

April 16, 2010

MEMORANDUM TO: Chairman Jaczko
Commissioner Svinicki
Commissioner Apostolakis
Commissioner Magwood
Commissioner Ostendorff

FROM: Michael R. Johnson, Director */RA/*
Office of New Reactors

SUBJECT: QUARTERLY REPORT ON THE STATUS OF NEW REACTOR
LICENSING ACTIVITIES – JANUARY 1 – MARCH 31, 2010

In response to the Commission's February 13, 2001, Staff Requirements Memorandum for COMJSM-00-0003, "Staff Readiness for New Nuclear Plant Construction and the Pebble Bed Modular Reactor," the enclosed report provides the status of new reactor licensing activities for the quarter beginning January 1, 2010, through March 31, 2010. The report outlines detailed information on the status of new reactor licensing reviews for design certifications, early site permits, and combined license applications for this quarter. It also provides information on regulatory infrastructure activities, advanced reactors to include an update on fusion technology, contracting activities, construction inspection activities, and international activities.

Enclosure:
As stated

cc: SECY
EDO
OGC
OCA
OPA
CFO

CONTACT: Amy Snyder, NRO/DNRL
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Status of New Reactor Licensing Activities January 1 – March 31, 2010

New Reactor Licensing

The new reactor program consists of three subprograms: licensing, construction inspection, and advanced reactors. The U.S. Nuclear Regulatory Commission (NRC) is allocating its available resources to ensure that all three subprograms are successful. NRC's primary focus is on the licensing and construction activities necessary to support near-term build (i.e., operation expected to begin in 2016-2017) applications. NRC is also investing in activities to establish the necessary regulatory framework and infrastructure for advanced reactors in order to position itself to succeed in the advanced reactor subprogram. In allocating resources among the subprograms and establishing scheduling for ongoing reviews, NRC will consider resource needs for the successful implementation of three subprograms as well as information regarding an applicant's construction and commercial operation plans and their support for issue resolution. NRC is using international experience and lessons-learned to assure safe designs both domestically and internationally.

The NRC expects to review applications for licenses for the next generation of nuclear power plants using Title 10 of the *Code of Federal Regulations* (10 CFR) Part 52. Part 52 governs the issuance of standard design certifications (DCs), early site permits (ESPs), and combined licenses (COLs) for nuclear power plants.

The NRC has three DC applications and two DC amendment applications under review. Thorough and timely reviews of these DC applications are critical to successful completion of the combined license application (COLA) reviews. As of March 31, 2010, the NRC has 18 COLAs in-house, 13 of which are under active review. NRC is midway through its reviews of the first COLA reviews that were submitted beginning in 2007.

During this reporting period, NRC has issued the Final Supplemental Environmental Impact Statement (EIS) for North Anna Unit 3 in March 2010, and issued the Draft EIS for South Texas Units 3 and 4 in March 2010. In addition, the NRC issued five DC safety evaluation report (SER) chapters covering three design centers to the Advisory Committee on Reactor Safeguards (ACRS), and issued 15 reference COLA (RCOLA) chapters covering two design centers to the ACRS.

The NRC expects to complete both the safety and environmental portions of the first of these COLA reviews in 2011-2012. NRC's experience with these applications has demonstrated that Part 52 and the design-centered review approach have been successful in achieving standardization around a selected design and have resulted in a clear safety focus and resource savings. At this time, the NRC staff is making good progress on the applications it currently has under review. The reviews have been complicated because some applicants are revising the proposed design currently under review. For all of the applications, it is important that applicants minimize design and siting modifications and work aggressively to resolve open issues. Further, COL applicants are revising the submittal dates for responses to requests for additional information (RAIs), thereby causing schedule delays and therefore causing resource impacts. The NRC is working with applicants to overcome these challenges. NRC is focusing on driving the remaining technical issues to resolution. NRC has moved forward on reviewing applications and is on a closure path for many issues.

The NRC staff continues to work with the applicants to ensure that they understand the regulatory process and the regulations. In addition, the NRC staff is taking a proactive approach to address schedule issues by actively engaging the applicants regarding their progress in meeting their established COLA review schedules.

On February 24, 2010, the NRC staff attended a half-day forum hosted by the Bipartisan Policy Center (BPC) regarding the new reactor program, processes and licensing status. The BPC reviewed the new reactor program and plans to provide recommendations to the NRC in April 2010 on how to improve the new reactor program and processes. A broad group of stakeholders, including the NRC, were invited to the forum to discuss issues raised during the individual interviews with the BPC and to elicit additional views and comments.

New Reactor Licensing Reviews

Design Certifications:

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

The NRC staff is currently performing the following DC reviews: GE-Hitachi Nuclear Energy's (GEH) Economic Simplified Boiling Water Reactor (ESBWR); Westinghouse's AP1000 DC Amendment; AREVA Nuclear Power's (AREVA's) US Evolutionary Power Reactor (US EPR); Mitsubishi Heavy Industries, Ltd.'s (MHI's) US-Advanced Pressurized Water Reactor (US-APWR); and South Texas Project Nuclear Operating Company's (STPNOC's) ABWR design certification application to address the aircraft impact rule.

In addition, GEH and Toshiba Corporation have each notified the NRC of their intent to submit renewal applications later in 2010 for the ABWR design certification. The ABWR design certification rule in 10 CFR Part 52, Appendix A was issued May 12, 1997, and is effective for a period of 15 years.

A status of the progress on each of the active DC reviews is provided below:

ESBWR DC:

The ESBWR DC application was submitted 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 RAI responses regarding GEH's setpoint methodology and hydrogen concentration in passive containment cooling system. Staff issuance of the final safety evaluation report (FSER) for the ESBWR DC is now scheduled for January 18, 2011. The DC rulemaking is scheduled to be completed in September 2011.

AP1000 DC AMENDMENT:

On May 26, 2007, Westinghouse submitted an application to amend the AP1000 DC rule and also submitted Revision 16 to the AP1000 Design Control Document (DCD). The NRC completed its acceptance review on January 18, 2008. Revision 17 to the AP1000 DCD was

submitted on September 22, 2008. On October 15, 2009, the NRC informed Westinghouse that the company has not demonstrated that certain structural components of the revised AP1000 shield building can withstand design basis loads. The impact on the overall AP1000 amendment review will be established after the staff receives Westinghouse's plans to address the NRC's conclusions regarding the shield building design. The impact on related review schedules for COLAs referencing the AP1000 will be addressed once the DC review schedule is better understood.

NRC received the revised shield building design report on March 22, 2010, and anticipates receiving the supporting analysis on April 30, 2010, and the test summary report in May 2010. A new review schedule for the project will be established after NRC receives these documents. The NRC staff's SER is scheduled to be complete by December 2010; however, the AP1000 DC amendment has high project schedule risks related to Westinghouse's shield building design. Some additional design changes were proposed by Westinghouse in January 2010, and the NRC staff anticipates additional changes arriving in the May time frame.

The containment sump design is another item that has associated with it a schedule risk for the completion of the AP1000 amendment review. Several key issues include coatings, limiting break for bypass evaluation, ability of the residual heat removal system to function, inspections, tests, analyses, and acceptance criteria (ITAAC) wording about equivalent insulation, and the adequacy of fuel assembly testing. Westinghouse completed its submittals in February 2010. A few additional questions were identified during the preparation of the final safety evaluation; these have been sent to Westinghouse.

The spent fuel pool criticality report was submitted by Westinghouse and is currently under review by the staff. Westinghouse is still interested in burnup credit to support full pool loading and is having discussions with NRC staff on how to proceed. In December 2009, agreement was reached to allow consideration of burnup credit in the calculation, and the staff review is proceeding on the Westinghouse submittal. Some additional challenges to completion of Chapter 6 have been identified, including a long-standing issue about containment external pressure and an issue concerning the revised control room ventilation system design.

Additional responses on control room ventilation were received in February 2010 and the staff is finalizing its evaluation.

US EPR DC:

The US EPR DC was submitted on December 11, 2007. By letter dated June 25, 2009, the NRC staff issued a revised review schedule for the US EPR DC application. 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 US EPR DC application.

By letter dated February 16, 2010, NRC staff notified AREVA NP, Inc., that it was unable to complete its review of the remaining eight chapters within the published milestone schedule due to changes to the previously committed schedule for providing responses to the staff's RAIs and new design information that was recently submitted. The schedule letter dated February 16, 2010, transmits the results of the staff's latest assessment of the review schedule for the US EPR DC application based on the RAI response schedule and other information provided through January 29, 2010.

During a December 14-15, 2009, public meeting, the staff was briefed on the progress of the development of a new soil-structure interaction analysis model to support certification of the US EPR. The intent of AREVA's new analyses is to include the U.S. eastern hard rock site seismic characteristics in the US EPR design certification. The new analyses will also be used to address a number of open RAIs that were initiated during the staff's review of the original seismic analyses. This new schedule takes a number of factors into account such as the soil-structure interaction analysis model development schedule provided at the aforementioned December 14-15, 2009, public meeting. In addition, it takes into account the correspondence from AREVA outlining the current RAI response schedule for final safety analysis report (FSAR) Sections 3.7 and 3.8 RAIs, as well as AREVA's schedule for the reconciliation of previous RAI responses with the results from the new analysis. Future NRC interactions with AREVA were also considered in the schedule such as the need to plan time to resolve technical issues and for the NRC to conduct an audit of the new analysis methodology.

After a July 8, 2009, public meeting, AREVA committed to perform US EPR specific strainer head loss testing, chemical effects testing, and downstream effects testing. AREVA completed a new set of sump performance tests in February 2010. AREVA committed to submit a final report by April 22, 2010. Based on the schedule for submission of this information, the Chapter 6 issuance date has been extended by 4 months.

The significance of issues remaining to be resolved for the US EPR FSAR Chapter 7, "Instrumentation and Controls," review regarding Defense-in-Depth and Diversity (D-3), Priority Actuation and Control Module Design, and Communications Independence has resulted in the need for additional review; and as a result, the Chapter 7 Phase 2 review issuance date has been extended by 4 months.

AREVA recently submitted a technical report containing a complete re-design of the new and spent fuel storage racks. The design change requires a complete re-review of Section 9.1.1 of the FSAR. As a result of this design change and the need for additional review, the Chapter 9 Phase 2 review completion date has been extended by 4 months.

The staff found the US EPR Chapter 18, "Human Factors Engineering," material initially submitted in the form of a topical report to be insufficient to address established guidance documents for this chapter. RAI responses were not effective in resolving the staff concerns. As a result, AREVA withdrew the topical report and submitted new implementation plans to address each of the elements in the guidance document. The staff issued RAIs and as of March 31, 2010, AREVA has submitted most of the RAI responses. The Chapter 18 issuance date has been extended by 5 months.

The overall review schedule for US EPR design certification is now 45 months. The staff will continue to evaluate schedule impacts as new information is received.

US-APWR DC:

The US-APWR DC was submitted on December 31, 2007. The NRC staff completed its acceptance review of MHI's US-APWR DC on February 29, 2008, and published its review schedule for the DC application. Thirteen US-APWR topical reports are referenced in the DC. Three have been approved, and 10 are under NRC staff review. The FSER is scheduled for completion in September 2011. MHI submitted Revision 2 of the DCD on October 27, 2009. A high schedule risk for the US-APWR DC review is the review of new computer codes proposed

by MHI for performing loss-of-coolant accident analyses. The NRC staff is reviewing these computer codes and performing independent analyses to support the review.

MHI changed the soil-structure interaction (SSI) seismic analysis methodology for all safety-related structures from a 'soil-spring' approach to a finite element approach. This new analysis that will be based on revised input parameters, such as ground motion time histories, finite element models and damping values that are different from the current DCD. The results of this seismic re-analysis impact the design of all structures, piping, equipment, and components. MHI submitted letters in January and February 2010 describing a plan to conduct a seismic re-analysis and submit three new technical reports. To date, MHI has submitted two new technical reports which are under review. MHI will submit a third and final technical report by end of April 2010. The NRC staff is currently evaluating these critical review areas to determine any potential impact on the review schedule.

ABWR DC RULE AMENDMENT:

STPNOC submitted on June 30, 2009, an application to amend the ABWR DC Rule (DCR) to address the requirements of the aircraft impact rule. The FSER is scheduled to be completed by April 2010, and the proposed environmental assessment is scheduled to be issued by June 2010. The estimated date to complete rulemaking is August 2011.

Over 25 RAI questions have been issued to STPNOC for action and responses for all of these have been received. The staff is writing the safety evaluation.

Early Site Permits:

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 (VEGP) site ESP and Limited Work Authorization (LWA) in Georgia.

Other ESP Activities:

On March 25, 2010, Exelon Nuclear Texas Holdings (Exelon) submitted an early site permit application for the Victoria County Station (VCS) site located in Victoria County, Texas. The ESP application uses the plant parameter envelope approach. The plant parameter envelope approach establishes a surrogate plant in the form of a set of bounding parameters. The application does not include a LWA. In addition, Exelon is requesting that the VCS Units 1 and 2, COLA (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 VCS ESP acceptance review is scheduled to begin on April 1, 2010, and be completed on June 7, 2010.

Combined License Applications:

As of March 31, 2010, the NRC has received 18 COLAs for review. Five of these applications were suspended 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:

Applicant	Design Type	Status
<p>Calvert Cliffs 3 Nuclear Project, LLC and UniStar Nuclear Operating Services, LLC. [UniStar] (Calvert Cliffs)</p>	<p>US EPR (Reference Plant)</p>	<p>On August 14, 2007, the NRC staff conducted a public outreach meeting.</p> <p>The first part of the application was submitted on July 13, 2007.</p> <p>The NRC staff completed its acceptance review of the partial COLA (first part of the application) on January 25, 2008.</p> <p>The second part of the COLA was submitted on March 17, 2008.</p> <p>Electricite de France (EDF) has purchased 49.99 percent of the Constellation Nuclear Energy Group. This impacts the financial review of the COLA because UniStar submitted organizational and financial details after this restructure on January 13, 2010. The new information received is in review by the staff.</p> <p>UniStar does not intend to respond to some RAIs pertinent to FSAR Section 2.3 until March 31, 2010.</p> <p>UniStar's package containing geotechnical information required for the review of FSAR Section 2.5 was submitted on October 13, 2009. The package is currently being reviewed by the NRC staff. Phase 1 for Chapter 2 was completed in February 2010, on schedule. On March 17, 2010, the staff conducted a site audit on Section 2.5, and as a result, several requests for additional information are being generated.</p> <p>UniStar's package containing the seismic information required for the review of FSAR Section 3.7 was submitted on December 29, 2009. The NRC staff is currently reviewing this submittal and RAIs are being generated as needed.</p> <p>The current schedule reflects completion of the SER by July 2012, draft environmental impact statement (DEIS) in April 2010 and Final Environmental Impact Statement (FEIS) in February 2011.</p>
<p>STP Nuclear Operating Company (STPNOC) (South Texas Project [STP])</p>	<p>ABWR (Reference Plant)</p>	<p>On June 27, 2007, the NRC staff conducted a public outreach meeting.</p> <p>The application was submitted on September 20, 2007.</p> <p>STPNOC chose Toshiba, Inc. (Toshiba) as the engineering and procurement contractor for the new STP units and the staff</p>

Applicant	Design Type	Status
		<p>performed a due diligence assessment to determine whether STPNOC had demonstrated that Toshiba was qualified to supply the certified ABWR design.</p> <p>Revision 2 of the STPNOC's application was received on September 24, 2008. The NRC staff completed its review of Revision 2 of the STPNOC application and published a review schedule for the STP COLA review on February 11, 2009.</p> <p>On September 18, 2009, STPNOC submitted Revision 3 of the COLA.</p> <p>On November 16, 2009, STPNOC submitted an application for a LWA to construct permanent crane foundation retaining walls. 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 prior to 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.</p> <p>On February 24, 2010, STPNOC submitted a letter identifying schedule challenges pertaining to 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 that have issues which must be resolved prior to exiting the current Phase 2 milestone. Once the required information is provided to resolve the issues, the staff will reassess the overall schedule impacts. The staff intends to continue its review with the schedule for Phase 2 through 6 to be determined. The safety evaluations for other chapters are continuing forward.</p> <p>NRC staff has issued 10 of 19 chapters of the SER with open items on schedule in February 2010 for review by the ACRS. The staff also completed on schedule (March 19, 2010) the milestone for development of a DEIS.</p> <p>The DEIS was published as NUREG-1937 on March 19, 2010, and the FEIS is scheduled for completion in March 2011. The FEIS is currently scheduled for completion in March 2011.</p> <p>The FSER is currently scheduled for completion in September 2011.</p>

Applicant	Design Type	Status
<p>Tennessee Valley Authority (TVA) (Bellefonte)</p>	<p>AP1000 (Reference Plant - in transition to Subsequent COL)</p>	<p>On September 11, 2007, the NRC staff conducted a public outreach meeting.</p> <p>The application was submitted on October 30, 2007.</p> <p>The NRC staff issued a review schedule on February 15, 2008.</p> <p>The hydrology review is delayed because of data pending from the applicant.</p> <p>The safety and environmental reviews are currently underway. However, the hydrology review is delayed pending receipt of data from the applicant. TVA's current schedule is to provide hydrology information by the end of June 2010. This date is contingent upon the completion of additional dam stability analysis, which may impact the hydrologic analysis.</p> <p>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 informs the NRC regarding 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 issued in the Summer of 2011 and the FEIS issued in the Summer of 2012.</p> <p>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.</p> <p>The FSER is scheduled for completion in March 2011, but will be changed to reflect the DC review schedule and change in status from reference COL (RCOL) to subsequent COL (SCOL).</p>
<p>Dominion Virginia Power (Dominion) (North Anna)</p>	<p>ESBWR (Reference Plant)</p>	<p>On October 24, 2007, the NRC staff conducted a public outreach meeting.</p> <p>The application was submitted on November 27, 2007.</p> <p>The NRC completed its acceptance review on January 28, 2008.</p>

Applicant	Design Type	Status
		<p>NRC staff issued a review schedule on February 27, 2008.</p> <p>The Final Supplemental EIS (SEIS) was published as NUREG-1917 on March 17, 2010.</p> <p>The FSER is scheduled for completion on February 2011.</p> <p>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 resolution of open items with the applicant.</p> <p>The applicant has been evaluating technology options in an effort to decide whether to remain with the ESBWR or chose another option. The applicant's schedule would call for a technology decision during the second quarter of 2010. The staff is waiting for an announcement from North Anna regarding its decision.</p> <p>The applicant filed an exemption request on November 17, 2009, for a one-time exemption from the requirement of 50.71(e)(3)(iii) for annual update of the FSAR. The FSAR update, due in December 2009, would be submitted by June 30, 2010. The staff granted the exemption on January 11, 2010.</p> <p>The advanced SER with no open items schedule will be revised consistent with the ESBWR DC schedule and delayed submittal of the updated FSAR.</p>
<p>Duke Energy (William States Lee III)</p>	<p>AP1000</p>	<p>On August 30, 2007, the NRC staff conducted a public outreach meeting.</p> <p>The application was submitted on December 13, 2007.</p> <p>The safety and environmental reviews are currently underway.</p> <p>On September 14, 2009, Duke Energy sent a letter to the NRC staff describing its 3-year delay for commercial operations for the William States Lee III Nuclear Station Units 1 and 2.</p> <p>By letter dated September 24, 2009, a supplement to the Evaluation Report (ER) was submitted to the NRC staff, which describes the</p>

Applicant	Design Type	Status
		<p>applicant's plan for Make-Up Pond C. The NRC staff is currently conducting a review of this submittal.</p> <p>On January 11, 2010, NRC staff notified Duke Energy of a change to the William States Lee III, Units 1 & 2 COLA public milestone schedule for the environmental review. The change extends the schedule by approximately 10 months. The schedule changes resulted from Duke Energy changing its COLA to include an additional make-up pond. The DEIS is scheduled for completion in July 2011 and the FEIS is scheduled for completion is August 2012.</p> <p>The FSER is currently scheduled for completion in 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 make-up water, and the applicant's change to its commercial operational schedule.</p>
<p>Progress Energy Carolinas, Inc. (PEC) (Shearon Harris)</p>	<p>AP1000</p>	<p>On September 18, 2007, the NRC staff conducted a public outreach meeting.</p> <p>The application was submitted on February 19, 2008.</p> <p>The NRC completed its acceptance review on April 17, 2008.</p> <p>The NRC staff issued a review schedule on May 16, 2008.</p> <p>The FSER is scheduled to be completed by April 2011. However, the schedule is dependent on the AP1000 DC Amendment and Vogtle RCOLA review schedules.</p> <p>The FEIS was initially scheduled for completion in May 2010. However, the FEIS schedule was revised on June 19, 2009, to change all remaining environmental review due dates to "to be determined" pending complete and sufficient RAI responses from PEC.</p>
<p>Entergy Operations, Inc. (EOI) (Grand Gulf)</p>	<p>ESBWR</p>	<p>On February 21, 2008, the NRC staff conducted a public outreach meeting.</p> <p>The application was submitted on February 27, 2008.</p>

Applicant	Design Type	Status
		<p>By letter dated January 9, 2009, EOI requested 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. Entergy 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 work that has been accomplished.</p> <p>This review remains suspended.</p> <p>On March 25, 2010, Entergy requested NRC to maintain Grand Gulf COLA in suspension and facilitate suspension of any supporting reviews by external agencies, including Federal Emergency Management Agency (FEMA).</p>
<p>Southern Nuclear Operating Company (SNC) (Vogtle)</p>	<p>AP1000 (in transition to become the RCOL)</p>	<p>On July 17, 2008, the NRC staff conducted a public outreach meeting.</p> <p>The application was submitted on March 31, 2008.</p> <p>The NRC completed its acceptance review on May 30, 2008.</p> <p>The NRC issued a review schedule on June 27, 2008.</p> <p>The NRC staff is currently conducting the safety and environmental reviews.</p> <p>On August 26, 2009, the NRC issued the VEGP ESP and LWA.</p> <p>The NRC received the environmental review Revision 1 on September 24, 2009.</p> <p>The NRC staff received a LWA request from SNC on October 2, 2009. This request is part of the COLA and is in addition to the LWA that was approved with the ESP application. The requested activities under this LWA include installation of reinforced steel, sumps, and drain lines and other embedded items in the Nuclear Island foundation base slab and placement of concrete for the Nuclear Island foundation base slab. The staff is preparing a supplemental notice of hearing in the <i>Federal Register</i> and the staff is developing a schedule that will be absorbed into the current Vogtle COLA schedule.</p>

Applicant	Design Type	Status
		<p>The Vogtle COLA FEIS is scheduled for completion in February 2011.</p>
<p>South Carolina Electric & Gas (SCE&G) (Virgil C. Summer)</p>	<p>AP1000</p>	<p>On August 27, 2007, the NRC staff conducted a public outreach meeting.</p> <p>The application was submitted on March 27, 2008.</p> <p>The safety and environmental reviews are underway.</p> <p>The DEIS is scheduled for April 2010, and the FEIS is scheduled for completion in February 2011.</p> <p>The FSER is scheduled for completion in April 2011, but is dependent on the AP1000 DCA and Vogtle RCOLA review schedules.</p>
<p>AmerenUE (Callaway)</p>	<p>US EPR</p>	<p>On July 9, 2008, the NRC staff conducted a public outreach meeting.</p> <p>The application was submitted on July 24, 2008.</p> <p>The Callaway COLA review was suspended by request of the applicant in June 2009 and remains suspended.</p>
<p>Progress Energy Florida, Inc. (PEF) (Levy County)</p>	<p>AP1000</p>	<p>On June 5, 2008, the NRC staff conducted a public outreach meeting.</p> <p>The application was submitted on July 30, 2008.</p> <p>The NRC completed its acceptance review on October 6, 2008.</p> <p>The NRC staff issued a review schedule on February 18, 2009.</p> <p>In a letter dated May 1, 2009, PEF formally withdrew an LWA request associated with the site in Levy County, Florida.</p> <p>The safety and environmental reviews are underway.</p> <p>The FEIS is scheduled to be issued in July 2011.</p> <p>By letter dated September 16, 2009, 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</p>

Applicant	Design Type	Status
		<p>applicant's RAI responsiveness have affected the schedule.</p> <p>The FSER completion date was changed from May 2011 to July 2011. However, the FSER schedule is dependent on the AP1000 DCA and Vogtle RCOLA review schedules.</p> <p>In October 2009, Progress Energy 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.</p> <p>On January 20, 2010, NRC staff notified Progress Energy 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 schedule was revised to reflect additional time needed to receive and resolve issues associated with requests for additional information, 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 environmental impact statement.</p>
<p>Exelon Nuclear Texas Holdings, LLC (Exelon) (Victoria County Station)</p>	<p>ABWR</p>	<p>On August 7, 2008, the NRC staff conducted a public outreach meeting.</p> <p>The application was submitted on September 3, 2008.</p> <p>The NRC staff completed its acceptance review on October 30, 2008.</p> <p>By letter dated November 24, 2008, Exelon informed the NRC it expects to designate an alternate reactor technology.</p> <p>The NRC staff suspended most of the COLA review and its development of a review schedule.</p> <p>The existing application remains docketed.</p> <p>By letter dated July 1, 2009, Exelon notified the NRC staff that Exelon has decided to pursue an ESP rather than a COL for Victoria Station. Exelon stated that it plans to submit the application either late in the fourth quarter of calendar year 2009 or in the first quarter of calendar year 2010.</p> <p>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</p>

Applicant	Design Type	Status
		<p>addition, Exelon is requesting that the VCS Units 1 and 2, COLA (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.</p> <p>The VCS ESP acceptance review is scheduled to begin on April 1, 2010 and be completed on June 7, 2010.</p>
<p>Detroit Edison Energy (Fermi)</p>	<p>ESBWR</p>	<p>On August 20, 2008, the NRC staff conducted a public outreach meeting.</p> <p>The application was submitted on September 18, 2008.</p> <p>By letter dated June 30, 2009, the NRC staff issued a review schedule for the COLA.</p> <p>The FEIS is scheduled for completion August 2011.</p> <p>The FSER is scheduled for completion in March 2012.</p> <p>The applicant has submitted changes to the application for relocation of 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.</p> <p>The DEIS schedule was contingent on receipt of complete responses to environmental RAIs by December 2009, but some responses were not provided until the March 25, 2010.</p> <p>The schedule for preparing the Draft EIS will need to be revised due to the applicant's late response to environmental RAIs.</p> <p>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 impact the Fermi schedule.</p>
<p>Luminant Generation Company, LLC (Luminant) (Comanche Peak)</p>	<p>US-APWR</p>	<p>On June 12, 2008, the NRC staff conducted a public outreach meeting.</p> <p>The application was submitted on September 19, 2008.</p> <p>Luminant submitted Revision 1 to the COL application in November 2009.</p> <p>Safety and environmental reviews are underway.</p>

Applicant	Design Type	Status
		<p>The FEIS is scheduled to be completed by May 2011.</p> <p>The FSER is scheduled to be completed by December 2011.</p> <p>Phase I of the Safety Review was completed in October 2009. In the environmental review, Luminant did not provide adequate data and information to properly characterize the construction and operation of the blowdown treatment facility, water availability, water quality, and impacts of the proposed project to Lake Granbury during low flow conditions. Three sets of RAIs were transmitted to the applicant. The first set of RAIs were issued June 26, 2009, the second set was issued on August 8, 2009, and the final set was issued January 15, 2010. The NRC staff and applicant participated in numerous conference calls and public meetings to clarify the RAIs, including a public meeting on January 27, 2010. The applicant has provided multiple responses to the RAIs to date with the last response provided March 17, 2010. As a result, the staff has extended the EIS completion dates for the DEIS to August 2010, and the FEIS to May 2011.</p> <p>The staff has determined that the applicant did not provide sufficient information in Part 1, Administrative and Financial Information. On August 31, 2009, and January 27, 2010, Luminant provided its response to the NRC staff's RAIs. The NRC staff issued another set of RAIs in March 2010. The NRC staff has extended the completion date for Part 1 to June 2010.</p> <p>During the review of the applicant's responses to the NRC staff's RAIs, the NRC staff found inconsistencies in the applicant's calculations of the probabilistic seismic hazards analyses (PSHA) for FSAR Section 2.5, Geology, Seismology, and Geotechnical Engineering, Section 2.5.2.</p> <p>During the staff's review of the applicant's responses, it was discovered that the applicant had made an error in its PSHA calculations and had revised the entire PSHA calculations as well as the site response calculations. The applicant has submitted its sensitivity analysis and the NRC staff plans to provide feedback on the acceptability of the sensitivity analysis by the end of March 2010 and issue RAIs by early April 2010. NRC staff also intends to conduct an audit in April 2010.</p> <p>In Chapter 3 of the DCD for the US-APWR, MHI, the DCD applicant made structural changes to its design which required performing a new seismic analysis. After the NRC staff</p>

Applicant	Design Type	Status
		<p>evaluates the DCD schedule changes, the NRC staff will then determine the schedule impact on the Comanche Peak RCOLA review schedule.</p>
<p>Entergy Operations, Inc. (EOI) (River Bend Station)</p>	<p>ESBWR</p>	<p>On November 18, 2008, the NRC staff conducted a public outreach meeting.</p> <p>The application was submitted on September 25, 2008.</p> <p>The NRC staff completed its acceptance review on December 4, 2008.</p> <p>By letter dated January 9, 2009, EOI requested that the NRC staff suspend, until further notice, its review of the docketed COLAs for the River Bend Station Unit 3 and the Grand Gulf Nuclear Station Unit 3.</p> <p>This review remains suspended except for FEMA's emergency preparedness reviews, which are independent of any future selected reactor technology.</p> <p>On March 25, 2010, Entergy requested NRC to maintain River Bend application in suspension and facilitate suspension of any supporting reviews by external agencies, including FEMA.</p>
<p>Nine Mile Point 3 Nuclear Project, LLC and UniStar Nuclear Operating Services, LLC (UniStar) (Nine Mile Point)</p>	<p>US EPR</p>	<p>On August 21, 2008, the NRC staff conducted a public outreach meeting.</p> <p>The application was submitted on September 30, 2008.</p> <p>On February 9, 2009, UniStar submitted a letter requesting that the NRC stagger the review of the Nine Mile Point Unit 3 (NMP3) COLA, relative to the current schedule of the Calvert Cliffs Unit 3 Reference COLA. UniStar requested that some review activities, such as those associated with the DHS audit, emergency preparedness (FEMA), the environmental scoping summary report, and the physical security plan continue during the first half of 2009.</p> <p>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 commence in September 2010. The NRC's response to the applicant's letter dated August 17, 2009, was issued 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</p>

Applicant	Design Type	Status
		<p>engineering, specifically the Lake Ontario tsunami effect study by the U.S. Geological Survey and the Lake Ontario ice effect study by the U.S. Army Corps of Engineers (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 draft EIS activities, and limited maintenance of environmental files and records; and (3) emergency planning, specifically FEMA review of State and local emergency planning information through completion of advanced SER input.</p> <p>On December 1, 2009, UniStar submitted a letter requesting that the NRC temporarily suspend the Nine Mile Point Unit 3 Nuclear Power Plant COLA review, including any supporting reviews by external agencies, until further notice.</p>
<p>PPL Bell Bend, LLC (Bell Bend)</p>	<p>US EPR</p>	<p>On August 19, 2008, the NRC staff conducted a public outreach meeting.</p> <p>The application was submitted on October 10, 2008.</p> <p>The EIS scoping report was completed in August 2009.</p> <p>The FEIS schedule is under development and currently projected for completion by March 2012. The EPR powerblock (US EPR reactor, safeguards buildings, etc.) 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 impact the project schedule.</p> <p>The FSER is scheduled to be completed by March 2012.</p> <p>This SCOL is dependent on the Calvert Cliffs (RCOL) project's ability to meet its schedule.</p>
<p>Florida Power and Light (FPL) (Turkey Point)</p>	<p>AP1000</p>	<p>On March 26, 2009, the NRC staff conducted a public outreach meeting.</p> <p>The COLA for Turkey Point Units 6 and 7 was tendered by FPL on June 30, 2009.</p> <p>The NRC staff completed its acceptance review on</p>

Applicant	Design Type	Status
		<p>September 4, 2009. The application was accepted for docketing; however, the NRC staff has identified information needs in several technical and environmental review areas that will affect the length of the review schedule and will not issue a schedule until these areas are addressed: Regional Geology description, Soil Dynamic Properties, Use of Generic Curves for Dynamic testing of soil, Hydrology, Regulations Applicable to Liquid Radioactive Waste Management System, and DCD changes requiring additional information.</p> <p>In a letter dated November 9, 2009, FPL submitted additional information in these areas. The NRC staff found that the geologic/seismic source description was not adequate for the staff to begin its technical review. Additional information that FPL submitted in the areas of geotechnical evaluations and hydrology now appears to be adequate for the staff to begin its technical review. With regard to the need for a soil-structure interaction (SSI) analysis, FPL stated it is in the process of following and evaluating the AP1000 DC applicant's changes and will be able to inform the NRC staff whether it will need a SSI by June 2010.</p> <p>The NRC staff is developing the schedule in all areas except geology/seismology, and expects to issue a complete review schedule in April 2010. For schedule planning purposes, the staff will assume that an SSI will be needed.</p>
Alternate Energy Holdings (Hammett)	US EPR (1 unit)	The application was expected in the 4 th Quarter (Q4) of Fiscal Year (FY) 2009. The NRC staff has not received any updates from the potential applicant.
Amarillo Power	US EPR (2 units)	The application was expected in the 4 th Quarter of FY 2009. The NRC staff has not received any updates from the potential applicant.
Transition Power Development LLC (Transition) (Blue Castle Generation Project)	TBD (2 units)	In a letter dated February 11, 2010, PSEG Power, LLC and PSEG Nuclear, LLC (PSEG) informed the NRC that it 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.
Unannounced (TBD)	TBD (units -TBD)	The application is expected during the 2010-2011 timeframe.

Applicant	Design Type	Status
Southern Nuclear Operating Company (SNC) (TBD)	TBD (units TBD)	Southern Nuclear Operating Company (SNC) informed the NRC that it intends to submit a COLA for a green-field unnamed site late 2011 timeframe.
Unannounced	TBD (2 units)	The application is expected late in FY 2010.
GE-Hitachi Nuclear Energy and Toshiba Corporation	DC Renewal	Regarding DC renewals, the NRC received letters from GE-Hitachi Nuclear Energy and Toshiba Corporation notifying the NRC of their intent to submit renewal applications later in 2010 for the ABWR design certification. The ABWR design certification rule in 10 CFR Part 52, Appendix A was issued May 12, 1997, and is effective for a period of 15 years.

In addition, review schedules and other pertinent information regarding these reviews are available on the public webpage at <http://www.nrc.gov/reactors/new-reactors.html>.

Other Licensing Activities That Occurred in the Second Quarter FY 2010:

A site hydrology safety audit was conducted at Turkey Point during the week of March 21, 2010.

Regulatory Infrastructure Activities

Review Process

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

Issue Management

Several of the issues currently under evaluation are:

- Standardized approach to license conditions,
- Review of construction impacts on existing units,
- Standards for technical qualification reviews, and
- DC amendment & renewal processes and standards.

Regulatory Guides (RGs)

The Office of Nuclear Regulatory Research (RES) program to update RGs is summarized on the RES Web site. The Web site also identifies those RGs for which NRO is the lead office for preparing the update.

Interim Staff Guidance (ISGs)

ISGs serve as interim measure to provide guidance to NRC staff during their licensing reviews. They also serve as an important reference for applicants and licensees to help them understand staff expectations. The information contained in ISGs is incorporated into other permanent NRC documents, such as regulatory guides and standard review plans, when they are periodically updated.

ISGs issued by NRO are available to the public on the [NRC Web site](#). ISGs issued in the second quarter of Fiscal Year 2010 include four ISGs issued for comment and two ISG issued final.

The four ISGs issued for comment are:

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" (February 3, 2010); ISG-14, "Assessing Ground Water Flow and Transport of Accidental Radionuclide Releases" (February 3, 2010); ISG-20, "Implementation of a Seismic Margin Analysis for New Reactors Based on Probabilistic Risk Assessment" (March 31, 2010); and ISG-21, "Review of Nuclear Power Plant Designs using a Gas Turbine Driven Standby Emergency Alternating Current Power System" (January 26, 2010).

The two ISGs issued as final are:

ISG-15, "Post-Combined License Commitments" (issued final on January 21, 2010) and ISG-17, Interim Staff Guidance on "Ensuring Hazard-Consistent Seismic Input for Site Response and Soil Structure Interaction Analyses" (issued final on March 24, 2010).

The staff is currently assessing the need for proposed ISGs in other areas such assessment of the impacts of construction on the operation of co-located operating nuclear power plants and process to issue licenses under 10 CFR Parts 30, 40, and 70.

Plans are being developed by the NRC staff to better integrate the regular maintenance and update of the SRP into the roles and responsibilities of technical branches, develop tools and a database tool for tracking the guidance updates completed since March 2007, as well as a portal for requesting future updates. Revisions 1 to Office Instructions NRO-REG-301, "Development and Issuance of Interim Staff Guidance for the Office of New Reactors," NRO-REG-300, "Issuance of Interim Staff Guidance for New Reactors," and NRO-REG-111, "NRC Staff Proposed Amendments or Changes to Previously Approved Designs or Programs," are currently planned for 2010.

Standard Review Plan (SRP)

NUREG-0800, "Standard Review Plan (SRP) for the Review of Safety Analysis Reports for

Nuclear Power Plants” is the primary review document for the NRC staff to review and evaluate proposed licensing actions for NPP. 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 a NPP. Updating of the SRP and other associated guidance documents are critical to ensuring that staff evaluations reflect the latest information and knowledge related to safe operation of NPPs. The comprehensive SRP Review and Update Program occurs on a 4-year cycle to review all sections of the SRP to determine which sections require an update and to budget and schedule the resources necessary to perform the updates. During the second quarter of FY2010, the staff continued to prepare plans to perform the next periodic update to the SRP in FY2012.

Some SRP updates must be updated in shorter timeframes than those supported by the review and update program. To support its developmental work in the area of digital instrumentation and control, the staff issued one proposed SRP updates for public comment in the second quarter of FY2010:

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).

Outreach

On January 20, 2010, the NRO staff held a public meeting with all design centers on generic COL issues, including Source, By-Product, and Special Nuclear Material for Part 52 applicants, post-COL license amendments, transition from ASME Section III to Section XI, and implementation of the aircraft impact rule.

On February 23, 2010, the NRO staff held a public meeting with the industry’s New Plant Working Group (NPWG) on COLAs to discuss issues confronting the industry and the NRC regarding the licensing of new reactors. Agenda topics included status and schedules for new reactor application reviews, licensing basis freeze point implementation, corrective action processes for new nuclear power plants during construction, updates on the Construction Inspection Assessment Process (CIAP), updates on staff plans for small modular reactors (SMRs), and for the proposed rule on access authorization and physical security during nuclear power plant construction.

On March 4, 2010, the staff held a public meeting to discuss the status of the development of templates for the upcoming rulemaking activities to support the timely issuance of design certifications.

On March 5, 2010, the staff held a public meeting on the ITAAC maintenance proposed rulemaking. The staff presented draft proposed rule text and requested feedback from external stakeholders. The staff is taking stakeholder feedback into account in preparing the proposed rule package for submittal to the Commission in mid-2010.

On March 31, 2010, the staff held a public meeting to review and discuss draft proposed language for the proposed rule for Access Authorization and Physical Security during Nuclear Power Plant Construction.

Between January 2010 and March 2010, the NRC staff has conducted seven public meetings to work through implementation details associated with the ITAAC closure, licensee construction assessment, enforcement, and other construction inspection program topics.

DC Rulemaking Streamlining

A potential scheduling issue that has been introduced by the concurrent reviews of DC applications and related COLAs relates to the need to complete the DC rulemaking prior to the issuance of a COL that relies on that DC. The typical rulemaking process includes publication of a proposed rulemaking for public comment, resolution of public comments, and then the issuance of the final rule. The rulemaking process typically takes approximately 2 years from the start of the effort to the time the final rule is published. 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 in order to identify possible ways to shorten the rulemaking process and coordinate activities (design reviews, rulemaking, licensing) to minimize the contribution of the rulemaking to the COL schedules.

SECY-09-0018 was issued on January 30, 2009, and details 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 has drafted templates for DC proposed rules and discussed them in a public workshop on March 4, 2010.

In a related activity, the Rulemaking and Guidance Development Branch of the Division of New Reactor Licensing (DNRL) issued a request to the Commission to establish NRO as a lead rulemaking office similar to NRR and the Office of Federal and State Materials and Environmental Management Programs (FSME).

That request was issued as COMSECY-09-0003 on February 4, 2009. A Staff Requirements Memorandum was issued to COMSECY-09-0003 on February 27, 2009, in which the Commission approved the staff's request, and asked the staff to report on effectiveness and efficiency gains in a future self-assessment. The staff is scheduled to issue that report in September 2011.

Interoffice Rulemaking Contract

NRO intends to collaborate with NRR and FSME in issuing a single rulemaking support contract, thus negating duplicate efforts to issue individual contracts. Each lead office, and possibly other support offices, would be able to write task orders against the contract. NRR and FSME fully support the effort. A working group was established and has drafted a request for procurement action (RFPA). Concurrence on the RFPA package is ongoing with a target to send the package to the Chairman for approval in April 2010.

Aircraft Impact Assessment Rulemaking

The final rulemaking on aircraft impact assessments (AIA) was published in the *Federal Register* (FR) on June 12, 2009 (74 FR 28111), and became effective on July 13, 2009. The rule at 10 CFR 50.150 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 in the process of evaluating industry guidance on the methodology for performing aircraft impact assessments for new plant designs. Information to comply with the AIA rule has been submitted for all design centers currently under NRC review and NRC staff review of the submittals is in progress.

On December 1, 2009, staff from NRO, RES and representatives from Nuclear Energy Institute (NEI) met with the Office of the Advisory Committee on Reactor Safeguards (ACRS) Safeguards & Security Subcommittee to discuss the draft final version of the guidance. The staff and NEI met with the ACRS Full Committee on February 4, 2010. On February 18, 2010, the ACRS issued a letter recommending that the final guidance (RG 1.217) be issued after revision to incorporate additional information recommended by the Committee. The staff is in the process of incorporating the ACRS comments into the final guidance.

Part 21 Rulemaking

The DCIP staff has identified several areas within Part 21, which could be enhanced through rulemaking. DCIP is collaborating with NRR, FSME, the Office of Nuclear Material Safety and Safeguards, and the Office of the General Counsel to collect all areas to be considered for the rulemaking and develop the regulatory basis for this rulemaking. Currently, NRO is adding this rulemaking to the Common Prioritization of Rulemaking chart in order to plan funding for this effort to begin in FY 2012.

Design Certification with Multiple Vendors

NRO has been discussing plans for addressing 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 FY2011. In addition, STPNOC submitted a request to amend the ABWR DC to comply with the AIA rule in June 2009. The staff is completing its technical review of this application. The staff expects to address issues associated with how it will treat the STPNOC amendment, if granted, in the Office of the Secretary (SECY) paper transmitting the proposed rulemaking on the amendment to the Commission. In addition, the staff will address issues associated with how it intends to treat multiple requests to renew the ABWR certification in a subsequent communication to the Commission.

Loss of Large Areas

The final rulemaking on Power Reactor Security Requirements was published in the FR on March 27, 2009 and 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. Regarding the changes to Section 50.54(hh) and Section 52.80(d), the NRO staff held discussions with NEI and Design-Centered Working Groups (DCWGs) on the development of guidance for mitigating strategies for loss of large areas due to explosions or fires (Item B.5.b in Interim Compensatory Measure Orders for operating plants; and section 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) Loss of Large Areas of the Plant due to Explosions or Fires from a Beyond-Design Basis Event," to endorse NEI 06-12, Revision 3. The

final DC/COL-ISG-016 was revised in consideration of industry comments received and will be presented to the ACRS on April 8, 2010. Neither the ISG nor the NEI document is public.

Cyber Security

The 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. It is publicly available in ADAMS (Accession No. ML090340159). NSIR staff continues to hold discussions with NEI and DCWGs digital instrumentation and control (I&C) representatives on the draft NEI 08-09, “Cyber Security Plan Template.” With regard to RG 5.71, a draft of the associated guidance document (DG-5022) was issued for public comment and a meeting was held on July 18, 2008 (Note: DG-5022 was later designated RG 5.71, “Cyber Security Programs for Nuclear Facilities.”) The NRC staff briefed the ACRS Digital I&C Systems Subcommittee in October 2009, and the ACRS Full Committee in November 2009 on the draft final RG 5.71. The ACRS concluded that the RG should be issued to support compliance with 10 CFR 73.54 and provided recommendations regarding future work related to cyber security. The final RG 5.71 was issued in January 2010.

The industry has developed its own document, NEI 08-09, to meet the requirements set forth in 10 CFR 73.54. The NRC staff has not endorsed this document. On January 28, 2010, the NRC provided a set of draft generic questions on Appendix A of NEI 08-09 that had been shared with the Executive Task Force on the Nuclear Security Working Group (NSWG) and NEI. Both groups committed to representing applicants and operating power reactor licensees by working with the NRC to resolve these generic questions. The NRC has discussed these questions with the NSWG and NEI and received a written response to the first set of questions on March 5, 2010. It should be noted that on February 4, 2010, NEI submitted NEI 08-09, Rev. 5. This revision removed hold of public disclosure under 10 CFR 2.390 marking but did not change the content of the document or affect the draft generic questions. Since NEI 08-09, Rev. 5 does not contain security related information, it is publicly available. The complete list of draft generic questions is publically available in ADAMS.

Access Authorization and Physical Protection Requirements for Nuclear Power Plant Construction

NRO 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 plans to hold a public workshop on March 31, 2010, to discuss the draft proposed rule text. The proposed is scheduled to be delivered to the Commission in August 2010.

ITAAC Maintenance Rulemaking

NRO/DNRL is developing a proposed rulemaking to amend the regulations related to verification of NPP construction activities through ITAAC under a combined license. 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 (1) 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 is met; (2) licensee documentation of the basis for all ITAAC notifications; and (3) licensee notification of completion of all ITAAC activities. The staff publically released draft proposed rule text on February 26, 2010, and held a public workshop to discuss the draft proposed rule on March 5, 2010. The current schedule is to have a proposed rule to the Commission by June 30, 2010.

The NRC staff received Revision 4 to NEI 08-01 for 10 CFR Part 52 applicants and licensees on requirements for ITAAC closure process in January 2010. The revised industry guideline was edited to add critical sections of ITAAC maintenance. The ITAAC maintenance period covers the time from when the licensee submits an ITAAC closure letter to the time the Commission authorizes the facility to operate. NRC staff is currently reviewing the document. After staff is satisfied with the industry guideline's revision, staff plans to issue the draft revision of RG 1.215 that endorses the industry guide by the end of this summer. The issuance of the draft regulatory guide revision will coincide with the publishing of the draft rule update to 10 CFR 52.99. The draft rule will update the rule language to include ITAAC maintenance and new reporting requirements.

Advanced Reactors:

NRC is continuing to see increasing interest in design and possible licensing applications for advanced reactor designs. The NRC is currently working with the U.S. Department of Energy (DOE) to coordinate various research and pre-application activities related to the Next Generation Nuclear Plant (NGNP) program. In addition, the NRC is increasing its efforts in preparing for the review of small modular Light Water Reactors (LWRs).

The NGNP program remains one of the primary focus areas 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. On March 8, 2010, DOE announced that Westinghouse and General Atomics have been selected to receive a total of about \$40 million for development of NGNP conceptual designs. The NGNP project is being conducted in two phases. Phase 1 comprises research and development, conceptual design and development of licensing requirements. Once conceptual designs are completed by August 31, 2010, DOE will use this information to choose a design for Phase 2 demonstration plant detailed design, licensing, and construction.

The NRC has added a second branch, in NRO's Advanced Reactor Program (ARP), focused on small modular LWRs, and is increasing NRC staff to support the increased workload. Leveraging its efforts on the NGNP program, the NRC staff has begun to identify the generic policy and technical issues associated with licensing of small modular LWRs. As resources allow, the ARP is also interacting with various designers of liquid metal reactor technologies.

The NRC staff continued to focus its pre-application 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:

- allowing the technical review NRC staff sufficient time to become familiar with advanced reactor design concepts;

- providing feedback on key design, technology, safety research, and licensing issues;
- identifying policy and technical issues, and developing plans for resolution of each including major deliverables and due dates.
- providing the information necessary to develop resource estimates for reviewing the designs for advanced reactors; and
- identifying technical skills necessary to review these designs and, as appropriate, hiring staff and identifying potential contractors who possess the requisite knowledge, skills and abilities. The NRC staff participated in several meetings and drop-in visits with potential applicants for advanced reactor designs.

The NRC staff developed a policy paper, SECY-10-0034, "Potential Policy, Licensing, and Key Technical Issues for Small Modular Nuclear Reactor Designs," to keep the Commission informed of the potential issues that may require Commission consideration. The NRC staff is developing proposed resolutions to these potential policy issues on a schedule consistent with industry plans to submit design certification or design approval applications. The staff will inform the Commission and other stakeholders of its activities and progress on resolving the issues. These proposed resolutions of policy issues will be submitted in future papers and will support the NGNP and other SMR review activities. In addition, the staff will inform the Commission in a timely manner of additional issues when they are identified.

The NRC staff issued Regulatory Information Summary (RIS) 2010-3 on February 26, 2010, requesting advanced reactor suppliers to provide information on potential pre-application and application submittals. The staff has received several responses (some marked as proprietary information) but is awaiting a few others. The staff will provide a list of suppliers and projected application dates in the next quarterly report following receipt and evaluation of all responses.

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

As directed in the SRM related to SECY-09-0064, "Regulation of Fusion-Based Power Generation Devices," The NRC staff is not pursuing licensing or infrastructure development for fusion-based energy devices until commercial deployment of the technology is more predictable by way of successful testing.

Committed and Obligated Funding

The following tables reflect the FY 2010 second quarter committed and obligated funding:

NRO CASE WORK ONLY

FY 2010 Funding	Q2
Commitments	\$5,277,956.45
Obligations	\$3,591,056.45

NRO- ALL (NON-PMDA MANAGED WORK)

FY 2010 Funding	Q2
Commitments	\$9,678,814.93
Obligations	\$6,786,183.91

Construction Inspection Activities

Construction is underway and NRC has begun executing construction inspection activities associated with the Vogtle LWA. Infrastructure is in place to support FY10 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 on-site ITAAC inspection, and 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 staff continues to refine concepts for ITAAC closure, and maintenance of closed ITAAC. The NRC staff conducted numerous public meetings within the past year to provide a forum for stakeholders to participate in and comment on NRC staff proposals for ITAAC closure, ITAAC maintenance, and other construction inspection program issues. One outcome from these meetings is the issuance of RG 1.215, "Guidance for ITAAC Closure under 10 CFR Part 52," in October 2010. The NRC staff continues to meet with stakeholders and will revise this Regulatory Guide to include guidance on ITAAC maintenance and other issues by the end of 2010. The NRC staff informed the Commission of its progress involving ITAAC maintenance in SECY 09-0119.

The Design Acceptance Criteria (DAC) working group was formed in November 2009 to respond to a STP request for review of digital I&C DAC products related to the STP Units 3 & 4 design. Efforts have been focused on development of a viable DAC inspection process that can be demonstrated in a test case (pilot) scenario for STP during the 3rd quarter of FY 2010. Elements include development of a process framework in parallel with development of DAC inspection procedures (digital I&C documents have priority, but piping and human factors strategies are also being developed). To date, the process framework has been developed and vetted. Inspection procedure development is on-going. Over the next quarter, the working group expects to brief ACRS on the proposed process and select a STP DAC product for pilot inspection. Concurrent with current efforts, an Integration Plan is being developed that will expand the working group charter beyond the pilot effort, incorporate elements of the STP initiative into a generic DAC inspection methodology, and set the stage for revisions to RG 1.215.

The construction reactor oversight process (cROP) working group was formed in December 2009 to respond to Commission direction to develop construction assessment program options for Commission consideration. Development efforts have been focused on the inclusion in the cROP of objective elements such as construction program Performance Indicators (PIs) and Significance Determination Processes (SDPs) analogous to those used in the Reactor

Oversight Process (ROP). To date, the working group has developed a regulatory framework, including strategic performance areas and cornerstones, including objectives, attributes, and areas to measure. The working group will continue to meet periodically with stakeholders during Category II and III public meetings to solicit their input and will develop a SECY paper with assessment program options for Commission consideration by September 2010.

The NRC staff conducted one vendor inspection (Shaw, AP1000 engineering services supplier). The NRC staff participated as an observer during an audit by the Nuclear Procurement Issue Committee (NUPIC) of an emergency diesel generator supplier.

The NRC staff continued to interact with various organizations (ASME NQA-1 and Section III, NEI) regarding the development of codes, standards, and guidance documents and to present current information to professional organizations (ASQ, ILAC) on counterfeit, suspect, and fraudulent items.

International Activities

NRC is continuing to use international experience and lessons-learned to assure safe design both domestically and internationally. All of the new reactor designs under review in the US are also under review, being coordinated or in operation in other countries.

On February 1 - 3, 2010, NRC staff chaired the 6th meeting of the Multinational Design Evaluation Program (MDEP) Issue-Specific Digital I&C Working Group in Paris, France.

During the week of February 1 - 5, 2010, NRC staff participated in a meeting with standards development organizations from France, Korea, Japan, Canada and the U.S. in Atlanta GA, to discuss their progress in pressure-boundary Code comparisons for Class 1 vessels, piping, pumps, and valves.

On February 12, 2010, NRC staff participated in an international call with the regulators from Finland (STUK), France (ASN) and U.K. (NII) to discuss the request by STUK for an international review of actions taken by AREVA to address undocumented weld repairs on the Finnish EPR Olkiluoto-3 main coolant loop piping.

During the week of March 1 - 5, 2010, NRC staff met with representatives from STUK to discuss welding procedure and operator qualification requirements in accordance with Section IX of the ASME Code.

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 United Kingdom. The containment safety analysis was the topic of a recent MDEP meeting, and the NRC staff member was invited to attend this follow-on meeting by MDEP counterparts at the NII. Observing the meeting allowed NRC to understand the analysis supporting U.S. design certification, 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 10 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, NRC staff and the Office of International Programs staff met with a representative of the current Italian regulator (ISPRA) to discuss plans for a specific co-operation on an in-depth study of a single process for authorization of new NPPs in Italy, which is similar to the NRCs combined license process. The meeting also covered the anticipated implementation of Italy's new agency for nuclear safety.

On March 14 - 21, 2010, an NRC delegation led by Mr. Michael Johnson, Director, NRO, traveled to China to meet with the China National Nuclear Safety Administration (NNSA), Westinghouse Electric Company (Beijing Office), China National Energy Administration (NEA), Shanghai Electric Equipment Manufacturing Company and CNNC Sanmen Nuclear Power Company. The purpose of the trip was to advance cooperation with NNSA in the areas of construction and vendor inspection and High Temperature Gas Cooled (HTGR) technology, to gain mutual agreement on a path forward for highlighting US-China cooperation on nuclear safety at the 2010 US-China Strategic and Economic Dialogues (S&ED), to determine the dates of the 2010 NRC-NNSA Steering Committee Meeting, to inform and advance cooperation with NEA on Emergency Preparedness for new reactors, to observe fabrication of reactor vessel and internals, steam generator, pressurizer and control rod drive mechanisms at the Shanghai Electric Equipment Manufacturing facility, to observe ongoing construction activities of the Westinghouse AP1000 reactor at the Sanmen Nuclear Power Station, and to provide training to NNSA staff on NRC systems analysis codes. The NRC delegation successfully completed its objectives.

During the week of March 21 - 26, 2010 three NRC staff members traveled 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.

On March 26 and March 29 - 30, 2010, NRC staff participated in MDEP EPR Severe Accident and Probabilistic Risk Assessment (PRA) subgroup meetings respectively, in Paris, France. The group discussed the status of their technical reviews and review insights since their last meeting in March 2009.

On March 31 – April 1, 2010, NRC staff participated in a bilateral meeting with French regulators from the Institut de Radioprotection et de Sûreté Nucléaire (IRSN) to compare approaches in the use of technical specifications and the use of risk information and cooperate in the development of the utilization of risk information in future regulatory applications.