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WRITTEN TESTIMONY
OF GREGORY B. JACZKO, CHAIRMAN
UNITED STATES NUCLEAR REGULATORY COMMISSION
TO THE
SENATE COMMITTEE ON ENVIRONMENT AND PUBLIC WORKS
SUBCOMMITTEE ON CLEAN AIR AND NUCLEAR SAFETY

MAY 5, 2010

Good morning Mr. Chairman, Senator Vitter, and distinguished members of the Subcommittee. The Commission, including my colleagues Commissioner Svinicki, Commissioner Apostolakis, Commissioner Magwood, and Commissioner Ostendorff, is pleased to appear before you today to discuss the Nuclear Regulatory Commission's (NRC) oversight of operating reactors and licensing of new reactors.

I first want to thank you Mr. Chairman, Senator Vitter, and the Subcommittee for your support and leadership in the recent confirmations of Commissioner Apostolakis, Commissioner Magwood, and Commissioner Ostendorff. With the benefit of their expertise and insights, along with Commissioner Svinicki's experience, the Commission stands fully prepared to continue to vigorously advance the NRC's mission of protecting the public health and safety, promoting the common defense and security, and protecting the environment.

That critical mission entails broad responsibilities for the agency. The NRC currently licenses, inspects, and assesses the performance of 104 operating nuclear power plants, as well as many fuel cycle facilities and research and test reactors. Furthermore, nuclear materials are in use at thousands of hospitals, universities, and other locations around the country. Each of these facilities and materials users presents different challenges for the NRC and requires that the NRC develop and sustain a diverse array of regulatory capabilities. The Commission cannot give enough credit for the NRC's effectiveness as a regulator to the NRC's hard-working,

talented, and dedicated staff. The Commission is continually impressed by their expertise, experience, and commitment to public service.

The NRC is now nearly 4,000 employees strong. As the agency has grown, the NRC team has remained united by a common set of organizational values and principles of good regulation. Those values and principles continue to guide the agency in advancing its important safety, security, and environmental mission. Those values guide the NRC in maintaining its independence in accomplishing its mission, engaging the public, licensees, and other stakeholders openly and transparently, and pursuing excellence in all aspects of the NRC's work. The Commission believes the NRC's historic values and principles are vital to the NRC's ability to serve as a strong and effective safety regulator. These values and principles have been especially important during the last few years – a time of dramatic change for the agency – in helping sustain our focus and effectiveness.

During the past five years alone, the number of NRC employees has grown by more than 25 percent, the size of the NRC budget has increased by more than 50 percent, and two new offices have been created within the agency. To accommodate this growth and reconsolidate the headquarters staff, construction will soon begin on the NRC's new 14-story office building adjacent to the agency's Rockville headquarters. This dramatic growth in staff and resources was necessary to maintain the NRC's ability to address significant changes in the agency's regulatory landscape, including the review of a large number of new reactor applications.

None of this would have been possible without the support of this Subcommittee. I want to thank you Mr. Chairman, Senator Vitter, Senator Voinovich, and the other Members of the Subcommittee for providing that support. Your efforts have enabled the NRC to maintain its critical focus on the safety of operating reactors, while effectively meeting the additional

regulatory workload associated with the sustained high interest in safe license renewals for operating reactors and additional interest in certifying designs and licensing new reactors.

First and foremost, the focus of the NRC has remained, and will continue to remain, on the safety and security of operating reactors and nuclear materials. The NRC performs continuous oversight activities through its Reactor Oversight Process (ROP) to verify that the 104 currently licensed reactors are operating safely and securely in accordance with the NRC's regulations. This risk-informed and performance-based oversight approach relies on inspection findings and performance indicators to assess the performance of the plants. Although the ROP is a highly effective oversight tool, the NRC is always focused on improving its effectiveness. Last year, the NRC completed a biennial review of the ROP baseline inspection program to ensure that the ROP continues to focus and align resources on the most appropriate areas of reactor safety. Additionally, the NRC held a public meeting earlier this month to begin a discussion with the public and stakeholders on the potential for changes to the performance indicators in the ROP. This past week, the Commission also held a meeting to discuss the development of a more risk-informed, performance-based approach to the agency's oversight of fuel cycle facilities.

In the materials area, the NRC and the Agreement States oversee a wide variety of licensees that use radioactive materials for industrial applications, basic and applied research, manufacturing, and medical purposes. The NRC works hard to ensure that its licensees are using these materials in a manner that protects public health and safety and the environment. That work includes guidance and rules for licensees, as well as effective oversight and enforcement programs to ensure compliance. As the Subcommittee may be aware, in March 2010, the NRC proposed a $227,500 fine against the U.S. Department of Veterans Affairs for violations of NRC regulations associated with an unprecedented number of medical errors involving treatment of prostate cancer patients at the Philadelphia Veterans Affairs Medical

Center. This is one of the largest fines the NRC has ever assessed against a medical licensee, and the licensee did not contest the fine. The NRC remains committed to ensuring that all patients, including veterans, are not exposed to radiation in violation of NRC regulations. To that end, the NRC is evaluating the program to see what improvements may be needed.

These types of oversight activities are critical to the NRC's effectiveness as a regulator. To maintain strong oversight programs, the NRC is focused on making progress on long-standing issues, as well as addressing emerging issues in a pro-active and effective way. Given the growth of the NRC's regulatory workload in recent years, these efforts are especially important for ensuring that the NRC remains an effective regulator.

Fire protection and emergency core cooling system sump performance are two significant long-standing issues on which the NRC is currently focused. The Commission's policy on fire protection is clear: the "staff should continue to encourage licensees to voluntarily transition to National Fire Protection Association Standard (NFPA) 805." As a risk-informed, performance-based approach, NFPA 805 allows licensees to undertake a comprehensive evaluation of their fire safety measures and focus their attention on design and operational issues according to their safety significance. Fifty plants have voluntarily opted to shift to NFPA 805. Two plants, Oconee and Shearon Harris, volunteered to be pilot plants for the transition to NFPA 805. The Shearon Harris pilot is nearing completion, and the Oconee pilot also expects to finish later this year. The path towards improving fire protection has been challenging at times, but the NRC and its licensees are making progress.

A second important issue on which the Commission intends to achieve closure in the near future is Generic Safety Issue-191 (GSI-191), which seeks to address the possibility that debris generated during a loss-of-coolant accident would clog the emergency core cooling system sump screens in pressurized water reactors. Like fire protection, GSI-191 has

presented challenges, but the agency has taken significant steps to address this issue among operating reactors and in new reactor designs. At the present time, 38 out of 69 pressurized water reactors have resolved their sump performance issues, with the exception of in-vessel effects. The Commission recently held a meeting to discuss the status of efforts to resolve this issue and will continue to remain engaged with the staff and licensees on this matter.

Even as the agency works on these long-standing issues, the NRC also will remain committed to addressing emerging issues in a pro-active and effective manner. Two such issues are age-related degradation and cyber security.

The NRC strives to maintain a sound understanding of the effect of age-related degradation on power reactor structures, systems, and components to ensure that they continue to meet their required safety performance. This research has taken on added significance in recent years as the NRC has received, and expects to continue to receive, license renewal requests that extend a reactor's authorized operation beyond its original 40-year term.

In recent months, age-related degradation has attracted widespread public attention in the context of buried piping and tritium leaks. The leaks have not exceeded the limits the NRC sets to ensure public health and safety, nor have the leaks interfered with the proper functioning of the plants' safety systems. But the public continues to ask– what is leaking, where is it leaking, how much is leaking, and what is being done to stop the leaking and to prevent it from happening again in the future? This is a public confidence issue that requires that both the NRC and licensees continually listen to people's concerns, and effectively communicate what the risks are and what is being done in response to the leaks. The Commission considers it a priority to fully inform the public and promote understanding of these issues. Toward that end, the NRC held public forums last month in Vermont and in the Washington, DC area to discuss

this matter. Be assured that the NRC will continue to engage the public to provide assurances that the NRC is working to protect public health and safety.

To further address these issues, the agency recently established a Groundwater Contamination Task Force to reevaluate the agency's actions in response to recent tritium incidents, as well as the staff's response to recommendations made in the 2006 Liquid Radioactive Release Lessons Learned Task Force Final Report. Also, the staff is actively participating in American Society of Mechanical Engineers Code and NACE International (formerly the National Association of Corrosion Engineers) standards activities to determine whether corrosion protection standards need to be enhanced.

As the agency stays on top of the potential safety issues related to aging facilities, the NRC has not lost sight of its critical security mission. A major power reactor security rule went into effect in March of this year that addresses issues such as physical barriers and detection and assessment systems. Although some licensees requested and were granted extensions to the compliance date for limited aspects of the new rule, the implementation of this rule furthers the agency's efforts to update security requirements. The NRC is keenly aware of the dynamic threat environment. The cyber threat, in particular, evolves quickly and requires that the agency maintain a consistent focus to evaluate the risks that it poses and how the NRC and its licensees can best guard against it. The NRC has worked collaboratively with the Federal Energy Regulatory Commission (FERC) to coordinate our roles and responsibilities in implementing our respective cyber security requirements. FERC and the North American Electric Reliability Corporation (NERC) have made progress on a Memorandum of Understanding to coordinate inspections on the cyber issue. This situation could be improved with statutory change to clarify that NERC can reimburse NRC for cyber security inspections.

Additionally, this past year, the Commission finalized a new cyber security rule, which requires that licensed nuclear power plants, as well as applicants for operating licenses, develop and submit for NRC review individual cyber security plans. To assist with the implementation of this rule, the staff has completed work on an associated regulatory guide, and continues to make progress in reviewing licensee plans. In addition to the Commission's other efforts to continue to update its security-related requirements, this cyber security rule is an indication of the significant progress the NRC has made in strengthening the agency's security regulatory framework.

The rulemaking and oversight work discussed to this point are very important to meeting the agency's safety and security objectives. The NRC continually works to strengthen its rules, update its guidance, and enhance its inspection and enforcement programs to meet the agency's safety mission. But the NRC cannot be everywhere, and it cannot inspect everything. It is the responsibility of the licensees who have day-to-day control over the functioning of the plant and have the responsibility to develop and maintain a positive safety culture that ensures that safety and security issues receive the attention they warrant.

Safety culture is an area that the NRC has increasingly focused on, in recent years, for the simple reason that the NRC has found that a deteriorating safety culture is associated with safety problems. The NRC has incorporated safety culture into the ROP and also has been working to develop a safety culture policy statement. The current draft statement makes clear that security is an important part of a positive safety culture and that safety culture is no less significant for material sites than for reactor facilities. The Commission recently held a meeting to discuss the draft statement after the public comment period closed. Throughout this process, the NRC has benefited from extensive public input by soliciting written comments and convening several public meetings on the issue. Over the next year, the Commission looks forward to working to finalize a statement that clarifies the NRC's expectations of its licensees and that helps the agency staff determine how best to promote safety culture.

Before moving on, I should emphasize that maintaining a strong safety culture within the agency is a priority for the NRC. The agency can take pride in the fact that the 2009 NRC Inspector General's Safety Culture Survey of NRC employees reported that the agency's safety culture and work climate scores are excellent and compare favorably with those of high-performing private-sector companies. Building upon this past success, the NRC has been working on implementing the follow-up actions to the Inspector General's findings, as well as the recommendations of the agency's Internal Safety Culture Task Force.

As these initiatives demonstrate, the Commission has maintained its focus on verifying that operating plants operate in line with the NRC's safety, security, and environmental requirements. The NRC's core mission objectives are no different in the context of new reactors. The agency is committed to ensuring that any new reactors that may be licensed, constructed, and operated would be done so in accordance with the NRC's safety, security, and environmental regulations.

By 2012, the NRC may be approaching a final decision on the first combined license (COL) applications for new reactors under the Part 52 licensing process. But that is far from the only new reactor licensing activity that the agency will be embarking upon. By 2012, the NRC also may be approaching a final decision on the operating license for the Watts Bar 2 reactor application under the original Part 50 licensing process. If its application is found to meet NRC requirements, Watts Bar 2 – a reactor that the Tennessee Valley Authority (TVA) started to construct in 1973, suspended construction on in 1985, and resumed construction on in 2007 – could be the first new reactor to start commercial operation since 1996. By 2012, in addition to these licensing activities, the NRC also expects to receive the first design certification request for a small modular reactor (SMR) utilizing technology similar to the current operating reactors. Subsequent SMR designs could employ reactor technologies other than the light-water technology that predominates among currently operating reactors.

Just ten years ago, few people inside or outside the NRC could have foreseen the breadth of major licensing activities now before the agency. The Commission is fully confident that the agency can successfully and effectively meet its regulatory responsibilities with regard to all of these matters. That confidence reflects the Commission's high regard for the hard work and dedication of the NRC staff and their strong track record in conducting efficient, predictable, and thorough licensing reviews.

One need look no further than NRC's existing licensing processes to see that the agency knows how to do this type of work. The NRC completes approximately 1500 reactor licensing actions and tasks per year. In addition to conducting reviews effectively and efficiently, the NRC has historically demonstrated its ability to adjust to changing circumstances, as shown when the agency developed new capabilities to review power reactor license renewal and power uprate applications.

At the present time, the NRC is actively reviewing 13 combined license (COL) applications for 22 new reactors under the Part 52 licensing process. The Commission originally envisioned that vendors would apply for certification of standardized designs, and that applicants would then proceed sequentially through the review process for a COL. Due to a number of factors, the anticipated sequential Part 52 process has not worked that way, but the NRC has done an effective job in concurrently reviewing design certification requests and reactor COL applications.

The agency's strong work in this area was recently recognized by the Bipartisan Policy Center (BPC). Under the leadership of former Senator Pete Domenici and former NRC Chairman Richard Meserve, the BPC assessment confirmed the high-quality work of the NRC staff in conducting thorough and timely reviews of license applications. In keeping with the agency's strong commitment to continuous improvement, the NRC will implement the BPC's

recommendation to conduct a lessons-learned review of the Part 52 licensing process. The NRC staff will proceed with this review after the first COL review has been completed, which may include recommended policy proposals for Commission consideration to further enhance the licensing process for future applications.

As the agency approaches final decisions on the first COL applications, the Commission will seek to complete its update of the waste confidence rule. The NRC staff has taken a fresh look at the technical basis for the agency's waste confidence findings and has reaffirmed that spent nuclear fuel in any reactor can be safely stored, without a significant impact to the environment, for at least 60 years after the licensed life of operation. The Commission has this draft final rule in front of it now. This will be an important issue for the Commission to resolve soon.

As the staff completes the final safety reviews on the first COL applications, the Commission also will focus attention on preparing for the mandatory hearings required under the Atomic Energy Act. Back in 2007, the Commission committed to conducting the mandatory hearings, rather than to continue to have the Atomic Safety and Licensing Board Panels perform this function. Over the coming year, the Commission will prepare for the conduct of these hearings. The Commission is committed to making required safety, security, and environmental findings openly, fairly, and efficiently.

In addition to the agency's work related to the new reactor COL applications under review, the NRC is also actively preparing for the licensing and other regulatory work related to the advanced generation of reactors. In 2012 and 2013, the NRC expects to receive multiple applications for design certifications, early site permits, combined licenses, and manufacturing licenses for small modular reactors (SMRs). Additionally, the Next Generation Nuclear Plant (NGNP) program is expected to provide a design certification application to the NRC in 2012 or

2013. The NRC has been working closely with the Department of Energy to ensure that the agency will be ready to review this application.

In anticipation of these activities, the NRC established the Advanced Reactor Program within the Office of New Reactors to focus on preparing and conducting licensing reviews of SMRs. Since the NRC's existing regulations and guidance are focused on light-water reactors and may not necessarily translate to other technologies that might be employed by SMRs, the NRC is identifying and conducting necessary research, developing the needed analytical tools, and preparing appropriate review guidance for SMR-related licensing activities. The staff has also prepared a comprehensive paper on potential policy, licensing, and technical issues that may require Commission consideration in the future.

In addition to the increased interest in new reactors, the NRC also has seen greater interest in the construction of uranium recovery and enrichment facilities. The agency has a strong regulatory framework in place for ensuring that uranium recovery and enrichment facilities are constructed, operated, and decommissioned in a safe, secure, and environmentally sensitive manner. In anticipation of new applications, the agency has been working to strengthen the agency's review process. For example, in the area of in situ recovery (ISR) facilities – the type of uranium recovery that has probably generated the most interest over the last few years – the agency has sought to make its environmental review more efficient and effective. Specifically, the agency has prepared a Generic Environmental Impact Statement (GEIS) to serve as a starting point for the site-specific environmental reviews for these applications. By addressing common environmental issues associated with these facilities, the GEIS helps avoid duplication in analyses and allows the staff to stay focused on conducting thorough site-specific reviews. To ensure that the site-specific review addresses all of the applicable environmental issues, the NRC is conducting a Supplemental Environmental Impact Statement for each proposed site.

The significant issues that I have discussed today make it all the more important that NRC continue to advance its mission in an open and transparent way and the Commission is committed to doing so. For example, over the past few months, the NRC has moved forward with implementing the President's Open Government Directive. As an independent agency, the NRC was not required to comply with this Directive, but the agency has done so because it is consistent with the NRC's historic organizational commitment to openness and transparency. Furthermore, the NRC staff has done consistently good work in reaching out to the public and to stakeholders in developing new regulatory implementation guidance and other related work. Greater openness and transparency will only build public confidence in the agency by highlighting the agency's strengths: the experience, expertise, and dedication of the NRC staff, as well as the vitality of the Commission.

Mr. Chairman, Senator Vitter, and members of the Subcommittee, on behalf of my fellow Commissioners, thank you again for the opportunity to appear before the Subcommittee. We look forward to continuing to work with you to advance the NRC's important public safety mission. We would be pleased to respond to any questions that the Subcommittee may have. Thank you.

January 8, 2010

The Honorable Byron Dorgan
Chairman, Subcommittee on Energy
and Water Development
Committee on Appropriations
United States Senate
Washington, D.C. 20510

Dear Mr. Chairman:

On behalf of the U.S. Nuclear Regulatory Commission (NRC), I am pleased to provide the following report on the NRC's process for reviewing applications for combined licenses for new nuclear power plants. This report fulfills H.R. 3183, Section 401, which requires the NRC to identify barriers and recommendations for streamlining the issuance of combined construction and operating licenses for new reactors, as well as any recommendations for overcoming those barriers to the House and Senate Appropriations Committees.

Consistent with its statutory responsibility, the NRC's primary focus is on ensuring the safety and security of nuclear power plants and radioactive materials, and protecting the public and the environment. Accordingly, for over 20 years, the NRC has been working to create an effective, efficient, and predictable new reactor licensing process. As a result of this work, the agency believes that no significant barriers exist in the new reactor licensing process. The agency is committed to continual improvement and implements improvements as they are identified in ongoing safety, security, and environmental reviews. In fact, the NRC has identified and implemented several measures to increase the predictability and efficiency of the new reactor licensing processes while maintaining the integrity of our safety, security, and environmental reviews. Background information on the development of the new licensing process is included in the enclosure to this letter.

While there are no significant barriers in the NRC's process, there are developments that have affected schedule predictability for COL applications. One of the chief developments is that applicants have referenced design certifications that are not final or certified designs that are being amended. As a result, COL applicants have submitted their applications while the design certification applications (or amendments thereto) are still undergoing review. All COL applicants to date are referencing proposed reactor designs that the NRC has not yet certified or are being amended. Although this circumstance is not precluded by NRC's process, the NRC cannot complete its safety, security, and environmental reviews of these COL applications until all NRC requirements are met, including certification of the referenced designs in accordance with 10 CFR Part 52 through rulemaking.

The actions taken by the NRC to prepare for new reactor licensing have been successful in both eliminating any barriers in the NRC's new reactor licensing process and maintaining the

focus on safety of new reactors. During the course of its reviews, the NRC staff will continue to look for efficiencies in the new reactor licensing processes without compromising safety, security, and protection of the environment.

Please contact me for any additional information that you may need.

Sincerely,

/RA/

Gregory B. Jaczko

Enclosure:
Overview of New Reactor
Licensing Process

cc: Senator Robert F. Bennett

Identical letter sent to:

The Honorable Byron Dorgan
Chairman, Subcommittee on Energy
and Water Development
Committee on Appropriations
United States Senate
Washington, D.C. 20510
cc: Senator Robert F. Bennett

The Honorable Peter J. Visclosky
Chairman, Subcommittee on Energy
and Water Development
Committee on Appropriations
United States House of Representatives
Washington, D.C. 20515
cc: Representative Rodney Frelinghuysen

Overview of the New Reactor Licensing Process

New Reactor License and Certification

In 1989, after several years of consideration, the NRC established in Title 10 of the *Code of Federal Regulations* (10 CFR) Part 52, a single-step process for licensing nuclear power plants. Prior to the issuance of 10 CFR Part 52, nuclear power plant licensing was a two-step process: an applicant first obtained a construction permit and then separately sought an operating license. As a result, the issuance of a construction permit and subsequent issuance of an operating license for a plant were usually years apart. For example, about a third of the reactors currently operating had a period of 10 years or more between the issuance of their construction permits and the issuance of their operating licenses. The shortest amount of time between construction permit and operating license was about 3 years; the longest amount of time was more than 20 years.

The first step in the two-step licensing process required a preliminary safety analysis report for application for a construction permit. The second step for application for an operating license required final design information and a supporting final safety analysis report. The time lag in this process sometime resulted in applicants changing designs or the NRC changing requirements between the construction permit phase and the operating license phase. Inevitably, such changes impacted the staff's review of the operating license. The passage of a significant amount of time also created the potential for a changing regulatory environment between the two reviews. This led to uncertainty in the basis used for the review of the operating license. In addition, under the two-step licensing process, the NRC conducted separate hearings for the construction permit and operating license, creating further uncertainty in the outcome and timing of the decision to issue an operating license.

Under the single-step process established in 10 CFR Part 52, an applicant can apply for a single combined license addressing both the construction and operation of a nuclear power plant. The combining of these two actions into a single license eliminates the need for two distinct reviews that are separated significantly in time. It also reduces the potential for changes in design and regulatory basis for review of the operating license. In addition, in the single-step licensing process, the hearings on construction and operation are combined, thereby further reducing the uncertainty in the licensing decision prior to construction of the plant. Our process under 10 CFR Part 52 also provides for a potential limited hearing upon a *prima facie* showing that the facility as constructed does not comply with the acceptance criteria in the combined license and that the specific operational consequence of nonconformance would be contrary to providing reasonable assurance of adequate protection of public health and safety.

In addition to the combined license process, 10 CFR Part 52 allows an applicant to address environmental and siting issues early by applying for and obtaining an early site permit for a site where the applicant intends to construct and operate a reactor. Additionally, a design vendor can resolve design issues early by applying for and obtaining certification for a standard design which can be referenced in a combined license application. As originally envisioned, an application for a combined license would include reference to a certified standard design (that had previously addressed design issues) and possibly an early site permit (that had previously resolved the siting and environmental issues). This would reduce the number and types of

issues that remain to be addressed during the review of the combined license application. However, this sequencing of applications is not required by the regulation and most of the current applicants have chosen to pursue combined licenses in parallel with ongoing design certification and siting reviews. As a result, the full benefits of 10 CFR Part 52 are unlikely to be achieved for the early combined license reviews. As design certifications are completed, the NRC anticipates that subsequent combined license applications will benefit more fully from the efficiencies of 10 CFR Part 52 while maintaining the integrity of the NRC's safety, security, and environmental reviews.

Public Participation and Hearings

Public participation is an important part of the NRC's regulatory processes and the NRC has taken steps to enhance the effectiveness and timeliness of public participation. A key component for public participation in the combined license and early site permit processes is the hearing process. Any person whose interests may be affected by a combined license or early site permit proceeding and desires to participate as a party in the proceeding is provided an opportunity to file a written petition for leave to intervene in accordance with 10 CFR 2.309. A hearing held as a result of a successful petition to intervene is a "contested" hearing. Such a hearing is separate and distinct from the mandatory, uncontested hearing required by the Atomic Energy Act.[1]

In order to enhance the efficiency and effectiveness of NRC adjudications while ensuring that the rights of all parties to fair, effective, and timely adjudications are maintained, the NRC established a set of model milestones in 2005 to use as a guideline in developing a hearing schedule. The model milestones for a hearing on a combined license, which are in 10 CFR Part 2, Appendix B, include for example, a milestone for the evidentiary hearing to begin within 175 days of the NRC staff's issuance of the safety evaluation report and the environmental impact statement. They also include a milestone for the presiding officer for the hearing to issue the initial decision within 90 days of the end of the evidentiary hearing and closing of the record. For the ongoing new reactor licensing reviews, all hearing schedules issued to date anticipate the presiding officer for the hearing will issue an initial decision on the application within the established milestone.

A key component for public participation in the standard design certification process is a public rulemaking. As part of the standard design certification process, the NRC issues a draft standard design certification rule in the *Federal Register* and seeks public comments for consideration. This is done prior to issuing a final standard design certification rulemaking and makes the overall process more efficient while maintaining effective public participation. The NRC recently completed a Lean Six Sigma streamlining review and initiated certain process changes, such as determining steps that could be completed in parallel rather than sequentially. These and other such changes will shorten the overall standard design certification rulemaking schedule by 7 months, from an estimated 19.5 months to 12.5 months without detracting from safety considerations.

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[1] The Commission has previously communicated to the Congress that it believes amending the Atomic Energy Act to eliminate the mandatory, uncontested hearing on combined license and early site permit applications could enhance the efficiency of NRC operations.

Design-Centered Review Approach

Also in 2006, the NRC recognized that the large number of anticipated applications presented a challenge regarding NRC's ability to complete the reviews in a timely manner. The NRC turned its focus to standardization to address this challenge in a manner that ensures that the reviews continue to adequately address safety, security, and environmental issues. The NRC developed the design-centered review approach based on a concept of one issue -- one review -- one position for multiple applications. This approach relied heavily on applicants' ability to standardize combined license applications referencing the same design. Standardization among combined licenses is achieved by the first (or reference) combined license application providing standard information that is used by subsequent combined license applications referencing the same design. Using this approach, the NRC conducts the review of a technical issue once on the initial application; where the same issue was appropriately standardized in subsequent applications, the NRC would apply its decision to those applications without further review. This standardized approach significantly reduces the scope of review for subsequent applications, and as a result the NRC will be able to optimize its review efforts, the resources needed to complete the review, and the review schedules. To ensure the success of this approach, the NRC called on applicants and vendors to establish design-centered working group activities to facilitate maximum standardization and early resolution of issues within a design center. The design-centered review approach and its associated activities are key to the timely completion of new reactor licensing reviews.

In 2008 and 2009, the NRC staff identified and eliminated unnecessary steps in the process for the review of subsequent combined license applications. Recognizing that the design-centered review approach significantly reduces the review scope of these applications, the NRC eliminated two of the six phases established for the review of subsequent combined license applications and thus reduced the resources needed for completing the subsequent combined license reviews without detracting from safety.

January 7, 2010 - Reminder: Biennial Web-Based Training Required For The No FEAR Act

The Notification and Federal Employee Anti-discrimination and Retaliation Act of 2002 (No FEAR Act) took effect on October 1, 2003. The No FEAR Act requires Federal agencies to provide training to all employees **biennially**. To comply with this provision, all employees are required to complete NRC's Web-based No FEAR Act training course by **February 28, 2010**.

The course explains the provisions of the No FEAR Act concerning the rights and remedies applicable to Federal employees under anti-discrimination and whistleblower protection laws. The course also provides information on NRC's Policy for Preventing and Eliminating Harassing Conduct in the Workplace.

You may access the No FEAR Act training course through iLearn. Remote users should not use CITRIX to access online courses in iLearn. Please use the following link: https://ilearnnrc.plateau.com/plateau/user/login.jsp. It should take less than 40 minutes to complete this required training.

Please contact the Professional Development Center at 301-492-2000 if you have questions about the course.

February 1, 2010 - Policy Reminder: Annual Reminder Notice of Notification and Federal Employee Antidiscrimination and Retaliation (No FEAR) Act

NRC's Office of Human Resources (HR) reminds all employees of their rights with respect to whistleblower protections and prohibited personnel practices in accordance with the Notification and Federal Employee Antidiscrimination and Retaliation (No FEAR) Act.

This notice is to ensure that our workforce is informed of its whistleblower rights and protections from prohibited personnel practices. Notice of whistleblower rights and prohibited personnel practices are posted in our headquarters buildings, as well as throughout our Regions. Employees need to be aware of their protections so they will report possible violations of law, rule or regulation, gross mismanagement, gross waste of funds, abuse of authority, or a substantial and specific danger to public health or safety without fear of retaliation.

Whistleblowing is defined as the disclosure of information that an employee reasonably believes is evidence of a violation of any law, rule, or regulation; or gross mismanagement, gross waste of funds, abuse of authority, or a substantial and specific danger to public health or safety unless disclosure of such information is specifically prohibited by law and such information is specifically required by Executive Order to be kept secret in the interest of national defense or the conduct of foreign affairs. An employee may confidentially report these matters to the U.S. Office of Special Counsel (OSC) or other sources, depending on the circumstances, including NRC's Office of the Inspector General.

Federal employees have the right to be free from prohibited personnel practices, including retaliation for whistleblowing. The following link is to the OSC's fact sheet, "Your Rights as a Federal Employee," which provides detailed information on prohibited personnel practices: http://osc.gov/documents/pubs/rights.htm.

NRC employees have protections afforded under the Energy Reorganization Act (ERA). The ERA makes it illegal to discharge or otherwise retaliate against an employee in terms of compensation, conditions, or privileges of employment because the employee or any person acting at an employee's request engages in protected activity, such as notifying your employer of an alleged violation of the ERA, or testifying before Congress or other Federal or State proceeding under the ERA. An ERA notice of protections is located at: http://www.internal.nrc.gov/HR/pdf/rights-under-era.pdf.

The No FEAR Act requires agencies to provide training about rights and remedies applicable under discrimination and whistleblower laws, and prohibited personnel practices. Agencies must provide training to new employees within 90 days of hire, and to all employees biennially. To comply with this provision, NRC updated the online course to make it more interactive, and to include new statutory employee protections. **All employees are required to complete the biennial training by February 28, 2010.** Beyond the required biennial training all employees are free to take training and test their knowledge of whistleblower protections and their rights at any time. Training on the No FEAR Act is available in *iLearn* at: https://ilearnnrc.plateau.com/plateau/user/login.jsp.

If you need further information or assistance regarding your rights and protections related to whistleblower activities and/or prohibited personnel practices, please contact your HR representative; a contact list is provided at: http://www.internal.nrc.gov/HR/contacts.html.

Equal Employment Opportunity Data Posted Pursuant to the *No FEAR Act*

Pursuant to Section 301 of the Notification and Federal Employee Anti-discrimination and Retaliation Act of 2002 (the No FEAR Act), the NRC has posted summary statistical data pertaining to complaints of employment discrimination filed by employees, former employees and applicants for employment under 29 CFR Part 1614. The specific data posted is described in section 301(b) of the Act and 29 CFR 1614.704.

NRC Discrimination Complaint Activity
FY 2004 - FY 2009

29 CFR § 1614.704(a) - (c)	29 CFR § 1614.705 Comparative Data Previous Fiscal Year Data					
Complaint Activity	**2009**	**2008**	**2007**	**2006**	**2005**	**2004**
Number of Complaints Filed in FY 1614.704(a)	8	13	11	13	10	12
Number of Complainants 1614.704(b)	8	12	11	13	9	12
Repeat Filers 1614.704(c)	0	1	2	2	0	0

29 CFR § 1614.704(d)	29 CFR § 1614.705 Comparative Data Previous Fiscal Year Data					
Complaint by Basis	**2009**	**2008**	**2007**	**2006**	**2005**	**2004**
Race	5	6	5	8	3	4
Color	1	2	0	0	0	4
Religion	1	0	0	0	0	1
National Origin	1	2	1	4	0	3
Sex (including complaint filed under Equal Pay Act)	0	3	4	4	3	4
Disability	1	0	3	3	4	2
Age	4	8	2	5	4	7
Reprisal	5	5	4	5	4	6
Other	0	0	0	0	0	0

29 CFR § 1614.704(e)	29 CFR § 1614.705 Comparative Data Previous Fiscal Year Data					
Complaint by Issue	**2009**	**2008**	**2007**	**2006**	**2005**	**2004**
Appointment/Hire	0	1	2	1	2	0
Assignment of Duties	4	5	2	7	6	5
Awards	1	2	2	6	2	2
Conversion to Full-time	0	0	0	0	0	0
Disciplinary Action						
Demotion	0	0	0	0	0	0
Reprimand	1	1	0	0	0	0
Suspension	0	1	0	0	0	0
Removal	0	1	1	0	1	0
Other	1	2	0	0	0	0
Duty Hours	0	0	0	1	0	0
Evaluation Appraisal	6	4	2	9	4	4
Examination/Test	0	0	0	0	0	0
Harassment						
Non-Sexual	6	6	4	9	7	5
Sexual	0	0	0	0	0	1
Medical Examination	0	0	0	0	0	0
Pay (Including Overtime)	1	0	0	0	0	0
Promotion/Non-Selection	1	10	6	6	2	8
Reassignment						
Denied	0	0	0	0	0	0
Directed	0	0	0	0	0	0
Reasonable Accommodation	0	0	1	0	2	0
Reinstatement	0	0	0	0	0	0
Retirement	0	0	0	0	0	0
Termination	0	1	1	0	0	0
Terms/Conditions of Employment	1	0	0	0	0	2
Time and Attendance	0	1	2	2	1	3
Training	0	2	2	4	4	5
Other	0	0	0	0	0	0

29 CFR § 1614.704 (f)			
Processing Time "...post the average length of time it takes to complete each step of the process for every complaint that is pending during any time of the then fiscal year..."		**FY 2009**	
		Number	**Average Days**
All complaints pending in Investigative State	1614.704(f)(1)	2	21
All complaints pending in Final Agency Decision/Action Stage		0	0
All complaints pending in which Hearing was not requested	1614.704(f)(2)	0	0
Time in Investigation Stage		0	0
Time to issue Final Agency Action		0	0
All complaints pending in which a Hearing was requested	1614.704(f)(3)	0	0
Time in Investigation Stage		0	0
Time to issue Final Agency Action		0	0

29 CFR § 1614.704(g)	29 CFR § 1614.705 Comparative Data Previous Fiscal Year Data					
Complaint Dismissed by Agency	**2009**	**2008**	**2007**	**2006**	**2005**	**2004**
Total Complaints Dismissed by Agency	5	0	3	1	0	0
Average days pending prior to dismissal	282	0	110	86	0	0

29 CFR § 1614.704(h)	29 CFR § 1614.705 Comparative Data Previous Fiscal Year Data					
Complaint Withdrawn by Complainants Pursuant to 1614.107(a)	**2009**	**2008**	**2007**	**2006**	**2005**	**2004**
Total Complaints Withdrawn	0	0	1	4	2	4

29 CFR § 1614.704(i)	29 CFR § 1614.705 Comparative Data											
Total Final Agency Actions Finding Discrimination	**2009**		**2008**		**2007**		**2006**		**2005**		**2004**	
	#	%	#	%	#	%	#	%	#	%	#	%
Total Number Findings 1614.704(i)(1)	0		0		0		0		0		0	
Without Hearing 1614.704(i)(2)	0		0		0		0		0		1	100
With Hearing 1614.704(i)(3)	0		0		0		0		0		0	

29 CFR § 1614.704(j)	29 CFR § 1614.705 Comparative Data Previous Fiscal Year Data											
Findings of Discrimination Rendered by Basis	**2009**		**2008**		**2007**		**2006**		**2005**		**2004**	
	#	%	#	%	#	%	#	%	#	%	#	%
Total Number Findings 1614.704(j)(1)	0		0		0		0		0		1	100
Number of Finds Rendered Without Hearing 1614.704(j)(2)	0		0		0		0		0		1	100
Number of Finds Rendered After Hearing 1614.704(j)(3)	0		0		0		0		0		0	
Race	0		0		0		0		0		0	
Color	0		0		0		0		0		0	
Religion	0		0		0		0		0		0	
National Origin	0		0		0		0		0		0	
Sex (include Equal Pay Act)	0		0		0		0		0		0	
Disability	0		0		0		0		0		1	100
Age	0		0		0		0		0		0	
Reprisal	0		0		0		0		0		0	

29 CFR § 1614.704(k)	29 CFR § 1614.705 Comparative Data Previous Fiscal Year Data											
Findings of Discrimination Rendered by Issue	2009		2008		2007		2006		2005		2004	
	#	%	#	%	#	%	#	%	#	%	#	%
Total Number Findings 1614.704(k)(1)	0		0		0		0		0		1	100
Findings Without Hearing 1614.704(k)(2)	0		0		0		0		0		1	100
Findings After Hearing 1614.704(k)(3)	0		0		0		0		0		0	
Appointment/Hire	0		0		0		0		0		0	
Assignment of Duties	0		0		0		0		0		0	
Awards	0		0		0		0		0		0	
Conversion to Full-time	0		0		0		0		0		0	
Disciplinary Action	0		0		0		0		0		0	
Demotion	0		0		0		0		0		0	
Reprimand	0		0		0		0		0		0	
Suspension	0		0		0		0		0		0	
Removal	0		0		0		0		0		0	
Other	0		0		0		0		0		0	
Duty Hours	0		0		0		0		0		0	
Evaluation Appraisal	0		0		0		0		0		0	
Examination/Test	0		0		0		0		0		0	
Harassment	0		0		0		0		0		0	
Non-Sexual	0		0		0		0		0		0	
Sexual	0		0		0		0		0		0	
Medical Examination	0		0		0		0		0		0	
Pay (Including Overtime)	0		0		0		0		0		0	
Promotion/Non-Selection	0		0		0		0		0		0	
Reassignment	0		0		0		0		0		0	
Denied	0		0		0		0		0		0	
Directed	0		0		0		0		0		0	
Reasonable Accommodation	0		0		0		0		0	0	1	100
Reinstatement	0		0		0		0		0		0	
Retirement	0		0		0		0		0		0	
Termination	0		0		0		0		0		0	
Terms/Conditions of Employment	0		0		0		0		0		0	
Time and Attendance	0		0		0		0		0		0	
Training	0		0		0		0		0		0	
Other	0		0		0		0		0		0	

29 CFR § 1614.704(l)	29 CFR § 1614.705 Comparative Data Previous Fiscal Year Data					
Complaints Pending From Previous Fiscal Years by Status	**2009**	**2008**	**2007**	**2006**	**2005**	**2004**
Total complaints from previous Fiscal Years 1614.704(l)(1)	0	2	2	2	3	2
Total Complainants 1614.704(l)(2)	0	2	2	2	3	2
Number of all pending complaints from previous Fiscal Years 1614.704(l)(3)						
Investigation	0	0	0	1	2	0
ROI issued, pending Complainant's action	0	0	0	0	0	0
Hearing	0	0	1	0	1	2
Final Agency Action	0	2	1	1	0	0
Number of closed complaints pending 1614.704(k)(3)						
Appeal with EEOC Office of Federal Operations	5	4	2	1	1	3

29 CFR § 1614.704(l)	29 CFR § 1614.705 Comparative Data Previous Fiscal Year Data					
Complaint Investigations	**2009**	**2008**	**2007**	**2006**	**2005**	**2004**
Number Pending Completion of Investigation	0	6	2	5	8	8
Pending Investigations Over Required Time Frames	0	0	0	2	2	5

Notification and Federal Employee Antidiscrimination and Retaliation Act Report

Fiscal Year 2009

Enclosure

TABLE OF CONTENTS

I. Executive Summary

The U.S. Nuclear Regulatory Commission (NRC) provides its fiscal year (FY) 2009 Annual Report to Congress as required by Section 203 of the Notification and Federal Employee Antidiscrimination and Retaliation Act of 2002 (No FEAR Act), Public Law 107-174.

The NRC's mission is to license and regulate the Nation's civilian use of byproduct, source, and special nuclear materials to ensure adequate protection of public health and safety, promote the common defense and security, and protect the environment. The NRC is headed by a five-member Commission. The President designates one member as Chairman and official spokesperson. The Executive Director for Operations (EDO) carries out the policies and decisions of the Commission. During FY 2009, the agency's workforce increased by approximately 100 employees, and at the end of this period, the agency had more than 3,900 permanent employees. To accommodate the growth in staff, the agency obtained additional space for its headquarters employees in several buildings in Montgomery County, Maryland. This expansion requires the agency to be more attentive to proper notification of No FEAR Act rights; the agency has been successful in this task. NRC's headquarters operations are located in offices in Rockville and Bethesda, Maryland, and its regional offices are located in King of Prussia, Pennsylvania; Atlanta, Georgia; Lisle, Illinois; and Arlington, Texas. The NRC's Technical Training Center is located in Chattanooga, Tennessee.

The Partnership for Public Service ranked the NRC the Best Place to Work in the Federal Government in 2009 based on the results of the 2008 Federal Human Capital Survey. NRC previously achieved the same ranking in 2007, based on the results of the 2006 survey. This rating reflects the agency's commitment to create a positive work environment.

The agency's informal and formal complaint activity decreased slightly. The agency resolved a significant number of complaints through the Alternative Dispute Resolution (ADR) program. The greatest number of complaints filed was under Title VII of the Civil Rights Act of 1964, as amended (Title VII). Age, race, and reprisal discrimination were the most frequently filed bases, and performance appraisal and harassment (nonsexual) were the most common issues. During this period, the agency issued nine final agency decisions. There were no findings of discrimination.

During FY 2009, there were two Federal district court cases filed against the agency. One case was dismissed and the second case is pending a decision by the court on a motion for summary judgment and/or dismissal. There were no reimbursements to the Judgment Fund, nor were there any judgments against the agency by a district court.

The agency's Office of Human Resources (HR) provides an ancillary process for dealing with issues of harassment raised under the NRC's Policy for Preventing and Eliminating Harassing Conduct in the Workplace. HR's efforts have been instrumental in encouraging early intervention to resolve workplace disputes. During FY 2009, no disciplinary actions were issued in conjunction with the Whistleblower Protection Act (WPA) or the agency's Policy for Preventing and Eliminating Harassing Conduct in the Workplace.

Since the enactment of the No FEAR Act, the NRC has had many accomplishments that have positively impacted the workplace climate. Examples include the following:

- Demonstrating continued support for the No FEAR Act by the Commission and senior agency executives through policy statements and in key meetings;

- Issuing a revised Comprehensive Diversity Management Plan (CDMP) and continuing promotion of the CDMP, which includes goals and strategies to achieve a positive and discrimination-free work environment where all employees are valued and use their diverse talents to support the agency's mission;

- Holding semi-annual equal employment opportunity (EEO) Commission briefings;

- Including a flow chart on the HR web page depicting the process for reporting harassing conduct in the workplace;

- Creating a web-based awareness training class on the Policy for Preventing and Eliminating Harassing Conduct in the Workplace;

- Posting in all facilities notices on Whistleblower Rights and Protections as required for Office of Special Counsel (OSC) 2302(c) compliance and certification [5 U.S.C § 2302(c)];

- Sponsoring an OSC briefing session for all managers and supervisors on their responsibilities under the No FEAR Act, specifically regarding Whistleblower regulations, Prohibited Personnel Practices, and the Hatch Act in February 2010;

- Conducting training programs and briefings for managers and employees on the No FEAR Act, EEO, diversity management, the Policy for Preventing and Eliminating Harassing Conduct in the Workplace, the WPA, prohibited personnel practices, reasonable accommodation, and ADR;

- Conducting EEO, affirmative employment, and diversity management program assessments to determine whether the agency is meeting the Equal Employment Opportunity Commission's (EEOC) standards for a model EEO program;

- Holding a number of Special Emphasis Program events and seminars to build a more positive work environment;

- Partnering with NRC offices to address issues through the CDMP organizational assessment process;

- Proactively addressing issues raised by staff and management to facilitate early resolution of differences; and

- Timely processing of all EEO complaints and ensuring that no backlog of cases occurs.

Additionally, the NRC has been committed to raising awareness and promoting the agency's ADR program to resolve complaints at the earliest stage.

II. Introduction

The No FEAR Act requires Federal agencies to submit annual reports to the Speaker of the House of Representatives, the President *pro tempore* of the Senate, the Committee on Governmental Affairs of the Senate, the Committee on Government Reform of the House of

Representatives, each committee of Congress with jurisdiction relating to the agency, the Attorney General, the EEOC, and the Office of Personnel Management (OPM). This report is submitted by the NRC to satisfy this reporting requirement.

III. Background

The No FEAR Act was signed into law by President George W. Bush on May 15, 2002, and became effective on October 1, 2003. The act requires each Federal agency to be accountable for violations of antidiscrimination and whistleblower protection laws and post on its web site certain statistical data relating to Federal sector EEO complaints filed with the agency. Section 203 of the No FEAR Act requires that each Federal agency submit an annual report to Congress not later than 180 days after the end of each fiscal year. Agencies must report on the number of Federal district court cases arising under each of the respective areas of law specified in the act in which discrimination was alleged, the status or disposition of cases, the amount of money required to be reimbursed to the Judgment Fund, the number of employees disciplined, any policies implemented related to appropriate disciplinary actions against a Federal employee who discriminated against any individual or committed a prohibited personnel practice, and an analysis of the data collected with respect to trends and causal analysis.

NRC's Office of Small Business and Civil Rights (SBCR) is responsible for administering and ensuring agency compliance with the Federal EEO laws, regulations, policies, and guidance that prohibit discrimination in the Federal workplace based on race, color, national origin, religion, sex, age, disability, or reprisal. SBCR is also responsible for preparing the agency's *Annual No FEAR Act Report*. HR, the Office of the Inspector General (OIG), and the Office of the General Counsel (OGC) also play a role in the implementation of the No FEAR Act for NRC employees.

IV. Data Posted for FY 2009

As required by the No FEAR Act, NRC timely posts and prominently displays a link to the No FEAR Act data on its public Web site (www.nrc.gov). This information is updated quarterly, not later than 30 calendar days after the end of each quarter. See Attachment 1 for details.

Overall, NRC's informal and formal complaint activity is relatively low. It is likely that this is due to a continual effort to maintain a positive work environment and the fact that a number of workplace disputes are resolved prior to complainants initiating the informal process. The following sections provide more information on the informal and formal complaints filed against the agency:

A. FY 2009 Informal and Formal Complaint Activity

During FY 2009, a total of 16 new informal complaints were initiated; only one informal complaint was carried over from the previous FY. Of the 17 informal complaints, 17 were closed during FY 2009. A total of 8 formal complaints were filed against the agency, and 20 formal complaints (several from prior fiscal years) were closed. Formal complaint activity for FY 2009 declined slightly from prior years.

During FY 2009, all EEO investigations were completed in a timely manner. As of the end of FY 2009, there were no cases pending investigation. During FY 2009, the agency issued nine final agency decisions; there were no findings of discrimination. In FY 2009, the agency settled a record number of cases (11) using ADR techniques to

include mediations and facilitated discussions. The NRC attributes the relatively low complaint activity to the use of proactive early intervention to resolve workplace disputes; the agency's ADR program; and the provision of EEO and No FEAR Act training to NRC managers, supervisors, and employees. The agency also emphasizes excellent customer service and responsiveness to issues.

B. Bases and Issues

The FY 2009 complaint data shows that complainants identified age, race, and reprisal as the most frequently filed bases that gave rise to complaints. Additionally, the data shows that complainants identified performance appraisals and harassment (non-sexual) as the most common issues for filing complaints. Several complaints included multiple bases. See Attachment 1 for details.

V. Civil Cases - Reimbursement to the Judgment Fund

Section 203(1) of the No FEAR Act requires that agencies include in their annual report the number of civil cases arising under the WPA and antidiscrimination laws, the status of such cases, and the amount of money reimbursed to the Judgment Fund. OPM published final regulations on May 10, 2006, to carry out the agency reimbursement provisions of the No FEAR Act. These final regulations state that the Federal Management Service (FMS), U.S. Department of Treasury, will provide written notice to an agency's Chief Financial Officer within 15 business days after payment from the Judgment Fund. The agency is required to reimburse the Judgment Fund within 45 business days after receiving the notice from FMS or must contact FMS to make arrangements in writing for reimbursement.

During FY 2009, there were two Federal district court cases filed against the agency. One case was dismissed and the second case is pending a decision by the court on a motion for summary judgment and/or dismissal. There were no reimbursements to the Judgment Fund, nor were there any judgments against the agency by a district court.

VI. Disciplinary Actions

Section 203(a)(6) of the No FEAR Act requires that agencies include in their annual report a detailed description of the policy implemented by the agency relating to disciplinary actions. These actions would be imposed against a Federal employee who discriminated against any individual in violation of any laws cited under section 201(a)(1) or (2), or committed another prohibited personnel practice that is disclosed in the investigation of a complaint alleging a violation of any of the laws cited under section 201(a)(1) or (2). Further, the act requires that, with respect to each such law, the agency report on the number of employees who were disciplined in accordance with such policy and the specific nature of the disciplinary action taken.

As indicated in the agency's prior No FEAR Act reports, the NRC's policy is to take appropriate disciplinary action against any employee who discriminates against an individual or engages in other prohibited personnel actions against an individual, including retaliation for lawful whistleblowing activities or for exercising an appeal, complaint, or grievance right. On February 1, 2010, the agency issued the Annual Reminder Notice of Notification and Federal Employee Antidiscrimination and Retaliation (No FEAR) Act. See Attachment 3 for details. This policy reinforces the agency's commitment to establishing a workplace free from discrimination, harassment, and retaliation.

During FY 2009, 19 claims of harassment were filed with HR; however, the inquiries did not result in findings of violations related to prohibited personnel practices. Therefore, no disciplinary actions were issued.

VII. Training Requirement for No FEAR Act

Section 202(c) of the No FEAR Act requires that agencies train employees about the Act. To comply with the provision, on September 30, 2005, the agency implemented a No FEAR Act web-based training course concerning the rights and remedies applicable to NRC employees under antidiscrimination and whistleblower protection laws. See Attachment 2 for details. The NRC's training was updated during early FY 2010. This new state-of-the-art training includes an introductory message from the Executive Director for Operations, interactive vignettes, and knowledge checks to reinforce learning. Approximately 98 percent of employees completed this refresher training course as of March 11, 2010. New employees are required to complete the training within 90 calendar days of being hired by the agency.

VIII. Trends, Analysis, and Practical Knowledge

Section 203(7) of the No FEAR Act requires that agencies examine trends, causal analyses, practical knowledge gained through experience, and any actions planned or taken to improve the complaint or civil rights program of the agency.

An analysis of complaints filed during FY 2009 shows there was a slight decrease in the number of informal and formal complaints filed against the agency. Complaint activity alleging race discrimination and reprisal remained consistent in FY 2009. Age complaints declined.

The agency continues to improve the processing time for investigations and ensure that all investigations are completed in a timely manner. The agency's average processing time for investigations was 198 calendar days, which was in accordance with EEOC regulations. This average includes four amended complaints.

The agency has made tremendous progress in developing standard operating procedures and internal controls to improve investigations. The agency has contractual arrangements to procure investigative services including an inter-agency agreement with the U.S. Postal Service. The NRC also has an internal staff of EEO investigators. SBCR's recruitment of a staff with considerable EEO complaint processing experience has resulted in the Civil Rights Program improving communication with complainants and managers; providing EEO training to employees to prevent discrimination; and reducing the processing time for investigations. The staff has also been able to publicize the ADR Program and provide training for collateral duty EEO Counselors on the No FEAR Act, ADR, reasonable accommodation, and EEO case law. SBCR continues to maintain contact with other Federal agencies and the Council of Federal EEO and Civil Rights Executives to gain knowledge and learn about best practices in the civil rights area.

The NRC's ADR program is used to help resolve workplace EEO disputes. The NRC has been committed to promoting ADR to resolve EEO complaints and offered ADR to 100 percent of all parties in both the informal and formal complaint processes. The ADR program manager meets with the agency official and employee separately to discuss the ADR process and the issues in dispute. The parties are encouraged to discover, discuss, and engage in creative methods of dispute resolution.

The agency's participation rate for ADR for formal complaints was 40 percent in FY 2009. During FY 2009, the NRC took several steps to increase the agency's use of ADR: (1) providing ADR awareness training, (2) holding informational exhibits about ADR, (3) distributing ADR brochures to employees, (4) evaluating assessments of ADR sessions, and (5) conducting an ADR brown bag luncheon.

The agency continues to make progress in the area of ADR including participating in the Federal Sharing Neutrals Program (SNP) by providing SBCR staff to conduct mediations for other Federal agencies and also by using SNP mediators to facilitate NRC mediation for EEO matters.

It is anticipated that the agency's ADR participation rate will increase to meet EEOC's goal of 50 percent through the use of these and other interactive events and initiatives.

March 27, 2010

The Honorable Joseph I. Lieberman
Chairman, Committee on Homeland
Security and Governmental Affairs
United States Senate
Washington, D.C. 20510

Dear Mr. Chairman:

I am pleased to provide a copy of the U.S. Nuclear Regulatory Commission's (NRC) Fiscal Year 2009 Annual Report on the Notification and Federal Employee Antidiscrimination and Retaliation (No FEAR) Act of 2002. The report is submitted in accordance with the requirements of Section 203 of the No FEAR Act. My Commission colleagues and I look forward to advising Congress of the NRC's efforts to maintain a model Equal Employment Opportunity program in the future.

If you have any questions about the report, please contact Ms. Corenthis B. Kelley, Director, Office of Small Business and Civil Rights (SBCR), at 301-415-7380 (corenthis.kelley@nrc.gov) or Ms. Lori Suto-Goldsby, Civil Rights Program Manager, SBCR, at 301-415-0590 (lori.suto-goldsby@nrc.gov).

Sincerely,

/RA/

Gregory B. Jaczko

Enclosure:
As stated

cc: Senator Susan Collins

Identical letter sent to:

The Honorable Joseph I. Lieberman
Chairman, Committee on Homeland
Security and Governmental Affairs
United States Senate
Washington, D.C. 20510
cc: Senator Susan Collins

The Honorable Nancy Pelosi
Speaker of the United States
House of Representatives
Washington, D.C. 20515

The Honorable Henry A. Waxman
Chairman, Committee on Energy
and Commerce
United States House of Representatives
Washington, D.C. 20515
cc: Representative Joe Barton

The Honorable John Berry
Director, United States Office
of Personnel Management
Theodore Roosevelt Building
1900 E. Street NW, Room 5A09
Washington, D.C. 20415

The Honorable Robert C. Byrd
President, Pro Tempore
United States Senate
Washington, D.C. 20510

The Honorable Edolphus Towns
Chairman, Committee on Oversight
and Government Reform
United States House of Representatives
Washington, D.C. 20515
cc: Representative Darrell Issa

The Honorable Barbara L. Boxer
Chairman, Committee on Environment
and Public Works
United States Senate
Washington, D.C. 20510
cc: Senator James M. Inhofe

The Honorable Stuart J. Ishimaru
Acting Chairman, United States Equal
Employment Opportunity Commission
131 M Street, NE
Washington, D.C. 20507

The Honorable Eric H. Holder, Jr.
Attorney General
United States Department of Justice
950 Pennsylvania Avenue, NW
Washington, D.C. 20530

April 1, 2010

The Honorable Russell D. Feingold
United States Senate
Washington, D.C. 20510

Dear Senator Feingold:

As required by Title VIII, Subtitle C, Sec. 8306, of the U.S. Troop Readiness Veterans' Care, Katrina Recovery, and Iraq Accountability Appropriations Act of 2007 (Public Law 110-28), I am informing you that for fiscal year 2009, the U.S. Nuclear Regulatory Commission (NRC) purchased articles, materials, and supplies valued at $211,346,149.00. The NRC did not directly purchase any articles, materials, or supplies manufactured outside the United States. Some NRC purchases were made through contracts awarded by other agencies, such as General Services Administration Supply Schedules. However, the NRC does not maintain data on the sources of articles, materials, or supplies in contracts awarded by other agencies.

The NRC looks forward to continuing its support of the Buy American program.

Sincerely,

/RA/

Gregory B. Jaczko

Identical letter sent to:

The Honorable Russell D. Feingold
United States Senate
Washington, D.C. 20510

The Honorable Joseph I. Lieberman
Chairman, Committee on Homeland
Security and Government Affairs
United States Senate
Washington, D.C. 20510
cc: Senator Susan Collins

The Honorable Edolphus Towns
Chairman, Committee on Oversight
and Government Reform
United States House of Representatives
Washington, D.C. 20515
cc: Representative Darrell Issa

Protecting People and the Environment

SEMIANNUAL STATUS REPORT ON THE LICENSING ACTIVITIES AND REGULATORY DUTIES OF THE UNITED STATES NUCLEAR REGULATORY COMMISSION

October 2009–March 2010

Note: The period of performance covered by this report includes activities occurring between the first day of October 2009 and last day of March 2010. The transmittal letter to Congress accompanying this report provides additional information to keep Congress fully and currently informed of the NRC's licensing and regulatory activities.

CONTENTS

I Implementing Risk-Informed and Performance-Based Regulations

The U.S. Nuclear Regulatory Commission (NRC) added Section 50.48(c) to Title 10 of the *Code of Federal Regulations* (10 CFR 50.48(c)) to allow existing nuclear power plant (NPP) licensees to adopt voluntarily a risk-informed and performance-based fire protection licensing basis, also known as National Fire Protection Association Standard 805. As of March 31, 2010, licensees for 50 reactor units have committed to transition to the new licensing basis. The licensees for two nuclear power stations, Shearon Harris and Oconee, volunteered to serve as pilot plants for this transition and submitted their license amendment requests on May 29, 2008, and May 30, 2008, respectively. The staff is currently reviewing these requests and has updated the regulatory guidance using lessons learned from these reviews.

II Reactor Oversight Process

The NRC continues to implement the Reactor Oversight Process (ROP) at all NPPs. The NRC also continues to meet with interested stakeholders on a periodic basis to collect feedback on the effectiveness of the process and to consider feedback for future ROP refinements.

ROP Program Activities

The agency's most recent performance assessments show that all plants continue to operate safely. The NRC Office of Public Affairs issued a press release on March 8, 2010, summarizing the 2009 annual end-of-cycle performance assessments and associated annual assessment letters for all nuclear plants. This information is publicly available on the NRC Web site.

The NRC staff completed a biennial review of the ROP baseline inspection program to ensure that the ROP continues to focus and realign resources on the most appropriate areas of reactor safety while maintaining the current level of overall inspection effort. The resulting changes and improvements to baseline inspection procedures became effective January 1, 2010.

In concert with the 2009 baseline inspection procedure realignment, the staff completed a major revision to the ROP radiation safety baseline procedures. It reorganized the inspection requirements in these procedures to align them with the functional areas in a nuclear power plant radiation protection program and clarified the basis for sampling the licensees' performance in each of these functional areas.

The NRC staff is issuing the results of its annual self-assessment of the ROP for calendar year (CY) 2009. Significant activities noted in the self-assessment report include the following:

- improved the effectiveness of the mitigating system performance index (MSPI) as a result of the lessons-learned review,
- provided training on the safety system functional failure (SSFF) performance indicator (PI) to the inspection staff to ensure consistent understanding and expectations,
- reviewed PIs already in use by industry (and internationally) for potential applicability to the PI program,
- provided recommendations to the Commission detailing potential improvements to the attraction and retention practices for resident inspector and senior resident inspector staff,

- continued to implement the operating experience smart sample process,
- issued the new significant determination process (SDP) for alternative mitigation strategies, the revised baseline security SDP, and the force-on-force (FOF) inspection SDP,
- continued development of analytical tools for low-power and shutdown applications,
- implemented a partnering initiative to review the NRC risk tools to identify areas for enhancement,
- revised Inspection Manual Chapter 0305, "Operating Reactor Assessment Program," to incorporate traditional enforcement, clarify safety culture concepts, and incorporate operating experience,
- revised the action matrix public Web site to provide a more current status of plant assessments,
- provided the Commission with plans and schedules for returning the Davis-Besse and Indian Point plants to normal NRC monitoring efforts, and
- initiated four regional ROP reliability initiatives.

The staff also issued SECY-10-0028, "FY 2009 Results of the Industry Trends Program for Operating Power Reactors," dated March 16, 2010, and made it available on the NRC public Web site.

The NRC hosted public meetings on October 15 and December 2, 2009, and January 21 and March 18, 2010, attended by the ROP Working Group and other interested stakeholders, to provide a forum for external feedback on staff initiatives. The ROP Working Group is composed of representatives from industry, the Nuclear Energy Institute (NEI), and NRC staff, who work to continuously improve the ROP and reactor safety. Topics discussed at these meetings included the following:

- PI topics, including changes to the MSPI emergency diesel generator (EDG) component boundary and EDG failure mode definitions in NEI 99-02, "Regulatory Assessment Performance Indicator Guideline," and MSPI basis document updates,
- performance assessment issues and general topics of interest in the performance assessment area, including the revision of Inspection Manual Chapter 0305,
- topics related to reactor inspection, including the SSFF guidance protocol, problem identification and resolution, inspection procedure improvements, and the update to NUREG-1022, "Event Reporting Guidelines: 10 CFR 50.72 and 50.73," issued October 2000, and
- frequently asked questions for ROP open and new PIs.

Other significant areas related to the ROP are described below.

Safety Culture

In 2006, the NRC enhanced the ROP to provide oversight for a licensee's safety culture. Currently, NEI and the industry are conducting a pilot implementation of the industry's proposed safety culture assessment process (NEI 09-07, "Fostering a Strong Nuclear Safety Culture, Revision 0") at four NPPs. On February 24, 2010, the NRC conducted a public meeting with NRC staff, NEI, industry representatives, and other interested stakeholders to discuss the NRC's observations of the industry's proposed approach to assessing and addressing nuclear safety culture issues. Should the NEI 09-07 process prove to be an effective and transparent means to cultivate and sustain a positive safety culture, the staff expects that the number of substantive cross-cutting issues identified under the ROP will decline across the industry. If that should be the case, the NRC may consider adjustments to the ROP to acknowledge the positive outcomes of the NEI 09-07 process, while still maintaining the agency's independent oversight of licensee safety culture.

10 CFR Part 26 Subpart I Final Rule

Subpart I, "Managing Fatigue," of 10 CFR Part 26, "Fitness-for-Duty Programs," establishes an integrated approach to fatigue management for NPP workers. The NRC developed these requirements on the premise that fatigue management requires collaboration between individual workers and the licensees, with fatigue prevention, detection, and mitigation as the primary components. Subpart I contains requirements to help combat the effects of acute and cumulative fatigue. Licensees implemented Subpart I on October 1, 2009.

To aid in the industry's continued understanding of the fatigue management requirements, the NRC sponsored a technical session during the 22nd annual NRC Regulatory Information Conference, held March 9–11, 2010. The session included presentations by staff and industry representatives from NEI and the STARS/USA alliance of nuclear power licensees. Also, the NRC staff continues to update the frequently asked questions public Web site regarding 10 CFR Part 26, Subpart I, as industry stakeholders send the NRC clarification and implementation inquiries.

Maintenance Rule

The objective of 10 CFR 50.65, "Requirements for Monitoring the Effectiveness of Maintenance at Nuclear Power Plants" (commonly referred to as the Maintenance Rule), is to require the monitoring of the overall continuing effectiveness of licensee maintenance programs to ensure that safety-related and certain nonsafety-related structures, systems, and components are capable of performing their intended functions.

On February 2 and 4, 2010, the NRC staff participated in the winter meeting of the Maintenance Rule Users Group, hosted by the Electric Power Research Institute (EPRI). The staff made a presentation and participated in discussions regarding system unavailability, system scoping rules, and performing risk assessments for planned and emergent work.

On February 19, 2010, the NRC staff held a public meeting with stakeholders to discuss proposed changes to the guidance in NUMARC 93-01, "Industry Guideline for Monitoring the Effectiveness of Maintenance at Nuclear Power Plants," to include emergency operating procedure scoping criteria, the definition of unavailability, and the consideration of external events in risk assessments.

Buried Piping

Several NRC stakeholders have raised concerns regarding leaking buried piping at nuclear reactor facilities. In SECY 09-0174, "Staff Progress in Evaluation of Buried Piping at Nuclear Reactor Facilities," dated December 2, 2009, the staff provided information to the Commission describing ongoing activities related to buried piping. For all of the actual events related to the degradation of buried piping, safety systems have remained operable, and there has been no challenge to piping structural integrity. Leaks from degraded buried piping containing radioactive or other hazardous material have not exceeded NRC regulatory limits. The staff concluded that current regulations and codes and standards are adequate to ensure the function of safety related piping. However, the staff will continue to participate in the American Society of Mechanical Engineers and NACE International (formerly the National Association of Corrosion Engineers) committees to develop enhancements related to advancements in technology or use of buried piping. In addition, the staff will participate with NACE to develop buried piping maintenance and corrosion protection standards specific to NPP applications.

The industry has developed a new Buried Piping Integrity Initiative that is intended to address the degradation of buried piping. The staff has met with the industry and will continue its review of the Buried Piping Integrity Initiative. In addition, the staff will evaluate the need for changes to NRC inspection activities related to licensee implementation of the Buried Piping Integrity Initiative.

Training and Accreditation at Nuclear Power Plants

Public health and safety depend on the proper operation, testing, and maintenance of power plant systems and components. Successful performance by NPP personnel is ensured by having workers achieve and maintain job-task qualifications through a process based on a systems approach to training. The Institute of Nuclear Power Operations (INPO) monitors the implementation of this training during the training program accreditation reviews conducted for the National Nuclear Accrediting Board. The NRC assesses the effectiveness of the accreditation process and industry's implementation of the systems approach to training by observing selected INPO-led accreditation team visits and meetings of the National Nuclear Accrediting Board.

The NRC and INPO hold an annual public coordination meeting on training-related issues. The purpose of the meeting is to discuss items of mutual interest concerning INPO's training program accreditation process.

International Affairs

The International Reporting System for Operating Experience (IRS) provides a Web-based forum for the international community to post and review reactor operating experience reports. The NRC staff participated in a technical meeting of IRS national coordinators on October 6–9, 2009, in Paris, France. These technical committee meetings are conducted annually to review the status of IRS operation and management. At this meeting, the participants reached consensus on and approved a draft revision of the IRS reporting guidelines document, under development for 3 years, which is expected to be published this year. The staff also made a presentation on a safety-significant event from the past year involving a failure to properly implement operating experience.

The NRC staff participated in the sixth meeting of the Committee on Nuclear Regulatory Activities Working Group on Operating Experiences, which occurred November 3–8, 2009, in Paris, France. The objective of the meeting was to discuss continuous improvement in the working group and its interactions with other working groups and to exchange recent significant operating experience, analysis, trends, and regulatory actions. The staff made a presentation on knowledge management at the NRC and on a recent generic communication that the NRC had issued. The working group concluded that a 1-day workshop, held on April 2010, on "Maintaining Knowledge on Operating Experience," would be beneficial as a followup to the discussion.

III Status of Issues Tracked in the Reactor Generic Issues Program

Currently, the NRC is tracking five open generic issues (GIs) in the GI management control system. The status of each is described below.

GI-186, "Potential Risk and Consequences of Heavy Load Drops in Nuclear Power Plants"

In July 2008, NEI submitted final industry-developed guidelines to address reactor vessel head drops consequence analyses and to establish a highly reliable handling system for reactor vessel head lifts and related applications. On September 5, 2008, the NRC staff issued a safety evaluation endorsing these guidelines, with one exception regarding acceptance criteria for the consequence analysis. The staff also issued supplementary inspection guidance for refueling and other outage activities that addresses implementation of the industry initiative on the control of heavy loads. The NRC posted this inspection guidance for inspector use and public review on September 18, 2008. On December 1, 2008, the NRC issued Regulatory Issue Summary 2008-28, "Endorsement of Nuclear Energy Institute Guidance for Reactor Vessel Head Heavy Load Lifts," to notify stakeholders of the NRC's endorsement of the guidelines in NEI 08-05, "Industry Initiative on Control of Heavy Loads," Revision 0. The NRC staff conducted sampling inspections to validate the initial implementation of the guidelines, and it plans to submit a closeout memorandum for review through the Advisory Committee on Reactor Safeguards (ACRS) during the third quarter of fiscal year (FY) 2010. The NRC has adjusted the closeout schedule to address inspection issues arising during the initial implementation of the industry initiative on heavy loads. The lead office for this GI is the Office of Nuclear Reactor Regulation (NRR).

GI-189, "Susceptibility of Ice Condenser and Mark III Containments to Early Failure from Hydrogen Combustion During a Severe Accident"

The NRC staff has reviewed industry proposals from licensees affected by GI-189 and has concluded that the proposed modifications will resolve GI-189 and provide benefit for certain security scenarios. On June 15, 2007, the NRC staff issued letters to affected licensees accepting the licensee's commitments. Since that time, licensee implementation and NRC verification inspections performed pursuant to NRC Temporary Instruction 2515/174, "Hydrogen Igniter Backup Power Verification," dated February 12, 2008, have been completed at all nine affected sites. The NRC staff is conducting activities to support closure of this GI in mid-2010. The lead office for this GI is NRR.

GI-191, "Assessment of Debris Accumulation on Pressurized-Water Reactor Sump Performance"

This GI concerns the possibility that, following a loss-of-coolant accident (LOCA) in a pressurized-water reactor (PWR), debris accumulating on the emergency core cooling system (ECCS) sump screen may result in clogging and restrict water flow to the pumps. As a result of this GI and the related generic letter, all PWR licensees increased the size of their containment sump strainers, significantly reducing the risk of strainer clogging. An associated issue, which needs to be resolved to close GI-191, concerns the potential for debris to bypass the sump strainers and enter the reactor core. In 2008, the NRC staff determined that a resolution of this issue would require additional industry-sponsored testing. The testing resulted in the submittal of a topical report to the NRC in April 2009 that remains under NRC review. Additional testing, requested by the NRC, yielded unexpected results, and therefore further testing is in progress. The NRC expects to issue a safety evaluation on the topical report that will provide guidance to licensees regarding use of the industry-developed test results and the topical report. Because industry testing is incomplete, the NRC has delayed the issuance of this safety evaluation until August 2010 or beyond. Licensees have also sought to take credit for an assumption (based on vendor testing) of reduced generation of debris following a LOCA. The NRC staff reviewed this testing and has been unable to conclude that the reduced generation assumption is valid. The Commission was recently briefed by the NRC staff and industry representatives on the status of the review of this issue, and will be providing further direction to the staff. The lead office for this GI is NRR.

GI-193, "Boiling-Water Reactor Emergency Core Cooling System Suction Concerns"

The task action plan to resolve this GI involves an evaluation of suppression pool designs, the dynamics of air entrainment in the suppression pool, and the impact of air entrainment on ECCS pump performance. Staff efforts are underway to estimate the maximum potential void fraction through scale experiments planned for 2010 at Purdue University. The purpose of the experiments is to provide clarification as to the potential for bubbles formed during a simulated LOCA blowdown to be transported in the wetwell to the ECCS pump inlets and, consequently, ingested into the ECCS pump impellers. The experiment test plan has been publicly released and testing is expected to start in the summer of 2010. The lead office for this GI is the Office of Nuclear Regulatory Research (RES).

GI-199, "Implications of Updated Probabilistic Seismic Hazard Estimates in Central and Eastern United States for Existing Plants"

While reviewing new reactor applications and updating seismic hazard information from the U.S. Geological Survey, the staff discovered that the estimated seismic hazard levels at some current central and eastern U.S. nuclear sites may be higher than the values used in designs and previous evaluations. The NRC opened GI-199 to assess the implications of updated seismic data and methods on operating nuclear plants. A comparison of the new seismic hazard data and methods with the earlier evaluations conducted by the NRC staff as part of the individual plant examination of external events program showed that seismic designs of operating plants in the central and eastern United States still provide adequate safety margins. At the same time, the staff recognized that the new seismic data and models could reduce available safety margins. EPRI is also evaluating the effects of new seismic hazard data and methods on U.S. nuclear plants. RES collaborated with EPRI to ensure that the complex seismic hazard assessments make use of available expertise for a sound technical approach.

The NRC plans a public meeting in the spring of 2010 and a briefing to the ACRS subcommittee in the summer of 2010. The lead office for this GI is RES.

IV Licensing Actions and Other Licensing Tasks

Operating power reactor licensing actions are defined as orders, license amendments, exemptions from regulations, relief from inspection or surveillance requirements, topical reports submitted on a plant-specific basis, notices of enforcement discretion, or other actions requiring NRC review and approval before they can be implemented by licensees. The FY 2010 NRC performance budget plan incorporates two output measures related to licensing actions: the number of licensing actions completed per year, and the age of the licensing action inventory.

Other licensing tasks for operating power reactors are defined as licensee responses to NRC requests for information through generic letters or bulletins; NRC responses to petitions under 10 CFR 2.206, "Requests for Action under this Subpart;" NRC review of generic topical reports; responses by NRR to regional office requests for assistance; NRC review of licensee analyses under 10 CFR 50.59, "Changes, Tests, and Experiments;" and final safety analysis report (FSAR) updates, or other licensee requests not requiring NRC review and approval before they can be implemented by licensees. The FY 2010 NRC performance budget plan incorporates two output measures related to other licensing tasks—the number of other licensing tasks completed per year and the age of the other licensing task inventory.

Table 1 shows the actual FY 2008 and FY 2009 results, the FY 2010 goals, and the midyear FY 2010 results for the two NRC performance plan output measures for operating power reactor licensing actions and other licensing tasks.

Table 1 Performance Plan

Output Measure	FY 2008 Actual	FY 2009 Actual	FY 2010 Goals	FY 2010 Midyear Actual
Licensing actions completed/year	1,054	1,002	≥ 950	458
Age of licensing action inventory	94.6% ≤ 1 year and 100% ≤ 2 years	93.3% 100%	90% ≤ 1 year and 100% ≤ 2 years	93.5% 100%
Other licensing tasks completed/year	678	541	600	348
Age of other licensing tasks inventory	96.6% ≤ 1 year and 100% ≤ 2 years	90.0% 100%	90% ≤ 1 year and 100% ≤ 2 years	94.0% 100%

V Status of License Renewal Activities

The NRC has issued renewed licenses to 59 of the 104 units licensed to operate. During this period (October 2009 to March 2010), the NRC issued the renewed licenses for the Three Mile Island Nuclear Station, Unit 1; Beaver Valley Power Station, Units 1 and 2; and Susquehanna Steam Electric Station, Units 1 and 2. The NRC is currently reviewing 13 license renewal applications for 19 units. The following is the status of applications currently under review. Previously issued semiannual reports describe activities that occurred before FY 2010.

Pilgrim Nuclear Power Station

On January 25, 2006, Entergy Nuclear Operations, Inc. (Entergy) submitted a license renewal application for the Pilgrim Nuclear Power Station (Pilgrim) to extend the operating license for an additional 20 years beyond the current license period. On March 26, 2010, the Commission remanded, in part, the contention on severe accident mitigation alternatives to the Atomic Safety and Licensing Board (ASLB). The other contention, involving management of the aging associated with buried piping and tanks, is pending before the Commission. Pilgrim's original 40-year licensing period will expire on June 8, 2012.

Vermont Yankee Nuclear Power Station

In January 2006, the NRC received an application from Entergy for renewal of the operating license for the Vermont Yankee Nuclear Power Station. The staff completed the environmental review of the application and is conducting the safety review. New England Coalition, Inc. (NEC) filed contentions that were related to metal fatigue, flow-accelerated corrosion, and steam dryer degradation. Subsequently, NEC submitted a motion to file a new contention that was denied by the ASLB. NEC has petitioned the Commission seeking reversal of the ASLB decision. This petition is pending before the Commission.

Indian Point Nuclear Generating Station, Units 2 and 3

On April 30, 2007, the NRC received an application from Entergy for renewal of the operating licenses for Indian Point Nuclear Generating Station, Units 2 and 3, for an additional 20 years beyond the current 40-year terms. During the reporting period, the NRC staff received new information from Entergy related to aquatic environmental impacts and severe accident mitigation alternatives. The NRC staff plans to issue the final supplemental environmental impact statement (SEIS) in mid-2010. Activities related to admitted contentions continue. Entergy filed a motion for summary disposition on certain admitted contentions, and various intervenors filed several amended and new contentions during the reporting period. The ASLB has not established a schedule for hearings as of the date of this report.

Prairie Island Nuclear Generating Plant, Units 1 and 2

On April 15, 2008, the NRC received an application from the Nuclear Management Company, now known as Northern States Power Company, a Minnesota corporation, for renewal of the operating licenses for Prairie Island Nuclear Generating Plant, Units 1 and 2, for an additional 20 years beyond the current 40-year terms. The NRC issued the final safety evaluation report (FSER) in October 2009, and the ACRS completed its review in December 2009. A staff petition for interlocutory review is currently pending before the Commission. The petition seeks reversal of the ASLB's January 28, 2010, decision to admit a late-filed contention regarding Prairie Island's safety culture.

Kewaunee Power Station

On August 14, 2008, Dominion Energy Kewaunee submitted an application for renewal of the operating license for the Kewaunee Power Station for an additional 20 years beyond the current 40-year term. The NRC issued the draft SEIS in February 2010 and held a public meeting on March 24, 2010, to solicit public comments concerning the preliminary recommendations of the Kewaunee Power Station draft SEIS for license renewal. The public comment period ended on April 23, 2010.

Duane Arnold Energy Center

On October 1, 2008, Florida Power and Light (FPL) Energy Duane Arnold submitted an application for renewal of the operating license for Duane Arnold Energy Center for an additional 20 years beyond the current 40-year term. The NRC issued the draft SEIS in February 2010 and held a public meeting on March 31, 2010, to solicit public comments concerning the preliminary recommendations of the Duane Arnold Energy Center draft SEIS for license renewal. The public comment period ended on April 19, 2010.

Cooper Nuclear Station

On September 30, 2008, the Nebraska Public Power District submitted an application for renewal of the operating license for the Cooper Nuclear Station for an additional 20 years beyond the current 40-year term. The NRC issued the draft SEIS in February 2010, and the staff held a public meeting on April 7, 2010, to solicit public comments concerning the preliminary recommendations of the Cooper Nuclear Station draft SEIS for license renewal. The public comment period ended on May 5, 2010.

Palo Verde Nuclear Generating Station, Units 1, 2, and 3

On December 11, 2008, Arizona Public Service Company submitted an application for renewal of the operating licenses for the Palo Verde Nuclear Generating Station, Units 1, 2, and 3, for an additional 20 years beyond the current 40-year terms. During the reporting period, the staff conducted multiple onsite audits and an inspection related to the safety and environmental review of the license renewal application.

Crystal River Nuclear Generating Plant, Unit 3

On December 16, 2008, the Florida Power Corporation submitted an application for renewal of the operating license for Crystal River Nuclear Generating Plant, Unit 3, for an additional 20 years beyond the current 40-year term. During the reporting period, the staff continued to conduct the environmental and safety review of the application in accordance with NRC regulations.

Salem Nuclear Generating Station, Units 1 and 2

On August 18, 2009, Public Service Enterprise Group (PSEG) Nuclear LLC submitted an application for renewal of the operating license for Salem Nuclear Generating Station, Units 1 and 2, for an additional 20 years beyond the current 40-year terms. During the reporting period, the NRC completed its acceptance review and found the application acceptable for docketing and review. The staff is conducting the environmental and safety reviews of the application and has conducted multiple onsite audits related to the safety and environmental review of the license renewal application.

Hope Creek Generating Station

On August 18, 2009, PSEG Nuclear LLC submitted an application for renewal of the operating license for Hope Creek Generating Station for an additional 20 years beyond the current 40-year term. During the reporting period, the staff completed its acceptance review and found the application acceptable for docketing and review. The staff is conducting the environmental

and safety reviews of the application and has conducted multiple onsite audits related to the safety and environmental review of the license renewal application.

Diablo Canyon Power Plant, Units 1 and 2

By letter dated November 23, 2009, Pacific Gas and Electric Company submitted an application for renewal of the operating licenses for Diablo Canyon Power Plant, Units 1 and 2, for an additional 20 years beyond the current 40-year terms. The staff performed an acceptance review and determined that the application was acceptable for docketing and review. The staff is conducting the environmental and safety reviews of the application in accordance with NRC regulations. The staff has held multiple public meetings near the plant and conducted an onsite scoping and screening methodology audit in March 2010. The NRC staff continued to accept public comments on the scope of the environmental review through April 12, 2010. The NRC received a petition for hearing and request to intervene from San Luis Obispo Mothers for Peace on March 22, 2010. An ASLB has been established to rule on the petition and to preside over any proceeding that may be conducted.

Columbia Generating Station

On January 20, 2010, Energy Northwest submitted an application for renewal of the operating license for Columbia Generating Station for an additional 20 years beyond the current 40-year term. The staff performed an acceptance review and determined that the application was acceptable for docketing and review. The deadline for filing hearing requests and petitions for intervention is May 14, 2010. The staff is conducting the environmental and safety reviews of the application in accordance with NRC regulations.

Generic Aging Lessons-Learned Report Update

The NRC is updating the license renewal guidance documents, which include NUREG-1801, "Generic Aging Lessons Learned (GALL) Report," and NUREG-1800, "Standard Review Plan for Review of License Renewal Applications for Nuclear Power Plants." This update focuses on lessons learned from the review of recent license renewal applications, operating experience, emerging issues, and the incorporation of interim staff guidance. The staff plans to issue these documents in December 2010.

Generic Environmental Impact Statement Update

The NRC is continuing the process of revising the generic environmental impact statement (GEIS) for the license renewal of NPPs and associated guidance documents in support of rulemaking. The NRC has conducted the GEIS revision with a focus on public participation and engagement, as evidenced by an extended public comment period. Members of the public were also encouraged to meet and discuss important issues directly with NRC technical staff during informal open houses before six public meetings held around the country. To further enhance accessibility and engagement, the NRC conducted an additional public meeting on the Internet, using Web streaming. The public comment period has since closed, and the NRC is now reviewing comments on the proposed rulemaking, GEIS revision, and associated guidance documents received from Federal and State agencies, industry, and members of the public regarding the environmental impacts of renewing NPP operating licenses for up to an additional 20 years.

VI Summary of Reactor Enforcement Actions

Reactor Enforcement by Region

For comparison purposes, the reactor enforcement statistics below are arranged by NRC Region, half-year, most recent half-year, FY to date, and two previous FYs. The statistics are also depicted in separate tables for the nonescalated and escalated reactor enforcement data, as well as separate tables for the escalated enforcement data associated with traditional enforcement and the ROP. The assessment of the significance of a violation is generally reflected by the severity level assigned to the violation (i.e., traditional enforcement). However, for most violations committed by power reactor licensees, the significance of a violation is assessed using the SDP under the ROP, which uses risk insights, where appropriate, to assist the NRC in determining the safety or security significance of inspection findings identified within the ROP.

These tables are followed by brief descriptions of the escalated reactor enforcement actions associated with both traditional enforcement and the ROP (as well as any other significant actions) taken during the applicable calendar half year.

Table 2 Nonescalated Reactor Enforcement Actions

		Region I	Region II	Region III	Region IV	TOTAL
Cited Severity Level IV or Green	1st Half FY 10	3	1	0	4	8
	2nd Half FY 10					
	FY 10 YTD Total	3	1	0	4	8
	FY 09 Total	4	3	0	6	13
	FY 08 Total	0	0	1	3	4
Noncited Severity Level IV or Green	1st Half FY 10	81	67	97	162	407
	2nd Half FY 10					
	FY 10 YTD Total	81	67	97	162	407
	FY 09 Total	173	110	205	221	709
	FY 08 Total	235	218	294	316	1,063
TOTAL Cited and Noncited Severity Level IV or Green	1st Half FY 10	84	68	97	166	415
	2nd Half FY 10					
	FY 10 YTD Total	84	68	97	166	415
	FY 09 Total	177	113	205	227	722
	FY 08 Total	235	218	295	319	1,067

NOTE: The nonescalated enforcement data above reflect the cited and noncited violations either categorized at Severity Level IV or associated with green findings during the referenced time periods. The numbers of cited violations are based on enforcement action tracking system data that may be subject to minor changes following verification. The monthly totals generally lag by 30 days because of the time needed for inspection reports and enforcement development. These data do not include green findings that do not have associated violations.

Table 3 Escalated Reactor Enforcement Actions Associated with Traditional Enforcement						
		Region I	Region II	Region III	Region IV	TOTAL
Severity Level I	1st Half FY 10	0	0	0	0	0
	2nd Half FY 10					
	FY 10 YTD Total	0	0	0	0	0
	FY 09 Total	0	0	0	0	0
	FY 08 Total	0	0	0	0	0
Severity Level II	1st Half FY 10	0	0	0	0	0
	2nd Half FY 10					
	FY 10 YTD Total	0	0	0	0	0
	FY 09 Total	0	0	0	0	0
	FY 08 Total	0	1	0	0	1
Severity Level III	1st Half FY 10	1	0	1	0	2
	2nd Half FY 10					
	FY 10 YTD Total	1	0	1	0	2
	FY 09 Total	1	0	2	0	3
	FY 08 Total	2	1	1	0	4
TOTAL Violations Cited at Severity Level I, II, or III	1st Half FY 10	1	0	1	0	2
	2nd Half FY 10					
	FY 10 YTD Total	1	0	1	0	2
	FY 09 Total	1	0	2	0	3
	FY 08 Total	2	2	1	0	5

NOTE: The escalated enforcement data above reflect the Severity Level I, II, or III violations or problems cited during the referenced time periods.

Table 4 Escalated Reactor Enforcement Actions Associated with the Reactor Oversight Process						
		Region I	Region II	Region III	Region IV	TOTAL
Violations Related to Red Findings	1st Half FY 10	0	0	0	0	0
	2nd Half FY 10					
	FY 10 YTD Total	0	0	0	0	0
	FY 09 Total	0	0	0	0	0
	FY 08 Total	0	0	0	0	0
Violations Related to Yellow Findings	1st Half FY 10	0	0	0	0	0
	2nd Half FY 10					
	FY 10 YTD Total	0	0	0	0	0
	FY 09 Total	0	0	0	0	0
	FY 08 Total	0	1	0	0	1
Violations Related to White Findings	1st Half FY 10	2	0	4	1	7
	2nd Half FY 10					
	FY 10 YTD Total	2	0	4	1	7
	FY 09 Total	2	4	6	1	13
	FY 08 Total	0	1	1	4	6
TOTAL Related to Red, Yellow, or White Findings	1st Half FY 10	2	0	4	1	7
	2nd Half FY 10					
	FY 10 YTD Total	2	0	4	1	7
	FY 09 Total	2	4	6	1	13
	FY 08 Total	0	2	1	4	7

NOTE: The escalated enforcement data above reflect the violations or problems cited during the referenced time periods that were associated with either red, yellow, or white findings. These data do not include red, yellow, or white findings that do not have associated violations.

Reactor Escalated Enforcement Actions and Other Significant Actions

(NOTE: This section includes security-related actions and confirmatory actions that are not included in the above tables.)

Dominion Energy Kewaunee, Inc. (**Kewaunee Power Station**)—EA-09-217

On October 13, 2009, the NRC issued a notice of violation to Dominion Energy Kewaunee, Inc. for a violation associated with a greater-than-green SDP finding at the Kewaunee Power Station. The details of the finding are official use only—security-related information.

Exelon Generation Company, LLC (**Dresden Nuclear Power Station**)—EA-09-172

On October 26, 2009, the NRC issued a notice of violation to Exelon Generation Company, LLC for violations associated with a white SDP finding as a result of inspections at the Dresden Nuclear Power Station, Unit 3. The white finding involved multiple violations, including: (1) 10 CFR 50.54(j), in which nonlicensed operators, during a maintenance activity, manipulated the control rod drive system hydraulic control unit insert riser isolation valves and the withdraw

riser isolation valves, an action that affected the reactivity of the reactor, in that the valve manipulations caused three control rods, D-7, E-7, and E-6, to move out of the core to positions 06, 18, and 16, respectively, (2) Technical Specification 3.1.1, in which the reactor was in Mode 4, the shutdown margin was not ≥ 0.38% Δk/k, and the licensee failed to initiate immediate actions to insert control rods, (3) Technical Specification 5.4.1, in which maintenance that affected the performance of the control rods, which are safety-related equipment, was performed in accordance with a written procedure that was not appropriate to the circumstances, (4) Technical Specification 5.4.1, in which the control room operators failed to implement a section of a procedure by not aggressively investigating annunciators and alarms and not accepting the alarms as correct until demonstrated otherwise, and (5) Technical Specification 5.4.1, in which the licensee failed to implement the written procedure that addressed the inability to drive control rods.

Northern States Power Company—Minnesota (**Prairie Island Nuclear Generating Plant**)—EA-09-193

On October 27, 2009, the NRC issued a notice of violation for a Severity Level III violation to Northern States Power Company—Minnesota. The licensee violated 10 CFR 50.9, "Completeness and Accuracy of Information," which requires, in part, that information provided to the Commission by an applicant be complete and accurate in all material respects. Specifically, on May 11, 2007, the licensee failed to report a medical condition of a senior reactor operator on a license renewal form, as required by 10 CFR 55.23, "Certification." This resulted in the NRC renewing the operator's license without a restriction for the medical condition.

South Carolina Electric & Gas Company (**Virgil C. Summer Nuclear Station**)—EA-09-113

On October 28, 2009, the NRC issued a notice of violation to South Carolina Electric & Gas Company for a violation associated with a greater-than-green SDP finding at the Virgil C. Summer Nuclear Station. The details of the finding are official use only—security-related information.

Southern Nuclear Operating Company, Inc. (**Joseph M. Farley Nuclear Plant**)—EA-09-065

On October 29, 2009, the NRC issued a notice of violation to Southern Nuclear Operating Company, Inc., as a result of an investigation completed at the Farley Nuclear Plant. The details of the finding are official use only—security-related information.

Entergy Operations, Inc. (**Waterford Steam Electric Station**)—EA-09-132 | EA-09-139

On November 2, 2009, the NRC issued a notice of violation to Entergy Operations, Inc., for a violation associated with a greater-than-green SDP finding at the Waterford Steam Electric Station. The details of the finding are official use only—security-related information.

Entergy Nuclear Operations, Inc. (**Palisades Nuclear Plant**)—EA-09-060

On November 10, 2009, the NRC issued an immediately effective confirmatory order and notice of violation to Entergy to confirm commitments made as a result of an alternative dispute resolution mediation session for a security violation at the Palisades Nuclear Plant. The details of the violation are official use only—security-related information.

R.E. Ginna Nuclear Power Plant, LLC (**R.E. Ginna Nuclear Power Plant**)—EA-09-249

On November 12, 2009, the NRC issued a notice of violation to Constellation Energy for a violation of 10 CFR Part 50, "Domestic Licensing of Production and Utilization Facilities," Appendix B, "Quality Assurance Criteria for Nuclear Power Plants and Fuel Reprocessing Plants," Criterion XVI, "Corrective Action," at the R.E. Ginna Nuclear Power Plant. The violation, which is associated with a white SDP finding, involved the failure to identify the cause of a significant condition adverse to quality. Specifically, after identifying corrosion on the turbine-driven auxiliary feedwater pump governor control valve stem on April 11, 2005, the licensee did not take adequate measures to identify the cause or prevent recurrence. This led to additional corrosion and binding of the governor control valve and resulted in the failure of the turbine-driven auxiliary feedwater pump on July 2, 2009.

NextEra Energy Seabrook, LLC (**Seabrook Station**)—EA-09-145

On November 12, 2009, the NRC issued a notice of violation to NextEra Energy Seabrook, LLC for a violation of 10 CFR Part 50, Appendix B, Criterion III, "Design Control," at Seabrook Station. The violation, which is associated with a white SDP finding, involved the failure to ensure that the design basis of the B emergency diesel generator (EDG) was correctly translated into work instructions and that measures were established for the selection of suitable parts and materials. Specifically, a design change to a flange on a jacket water cooling line to the B EDG turbocharger did not (1) control welding stresses, verify flange alignment, or evaluate vibration effects, (2) address the suitability of gasket material, or (3) consider flange performance history. This resulted in the failure of the flange during operation of the B EDG, leading to rapid loss of jacket cooling water and the inoperability of the EDG.

Exelon Generation Company, LLC (**Peach Bottom Atomic Power Station**)—EA-09-007 | EA-09-059

On December 1, 2009, the NRC issued an immediately effective confirmatory order to Exelon Generation Company, LLC (Exelon) to confirm commitments made as a result of an alternative dispute resolution mediation session held on September 3, 2009. This enforcement action is based on two violations of NRC requirements at Exelon's Peach Bottom Atomic Power Station (Peach Bottom), including the deliberate failure of a former reactor operator to report an arrest in a timely manner, and the deliberate failure of a former maintenance supervisor to provide complete and accurate information on a personal history questionnaire. Exelon agreed to take the following actions: (1) provide additional training on deliberate misconduct at Peach Bottom and other Exelon sites, for both employees and supervisors, (2) perform an assessment to verify the effectiveness of the deliberate misconduct training, (3) conduct training with licensed operators on the special obligations associated with holding an NRC license, (4) perform an assessment of Peach Bottom employee conduct, including trending, (5) conduct additional Exelon fleetwide training on the Behavioral Observation Program, fitness-for-duty requirements, and the Employee Assistance Program, (6) submit a lessons-learned article to two professional organizations requesting publication in their respective newsletters, and (7) discuss with INPO the possibility of incorporating training on deliberate misconduct into its supervisor and operator development programs. In consideration of these commitments, and other actions already completed by Exelon, the NRC agreed to refrain from issuing a civil penalty or notice of violation for these violations.

Tennessee Valley Authority (**Browns Ferry Nuclear Plant**)—EA-09-009 | EA-09-203

On December 22, 2009, the NRC issued a confirmatory order (effective immediately) to the Tennessee Valley Authority (TVA) to confirm commitments made as a result of an alternative dispute resolution mediation session held on December 4, 2009. At issue were two apparent violations of 10 CFR 50.7, "Employee Protection," identified during two separate investigations conducted by the NRC Office of Investigations (OI) at the Browns Ferry Nuclear Plant. The NRC acknowledged that TVA, before the mediation session, had taken numerous actions that address the issues underlying the apparent violations. As part of the agreement, TVA agreed to take a number of additional actions. These actions include implementing a process to review proposed adverse employment actions before they are taken to ensure compliance with 10 CFR 50.7 and to ensure the action could not negatively affect the safety-conscious work environment; issuing a fleetwide written communication from TVA's executive management, communicating TVA's policy and management expectations regarding the employee's right to raise concerns without fear of retaliation; performing two additional independent safety culture surveys before the end of CY 2013; and modifying contractor in-process training and new supervisor training to improve awareness of TVA's policy on a safety-conscious work environment. In recognition of these commitments, and the other actions already completed by TVA, the NRC agreed to refrain from issuing a civil penalty or notice of violation for these apparent violations.

Entergy Operations, Inc. (**Waterford Steam Electric Station**)—EA-09-018

On January 14, 2010, the NRC issued a notice of violation to Entergy Operations, Inc., for a violation of Technical Specification 6.8.1.a, "Procedures and Programs," at Waterford Steam Electric Station, Unit 3. The violation, which is associated with a white SDP finding, involved the failure to properly follow all procedural steps during replacement of the safety-related Train B 125-volt direct current battery in May 2008. Specifically, following replacement of the battery, the licensee did not (1) adequately torque all of the affected intercell connections, (2) obtain the required quality control inspector verification that all affected connections were properly tightened, (3) ensure that all the necessary intercell resistance checks were performed, and (4) obtain quality control verification that the intercell resistance checks met technical specification limits. As a result, an intercell connection on the battery loosened over time and, during testing on September 2, 2008, the battery was found to be inoperable.

Entergy Nuclear Operations, Inc. (**Palisades Nuclear Plant**)—EA-09-269

On January 20, 2010, the NRC issued a notice of violation to Entergy Nuclear Operations, Inc., for a violation associated with a white SDP finding as a result of inspections at the Palisades Nuclear Plant. This white finding involved the licensee's failure to meet the technical specifications requirements for fuel storage in the spent fuel pool. Specifically, the Region I spent fuel pool storage rack neutron absorber had deteriorated over the life of the plant and was less effective than required by the technical specifications. Corrective actions placed additional controls on the spent fuel pool.

PPL Susquehanna, LLC (**Susquehanna Steam Electric Station**)—EA-09-248

On January 28, 2010, the NRC issued a notice of violation for a Severity Level III violation to PPL Susquehanna, LLC. This finding involved a violation of 10 CFR 55.21, "Medical Examination," which requires, in part, that the licensed operator receive a medical examination by a physician every 2 years and meet the requirements of 10 CFR 55.33(a)(1). This regulation

states, in part, that the medical condition of the applicant will not adversely affect the performance of assigned duties or cause operational errors endangering public health and safety. The regulations in 10 CFR 55.33(b) state, in part, that if an applicant's general medical condition does not meet the minimum standards under 10 CFR 55.33(a)(1), the Commission may approve the application and include conditions in the license to accommodate the medical defect. Also, 10 CFR 55.23, "Certification," requires, in part, that a facility licensee certify the medical fitness of an applicant. PPL certified that it used the guidance of American National Standards Institute/American Nuclear Society (ANSI/ANS) 3.4 1983, which describes the health requirements. Contrary to the above, in 2009, a PPL operator did not meet a certain medical prerequisite for performing NRC-licensed operator activities. Specifically, on three separate occasions, the licensed operator performed duties, even though, as the result of a medical examination, a license condition had been imposed.

Exelon Generation Company, LLC (**Braidwood Nuclear Power Station**)—EA-09-259

On February 25, 2010, the NRC issued a notice of violation to Exelon Generation Company, LLC, for a violation associated with a white SDP finding, as a result of inspections at the Braidwood Nuclear Power Station. This finding involved a violation of 10 CFR Part 50, Appendix B, Criterion III, which requires, in part, that measures be established for the selection and review for suitability of the application of materials, parts, equipment, and processes that are essential to the safety-related functions of the structures, systems, and components. Specifically, on June 24, 2009, a safety-related valve failed to stroke full open during a surveillance testing procedure. Following the test failure, the licensee determined that water had entered the valve actuator through conduit penetration and caused corrosion to the valve internals, which caused the valve not to fully open.

FirstEnergy Nuclear Operating Company (**Davis-Besse Nuclear Power Station**)—EA-09-283

On February 25, 2010, the NRC issued a notice of violation to FirstEnergy Nuclear Operating Company for a violation associated with a white SDP finding as a result of inspections at the Davis-Besse Nuclear Power Station. This finding involved a violation of 10 CFR 50.54(q), which requires, in part, that a holder of an operating license follow emergency plans that meet the standards in 10 CFR 50.47(b). Also, 10 CFR 50.47(b) requires, in part, that the licensee have a standard emergency classification and action level scheme in use. The Davis-Besse emergency plan requires, in part, that the shift manager verify the indication of an off-normal event and classify the situation. Specifically, on June 25, 2009, the shift manager failed to verify the indications of an off-normal event or reported sighting, assess the information available from valid indications or reports of an explosion, and classify the situation as an alert, in accordance with the emergency action level conditions during an actual event.

VII Power Reactor Security and Emergency Response Regulations

The NRC is continuing its security inspection and oversight activities, as well as developing and implementing rules that incorporate applicable security and emergency preparedness (EP) enhancements into the regulations.

The NRC required licensees to be in compliance with the revised final rule, "Power Reactor Security Requirements," no later than March 31, 2010. The rule was published in the *Federal Register* (FR) on March 27, 2009, (74 FR 13926–13993) and became effective on May 26, 2009. It amended existing security regulations and added new security requirements pertaining to nuclear power reactors, including cyber security requirements. The NRC approved

40 requests from individual licensees that sought compliance deadline exemptions because of an inability to complete site reconfiguration requirements needed to achieve full compliance with certain technical aspects of the new rule. It should be noted that commercial nuclear facilities use a very limited number of vendors for these projects, so the competition for their services has intensified. Most licensees will be in full compliance with the new security requirements by year end.

Consistent with the new rule, all operating power reactor licensees submitted site-specific cyber security plans and program implementing schedules to the NRC by November 23, 2009. The agency is reviewing these plans and schedules to ensure that they meet the intent of 10 CFR 73.54, "Protection of Digital Computer and Communication Systems and Networks," and 10 CFR 73.55, "Requirements for Physical Protection of Licensed Activities in Nuclear Power Reactors Against Radiological Sabotage." In addition to reviewing 65 cyber security plans from operating reactor licensees, the staff is also reviewing seven cyber security plans from new reactor applicants.

The NRC is continuing force-on-force (FOF) inspections at each nuclear power reactor and Category I fuel cycle facilities on a normal 3-year cycle, using the adversary characteristics that are required as part of the Design Basis Threat and that are reflective of the current threat environment. The purpose of the FOF inspections is to assess and improve, as necessary, defensive strategies in place at licensed facilities. During the first and second quarters of FY 2010, the NRC completed FOF inspections at nine sites. The current FOF cycle ends in December 2010. The NRC remains committed to working with the industry to improve the realism and effectiveness of the FOF inspection program and continues to pursue methods to improve simulations.

The NRC developed a revised proposed rule amending 10 CFR Part 73, "Physical Protection of Plants and Materials," that contains the implementing provisions for Section 161A of the Atomic Energy Act of 1954, as amended (42 U.S.C. § 2201a). This rule requires new firearms background checks for armed security personnel and will permit certain NRC licensees to obtain enhanced weapons (preempting individual State laws prohibiting private entities from obtaining such weapons). The NRC worked with the U.S. Department of Justice, including the Federal Bureau of Investigation and the Bureau of Alcohol, Tobacco, Firearms, and Explosives, to develop the firearms guidelines required by the Act. The NRC published the guidelines in the FR on September 11, 2009. The proposed rule is currently scheduled to be published in the FR by the summer of 2010.

Following the U.S. Department of Energy (DOE) request to withdraw its license application for a high-level waste repository at Yucca Mountain, Nevada, the NRC is evaluating safety- and security-related regulations on independent spent fuel storage installations.

The NRC continues to make progress on implementing a comprehensive revision to EP regulations and associated guidance. On December 8, 2009, the NRC staff briefed the Commission on the status of the EP rulemaking initiative. The Federal Emergency Management Agency (FEMA) and several external stakeholders (i.e., New Jersey, North Carolina, Illinois, Riverkeeper, NEI, Pilgrim Watch, and a representative from the University of Missouri-Columbia) also gave presentations at the Commission briefing. Overall, during the public comment period, the NRC received 94 submittals from various stakeholders containing 687 individual comments.

Several milestones remain before the NRC staff submits the draft EP final rule package to the Commission. These milestones include completing the draft final rule and its supporting documents; working with FEMA to resolve cross-cutting issues; revising the NRC guidance documents, as appropriate; obtaining FEMA and NRC concurrence; and supporting the ACRS review.

Work is ongoing to establish personnel access authorization and physical security requirements for NPPs during the construction phase. Over the past 2 years, the NRC has held numerous meetings with the industry's New Plants Security Task Force to discuss the need for (and the scope of) security measures at new power reactor construction sites. Based in part on this collaborative effort with the industry, the NRC developed a technical basis to pursue an access authorization and physical security rulemaking for power reactor construction sites. The NRC intends to solicit input from stakeholders through public meetings and FR notices during the rulemaking process. The NRC has scheduled publication of the proposed rule by August 2010, and plans to publish the final rule in the FR in late 2011.

To date, all EP and physical security program licensing reviews are on schedule for new power reactor applications. The security policy division has increased resources for the development of policies and procedures, including qualification requirements for new reactor application reviewers. In addition, the NRC continues to work with the U.S. Department of Homeland Security (DHS) and FEMA to ensure that their deliverables meet the predetermined schedules, including the completion of 16 DHS consultation visits for docketed applications.

VIII Power Uprates

There are three types of power uprates. A measurement uncertainty recapture (MUR) power uprate is a power uprate of less than 2 percent and is based on the use of more accurate feedwater flow measurement techniques. Stretch power uprates (SPUs) are power uprates that are typically on the order of less than 7 percent and are within the design capacity of the plant. SPUs require only minor plant modifications. Extended power uprates (EPUs) are power uprates beyond the design capacity of the plant and, thus, require major plant modifications.

Licensees have applied for and implemented power uprates since the 1970s as a way to increase the power output of their plants. The NRC staff has reviewed and approved 129 power uprates to date. Approximately 17,179 megawatts-thermal (MWt) or 5,726 megawatts-electric (MWe) in electric generating capacity (the equivalent of about 5.7 NPP units) have been gained through the implementation of power uprates at existing plants. The NRC currently has 15 plant-specific power uprate applications under review. The 15 applications include eight MUR power uprates and seven EPUs.

In December 2009, the NRC staff conducted a survey of all NPP licensees to obtain information on whether they planned to submit power uprate applications over the next 5 years. Based on updates to this survey, licensees plan to request power uprates for 40 NPPs over the next 5 years.

IX New Reactor Licensing

The new reactor program consists of three subprograms: licensing, construction inspection, and advanced reactors. The NRC allocates its available resources to ensure that all three subprograms are successful. The NRC's primary focus is on the licensing and construction activities necessary to support near-term-build applications (i.e., plants expected to begin

operating in 2016–2017, if approved). The NRC is also investing in activities to establish the necessary regulatory framework and infrastructure for advanced reactors. In allocating resources and scheduling reviews, the NRC will consider resource needs for the successful implementation of the subprograms as well as information regarding an applicant's construction and commercial operation plans and their support for issue resolution. The NRC is using international experience and lessons learned to ensure safe designs, both domestically and internationally.

The NRC expects to conduct the license review of the next generation of NPPs using 10 CFR Part 52, "Licenses, Certifications, and Approvals for Nuclear Power Plants," which governs the issuance of standard design certifications (DCs); early site permits (ESPs), and combined licenses (COLs) for NPPs. The NRC staff is engaged in numerous ongoing interactions with vendors and utilities regarding prospective new reactor applications and licensing activities.

Over the past few years, the NRC has taken steps to improve the licensing process to increase the effectiveness, efficiency, and predictability of licensing a new reactor, while maintaining the NRC's focus on safety and security. The revision of 10 CFR Part 52 is one of the key accomplishments that contribute to this improvement.

The NRC has three DC applications and two DC amendments under review. Thorough and timely reviews of these DC applications are critical to the successful completion of the COL application (COLA) reviews. As of March 31, 2010, the NRC has 18 COLAs in house, 13 of which are under active review. Applicants for 5 COLAs have asked the NRC to suspend the review of their application. The NRC is midway through its reviews of the first COLAs that were submitted beginning in 2007. Since September 30, 2009, the NRC issued the final SEIS for North Anna Unit 3 and the draft environmental impact statement (DEIS) for South Texas Units 3 and 4 (in March 2010) and sent 40 chapters of DC application reviews, covering five design centers, to the ACRS. For the 13 active COLA reviews, the NRC has sent 36 chapters to the ACRS.

The NRC expects to complete both the safety and environmental portions of the first of these COLA reviews in 2011–2012. At this time, the NRC staff is making good progress on the applications currently under review. The process is complicated because some applicants are still revising their proposed designs while they are under NRC review. For all of the applications, it is important that applicants minimize design and siting modifications and work aggressively to resolve open issues. Furthermore, COL applicants are revising the submittal dates for responses to requests for additional information (RAIs), thereby causing schedule delays with resulting resource impacts. The NRC is working with applicants to overcome these challenges and is focusing on bringing the remaining technical issues to resolution. The NRC has moved forward on reviewing applications and is on a closure path for many issues.

Early Site Permit Reviews

To date, the NRC has issued four ESPs: System Energy Resources, Inc., for the Grand Gulf site in Mississippi; Exelon Generation Company, LLC, for the Clinton site in Illinois; Dominion Nuclear North Anna, LLC, for the North Anna site in Virginia; and Southern Nuclear Operating Company for the Vogtle Electric Generating Plant site ESP and limited work authorization (LWA) in Georgia.

On March 25, 2010, Exelon Nuclear Texas Holdings (Exelon) submitted an ESP application for the Victoria County Station (VCS) site located in Victoria County, Texas. The ESP application uses the plant parameter envelope approach, which establishes a surrogate plant in the form of a set of bounding parameters. The application does not include an LWA. In addition, Exelon has asked to withdraw the COLA for VCS Units 1 and 2 (NRC docket numbers 52-031 and 52-032), which was submitted to the NRC on September 2, 2008, upon docketing of the VCS ESP application. The NRC is scheduled to begin the VCS ESP acceptance review on April 1, 2010, and complete it by June 7, 2010.

Design Certifications

The NRC staff has issued DCs for four reactor designs that can be referenced in an application for an NPP: the General Electric (GE) Nuclear Energy Advanced Boiling Water Reactor (ABWR) design, the Westinghouse Electric Company, LLC (Westinghouse) System 80+ design, the Westinghouse Advanced Passive (AP) 600 design, and the Westinghouse AP1000 design.

The NRC staff is currently performing the following DC reviews: the GE Hitachi Nuclear Energy (GEH) Economic Simplified Boiling-Water Reactor (ESBWR), the Westinghouse AP1000 DC rule amendment, the AREVA Nuclear Power (AREVA) U.S. Evolutionary Power Reactor (U.S. EPR), the Mitsubishi Heavy Industries, Ltd. (MHI) U.S.-Advanced Pressurized-Water Reactor (US-APWR), and the South Texas Project Nuclear Operating Company (STPNOC) ABWR DC rule amendment. The status of the progress on each of these reviews follows.

The NRC received the ESBWR DC application on August 24, 2005. On November 5, 2009, the staff published an updated schedule for the ESBWR DC, based on information regarding the number and scope of remaining open items and the schedule for GEH RAI responses at that time. As of March 31, 2010, the staff is evaluating the recent responses to RAIs regarding GEH's setpoint methodology and the hydrogen concentration in the passive containment cooling system. The staff plans to issue the FSER for the ESBWR DC on January 18, 2011, and complete the DC rulemaking in September 2011.

On May 26, 2007, Westinghouse submitted an application to amend the AP1000 DC rule and also submitted Revision 16 to the AP1000 DC document (DCD). The NRC completed its acceptance review on January 18, 2008. Westinghouse submitted Revision 17 to the AP1000 DCD on September 22, 2008. On October 15, 2009, the NRC informed Westinghouse that the company had not demonstrated that certain structural components of the revised AP1000 shield building could withstand design-basis loads. Westinghouse will have to submit its plans to address the NRC's conclusions on the shield building design before the NRC can estimate its impact on the overall AP1000 amendment review. Once the DC review schedule is better understood, the NRC can address the effect on related review schedules for COLAs referencing the AP1000.

The NRC received the revised shield building design report on March 22, 2010 and the supporting analysis on May 7, 2010. The NRC expects to receive the test summary report in May 2010. After the NRC receives these documents, it will establish a new review schedule for the project. The NRC staff plans to complete the safety evaluation report (SER) by December 2010; however, the AP1000 DC amendment has high project schedule risks related to the shield building design. Westinghouse proposed some additional design changes in January 2010, and the NRC staff anticipates that additional changes will arrive in May 2010. The revised schedule will take these changes into account.

The NRC received the U.S. EPR DC application on December 11, 2007. By letter dated June 25, 2009, the NRC staff issued a revised review schedule for it. In accordance with that schedule, the staff has completed or is in the process of completing Phase 2 ("SER with Open Items") and Phase 3 ("ACRS Review of SER with Open Items") reviews of Chapters 2, 4, 5, 8, 10, 11, 12, 13, 16, 17, and 19 of the U.S. EPR DC application. By a letter dated February 16, 2010, the NRC staff notified AREVA that it was unable to complete its review of the remaining eight chapters within the published milestone schedule, because of changes to the previously committed schedule for providing responses to the staff's RAIs and new design information that AREVA recently submitted. The schedule letter dated February 16, 2010, transmits the results of the staff's latest estimated review schedule for the U.S. EPR DC application, based on the RAI response schedule and other information provided through January 29, 2010.

In the revised published milestone schedule, the Phase 2 completion date was delayed by 6 months, from June 30, 2010, to December 21, 2010. The effect of this delay on the Phase 6 ("Final SER with No Open Items") target finish date is 4 months. The overall review schedule for U.S. EPR DC now stands at 45 months.

MHI submitted its US-APWR DC application on December 31, 2007. The NRC staff completed its acceptance review on February 29, 2008, and published its review schedule for the DC application. The DC references 13 MHI US-APWR topical reports; the NRC has approved 3 and is reviewing the remaining 10. The DC FSER is scheduled for completion in September 2011. MHI submitted Revision 2 of the DCD on October 27, 2009. Critical review areas include the seismic analysis of safety-related buildings and new computer codes proposed by MHI for analyzing loss-of-coolant accidents. The NRC staff is currently evaluating these critical review areas to determine any potential impact on the review schedule.

On June 30, 2009, STPNOC submitted an application to amend the ABWR DC rule to address the requirements of the aircraft impact rule (discussed further below). The NRC staff completed the acceptance review and accepted and docketed the amended application. It issued RAIs to STPNOC for action and has received responses for all of them. The staff is writing the safety evaluation and estimates it will complete the rulemaking in August 2011.

Combined License Application Activities

As of March 31, 2010, the NRC had received 18 COLAs for review. It suspended five of these at the request of the applicants, as described below. The applications are listed below with a brief status of the NRC staff's review activities.

- Calvert Cliffs COLA: On July 13, 2007, Calvert Cliffs 3 Nuclear Project, LLC, and UniStar Nuclear Operating Services, LLC (UniStar), submitted a partial COLA for a U.S. EPR to be located at UniStar's Calvert Cliffs site near Lusby in Calvert County, Maryland.
  - The NRC completed its acceptance review of the partial COLA on January 25, 2008.
  - The applicants submitted the second and final part of the COLA on March 17, 2008.

- The NRC staff issued the schedule for the review of the full COLA on August 18, 2008.

- The current schedule reflects completion of the SER by July 2012, the DEIS in April 2010, and final EIS (FEIS) by February 2011.

- South Texas COLA: On September 20, 2007, STPNOC submitted a COLA for two ABWR units to be located at its STP site near Bay City in Matagorda County, Texas.

  - The NRC completed its acceptance review on November 29, 2007, but noted that it could not provide a schedule until STPNOC submitted additional information.

  - The NRC staff published a schedule for the STP COLA review on February 11, 2009.

  - On September 18, 2009, STPNOC submitted Revision 3 of the COLA.

  - On November 16, 2009, STPNOC requested approval for an LWA to construct permanent crane foundation retaining walls if this required NRC approval. In a letter dated January 8, 2010, the staff informed STPNOC that the walls met the definition of construction and would require NRC regulatory approval. On February 2, 2010, STPNOC withdrew the LWA request and requested an exemption to allow the start of construction activities for a crane foundation retaining wall before COL issuance. On March 23, 2010, STPNOC submitted a revised exemption request for the installation of crane foundation retaining walls. The staff is reviewing this request and has not developed a schedule.

  - On February 24, 2010, STPNOC submitted a letter identifying schedule challenges for issuing some chapters of the SER with open items to meet the Phase 2 milestone. On March 26, 2010, the NRC responded, identifying three chapters with issues that must be resolved before reaching the current Phase 2 milestone. Once the applicant provides the required information to resolve the issues, the staff will reassess the overall schedule impacts. The staff intends to continue its review, with the schedule for Phases 2 through 6 to be determined. The safety evaluations for other chapters are continuing.

  - NRC staff issued 10 of 19 chapters of the SER with open items on schedule in February 2010 for ACRS review. The staff also completed, on schedule, the milestone for developing a DEIS.

  - The NRC published the DEIS as NUREG-1937 on March 19, 2010, and scheduled the FEIS for completion in March 2011.

- Bellefonte COLA: On October 30, 2007, Tennessee Valley Authority (TVA) submitted a COLA for two AP1000 units to be located at TVA's Bellefonte site near Scottsboro in Jackson County, Alabama.

  - The NRC staff completed its acceptance review on January 18, 2008.

  - The NRC staff issued a review schedule on February 15, 2008.

- The hydrology review is delayed because of data pending from the applicant.
- TVA's tentative schedule for providing hydrology information is June 2010.
- On July 21, 2009, the NRC staff informed TVA that it intends to hold publication of the Bellefonte Unit 3 and 4 DEIS until after TVA's Board of Directors makes a decision and tells the NRC whether it will complete Units 1 and 2. TVA has indicated that it intends to make a decision no later than April 2011, resulting in a DEIS to be issued in the summer of 2011 and the FEIS to be issued in the summer of 2012.
- The NRC staff completed the second phase of its safety evaluation, SER with open items, in February 2010 without the hydrology, engineered safety features, and security information.
- The NRC has scheduled the FSER for completion in March 2011, but this date will be changed to reflect the DC review schedule and change in status from a reference combined license (RCOL) to a subsequent COL.

• North Anna COLA: On November 27, 2007, Dominion Virginia Power (Dominion) submitted a COLA for an ESBWR to be located at Dominion's North Anna site near Richmond in Louisa County, Virginia.

- The NRC completed its acceptance review on January 28, 2008.
- The NRC staff issued a review schedule on February 27, 2008.
- The NRC published the final SEIS as NUREG-1917 on March 17, 2010.
- The NRC has scheduled the FSER for completion in February 2011.
- The applicant is expected to submit information sufficient for the NRC staff's evaluation in the areas of (1) fiberglass piping for the plant service water system, (2) cyber security, (3) large area fires, and (4) physical security, consistent with the established safety review schedule. The staff is actively pursuing the resolution of open items with the applicant.
- The applicant has been evaluating technology options in an effort to decide whether to remain with the ESBWR or choose another design. The applicant's schedule would call for a technology decision during the second quarter of 2010. The staff is waiting for an announcement from Dominion regarding its decision.
- The applicant filed an exemption request on November 17, 2009, for a one-time exemption from the requirement of 10 CFR 50.71(e)(3)(iii) for an annual update of the FSAR. The applicant would submit the FSAR update, due in December 2009, by June 30, 2010. The staff granted the exemption on January 11, 2010.

- William States Lee III COLA: On December 13, 2007, Duke Energy submitted a COLA for two AP1000 units to be located at Duke's Lee site near Charlotte in Cherokee County, South Carolina.
  - The NRC completed its acceptance review on February 25, 2008.
  - NRC staff issued a review schedule on April 2, 2008.
  - On September 14, 2009, Duke Energy sent a letter to the NRC describing its 3-year delay for commercial operations for the William States Lee III Nuclear Station Units 1 and 2.
  - By letter dated September 24, 2009, Duke Energy submitted a supplement to its environmental report to the NRC, which describes the applicant's plan for an additional offsite source of makeup water.
  - On January 11, 2010, the NRC staff notified Duke Energy of a change to the William States Lee III, Units 1 and 2 COLA public milestone schedule for the environmental review, as a result of Duke changing its COLA to include an additional makeup pond. The change extends the schedule by approximately 10 months. The NRC has scheduled the DEIS for completion in July 2011 and the FEIS for completion in August 2012.
  - The NRC is currently scheduling the completion of the FSER for February 2011. However, the FSER review schedule is expected to change to reflect the revised review schedule for the AP1000 DC application and the applicant's plans to construct an additional offsite source of makeup water, as well as the applicant's change to its commercial operational schedule.
- Shearon Harris COLA: On February 19, 2008, Progress Energy Carolinas, Inc. (PEC) submitted a COLA for two AP1000 units to be located at PEC's Harris site near New Hill in Wake County, North Carolina.
  - The NRC completed its acceptance review on April 17, 2008.
  - The NRC staff issued a review schedule on May 16, 2008.
  - The NRC has scheduled the FSER to be completed by April 2011. However, this will depend on the schedules for review of the AP1000 DC amendment and Vogtle reference combined license application (RCOLA).
- Grand Gulf COLA: On February 27, 2008, Entergy Operations, Inc. (EOI) submitted a COLA for an ESBWR to be located at EOI's Grand Gulf site near Port Gibson in Claiborne County, Mississippi.
  - By letter dated January 9, 2009, EOI asked the NRC to suspend, until further notice, the NRC staff's review of the docketed COLAs for the River Bend Station, Unit 3, and the Grand Gulf Nuclear Station, Unit 3. EOI plans to reconsider the GEH ESBWR reactor technology, which was the basis for the COL. The NRC has responded to the request and has worked with EOI and other Federal agencies supporting the NRC staff to suspend the COLA review in a timely and

orderly manner, in an effort to preserve appropriately the work that has been accomplished.

- This review remains suspended.
- On March 25, 2010, EOI asked the NRC to maintain the Grand Gulf COLA in suspension and facilitate suspension of any supporting reviews by external agencies, including FEMA.

- Vogtle COLA: On March 31, 2008, Southern Nuclear Operating Company (SNC) submitted a COLA for two AP1000 units to be located at SNC's Vogtle site near Augusta in Burke County, Georgia.
  - The NRC completed its acceptance review on May 30, 2008.
  - The NRC issued a review schedule on June 27, 2008.
  - The NRC staff is currently conducting the safety and environmental reviews.
  - On August 26, 2009, the NRC issued the Vogtle ESP and LWA. The Vogtle ESP facilitates the COLA review.
  - The NRC staff received an LWA request from SNC on October 2, 2009. This request is part of the COLA and is in addition to the LWA that the NRC approved with the ESP application. The staff is preparing an FR notice acknowledging the receipt of the application and is developing a schedule that it will incorporate into the current Vogtle COLA schedule.
  - The NRC staff issued a revised safety review schedule on June 30, 2009, and scheduled the FSER for completion in April 2011, but this date is dependent on the AP1000 DC rule amendment review schedule.

- Virgil C. (V.C.) Summer COLA: On March 27, 2008, South Carolina Electric & Gas (SCE&G) submitted a COLA for two AP1000 units to be located at SCE&G's V.C. Summer Nuclear Station site in Fairfield County, South Carolina.
  - The NRC completed its acceptance review on July 31, 2008.
  - The NRC staff issued a review schedule on September 26, 2008.
  - The NRC scheduled the FEIS for completion in February 2011.
  - The NRC scheduled the FSER for completion in April 2011, but this date is dependent on the AP1000 DCA and the RCOLA review schedules.

- Callaway COLA: On July 28, 2008, AmerenUE submitted a COLA for a U.S. EPR to be located at AmerenUE's Callaway site in Callaway County, Missouri. Callaway's review was suspended at the request of the applicant in June 2009 and remains suspended.

- Levy County COLA: On July 30, 2008, Progress Energy Florida, Inc. (PEF) submitted a COLA for two AP1000 units to be located at PEF's site in Levy County, Florida.

- The NRC completed its acceptance review on October 6, 2008.
- The NRC staff issued a review schedule on February 18, 2009.
- In a letter dated May 1, 2009, PEF formally withdrew an LWA request associated with the site in Levy County, Florida.
- The NRC has scheduled the FEIS to be issued in July 2011.
- By letter dated September 16, 2009, the NRC staff informed PEF of a 2.5-month safety review schedule change for the Levy County COLA. The material properties and characteristics of the Levy County site result in a more complicated review and an anticipated higher number of RAIs in the geotechnical and structural engineering areas. This complexity and the applicant's responsiveness to RAIs have affected the schedule. The NRC changed the FSER completion date from May 2011 to July 2011. However, the FSER schedule is dependent on the AP1000 DCA and Vogtle RCOLA review schedules.
- In October 2009, PEF amended its application and moved its proposed commercial operation dates for Unit 1 and Unit 2 from 2016 and 2017 to 2018 and 2019, respectively.
- On January 20, 2010, the NRC staff notified PEF of a change to the Levy County Units 1 and 2 COLA public milestone schedule for the environmental review. The change extends the original schedule by approximately 10 months. The NRC revised the schedule to reflect the additional time needed to receive and resolve issues associated with RAIs, including U.S. Army Corps of Engineers (USACE) questions related to its determination regarding the least environmentally damaging practicable alternative. USACE is a cooperating agency in the development of the Levy County EIS.

- Victoria County COLA: On September 3, 2008, Exelon Nuclear Texas Holdings, LLC (Exelon) submitted a COLA for two ESBWR units to be located at Exelon's Victoria County Station (VCS) site near Victoria City in Victoria County, Texas.
  - By letter dated November 24, 2008, Exelon advised the NRC staff that it expected to designate an alternative reactor technology.
  - The NRC staff suspended most of the COLA review.
  - The existing application remains docketed.
  - By letter dated July 1, 2009, Exelon notified the NRC staff that it had decided to pursue an ESP, rather than a COL, for VCS. Exelon stated that it planned to submit the application either late in the fourth quarter of CY 2009 or in the first quarter of CY 2010.

- On March 25, 2010, Exelon submitted an ESP application for the VCS site located in Victoria County, Texas. The ESP application uses the plant parameter envelope approach and no LWA has been requested at this time. In addition, Exelon is requesting that the COLA for VCS Units 1 and 2, (NRC docket numbers 52-031 and 52-032), which was submitted to the NRC on September 2, 2008, be withdrawn upon docketing of the VCS ESP application. The NRC scheduled the VCS ESP acceptance review to begin April 1, 2010 and be completed by June 7, 2010.

- Fermi COLA: On September 19, 2008, Detroit Edison Company submitted a COLA for an ESBWR to be located at the Detroit Edison Company's Fermi site near Newport City in Monroe County, Michigan.

  - The NRC completed its acceptance review on November 25, 2008.

  - By letter dated June 30, 2009, the NRC staff issued a review schedule for the COLA.

  - The NRC scheduled the FEIS for completion in August 2011.

  - The NRC scheduled the FSER for completion in March 2012.

  - The applicant has submitted changes to the application to relocate the cooling tower, and the NRC staff's assessment indicates that there are no significant schedule impacts. However, the changes also affect the meteorological monitoring tower.

  - The DEIS schedule was contingent upon receipt of complete responses to environmental RAIs by December 2009, but the applicant did not provide some responses until March 25, 2010. The applicant's late response to environmental RAIs will cause the NRC to revise its schedule for preparing the DEIS.

  - The North Anna (ESBWR RCOLA) updated FSAR submittal is delayed from December 2009 to June 2010, and the resulting revised project schedule for North Anna may affect the Fermi schedule.

- Comanche Peak COLA: On September 19, 2008, Luminant Generation Company LLC (Luminant) submitted a COLA for two US-APWR units to be located at Luminant's Comanche Peak site near Glen Rose in Somervell County, Texas.

  - The NRC completed its acceptance review on December 2, 2008.

  - The NRC held public scoping meetings to support the EIS on January 6, 2009, and completed an environmental site audit on February 23, 2009.

  - The NRC has scheduled the FEIS for completion in May 2011.

  - The NRC has scheduled the FSER for completion in December 2011.

- The NRC completed Phase 1 of the safety review, issuance of initial RAIs, in October 2009.

- Luminant submitted Revision 1 to the COLA to the NRC in November 2009.

- River Bend COLA: On September 25, 2008, Entergy Operations, Inc. (EOI) submitted a COLA for an ESBWR to be located at EOI's River Bend Station site near St. Francisville, Louisiana.

  - By letter dated January 9, 2009, EOI requested a suspension, until further notice, of the NRC staff's review of the docketed COLAs for the River Bend Station Unit 3 and the Grand Gulf Nuclear Station Unit 3.

  - This review remains suspended except for FEMA's EP reviews, which are independent of any future selected reactor technology.

  - On March 25, 2010, EOI asked the NRC to maintain the River Bend application in suspension and facilitate suspension of any supporting reviews by external agencies, including FEMA.

- Nine Mile Point COLA: On September 30, 2008, Nine Mile Point Nuclear Project, LLC, and UniStar submitted a COLA for a U.S. EPR (Unit 3) to be located at UniStar Nuclear Energy's Nine Mile Point site in Oswego, New York.

  - On February 9, 2009, UniStar submitted a letter requesting that the NRC stagger the review of the Nine Mile Point Unit 3 COLA, relative to the current schedule of the Calvert Cliffs Unit 3 RCOLA. UniStar asked that some review activities, such as those associated with the DHS audit, EP (FEMA), the environmental scoping summary report, and the physical security plan, continue during the first half of 2009.

  - In a letter dated August 17, 2009, UniStar requested that the remaining portions of the review be sequenced so that the NRC staff technical reviews begin in September 2010.

  - The NRC issued its response to the applicant's letter on September 28, 2009. The response letter communicates to the applicant the NRC's decision to suspend most review activities on the application until at least September 2010 and to continue with the limited-scope activities associated with (1) hydrologic engineering, specifically the Lake Ontario tsunami effect study by the U.S. Geological Survey and the Lake Ontario ice effect study by USACE, resulting in a technical report for the NRC staff's consideration when evaluating the FSAR, (2) environmental scoping, specifically, delineation and binning of the comments received during the public scoping period, limited coordination with the New York State (NYS) Department of Environmental Conservation and USACE on joint Clean Water Act permitting and NYS DEIS activities, and limited maintenance of environmental files and records, and (3) emergency planning, specifically, the FEMA review of State and local emergency planning information through completion of advanced SER input.

- On December 1, 2009, UniStar submitted a letter requesting that the NRC temporarily suspend the Nine Mile Point Unit 3 COLA review, including any supporting reviews by external agencies, until further notice.

- Bell Bend COLA: On October 10, 2008, PPL Bell Bend, LLC, submitted a COLA for a U.S. EPR to be located at a new site adjacent to PPL's Susquehanna Steam Electric Station, in Luzerne County, Pennsylvania.

  - The NRC completed its acceptance review on December 19, 2008.

  - The NRC is developing the FEIS schedule and currently projects its completion by March 2012. The EPR power block (e.g., U.S. EPR reactor, safeguards buildings) requires relocation to address site wetlands avoidance issues. Also, the availability of water resources remains to be finalized with the Susquehanna River Basin Commission. This, as well as other potential design changes, could affect the project schedule.

  - The NRC has scheduled the FSER to be completed by March 2012.

  - This schedule depends on the Calvert Cliffs (RCOL) project's ability to meet its schedule.

- Turkey Point COLA: On June 30, 2009, FPL submitted a COLA for AP1000 units to be located at the existing Turkey Point site, located in Miami-Dade County, Florida.

  - The staff completed its acceptance review on September 4, 2009. The NRC staff accepted the application for docketing but did not develop the review schedules pending additional information from the applicant.

  - The staff has identified the following technical and environmental review areas that will affect the length of the review schedule: regional geology description, soil dynamic properties, use of generic curves for the dynamic testing of soil, hydrology, and DCD changes requiring additional information.

  - Based on additional information provided by the applicant on November 9, 2009, the NRC staff is developing review schedules in all review areas except geology and seismology.

  - The NRC staff expects to issue a complete review schedule in April 2010.

<u>Expected Application Submittals to the NRC:</u>

Based on letters from potential applicants, the NRC expects the following COLAs to be submitted:

- SNC informed the NRC that it intends to submit a COLA for a green-field unnamed site in late 2011.

- Transition Power Development, LLC, informed the NRC that it intends to submit a COLA or an ESP application by April 2010 for two nuclear units. The two units will be part of the Blue Castle Generation Project, to be located in east central Utah.

- The NRC received a proprietary letter indicating intentions to file a COLA for two new units in late FY 2010.

- The NRC received a proprietary letter indicating intentions to file a COLA for unspecified units in the 2010 to 2011 timeframe.

In addition, the NRC received a letter, dated February 11, 2010, from PSEG Power, LLC, and PSEG Nuclear, LLC, stating that they intend to submit an ESP application for the proposed PSEG site on or before May 28, 2010. PSEG has not selected a particular reactor design to be constructed at the site; therefore, the application uses the plant parameter envelope approach. This approach establishes a surrogate plant in the form of a set of bounding parameters. The application is to include a complete and integrated emergency plan and will not include an LWA.

Regarding DC renewals, the NRC received letters from GEH and Toshiba Corporation, notifying the NRC of their intent to submit renewal applications later in 2010 for the ABWR DC. On May 12, 1997, the NRC issued the ABWR DC rule in 10 CFR Part 52, Appendix A, "Design Certification Rule for the U.S. Advanced Boiling-Water Reactor," which is effective for 15 years.

Regulatory Infrastructure

The NRC staff continues to perform activities to enhance the effectiveness and the efficiency of the review processes for new reactor applications. These activities include pursuing changes to regulations, updating key guidance documents for NRC activities and application preparation, developing strategies and work products for optimizing the review of applications received, and developing a construction inspection program for new construction activities.

Examples of recent infrastructure activities are described below.

Inspections, Tests, Analyses, and Acceptance Criteria Maintenance Rulemaking

The NRC staff is developing a proposed rulemaking to amend the regulations related to verification of NPP construction activities through inspections, tests, analyses, and acceptance criteria (ITAAC) under a COL. Specifically, the staff is proposing new provisions that apply after a licensee has completed an ITAAC and submitted an ITAAC closure letter. The new provisions would require licensee reporting of new information materially altering the basis for determining that a prescribed inspection, test, or analysis was performed as required, or that a prescribed acceptance criterion had been met. The staff has worked with external stakeholders to establish thresholds for determining what types of unplanned events or licensee actions would materially alter the original ITAAC determination basis, and this information will be reflected in regulatory guidance for implementing the proposed rule. The proposed rule would also require licensee documentation of the basis for all ITAAC notifications. The NRC does not expect either the original ITAAC closure letters or the supplemental ITAAC closure letters that are being proposed in this rule to contain all of the detailed ITAAC closure information (e.g., analyses reports, test result packages). Licensees will maintain the detailed ITAAC closure information onsite and that information will be referenced in the ITAAC closure letters. This detailed onsite information is referred to as the ITAAC determination basis. The NRC staff is proposing to codify the requirement to maintain these ITAAC records. Finally, the NRC staff is proposing to require licensee notification of the completion of all ITAAC activities. This proposed notification would be a one-time letter stating that the licensee has successfully completed all ITAAC and is maintaining all acceptance criteria. This notification would support the finding that the

Commission makes under 10 CFR 52.103(g), that all ITAAC in the COL are met, before it allows fuel load and operation. The current schedule would have a proposed rule to the Commission by August 13, 2010.

Access Authorization and Physical Protection Requirements for NPP Construction Rulemaking

The NRC staff is preparing a proposed rulemaking to add provisions that would apply during the reactor construction phase. The new provisions would require (1) physical protection measures, (2) access authorization controls, (3) physical inspections, (4) performance of high-quality security sweeps, and (5) lockdown measures and procedures for securing the security- and safety-related structures, systems, and components before entering the operational phase. The staff held a public workshop on March 31, 2010, to discuss the draft proposed rule. The current schedule would have the proposed rule delivered to the Commission by mid-2010.

Aircraft Impact Assessment Rulemaking

The NRC published the final rulemaking on aircraft impact assessments in the FR on June 12, 2009 (74 FR 28111), and it became effective on July 13, 2009. The rule in 10 CFR 50.150, "Aircraft Impact Assessment," requires applicants for new nuclear power reactors to perform a design-specific assessment of the effects of the impact of a large commercial aircraft. The rule requires applicants to use realistic analyses to identify and incorporate design features and functional capabilities to show, with reduced use of operator actions, that either the reactor core remains cooled or the containment remains intact, and either spent fuel cooling or spent fuel pool integrity is maintained. The staff is evaluating industry guidance on the methodology for performing aircraft impact assessments for new plant designs. Information to comply with the rule has been submitted for all design centers currently under NRC review, and the NRC staff is reviewing the submittals.

10 CFR Part 73, Loss of Large Areas

The NRC published its final rulemaking on power reactor security requirements in the *FR* on March 27, 2009, and it became effective on May 26, 2009. The rulemaking was the primary vehicle to codify the requirements imposed on operating reactors by orders issued after September 11, 2001. The two areas receiving NRC attention are 10 CFR 50.54(hh) and 10 CFR 52.80(d). The NRC staff held discussions with NEI and the design-centered working groups on the development of guidance for mitigating strategies for loss of large areas caused by explosions or fires (Item B.5.b in Interim Compensatory Measure Orders for operating plants and 10 CFR 50.54(hh) in the final security rulemaking). The staff developed DC/COL-ISG-016, "Compliance with 10 CFR 50.54(hh)(2) and 10 CFR 52.80(d)," to endorse NEI 06-12, Revision 3. The NRC revised the final DC/COL-ISG-016 in consideration of public comments and presented it to the ACRS on April 8, 2010. Because the interim staff guidance and the NEI document contain security-related information, the documents are not publicly available.

Design Certification Rulemaking Streamlining

A potential scheduling issue that has been introduced by the concurrent reviews of DC applications and related COLAs is the need to complete the DC rulemaking before the issuance of a COL that relies on that DC. The typical rulemaking process includes publication of a proposed rule for public comment, resolution of public comments, and then the issuance of the final rule. The rulemaking process typically takes 2 years from the start of the effort to the publication of the final rule. Given the current schedules for completing some of the DCs and

related COLAs, the rulemaking process could be a significant critical path item for the issuance of the first COL in several design centers. The staff evaluated the DC rulemaking process as part of the NRC's Lean Six Sigma Program to identify possible ways to shorten it and coordinate activities (design reviews, rulemaking, licensing) to minimize the impact of the rulemaking on the COL schedules.

The NRC issued SECY-09-0018 on January 30, 2009, to describe the staff's streamlining effort. With the implementation of the various improvements, the staff believes that the DC rulemakings can be completed in about 1 year and can be timed to minimize possible delays in the COL licensing process. The staff is currently implementing the identified improvements. The staff drafted templates for DC proposed rules and discussed them in a public workshop on March 4, 2010.

Design Certification with Multiple Vendors

The staff has developed plans to address industry activities related to the ABWR DC. There are currently two parties who have stated their intention to submit renewals for the ABWR DC in early FY 2011. In addition, STPNOC submitted a request to amend the ABWR DC to comply with the aircraft impact assessment rule in June 2009. The staff is completing its technical review of this application. The staff expects to address issues associated with its treatment of the STPNOC amendment, if granted, in the SECY paper transmitting the proposed rulemaking on the amendment to the Commission. In addition, in a subsequent communication to the Commission, the staff will address issues associated with its treatment of multiple requests to renew the ABWR DC.

Regulatory Guides

During the first half of FY 2010, the NRC reviewed a total of 30 draft and final regulatory guides (RGs) in preparation for their issuance for public comment, for final issuance, or for withdrawal.

Of particular note were staff activities associated with cyber security. The recent security rulemaking included a new provision for cyber security, 10 CFR 73.54, "Protection of Digital Computer and Communication Systems and Networks." In January 2010, the NRC published RG 5.71, "Cyber Security Programs for Nuclear Facilities," which provides implementation guidance to applicants and licensees on an acceptable method for satisfying the requirements of 10 CFR 73.54. This document is publicly available.

Interim Staff Guidance

ISGs serve as interim measures to provide guidance to NRC staff during licensing reviews. They are also an important reference to assist applicants and licensees in understanding staff expectations. The information contained in ISGs is incorporated into other permanent NRC documents, such as RGs and SRPs, when they are periodically updated.

During the first half of FY 2010, the NRC issued seven ISGs for public comment. The seven issued for comment include the following:

- **DC/COL-ISG-13**, "Interim Staff Guidance on NUREG-0800, Standard Review Plan, Section 11.2 and Branch Technical Position 11-6, 'Assessing the Consequences of an Accidental Release of Radioactive Materials from Liquid Waste Tanks for Combined License Applications Submitted under 10 CFR Part 52'" (originally issued for comment on April 24, 2009, but the comment period was extended on February 3, 2010).

- **DC/COL-ISG-14**, "Assessing Ground Water Flow and Transport of Accidental Radionuclide Releases" (issued for comment on February 3, 2010).

- **DC/COL-ISG-16**, "Interim Staff Guidance DC/COL-ISG-016, 'Compliance with 10 CFR 50.54(hh)(2) and 10 CFR 52.80(d)'" (issued for comment on October 7, 2009). (Contains security information and is not available to the public.)

- **DC/COL-ISG-18**, "Section 17.4 Reliability Assurance Program" (issued for comment on October 22, 2009).

- **DC/COL-ISG-19**, "Gas Accumulation Issues in Safety-Related Systems" (issued for comment on November 3, 2009).

- **DC/COL-ISG-20**, "Implementation of a Probabilistic Risk Assessment-Based Seismic Margin Analysis for New Reactors" (issued for comment on October 8, 2009).

- **DC/COL-ISG-21**, "Review of Nuclear Power Plant Designs using a Gas Turbine Driven Standby Emergency Alternating Current Power System" (issued for comment on January 26, 2010).

The NRC issued the following five final ISGs in the first half of FY 2010:

- **DC/COL-ISG-6**, "Evaluation and Acceptance Criteria for 10 CFR 20.1406 to Support Design Certification and Combined License Applications" (issued final on October 2, 2009).

- **DC/COL-ISG-10**, "Review of Evaluation to Address Adverse Flow Effects in Equipment Other Than Reactor Internals" (issued final on November 3, 2009).

- **DC/COL-ISG-11**, "Finalizing Licensing-basis Information" (issued final on November 2, 2009).

- **DC/COL-ISG-15**, "Post-Combined License Commitments" (issued final on January 21, 2010).

- **DC/COL-ISG-17,** "Ensuring Hazard-Consistent Seismic Input for Site Response and Soil Structure Interaction Analyses" (issued final on March 24, 2010).

Standard Review Plan

The SRP is the primary document used by the NRC staff to review and evaluate proposed licensing actions for NPPs. It contains guidelines to ensure that staff evaluations lead to clear and defensible findings that demonstrate that the health and safety of the public will be maintained.

The SRP contains approximately 250 sections covering the entire scope of an NPP. Updating the SRP and other associated guidance documents is critical to ensuring that staff evaluations reflect the latest information and knowledge related to the safe operation of NPPs. The comprehensive SRP review and update program occurs on a 4-year cycle; it calls for a review of all sections of the SRP to determine which sections require an update and to budget and schedule the resources necessary to perform the updates. In the first half of FY 2010, the staff prepared plans to perform the next periodic update of the SRP in FY 2012.

To support its work in the area of digital instrumentation and control, the staff issued the following two proposed SRP updates for public comment in the first half of FY 2010:

Appendix 18-A, "Guidance for Crediting Manual Operator Actions in Diversity and Defense-in-Depth (D3) Analysis" (issued for comment on November 27, 2009); and

Branch Technical Position (BTP) 7-19, "Guidance for Evaluation of Diversity and Defense-in-Depth in Digital Computer-Based Instrumentation and Control Systems" (issued for comment on March 26, 2010).

International Activities

The NRC continues to use international experience and lessons-learned to ensure safe designs, both domestically and internationally. All of the new reactor designs under review in the United States are also under review, being coordinated, or in operation in other countries.

On October 6–9, 2009, the NRC staff participated in the fifth meeting of the Multinational Design Evaluation Program (MDEP) Digital Instrumentation and Controls (I&C) Working Group, held in South Korea. An NRC staff member chaired the working group discussions that included completing and forwarding letters to the MDEP Steering Technical Committee (STC), discussing proposals and making decisions on various common positions, and discussing lessons learned and insights associated with MDEP EPR Digital I&C Working Group. The group also visited the APR1400 simulator and Shin-Kori Units 1–4 construction sites to observe the construction progress and assess the project status.

On October 7–9, 2009, the NRC participated in a meeting of the MDEP STC at the Nuclear Energy Agency offices in Paris, France.

On November 20, 2009, the United Kingdom's (UK's) regulatory body, Nuclear Installation Inspectorate (NII), provided the NRC with advance copies of the final draft of its General Design Assessment (GDA) Step 3 Reports for the AP1000 and the UK EPR designs. The GDA is a four-step technical assessment process conducted before any site-specific license assessments are undertaken. The final reports were posted on the NII Web site on November 27, 2009. The summary reports will be supported by 15 detailed technical reports, which were not made available to the NRC before publication. The NRC staff has verified that there are no significant findings made by NII beyond the issues that have already been raised by the NRC. Throughout their reviews, the NRC staff has shared information through bilateral and multilateral (e.g., MDEP) activities. In areas such as accidents and transients, digital I&C, and probabilistic safety analyses, the NRC staff regularly exchanges information at MDEP working group meetings.

On November 30, 2009, the NRC staff and management held a video conference with the Chinese regulator, the National Nuclear Safety Administration (NNSA), to discuss structural engineering issues associated with the AP1000 shield wall design.

On December 7–8, 2009, the NRC staff met with five members of the Lithuanian State Nuclear Power Safety Inspectorate to discuss several issues, including the provision of training on the 10 CFR Part 52 licensing process, the development of the construction inspection program, and a presentation about NRC's quality assurance program.

On March 9, 2010, an NRC staff member attended a presentation by AREVA to the UK's NII on the EPR containment safety analysis. The presentation was made to support the EPR generic design approval process in the UK. The containment safety analysis was the topic of a recent MDEP meeting, and the NRC staff member was invited to attend this followon meeting by MDEP counterparts at NII. Observing the meeting allowed the NRC to understand the analysis supporting the U.S. DC, as well as the analysis supporting European licensing.

On March 11, 2010, the NRC hosted the fourth annual MDEP Policy Group meeting. This meeting was attended by the head regulators of the ten MDEP member countries. The NRO Deputy Office Director, chair of the MDEP STC, made a presentation on the activities and future plans of the STC and working groups. The Policy Group provided feedback to the STC and discussed policy issues, including membership and outreach to external stakeholders.

On March 11, 2010, the NRC staff, including the Office of International Programs, met with a representative of the current Italian regulator (ISPRA) to discuss plans for specific cooperation on an indepth study of a single process for authorizing new NPPs in Italy, which is similar to the NRC's COL process. The meeting also covered the anticipated creation of Italy's new agency for nuclear safety.

On March 14–21, 2010, the NRC staff travelled to China to advance cooperation with NNSA in the areas of construction and vendor inspection and high-temperature gas-cooled reactor technology, as well as to observe component fabrication and ongoing construction activities.

During the week of March 21–26, 2010, three NRC staff members travelled to China to participate in the third meeting of the MDEP AP1000 design-specific working group and visit the site of the first AP1000 reactor under construction in China.

From March 24 through April 2, 2010, three NRC staff participated in MDEP subgroup meetings on U.S. EPR severe accident assessment and probabilistic risk assessment.

Construction Inspection Program Developments

Limited work in preparation for construction is underway, and the NRC has begun construction inspection activities for this work. The infrastructure is in place to support FY 2010 inspection activities to verify quality construction. On March 8, 2010, site construction officially began at Vogtle Unit 3, with the start of engineered backfill operations authorized under the LWA. NRC Region II construction inspectors were present to view the initial activities and to begin the first onsite ITAAC inspection; Region II has selected the construction senior resident inspector and resident inspector for Vogtle and plans to open the resident office in the summer of 2010.

The NRC continues to make significant progress in the development of programs and procedures to support construction inspection. The NRC achieved the following milestones regarding the development of the construction inspection program:

- The NRC staff conducted seven public meetings in the Washington, D.C. area to discuss implementation details associated with ITAAC closure, licensee assessment, enforcement, and other topics related to the construction inspection program.

- In January 2010, the NRC staff received Revision 4 to NEI 08-01, "Industry Guideline for the ITAAC Closure Process Under 10 CFR Part 52," for 10 CFR Part 52 applicants and licensees on requirements for the ITAAC closure process. The revised industry guideline added critical sections on ITAAC maintenance. The ITAAC maintenance period covers the period from the time the licensee submits an ITAAC closure letter to the time the Commission authorizes the facility to operate. The NRC staff is currently reviewing the document. If the staff finds the industry guideline's revision acceptable, it plans to issue, by the end of the summer of 2010, the draft revision of RG 1.215, "Guidance for ITAAC Closure Under 10 CFR Part 52," that endorses the industry guide. The issuance of the draft RG revision will coincide with the publishing of the draft rule update to 10 CFR 52.99, "Inspection during Construction." The draft rule will contain updated text on ITAAC maintenance and new reporting requirements.

- On March 8, 2010, site construction activities authorized under the LWA issued by the NRC for Vogtle Unit 3 officially began with the placement of engineered backfill. NRC inspections of the construction activities began, in accordance with the NRC inspection program.

Advanced Reactors

The NRC continues to see increasing interest in design and possible licensing applications for advanced reactor designs. The NRC is currently working with DOE to coordinate various research and preapplication activities related to the next-generation nuclear plant (NGNP) program. In addition, the NRC is increasing its efforts to prepare for the review of small modular light-water reactors (LWRs).

The NGNP program remains one of the primary focus points in the area of advanced reactors, as the NRC staff develops the necessary infrastructure to license gas-cooled reactors, consistent with the joint NRC/DOE NGNP licensing strategy. The NGNP project is being conducted in two phases. Phase 1 comprises research and development, conceptual design, and the development of licensing requirements. Once conceptual designs are completed, by August 31, 2010, DOE will use this information to choose a design for the Phase 2 demonstration plant, including detailed design, licensing, and construction.

The NRC has added a second branch in the NRO Advanced Reactor Division, focused on small modular LWRs, and the NRC staff is expanding to support the added workload. Leveraging its efforts on the NGNP program, the NRC staff is identifying the generic policy and technical issues associated with licensing of small modular LWRs and is continuing to work to resolve them.

The NRC staff continued to focus its preapplication review efforts on advanced reactor designs in a more integrated manner. Focusing the attention of the NRC staff on the NGNP program

and on small modular LWRs continues to enhance the effectiveness and efficiency of other advanced reactor activities by doing the following:

- providing the information necessary to develop resource estimates for reviewing the designs for advanced reactors,
- allowing the NRC technical review staff sufficient time to become familiar with advanced reactor design concepts,
- providing feedback on key design, technology, safety research, and licensing issues,
- identifying interrelated or cross-cutting regulatory safety issues and beginning to identify reasonable resolution paths for these issues,
- identifying the technical skills necessary to review these designs and, as appropriate, hiring staff and finding potential contractors who possess the requisite knowledge, skills, and abilities, and
- Participating in meetings and drop-in visits with potential applicants for advanced reactor design positions.

The NRC staff also met with various international organizations regarding technical and licensing issues associated with small modular reactors. On February 3–4, 2010, the NRC staff conducted a workshop on generic licensing issues for these reactors.

Report to Congress on the Security Inspection Program for Commercial Power Reactor and Category I Fuel Cycle Facilities: Results and Status Update

Annual Report for Calendar Year 2009

Office of Nuclear Security and Incident Response
U.S. Nuclear Regulatory Commission
Washington, DC 20555-0001

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ABSTRACT

This report fulfills the requirements of Section 170D to Chapter 14, of the Atomic Energy Act of 1954 (42 U.S.C. 2201 et seq.), as amended by the Energy Policy Act of 2005, which states, "not less often than once each year, the Commission shall submit to the Committee on Environment and Public Works of the Senate and the Committee on Energy and Commerce of the House of Representatives, a report, in classified form and unclassified form, that describes the results of each security response evaluation conducted and any relevant corrective action taken by a licensee during the previous year." This is the fifth annual report, which covers calendar year 2009. In addition to information on the security response evaluation program (force-on-force inspections), the U.S. Nuclear Regulatory Commission (NRC) is providing additional information regarding the overall security performance of the commercial nuclear power industry and Category I fuel cycle facilities to keep Congress and the public informed of the NRC's efforts to protect public health and safety, the common defense and security, and the environment, through the effective regulation of the Nation's commercial nuclear power facilities and strategic special nuclear material.

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ACRONYMS

10 CFR	Title 10 of the *Code of Federal Regulations*
BWNOG	Babcock & Wilcox Nuclear Operations Group, Inc.
CAF	composite adversary force
CAT I	Category I
CY	calendar year
DBT	design-basis threat
DHS	U.S. Department of Homeland Security
FBI	Federal Bureau of Investigation
FOF	force-on-force
HEU	highly enriched uranium
IPCE	Integrated Pilot Comprehensive Exercise
IR	inspection report
MC&A	material control and accounting
NEI	Nuclear Energy Institute
NFS	Nuclear Fuel Services
NPP	nuclear power plant
NRC	U.S. Nuclear Regulatory Commission
PA	protected area
PI	performance indicator
PPSDP	physical protection significance determination process
ROP	Reactor Oversight Process
SDP	significance determination process
SGI	Safeguards Information
SL	severity level
SSNM	strategic special nuclear material

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1. INTRODUCTION

This report fulfills the requirements of Section 170D to Chapter 14, of the Atomic Energy Act of 1954 (42 U.S.C. 2201 et seq.), as amended by the Energy Policy Act of 2005, which states, "not less often than once each year, the Commission shall submit to the Committee on Environment and Public Works of the Senate and the Committee on Energy and Commerce of the House of Representatives a report, in classified form and unclassified form, that describes the results of each security response evaluation conducted and any relevant corrective action taken by a licensee during the previous year." This fifth annual report covers calendar year 2009. In addition to providing information on the security response evaluation program (force-on-force (FOF) inspections), the U.S. Nuclear Regulatory Commission (NRC) is providing additional information regarding the overall security performance of the commercial nuclear power industry and Category I fuel cycle facilities to keep Congress and the public informed of the NRC's efforts to protect public health and safety, the common defense and security, and the environment, through the effective regulation of the Nation's commercial nuclear power facilities and strategic special nuclear material.

Conducting FOF exercises and implementing the security inspection program are just two of a number of regulatory oversight activities that the NRC performs to ensure the secure, safe use and management of radioactive and nuclear materials by the commercial nuclear industry. In support of these activities, the NRC evaluates relevant intelligence information and vulnerability analyses to determine realistic and practical security requirements and mitigative strategies. The NRC also takes a risk-informed, graded approach to establish appropriate regulatory controls, to enhance its inspection efforts, to assess the significance of issues, and to require timely and effective corrective action of identified deficiencies by licensees of commercial nuclear power reactors and Category I fuel facilities. The NRC also relies on interagency cooperation to develop an integrated approach to the security of nuclear facilities and contribute to the NRC's comprehensive evaluation of licensee security performance.

The U.S. Nuclear Regulatory Commission (NRC) is providing to Congress the fifth annual report on the results of the NRC's security inspection program. This report for calendar year (CY) 2009 conveys the results of inspections for the reporting period.

This report provides both an overview of the NRC's security inspection and force-on-force (FOF) programs and summaries of the results of those inspections. It also describes the NRC's communications and outreach activities with the public and other stakeholders (including other Federal agencies). Unless otherwise noted, this report does not include security activities or initiatives of any class of licensee other than power reactors or Category I (CAT I) fuel cycle facilities. CAT I fuel cycle facilities are those that use or possess formula quantities of strategic special nuclear material (SSNM), which Title 10 of the *Code of Federal Regulations* (10 CFR), Section 70.4, "Definitions," defines as uranium-235 (contained in uranium enriched to 20 percent or more in the uranium-235 isotope), uranium-233, or plutonium.

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2. REACTOR SECURITY OVERSIGHT PROCESS

2.1 Overview

The NRC continues to implement the Reactor Oversight Process (ROP), which is the agency's program for inspecting and assessing licensee performance at operating nuclear power plants (NPPs) in a manner that is risk-informed, objective, predictable, and understandable. ROP instructions and inspection procedures help ensure that licensee actions and regulatory responses are commensurate with the safety or security significance of the particular event, deficiency, or weakness. Within each ROP cornerstone (see Figure 1), NRC inspectors implement detailed inspection procedures and NPP licensees report performance indicator (PI) results to the NRC. The results of these inspections and PIs contribute to an overall assessment of licensee performance.

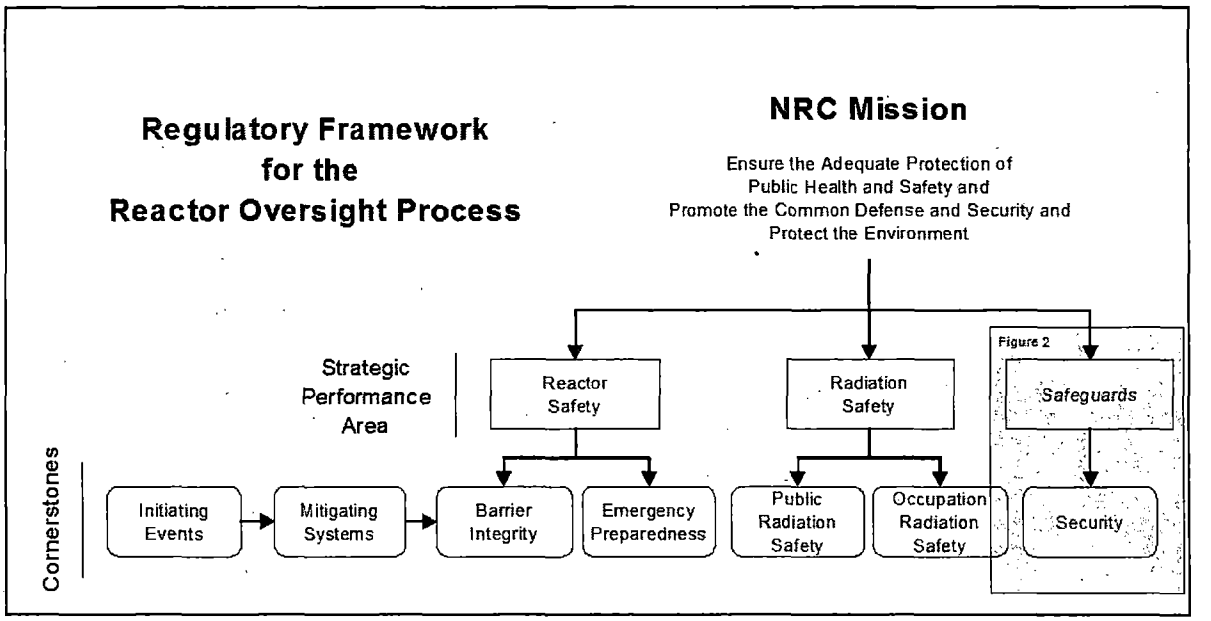

Figure 1: Cornerstones of the ROP

As part of its actions following the terrorist attacks of September 11, 2001, the NRC issued a number of orders requiring licensees to strengthen security programs in several areas. During 2009, the NRC completed a rulemaking that made generally applicable security requirements similar to the orders and added new requirements based on insights and experience, including stakeholder feedback. Through those orders and the subsequent rulemaking, the NRC significantly enhanced its baseline security inspection program for commercial NPPs. This inspection effort resides within the "security cornerstone" of the agency's ROP. The security cornerstone focuses on the following five key licensee performance attributes: access authorization, access control, physical protection systems, material control and accounting (MC&A), and response to contingency events. Through the results obtained from all oversight activities, including baseline security inspections and PIs, the NRC determines whether licensees comply with requirements and can provide high assurance of adequate protection against the design-basis threat (DBT) of radiological sabotage.

The security cornerstone's baseline inspection program has four objectives: (1) to obtain information providing objective evidence that the security and safeguards at NRC-licensed NPPs are maintained in a manner that contributes to public health and safety and promotes the common defense and security; (2) to determine that licensees have established measures to deter, detect, and protect against the DBT of radiological sabotage, as required by regulations and other Commission mandates, such as orders; (3) to determine the causes of declining performance in the physical protection arena before such performance reaches a level that could result in a degradation of reactor safety or undue risk to public health and safety; and (4) to identify those significant issues that may have generic or crosscutting applicability. These objectives help ensure the secure use and management of radioactive materials.

The security cornerstone's baseline inspection program includes seven inspectable areas to be reviewed periodically at each power reactor facility (see Figure 2). One of the inspectable areas (cyber security) is still under development and will be included in the inspection program at a later date.[1] The staff is coordinating with internal and external stakeholders in its current efforts to further develop this inspectable area, which will formalize and better define existing oversight activities. Another inspectable area, contingency response, is assessed through the conduct of FOF inspections, which the next section describes in detail.

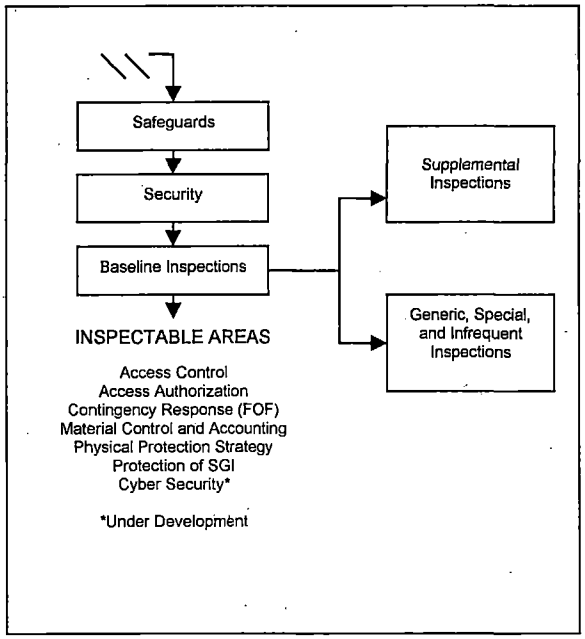

Figure 2: Inspectable areas of the security cornerstone

[1] Cyber Security actions were required by licensees by Order after 9/11 and subsequently codified through the issuance of 10 CFR 73.54. Previously, licensees addressed elements of cyber security in a section of their physical security plans. The new regulation required licensees to develop stand-alone cyber security plans, and they are in the process of implementing these plans. NRC inspection procedures and an oversight program are in the process of being developed.

If a licensee's performance degrades as indicated by quantity and significance of inspection findings and performance indicators, the Agency may conduct supplemental inspections in accordance with the security action matrix to ensure the licensee takes corrective actions to address and prevent recurrence of the performance weaknesses.

In response to security or safeguards events or to conditions affecting multiple licensees, the NRC may conduct generic or special inspections, which are not part of the baseline or supplemental inspection program. Examples of these events or conditions include, but are not limited to, resolution of employee concerns, security matters requiring particular focus, and licensee plans for coping with a security force strike or walkout.

2.2 Significance Determination Process

The significance determination process (SDP) for NPPs uses risk insights, where appropriate, to help NRC inspectors and staff determine the significance of inspection findings. These findings include both programmatic and process deficiencies. The NRC evaluates security-related findings using the baseline physical protection SDP (PPSDP). The PPSDP determines the security significance of security program deficiencies.

The NRC also uses a PPSDP to evaluate FOF performance findings. The significance of findings associated with FOF adversary actions depends on the impact on critical equipment (referred to as a target set) and a determination of whether these actions could have an adverse impact on public health and safety. The NRC also uses the baseline PPSDP to evaluate other security-related findings identified during FOF activities. These findings may include programmatic and process deficiencies that are not directly related to an FOF inspection outcome but are identified during the FOF exercise. In situations where the NRC cannot clearly determine the outcome of an exercise, it will consider the exercise indeterminate, and it may conduct an additional exercise, if appropriate.

The NRC assigns the following colors to inspection findings evaluated with the SDP:

- Green (very low security significance)
- White (low to moderate security significance)
- Yellow (substantial security significance)
- Red (high security significance)

The NRC conducts supplemental inspections in response to white, yellow, and red findings.

2.3 Finding and Violations

Inspection findings are associated with identified performance deficiencies and typically also relate to violations of NRC requirements. Violations associated with green findings are usually described in inspection reports (IRs) as noncited violations if the licensee has placed the issue into its corrective action program. A violation associated with a finding having greater-than-green significance is typically cited as a notice of violation requiring a written response detailing reasons for the violation and immediate and long-term corrective actions.

The NRC does not use the SDP to evaluate all inspection findings at CAT I fuel cycle facilities or those findings at commercial power reactor facilities that result in violations with willful aspects, or with potential or actual safety consequences, but instead addresses them through the traditional enforcement process. The staff categorizes these violations in terms of four levels of severity to show their relative importance or significance. It assigns Severity Level (SL) I to the most significant violations. In general, violations designated as SL I or II involve actual or high potential consequences for public health and safety or the common defense and security. SL III violations are cause for significant regulatory concern. SL IV violations are less serious, but are of more than minor concern. SL IV violations involve noncompliance with NRC requirements that are not considered significant, based on security risk. For particularly significant violations, the Commission reserves the use of discretion to assess civil penalties in accordance with Section 234 of the Atomic Energy Act of 1954, as amended.