In addition, the NRC expanded its efforts to inform the public through releasing records in response to Freedom of Information Act (FOIA) requests. This year, NRC completed its responses to requests on the Fukushima Dai-chi nuclear accident, releasing over 260,000 pages on the FOIA Web site. The NRC also placed more emphasis on improving efficiency in the agency's FOIA program and reduced its backlog by 69 percent by the end of FY 2014.

In support of public meetings, the Public Meeting Notice System was upgraded to provide for more efficient and streamlined posting of public meetings. The Public Meeting Feedback System was implemented to allow the public to easily provide comments and feedback on public meetings by directly linking them to the meeting Web site using quick response (QR) codes. In addition, a database containing Resolutions of Generic Safety Issues is now searchable and can be downloaded by the public from the NRC public Web site.

Additionally, the NRC is an active participant in data.gov, a Federal Web site designed to increase public access to high-value, machine-readable datasets generated by the Executive Branch. In FY 2014, the NRC expanded our participation by implementing OMB Open Data Policy. The NRC fosters the OMB Open Data Policy by making information resources accessible, discoverable, and usable by the public. The NRC will continue to encourage public feedback in ways consistent with agency policy and with guidance provided by OMB.

### NUCLEAR REACTOR SAFETY

#### *Operating Reactors*

In March 2014, the NRC held the 26<sup>th</sup> annual RIC. The RIC brings together diverse groups of stakeholders to learn, share, and discuss information on significant and timely nuclear regulatory activities and emergent issues. The conference serves as a communication vehicle that fosters informal, open dialogue between the public and the NRC staff, and supports the NRC's cross-cutting objective to ensure openness. The plenary sessions are comprised of a keynote address delivered by the NRC's Chairman, followed by remarks from each member of the Commission.

The agency made a presentation on the topic of safety culture and the NRC's Safety Culture Policy Statement at the National Association of Employee Concerns Professionals on February 25, 2014; the Waste Management Symposium on March 4, 2014; the bilateral meeting with Korean visitors on March 21, 2014; and at the High Reliability Organization Conference on March 28, 2014.

During FY 2014, the NRC held dozens of public meetings to discuss technical issues associated with the operating of specific power reactors or general topics related to operating reactors. The agency posts notifications of its public meetings at this Web link: <http://www.nrc.gov/public-involve/public-meetings.html>.

#### *New Reactors*

The NRC issued an Annual Report of the New Reactor Program (NUREG/BR-0476) highlighting the significant accomplishments and goals of the program and the status of its activities.

The agency conducted extensive public outreach by hosting a Vendor Oversight Workshop, which was attended by 415 domestic and international stakeholders, including industry organizations, regulators, and component and material vendors. The workshop provided an opportunity for the NRC and stakeholders to discuss issues such as counterfeit, fraudulent, or suspect items, commercial-grade dedication, and supplier oversight.

The agency received and addressed almost 2,000 comments from industry on the draft mPower design specific review standard (DSRS) that was issued for public comment in 2013, and the NRC issued 13 additional DSRS sections for comment in April 2014. The NRC held public meetings to discuss various mPower DSRS topics. The agency conducted public outreach as part of the construction oversight process by holding workshops to assess and refine the oversight process, the ITAAC closure notification process, and holding public meetings to discuss the construction inspection program.

### NUCLEAR MATERIALS AND WASTE SAFETY

#### *Fuel Facilities*

The NRC co-chaired the annual Nuclear Materials Management and Safeguards System (NMMSS) training meeting on May 12-15, 2014. Approximately 152 people attended and participated in the meeting. Other Government agencies who participated in the meeting included the Department of Energy, Department of Homeland Security, and Department of State. The conference included a session on tracking and reporting of nuclear materials to the NMMSS database, several workshops on NMMSS refresher training, and information sharing regarding best practices performed by the nuclear industry.

On June 10-11, 2014, the agency hosted the 9<sup>th</sup> Annual Fuel Cycle Information Exchange (FCIX). The FCIX provided a unique opportunity for government, industry, and other stakeholders to openly discuss current safety and regulatory topics relevant to key sectors of the nuclear fuel cycle. The FCIX program included panels in operating experience, guidance development, rulemaking, emergency preparedness, and security and safeguards.

The NRC has conducted quarterly meetings with the industry and stakeholders in June 2014 and September 2014 to discuss the status of items on the Integrated Schedule. The exchange of information at these quarterly meetings is used to remove unnecessary regulatory burden resulting from scheduling conflicts, multiple activities during the same period, or other considerations (e.g., safety issues, Commission direction, resources, and industry concerns). Both the NRC staff and fuel cycle stakeholders have found the Integrated Schedule and quarterly meetings an effective approach to mitigate the CER.

The NRC participated in a successful Nuclear Materials Information Program (NMIP) inter-agency exercise

on April 16, 2014. NMIP was established through National and Homeland Security Presidential Directive NSPD-48/HSPD-17. This interagency effort is managed by the Department of Energy's Office of Intelligence and Counterintelligence. In addition, the agency supported a classified Government Accountability Office (GAO) review on the information on NMIP. There is no action or recommendation from the GAO review for the NRC.

#### *Nuclear Materials Users*

The agency hosted a series of public meetings including the following:

- A Webinar with over 100 participants to discuss performance based inspections for the Agreement States;
- Seven Management Review Board (MRB) meetings and one Special MRB meeting to discuss Agreement State programs;
- Three meetings to discuss and respond to questions and issues concerning the implementation of 10 CFR Part 37;
- A meeting to discuss the sealed source and device application process and license requirements; and
- A meeting to provide interested industry representatives and members of the public preliminary observations of the NRC's 10 CFR Part 37 Self-Assessment working group.

The NRC completed the "Report to Congress on Abnormal Occurrences; Fiscal Year 2013" (NUREG-0090, Vol. 36) in May 2014. This report provides accurate and timely information to the public about licensee performance and risks associated with radioactive materials, supporting the agency's strategic objective of openness.

#### *Spent Fuel Storage and Transportation*

In FY 2014, the NRC conducted a public meeting through a Webinar that discussed the basics of Independent Spent Fuel Storage Installations (ISFSI) and the planned ISFSIs at the Pilgrim Nuclear Power Station and the Palisades Nuclear Generating Station. The agency responded to questions submitted in writing during the Webinar from approximately 70 members of the public. The agency held public meetings in FY 2014 to discuss rule activities. The Commission was informed about public input received on policy issues. The NRC received more than 33,000 written documents and nearly 500 oral comments on the continued storage rule.

### *Decommissioning and Low-Level Waste*

The agency Issued “**Information Notice 1999-03**, Rev. 1: Exothermic Reactions Involving Dried Uranium Oxide Powder (Yellowcake).”

During FY 2014, the NRC held a workshop with the National Mining Association to discuss radon guidance and National Historic Preservation Act Section 106 consultation lessons learned. In addition, the agency initiated information gathering for the update of the 2007 Low Level Waste Strategic Assessment.

## MANAGEMENT OBJECTIVES

This section focuses on the activities related to the key management objectives of human capital and information management and information technology. Other management objectives include acquisitions, space and facilities management, and financial management.

## HUMAN CAPITAL

The priorities for Human Resources Management in FY 2014 were as follows:

1. Continue to focus on filling critical skill positions within the agency and re-structuring grade levels across the agency to ensure a solid position management foundation.
2. Continue to focus on providing NRC employees with work life programs and services.
3. Continue to focus on activities to ensure successful implementation of the centralization of human capital functions.
4. Continue to lead the agency in addressing human capital challenges.

As the NRC moves toward the future, the agency is reviewing its human capital needs to respond to its changing environment and implementing strategies to address them while ensuring the agency continues to stay focused on the mission of protecting public health and safety and security. Staffing levels have remained steady since FY 2012, and overall growth in agency staffing is not expected. The NRC continues to make adjustments in staffing levels to support some areas. For example, the NRC is implementing the Fukushima NTFF recommendations and alleviating the backlog of operating reactor licensing actions, while decreasing staffing levels in other areas such as in new reactor licensing.

## RECRUITMENT AND STAFFING

The NRC is approaching work in a context of budgeted priorities and is strategically focusing on evaluating the need to replace employees who depart; fine-tuning available skills sets to meet future mission needs while still emphasizing Government-wide programs such as hiring of the disabled (e.g., OPM’s List of People with Disabilities and the Workforce Recruitment Program); employing veterans through coordination of, and attendance at, events focused on veterans including the Operation War Fighter career fair, the Corporate Gray Military Friendly job fair, and the Vets to Feds program; and continuing to support the agency’s Comprehensive Diversity Management Plan through the Diversity Management and Inclusion Council. As a result of the increased emphasis on the hiring of veterans and disabled veterans, the NRC exceeded its FY 2014 established hiring goals. In the first three quarters of FY 2014, the agency attended 24 recruitment events of which 13 focused on individuals with disabilities including disabled veterans, and has hired a total of 51 Veterans and 12 disabled veterans, which represents 26 percent and 6 percent of all NRC hires, respectively.

The agency continues to focus on ensuring that its employees have the skills and competencies to carry out the agency mission by fostering internal strategic partnerships between the Office of the Chief Human Capital Officer and the technical program offices to ensure there is a firm understanding of what skills and capabilities exist, where gaps exist, and the best ways to close those gaps through external hiring or internal mobility.

## WORK LIFE SERVICES

The NRC has a strong commitment to work life and benefit programs, understanding that creating a flexible, supportive environment for employees maximizes organizational performance and maintains an exceptional, engaged workforce. Programs such as the Employee Wellness Program, the Employee Assistance Program, alternative work flexibilities, and telework allow employees to balance work and personal or family lives. These factors have contributed to the NRC continuing to be one of the best places to work in the Federal government based on the 2013 Federal Employee Viewpoint Survey data.

### INTERNAL SAFETY CULTURE

According to Federal Human Capital Survey Results, specifically the FY 2013 Federal Employee Viewpoint Survey, the Office of Personnel Management (OPM) placed the NRC in the top three of the 37 largest Federal departments and agencies in each of the four areas (Leadership and Knowledge Management, Results-Oriented Performance Culture, Talent Management, and Job Satisfaction) covered by the survey. The NRC excels in areas such as effective leadership, matching employees' skills to the agency's mission, strategic management, training and development, work-life balance, support for diversity, performance-based rewards and advancements, and alternative work and employee support programs. The NRC realizes that the success of the agency depends on the talent and commitment of our employees. We strive to create an open and collaborative work environment that is rich in work-life balance and where employees are engaged in meaningful and challenging work.

### TRAINING AND DEVELOPMENT

The priorities for Training and Development in FY 2014 were as follows:

1. Continue to manage and improve the training funds centralization process to ensure essential training needs are met and to ensure a professional level of customer satisfaction.
2. Provide training courses to develop the competencies needed by the staff to perform their job functions.
3. Continue with the organization, planning, and development of the Learning Transformation Initiative for the benefit of streamlining and maximizing efficiencies in delivering agency training.

The NRC will ensure continuous improvement by evaluating training products for optimum content and delivery method and will ensure that critical skills and competencies are available in the future is by adapting our training and development programs to meet the changing needs of the agency and changes in technology. The NRC continues to focus on a competency-based approach to training, ensuring a line-of-sight alignment between employees' learning experiences and the agency's mission. Training and development programs are designed to shorten the time to competency. The NRC's learning and development programs continue to evolve to support the needs of the next generation

of regulatory experts. For example, the NRC has continued the successful development of new reactor simulators and technical training courses to coincide with the building of a new generation of nuclear reactors. Additionally, the agency has launched an initiative to include more on-line or blended delivery methods into the current training environment. This Learning Transformation Initiative focuses on the needs of the learner and is geared to providing the right information at the right time for individual staff members.

As the ever changing demographics in workforce continues and employees with vast knowledge and experiences become eligible to retire, the NRC recognizes the need to foster an environment of knowledge sharing and provide appropriate tools necessary to capture, retrieve, and share information in a meaningful way. The NRC has made Knowledge Management (KM) an integral part of the agency's Strategic Plan, making it a priority to support effective approaches for knowledge sharing activities. The agency KM program uses a broad and continuously evolving range of methodologies to support strategic hiring and training to fill knowledge gaps and foster a culture of knowledge transfer and retention. In FY 2014, the agency's KM program launched an internal series called, "Ask SME and Learn," to capture and share critical knowledge and experiences of subject matter experts (SME). The sessions provide an opportunity for staff across the agency to learn directly from the agency experts on a particular topic in an open forum. The sessions are recorded and made available to staff as a knowledge resource.

### OUTREACH

The priorities for Outreach in FY 2014 were as follows:

1. Continue to focus on activities to ensure successful implementation of the management of the civil rights program, affirmative employment and diversity management program, outreach and compliance coordination program and the small business program.
2. Continue effective administration of the Minority Serving Institutions (MSI) grants program and Minority Serving Institutions Program (MSIP) to assist in their efforts to develop a diverse skilled workforce to benefit the NRC, the industry, and nation.
3. Continue an exemplary level of small business contract performance and conduct internal training in the benefits of small business contracting.

4. Effectively manage the EEO complaints process in compliance with EEOC regulations to promptly address alleged discrimination, harassment, and retaliation in the workplace.
5. Continue to provide guidance and technical assistance in developing and executing strategies in support of the agency's Comprehensive Diversity Management Plan.

The Civil Rights Program (CR) received nine formal EEO complaints in FY 2014. By comparison, there were a total of 11 complaints filed last fiscal year. The CR Program issued the No FEAR Act Report to Congress on March 31, 2014. Also during FY 2014, two lunch-and-learn training sessions were conducted for collateral duty EEO counselors.

The NRC conducted the 2014 Environmental Justice (EJ) Conference, which resulted in NRC staff and the public being educated in EJ and alignment with the conference theme "Enhancing Communities through Capacity Building and Technical Assistance." The agency participated in two mandatory meetings with the White House Initiatives Office on Historically Black Colleges and Universities (HBCUs) regarding reporting and assistance provided to HBCUs and co-hosted a Webinar with the White House Initiatives Office on American Indian and Alaska Native Education (AIANE) on MSI grants opportunities. The meetings and Webinar provided the prospective MSI applicants with important technical assistance and a Q&A session for the MSI FY 2014 funding opportunity announcement.

### INFORMATION MANAGEMENT AND INFORMATION TECHNOLOGY

The priorities for Information Technology and Information Management in FY 2014 were as follows:

1. Improve the business value of NRC's IT solutions by providing the right products and services when and where needed.
2. Enable NRC staff and stakeholders to easily find and use the information they need.
3. Provide the foundation to deliver consistent and secure solutions to meet our customer's needs.
4. Improve enterprise decision-making based on mission-defined value and best practices.

5. Improve the accessibility, delivery and utility of the services that employees and business units need to work identify customer service enhancements.
6. Implement an effective cyber security program for protection of the NRC's information technology assets and identification of attempts at compromise.

In support of the NRC's Information Technology and Information Management (IT/IM) goals to better enable NRC staff and stakeholders to easily find and use the information they need, the NRC successfully imported approximately 3.75 million records consolidated and collected from the public Licensing Support Network (LSN) network into an internal NRC LSN library within the ADAMS. An upgrade to ADAMS replaced the main search engine with a new product that provides faster and better search results. The new search engine also adds several other user-requested features and supports finding results that are more relevant. The upgrade addresses the slow search response times that were cited in the FY 2012 IT/IM Survey as an area of concern. The agency continues to improve the accessibility, delivery, and utility of services needed to identify customer service enhancements.

The NRC improved the usability of agency information by modernizing the Information and Records Management (IRM) process to make information capture and categorization more transparent, accurate, and complete. The IRM Plan provides a strategic approach to managing twelve interrelated projects over the next five years (FY 2014 – FY 2019), and helps identify resource requirements.

The agency deployed several IT/IM modernization and improvement initiatives to better support external stakeholders and the public. The NRC continues to streamline public interactions with agency information systems by upgrading the security, Web browser compatibility, and processes associated with the Electronic Information Exchange system. This system supports intake and processing of information including: criminal history submissions, general forms data, and fitness for duty data. To better safeguard secure information provided by the public and key stakeholders, improvements were made to the credentialing processes and systems used for access to Integrated Source Management Portfolio (ISMP), Electronic Information Exchange (EIE), Emergency Response Data System (ERDS), and other public facing systems.

In addition to the successes listed above, the NRC has made many internal advances in IT/IM that enable the overall operational success of the agency. A few examples include: progress on the Private Cloud initiative which includes consolidating data centers, more efficiently managing infrastructure services, and supporting the eventual transitioning of appropriate services to the external cloud; enhancements to the Mobility Program that will provide new capabilities and additional device offerings to staff with mobile requirements; and several general IM and IT enhancements (e.g. search and analytic improvements, Intranet platform upgrade, server and network refreshes, bandwidth planning, and Lync implementation) to support new services offering, and a more efficient and redundant IT/IM infrastructure.

During FY 2014, the NRC expanded its incident response database to include tracking and reporting of incidents related to physical security incident reporting. In an effort to improve the agency's cyber security posture and to inform stakeholders, the NRC developed a Cyber Security Risk Dashboard. It is now operational and implementation of office-specific dashboards is ongoing. The NRC is using the dashboard to communicate cyber security risks and posture to Senior Executives and others with cyber security roles and responsibilities.

The NRC continues its efforts to improve cyber security situational awareness and training. This includes administration of phishing tests each quarter and hands-on demonstrations and presentations at all levels of the agency on security risks and vulnerabilities. The agency has seen improvements in this area by the number of reported phishing e-mails. In addition, even though the difficulty level of the phishing tests increased, the percentage of agency staff who succumbed to the test remained consistent with the previous phishing tests.

### ADDITIONAL MANAGEMENT OBJECTIVES

#### ACQUISITIONS

The priorities for Acquisitions in FY 2014 were as follows:

1. Continue to train and implement change management to ensure the continued post-implementation success of the acquisition centralization, Strategic Acquisition System (STAQS), and Business Advisory Center (BAC) operations.

2. Implement additional system, policy, and process efficiencies to optimize agency procurement activities and ensure mission needs are met.
3. Ensure sourcing strategies are strategic and are executed with an agency-wide view.

During FY 2014, significant progress was achieved in streamlining the procurement process for the agency through improved training for users of STAQS and the BAC.

The NRC awarded several enterprise-wide contracts for technical assistance and research, information technology, and corporate support, as well as several enterprise-wide agreements for DOE laboratories. With diverse membership from across the NRC, these strategic acquisitions were initiated through three Portfolio Councils charged with ensuring sourcing strategies represent an agency-wide view.

#### ADMINISTRATIVE SERVICES

The priorities for Administrative Services in FY 2014 were as follows:

1. Develop and initiate an updated headquarters housing strategy for the near-term, including moves into One White Flint North (OWFN) and Two White Flint North (TWFN), and out of Three White Flint North.
2. Develop and implement an updated strategy for housing headquarters and regional staff for the long-term.
3. Provide the necessary level of administrative support to the agency, including rulemaking support.

During FY 2014, the NRC developed a plan with the General Services Administration (GSA) to share office space in Three White Flint North (3WFN) with the Food and Drug Administration (FDA) pursuant to a House Committee on Transportation and Infrastructure resolution approving a prospectus for the TWFN replacement lease. The NRC is releasing eight floors in 3WFN to FDA in two stages. The first stage was implemented in July 2014 with FDA occupancy of four vacated floors. The second stage is scheduled for execution in May 2015 with FDA occupancy of four additional floors.

In February 2014, the NRC published the NRC final plan for the retrospective analysis of existing rules in the *Federal Register* (79 FR 9981) and posted it on the NRC's Open Government Web page. The final Plan describes the processes and activities

that the NRC uses to determine whether any of its regulations should be modified, streamlined, expanded, or repealed. This action is part of the NRC's voluntary implementation of Executive Order 13579, "Regulation and Independent Regulatory Agencies," issued by the President on July 11, 2011.

To enhance agency interaction with the small business community, the NRC launched a new page on the NRC's public Web site called *Small Business Regulatory Enforcement Fairness Act (SBREFA) Compliance*, and updated the existing *Regulatory Flexibility Act (RFA) Compliance* page. From these pages the public can learn about the NRC's compliance with the RFA of 1980, as amended, and the SBREFA of 1996, as amended. New information includes a listing of all rules that impact small entities; the list also contains links providing easy access to small entity compliance guides for these rules.

Throughout FY 2014, the agency reached the goals for timely processing of background investigations and re-investigations as defined in the *Intelligence Reform and Terrorism Prevention Act*.

### FINANCIAL MANAGEMENT

The priorities for Financial Management in FY 2014 were as follows:

1. Complete centralization of budget formulation, continue to centralize the time keeping functions, Technical Assignment Control (TAC) management, and implement the spend plan and invoice processing systems.
2. Support lessons learned on fee under-billing and implement recommendations from the Office of Inspector General's audit of fee policy and billing.
3. Conduct FY 2013 end-of-year budget execution analysis, provide enhanced support of quarterly program reviews, and develop consistent cost center policy.
4. Continue implementation activities to deploy the new eTravel system during FY 2014 successfully.

The agency met the challenges of ensuring that personnel were paid on time and travelers were accommodated during the Government shutdown. The NRC remained open seven business days longer than a majority of Federal agencies due to management of agency carryover funding to cover salaries and benefits for NRC employees. Once a Continued Resolution was passed, the agency quickly resumed normal operations.

On June 30, 2014, the NRC issued a final rule in the *Federal Register* amending the licensing, inspection, and annual fees charged to its applicants and licensees. The amendments are necessary to implement the *Omnibus Budget Reconciliation Act of 1990 (OBRA-90)*, as amended, which requires the NRC to recover through fees approximately 90 percent of its budget authority, not including amounts appropriated for waste incidental to reprocessing (WIR) and amounts appropriated for generic homeland security activities. Based on the *Consolidated and Further Continuing Appropriations Act of 2014*, the NRC's required fee recovery amount for the FY 2014 budget is \$930.7 million. After accounting for billing adjustments, the total amount to be billed as fees to licensees is \$916.7 million. The NRC Fee Recovery Schedules for FY 2014 are located at <http://www.gpo.gov/fdsys/pkg/FR-2014-06-30/pdf/2014-15193.pdf>.

### INTERNATIONAL ACTIVITIES

The NRC supports U.S. interests abroad in the safe and secure use of nuclear materials and in guarding against the spread of nuclear weapons. The agency performs certain legislatively mandated duties. These include participation in activities that support U.S. Government compliance with international treaties and agreements and serving as the U.S. licensing authority for exports and imports of nuclear materials and equipment.

### INTERNATIONAL TREATIES AND AGREEMENTS

The NRC participates in a variety of conventions, treaties, and other legal and political instruments that together make up the international nuclear regime. For example, the Convention on Nuclear Security, the Joint Convention on the Safety of Spent Fuel Management and on the Safety of Radioactive Waste Management, the Nuclear Non-proliferation Treaty and the Convention on the Physical Protection of Nuclear material are just a few of these activities.

In FY 2014, the NRC provided significant support for the 6th Convention on Nuclear Safety (CNS). This included publication of the United States' Sixth National Report, reviewed 59 Contracting Parties' reports, and issued 187 questions to various countries. The agency responded to 238 questions on the US National Report. In addition, the NRC held two officer positions during the 6th CNS Review Meeting

and supported a delegation of more than 25 members.

The agency prepared for the upcoming CNS Diplomatic Conference assignments by:

- Supporting several Interagency meetings (i.e., NRC, Nuclear Security Council, Department of State, Department of Energy, and US Mission in Vienna),
- Conducting various Commission Technical Assistants and Commission briefings,
- Evaluating of the Diplomatic Conference rules of procedures, and
- Preparing U.S. Government positions and providing alternative language for the proposed amendment.

The NRC is the U.S. licensing authority for exports and imports of nuclear materials and equipment. The NRC work in this area supports the United States non-proliferation objectives to guard against the weaponization of nuclear technology and material.

The agency updated the U.S. National Report on Management of radioactive waste, spent fuel and disused sealed sources in the national safety regime for the Joint Convention meeting in May 2015, as part of a working group which includes signatory countries and organizations. The report is being revised to reflect changes in the U.S. regulatory system in specific topics such as: the continue storage, application of Lessons Learned from the Fukushima Accident, Legacy Cleanup Programs and Recovery Radioactive Source. The report will be submitted to Joint Convention Contracting Parties and the IAEA in September 2014.

During FY 2014, the Integrated Regulatory Review Services (IRRS) Followup Mission was completed. One of two recommendations and 19 of 20 suggestions were closed. One new suggestion was opened and one good practice was identified. The report can be viewed at <http://www.nrc.gov/reactors/operating/ops-experience/preliminary-report.pdf>. The agency has continued to participate in IRRS missions in other countries.

During FY 2014, the agency supported review of Agreements for Peaceful Nuclear Cooperation (123 Agreements) with the IAEA, Taiwan, Vietnam, China, Republic of Korea, and Norway; the administrative agreement to implement the 123 Agreement with India; and Project and Supply Agreements with Peru and Algeria.

## EXPORT AND IMPORT LICENSING

In FY 2014, NRC management participated in several Joint Convention related assignments, including working group meetings with DOE; submission of member state questions and comments in support of the 5th Meeting of the Joint Convention; preparing for the workshop of incoming and outgoing officer's for the Joint Convention; and providing nominations for open officer's positions within the Joint Convention.

In FY 2014 the NRC completed 84 specific export or import licensing actions, 12 reviews of part 810, "Assistance to Foreign Atomic Energy Activities" authorization requests; and 10 Subsequent Arrangements requests proposed by the Executive Branch. NRC participated in U.S. interagency bilateral physical protection visits to support export licensing. The NRC's export/import licensing reviews ensure that nuclear equipment and material are transferred to authorized parties in ways consistent with applicable U.S. law and international obligations. The NRC continued to monitor policy and technical changes at the Nuclear Suppliers Group (NSG) for impacts on its export regulations.

The NRC provided significant support in reviewing Westinghouse application to export reactor equipment to the United Arab Emirates.

## BILATERAL COOPERATION AND ASSISTANCE

In FY 2014, 8 bilateral technical cooperation exchange arrangements were finalized with Belgium, Brazil, Czech Republic, EURATOM, Indonesia, Kazakhstan, Mongolia and South Africa. On August 28, 2014, a cooperative arrangement was renewed with Brazil. On September 24, 2014, the NRC renewed its Arrangements with Belgium, Czech Republic, Kazakhstan, and South Africa. The NRC has provided draft Arrangements for review and final signature for Mongolia, Indonesia and EURATOM. All other NRC international agreements are current and all information was exchanged with appropriate agreements and approvals in place.

The agency participated in 24 bilateral meetings on diverse technical topics and supported Joint Standing Committee on Nuclear Energy Cooperation meetings with Taiwan and Argentina.

In FY 2014, the NRC completed a rulemaking effort to modify NRC regulations in 10 CFR Part 110 “Export and Import of Nuclear Equipment and Material.” The revised regulations adopt **INFCIRC/225/Rev. 5** “The Physical Protection of Nuclear Material and Nuclear Facilities” as a physical protection criterion in licensing exports of nuclear materials and facilities. The rulemaking facilitates the U.S. Government’s support of a global effort to promote the implementation of INFCIRC/225/Rev. 5.

The NRC began implementing a detailed plan with the regulatory authority of China, the National Nuclear Safety Administration (NNSA), for cooperation on the construction of AP1000 reactors in both countries. The plan includes exchange of inspectors and regulatory oversight during the pre-operational testing phases. In 2014, NRC held multiple meetings and discussions with NNSA on the AP1000 design, which resulted in additional questions and answers from both parties, and sent the first NRC representative to serve at NNSA’s headquarters in Beijing.

Under its active assistance program, the NRC continued engagement on establishing basic regulatory infrastructure needed for oversight of a nuclear power program with countries of Africa, Europe, the Middle East, and Southeast Asia. The agency also continued expansion of engagement with regulatory counterparts in Africa, Asia, and Latin America on establishing effective regulatory oversight of facilities.

The NRC continued the program of assistance to the countries of Latin America and the former Soviet Union for regulatory controls over radioactive materials, including the establishment or enhancement of national source registries and review of national legislation. The agency also began expansion of sources-related assistance to countries of the Middle East and Africa.

The NRC continues to work with the Japanese counterparts on Fukushima and other safety-related activities. The NRC and the Japan Nuclear Regulatory Authority held several Steering Committee meetings on nuclear security. The cooperative framework provides the basis for more structured bilateral cooperation between NRS and NRC. Additionally the NRC held information exchanges with other Japanese government agencies.

## MULTILATERAL COOPERATION AND ASSISTANCE

The agency supported reviews of Agreements for Peaceful Nuclear Cooperation with the IAEA, India, Taiwan, and Vietnam.

The NRC participated in IAEA member state consultancy meetings to draft the IAEA’s Nuclear Security Series documents. This included reviewing and providing comments on multiple IAEA guidance documents, including draft NTS023 Implementation Guidance for INFCIRC/225/Rev. 5 “The Physical Protection of Nuclear Material and Nuclear Facilities.”

The NRC continues to benefit from its work at the NEA and holds leadership positions in a number of NEA committees and working groups. The NRC chairs the Nuclear Energy Agency’s Committee on Safety of Nuclear Installations (CSNI). Some of the most significant work is done in this group is with the Halden Reactor Project, a program of research covering a broad range of areas including fuels, materials, digital systems, human factors, and human reliability. The NRC also continued to co-chair the Nuclear Energy Agency’s Committee on Nuclear Regulatory Activities (CNRA). NRC participated in all 3 NEA working groups and 3 senior level task groups under CNRA, chairing one of each of these groups.

The NEA’s membership comprises countries with mature nuclear programs and regulatory organizations, which facilitates beneficial dialogue on detailed technical topics. The NEA’s research activities enable multiple countries to benefit from research conducted in a single location, which promotes cooperation and efficient use of limited resources.

The NRC is engaged both domestically and internationally in efforts to enhance nuclear safety and security through the regulatory oversight of radioactive sources. The agency has participated in numerous meetings of technical and legal experts on the IAEA’s Code of Conduct for the Safety and Security of Radioactive Sources, both to ensure that its implementing guidance is clear and accurate and to encourage Member States that have not yet made a political commitment to implement the Code to do so.

The NRC also participates in numerous IAEA-sponsored coordination, information exchange, and knowledge management forums. These include the Global Nuclear Safety and Security Network, the Asian Nuclear Safety Network, the Regulatory Cooperation Forum, the Technical Support Organization Forum, the Forum of Nuclear Regulatory Bodies in Africa, and the Arab Network of Nuclear Regulators.

The NRC played a leadership role in the Multinational Design Evaluation Program (MDEP), which facilitates cooperation among 13 countries in evaluating the designs for new nuclear power plants including the AP1000, EPR, APR1400, and ABWR. The NRC Chairman led the MDEP Policy Group. The agency participated in seven working groups, leading three of these groups.

The NRC took a lead role in the development of an international regulatory forum for cooperation on small modular reactor designs within the IAEA.

### INTERNATIONAL SECURITY

Four years ago, the President of the United States convened the first-ever heads of state-level international Nuclear Security Summit. The objective of this Summit was to focus on how to better safeguard weapons-grade plutonium and uranium in order to prevent nuclear terrorism. One of the outcomes of this first summit was the United States agreeing to an International Physical Protection Advisory Service (IPPAS) Mission to be hosted by the NRC and NIST.

The mission was held from Sept 30- Oct 11, 2013. These missions provide peer advice on implementing nuclear security instruments and IAEA guidance on the protection of nuclear and other radioactive material. It also gives NRC the benefit of international experience to improve nuclear security and gives those participating in the IPPAAS team the opportunity to thoroughly understand best practices by other countries. NRC operating reactor office staff prepared background material, responded to questions, and coordinated a site visit regarding research and test reactors.

The NRC supported numerous bilateral engagements with foreign regulatory bodies to exchange information on security related activities such as emergency preparedness, physical security and cyber security. The agency also participates in many multilateral activities such as the IAEA's Nuclear Security Guidance Committee meetings, and technical and

consultancy meetings on security for research and test reactor, and radioactive sources.

The agency supported DOE during FY 2014 in documenting the conclusion of the 1993 US/Russian HEU Agreement for the down blending of 500,000 kilograms of Russian weapon grade uranium into low-enriched uranium (LEU).

### PROGRAM EVALUATIONS

The NRC conducted several program evaluations of its regulatory operations during FY 2014. The evaluations were conducted for both the nuclear reactor and the nuclear materials programs.

#### ABNORMAL OCCURRENCE (AO) REPORT

**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 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

**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 nuclear power plant core damage risk, (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 goals established in the agency's Strategic Plan.

## CONSTRUCTION REACTOR OVERSIGHT PROCESS (cROP)

**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 resultant 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 Inspections, Tests, Analysis and Acceptance Criteria (ITAAC) closure verification program, 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 into the NRC's programs.

**Outcome:** The results of the calendar year 2013 self-assessment indicate that the cROP met its program goals and the agency's strategic goals of ensuring safety and security through objective, risk-informed, understandable, and predictable oversight. Ten of the eleven performance metrics met predetermined criteria and corrective actions were identified for the one that did not.

## VENDOR INSPECTION PROGRAM

**Objective:** An annual self-assessment determines whether the Vendor Inspection Program (VIP) has met the following objectives: verify applicants and licensees are providing effective oversight of supply chain, effectively communicate with stakeholders, perform timely and adequate allegation follow up, and ensure that agency staff has necessary knowledge and skills.

**Scope:** The self-assessment evaluates performance metrics under each objective to demonstrate that overarching goals are being supported.

**Outcome:** The results of the fiscal year 2013 self-assessment demonstrated the VIP met its program goals. Nine of eleven performance metrics met the predetermined criteria, and the agency identified corrective actions for those that did not.

## SUPPORT SERVICES

**Objective:** Each program evaluation will determine whether the 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 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) program strengths and weaknesses.

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

**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 Agreement States and NRC regional office activities and responsibilities. The agency factors any recommendations or good practices into future reviews of materials programs.

## OPERATOR LICENSING PROGRAM

**Objective:** The NRC's annual self-evaluation of the Operator Licensing Program ensures that the program remains effective and consistently implements the requirements in 10 CFR Part 55, "Operators' Licenses"; the guidance in **NUREG 1021**, "Operator Licensing Examination Standards for Power Reactors," Revision 9, issued July 2004; and other policy documents.

**Scope:** The annual self-evaluation involves audits of one or two written operator licensing examinations and operating tests in each NRC regional office to ensure consistent quality, level of difficulty, administration, and grading. The evaluation also includes a detailed review of the operator licensing function at one regional office each year, with each NRC region performing a similar self-assessment during the alternate years.

The detailed regional 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 usage.

### DATA SOURCES, DATA QUALITY, AND DATA SECURITY

The NRC's data collection and analysis methods are driven largely by the regulatory mandate that Congress entrusted to the agency. Specifically, the NRC's mission is to regulate the Nation's civilian use of byproduct, source, and special nuclear materials to ensure adequate protection of public health and safety, and promote the common defense and security. In undertaking this mission, the agency oversees nuclear power plants, nonpower reactors, nuclear fuel facilities, interim spent fuel storage, radioactive material transportation, disposal of nuclear waste, and the industrial and medical uses of nuclear materials.

As part of the NRC's regulatory requirement under 10 CFR 20.2206, several NRC-regulated industries are required to submit occupational radiation exposure reports to the Radiation Exposure Information and Reporting System (REIRS) database. The agency analyzes these reports to ensure that licensees comply with the annual occupational dose limit of 50 millisieverts (5 rem). The agency uses the data in the following ways: (1) as a metric in the agency's Reactor Oversight Process to evaluate the effectiveness of licensee programs used to keep occupational radiation doses as low as reasonably achievable and for inspection planning; (2) to assist in the evaluation of the radiological risk associated with certain categories of NRC-licensed activities and for comparative analysis of radiation protection performance; (3) to provide occupational radiation exposure history reports to individuals exposed to radiation or radioactive material at NRC-licensed facilities; and (4) to provide facts for responding to Congressional and administration inquiries and to questions from the public regarding occupational radiation exposures at NRC-licensed facilities. The agency publishes NUREG-0713, "Occupational Radiation Exposure at Commercial Nuclear Power Reactors and Other Facilities," annually. NUREG-0713 Volume 33 for calendar year 2012 was issued in April 2014. It is available on the agency's Web site: <http://pbadupws.nrc.gov/docs/ML1412/ML14126A597.pdf>.

Section 208 of the *Energy Reorganization Act of 1974*, as amended, requires the NRC to inform Congress of incidents or events that the Commission determines to be significant from the standpoint of public health and safety. The agency developed the Abnormal Occurrence criteria to comply with the legislative intent of the *Energy Reorganization Act of 1974* to determine which events should be considered significant. Based on these criteria, the agency prepares an annual "Report to Congress on Abnormal Occurrences" (NUREG-0090). One important characteristic of this report is that the data presented normally originate from external sources, such as Agreement States and NRC licensees. NUREG-0090 Volume 36 for FY 2013, issued in May 2014, is available on the agency's Web site: <http://www.nrc.gov/reading-rm/doc-collections/nuregs/staff/sr0090/v36/>.

The NRC finds these data sources credible because (1) agency regulations require Agreement States, licensees, and other external sources to report the necessary information, (2) the NRC maintains an aggressive inspection program that, among other activities, includes auditing licensee programs and evaluating Agreement State programs to ensure that they are reporting the necessary information as required by the agency's regulations, and (3) the NRC has established procedures for inspecting and evaluating licensees. The agency employs multiple database systems to support this process, including the licensee event report Search System, the Accident Sequence Precursor database, the Nuclear Materials Events Database, and the REIRS. In addition, non-sensitive reports submitted by Agreement States and NRC licensees are available to the public through ADAMS, accessible through the agency's Web site <http://www.NRC.gov/reading-rm/adams.html>.

The NRC verifies the reliability and technical accuracy of event information reported to the agency. The agency periodically inspects licensees and reviews Agreement State programs.

In addition, NRC Headquarters, the regional offices, and Agreement States hold periodic conference calls to discuss event information. Events identified as meeting the Abnormal Occurrence Criteria are validated and verified before being reported to Congress.

Additionally, the NRC is an active participant in data.gov, a Federal Web site designed to increase public access to high value, machine-readable datasets generated by the Executive

Branch. The NRC published its first dataset in October 2009, and in response to the Open Government directive published three additional datasets in January 2010, and as of the end of

FY 2012, at total of 30 datasets had been published. The NRC will continue to encourage public feedback on its high-value information, and consistent with agency policy and guidance provided by data.gov, will continue to add new datasets to its high-value dataset publication plan.

### INFORMATION SECURITY

The NRC's information security program (1) protects NRC and licensee information and information systems from unauthorized access, use, disclosure, disruption, modification, or destruction, (2) protects electronic control functions from unauthorized access or manipulation, and (3) ensures that adequate controls for protecting security-related information are used in the conduct of NRC business. The NRC information security program includes measures to accomplish the following: (1) ensure that information security requirements, standards, and guidance are clear, concise, appropriate, and able to mitigate the potential adverse effects if sensitive information is compromised; (2) ensure that security controls for information owned by or under the control of the NRC are consistent with established information security controls, operating as intended, and having the desired impact, and that similar controls for licensees regulated by the NRC are in compliance with NRC information security regulations; (3) ensure that suspected or actual information security violations are evaluated and that appropriate sanctions are considered; (4) ensure that the NRC has made sufficient preparations for information security-related emergencies and incidents; and (5) ensure that internal information security program components complement each other and are periodically evaluated and improved.

### PERFORMANCE DATA COMPLETENESS AND RELIABILITY

In order to manage for results, it is essential that the NRC assess the completeness and reliability of its performance data. Comparisons of actual performance with the projected levels are possible only if the data used to measure performance are

complete and reliable. Consequently, the *Reports Consolidation Act of 2000* requires the NRC Chairman to assess the completeness and reliability of the performance data used in this report. The process for ensuring that the data are complete and reliable requires offices to complete a template for submission to the Chief Financial Officer for every performance indicator certifying that the data submitted have been approved by the applicable office director. The report "Data Collection Procedures for Verification and Validation of Performance Indicators," contains the processes the agency uses to collect, validate, and verify performance data. This report can be found on page 104 of the NRC's FY 2014 Congressional Budget Justification located on the NRC Web site <http://www.nrc.gov/reading-rm/doc-collections/staff/sr1100/v29/fy2014-cbj.pdf>.

### DATA COMPLETENESS

The NRC considers data to be complete if the agency reports actual performance data for every performance goal and indicator in the annual plan. Actual performance data include all data that are available when the agency sends its report to the President and Congress. The agency has reported actual data for every strategic and performance goal indicator. In addition, all of the data are reported for each indicator. As a result, the data presented in this report meet the requirements for data completeness.

### DATA RELIABILITY

The NRC considers data to be reliable when agency managers and decisionmakers use the data in carrying out their responsibilities. The NRC, for example, has implemented data driven Quarterly Program Performance reviews with senior managers. The data presented in this report meet this requirement for data reliability because NRC managers and senior leaders review the data quarterly during the Quarterly Performance Reviews and regularly use the reported data in the course of their duties.

