January 15, 2010

MEMORANDUM TO: Chairman Jaczko
Commissioner Klein
Commissioner Svinicki

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

SUBJECT: QUARTERLY REPORT ON THE STATUS OF NEW REACTOR LICENSING ACTIVITIES – OCTOBER 1 – DECEMBER 31, 2009

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 October 1, 2009, through December 31, 2009. 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, international activities, and cooperation between the Nuclear Regulatory Commission and U.S. Army Corps of Engineers.

Enclosure:
As stated

cc: SECY
EDO
OGC
OCA
OPA
CFO

CONTACT: Amy Snyder, NRO/DNRL
(301) 415-6822

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Status of New Reactor Licensing Activities
October 1 – December 31, 2009

New Reactor Licensing

The U.S. Nuclear Regulatory Commission (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 staff is engaged in numerous ongoing interactions with vendors and utilities regarding prospective new reactor applications and current licensing activities. As of December 31, 2009, the NRC staff has received 18 COLAs for a total of 28 new nuclear units.

At this time, the NRC staff is making good progress on the applications it currently has under review.

Delays in COLA reviews have resulted from one of more of the following reasons: 1) some applicants had difficulties in meeting NRC-issued schedules; 2) some applicants had difficulties in providing, at the detailed technical review stage, detailed information, such as site-specific data or test data required to confirm specific approaches or applications which they have chosen to pursue; 3) some applicants had difficulties keeping pace with DC design changes made after their COLAs were submitted; and 4) some applicants made design changes (i.e., design modifications or site layout changes) after the detailed safety and environmental reviews started.

The NRC staff has suspended five reviews at the request of applicants who cited changing business strategies. In addition, there have been circumstances where applicants have submitted significant changes to their applications, revised their overall project schedules (e.g., altered their estimated dates for starting construction or for commercial operation), or reduced their level of support for NRC review activities. In the future, such changed circumstances will prompt the NRC's staff reevaluation of previously established schedules in light of the potential impact on NRC staff resource planning related to both licensing review and construction inspection activities.

The NRC staff will continue to focus on the licensing reviews and construction oversight activities necessary to address industry plans for near-term construction and operation by 2016-2017.

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 December 7, 2009, the NRC staff met with the Bipartisan Policy Center (BPC) Advocacy Network regarding the new reactor program, processes and licensing status. The BPC Advocacy Network will review the new reactor program and provide recommendations by the end of January 2010 on how to improve the new reactor program and processes. The NRC staff met with the BPC Legislative Director and senior fellows, former Senator Domenici and Dr. Richard Meserve, to provide them an overview of the New Reactor Program, what the NRC has done to prepare for new reactor applications, what the NRC has accomplished to date with new reactor licensing and construction inspection activities, and the staff's plans to enhance the program.

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.

ESBWR DC*:*

The ESBWR DC application was submitted on August 24, 2005. GEH submitted Revision 6 to the ESBWR design control document (DCD) on August 31, 2009. The NRC staff's updated review schedule for the ESBWR DC was provided to GEH on November 5, 2009. In accordance with the November 5th schedule, the NRC staff expected to issue the final safety analysis report for the ESBWR DC in January 2011 and complete the rulemaking to certify the design September 2011, provided project schedule risks in the areas of spent fuel rack design and setpoint methodology are mitigated.

GEH submitted revised analyses in August 2009 and October 2009 for the spent fuel rack design. Eleven open request for additional information (RAI) items remain in structural analysis area. GEH responded to all RAIs by December 15, 2009. The NRC staff is scheduled to complete the review of RAI responses by the end of February 2010.

Regarding setpoint methodology, NRC's contractor provided support to resolve a complex issue associated with conformance to Regulatory Guide (RG) 1.105. The staff communicated its position to GEH on September 30, 2009, that GEH has not demonstrated conformance to RG 1.105. GEH submitted revised topical report on December 12, 2009. Additional changes to topical report are required to resolve the issue. GEH is planning to resubmit the topical report by the end of January 2010 to stay on schedule.

In addition, there was a meeting with the Advisory Committee on Reactor Safeguards (ACRS) in November 2009 on the ESBWR. Based on the comments from that meeting, a new RAI was issued on December 10, 2009, requesting that the applicant address the potential buildup of a combustible concentration of hydrogen in the Passive Containment Cooling System (PCCS) heat exchangers following a loss of coolant accident. GEH has proposed a design change to address the concern and plans on submitting the necessary information to the NRC staff by January 26, 2010.

AP1000 DC AMENDMENT*:*

By letter dated May 26, 2007, Westinghouse submitted an application to amend the AP1000 DC Rule and also submitted Revision 16 to the AP1000 DCD. Westinghouse submitted Revision 17 to the AP1000 DCD on September 22, 2008. The NRC staff's updated review schedule for the AP1000 DC was provided to Westinghouse on April 3, 2009. The schedule was revised due to delayed RAI responses and new submittals. The schedule is currently under further review due to the current project schedule risks discussed below.

The shield building design methodology is the critical path task for Phase 2 and is a significant project risk. Westinghouse has agreed to perform verification testing of its design for critical sections. Westinghouse submitted a design report dated August 31, 2009, explaining design methodologies for the entire structure. The NRC staff has completed its review of Westinghouse's submittal and concluded that the proposed design will require modification in some specific areas to ensure its ability to perform its safety function under design basis conditions. The NRC staff issued a letter to Westinghouse on October 15, 2009, informing them of this conclusion and the specific technical concerns. The letter further notes that NRC staff review of other issues will continue, and that a new review schedule will be established after the applicant provides its plans to address the regulatory safety concerns.

On November 3, 2009, the NRC staff briefed staff of the Senate Committee on Energy and Natural Resources and the Committee on Environment and Public Works on the results of NRC's review of the Westinghouse AP1000 Shield Building Design Report. The NRC staff discussed the differences between the AP1000 Revision 15 and Revision 16 designs, key messages and significant findings, issues regarding the current AP1000 Revision 16 design, and the path forward towards Westinghouse's resolution of the issues.

A meeting with Westinghouse was held on November 18, 2009, at which Westinghouse outlined proposed design changes (such as added shear reinforcement, simplified air-inlet design and change in plate thickness and material). Based on the information that Westinghouse presented at this meeting, the proposed design changes are directed to resolution of the critical concerns the NRC staff identified. However, the staff believes that the design changes will require a substantial amount of effort by Westinghouse, and represent a potential impediment to reaching an NRC staff decision on the acceptability on a schedule consistent with Westinghouse's current expectations.

On November 30, 2009, NRC staff held a video conference with the Chinese regulator, National Nuclear Safety Administration of China, to discuss structural engineering issues associated with the AP1000 shield wall design. Refer to the section of this report on International Activities for more information regarding this activity.

On December 3, 2009, a non technical meeting between the NRC staff and Westinghouse on the AP1000 shield building was conducted to identify dates for specific technical meetings associated with the testing and benchmarking plans. A meeting on test program setup and criteria and analysis was held on December 21-22, 2009. A technical meeting is scheduled for January 28-29, 2010. Westinghouse plans on providing to the NRC staff its revised Shield Building Design Report, Seismic Report, Hard Rock High Frequency Report, and Shield

Building Chapter 3 update in February 2010 and its Test Summary Report in March 2010.The schedule is considered tentative.

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 are still unresolved on the containment sump issue, notably, 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. Supplemental RAIs were issued on August 14, 2009, and a letter was issued by the NRC staff on August 27, 2009, advising that the schedule will be impacted for this chapter. A NRC public meeting on these remaining issues was held on September 2, 2009. The NRC staff held a teleconference with Westinghouse on September 16, 2009, on the remaining issues from the public meeting. Westinghouse is considering more design changes for the in-containment refueling water storage tank screens. A public meeting was conducted on December 15, 2009, to discuss these submittals and overall schedule for Chapter 6. The applicant is to complete its submittals in February 2010.

Two other areas pose schedule risks for the AP1000 amendment. These are the seismic rack design for new and spent fuel storage and spent fuel criticality. The NRC staff believes that Westinghouse's current seismic rack design for new and spent fuel storage does not appear to meet the American Society of Mechanical Engineers (ASME) code. To address the potential risk to the review schedule, the NRC staff has engaged Westinghouse many times, through teleconferences, after the staff issued its RAIs at the end of January 2009. The last teleconference between the staff and Westinghouse occurred on October 28, 2009. Westinghouse submitted its revised rack design analysis in November 2009. The NRC staff is planning to conduct an audit in January 2010 on the rack analysis.

The spent fuel pool criticality report was submitted by Westinghouse and is currently under review by the staff. A course of action was agreed upon to restrict loading in the pool pending resolution of concerns about burnup credit. Westinghouse provided a letter to the NRC staff on September 16, 2009, committing to revised analysis and restricted loading pattern. The NRC staff has issued the safety evaluation (SE) with open items for this section. The SE with open items was presented to the ACRS in November 2009. Westinghouse is still interested in burnup credit to support full pool loading and is having discussions with NRC staff on how to proceed. 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. These issues were discussed at a December 15, 2009, public meeting, so that the NRC staff understands the plan and schedule for Westinghouse's resolution of these topics. Additional responses on control room ventilation are expected by February 2010.

US EPR DC*:*

The US EPR DC was submitted on December 11, 2007. The NRC staff completed its acceptance review of AREVA's US EPR DC on February 25, 2008, and is currently conducting its safety review of the US EPR DC application. Phase 1 of the review for US EPR DC was completed on January 28, 2009. The NRC staff's Final SER (FSER) for the US EPR DC was scheduled to be completed in September 2011. However, the US EPR DC has high schedule risks in the following areas of review: modeling for the passive containment cooling analysis, digital instrumentation and controls (DI&C), methodology used in some design basis accident analyses, and containment sump design. The NRC staff will make a decision on the viability of the new Phase 2 schedule by mid-May 2010.

The U.S. EPR design does not rely on active containment cooling systems for post-accident containment mixing. The NRC staff issued a request for additional information which requested

long lead items properly address the issue. The applicant developed a multi-node containment model after the single-node model was found to be non-conservative. AREVA submitted a technical report containing the multi-node containment analysis and associated Final Safety Analysis Report (FSAR) changes on December 18, 2009. The NRC staff is reviewing the submittal.

AREVA has submitted topical reports that are incorporated by reference in I&C, accident analyses and fuel design chapters. The NRC staff has raised significant issues on digital I&C design and the methodology used in some design basis accident analyses. AREVA has submitted revised technical reports and FSAR changes to address staff's concerns. The NRC staff is reviewing the new information.

For this review, there is an issue related to the Generic Safety Issue (GSI)-191, "Assessment of Debris Accumulation on Pressurized-Water Reactor (PWR) Sump Performance." AREVA's analysis and testing supporting the adequacy of the sump design does not follow current industry guidance and does not adequately address key technical topics like chemical and downstream effects. AREVA is committed to provide a complete submittal to the NRC staff by April 22, 2010.

During the final stage of the Phase 2 review, AREVA submitted a technical report containing a design change to the new and spent fuel storage rack. The additional review scope has resulted in making Chapter 9 a near critical path for review. The NRC staff is reviewing the new information.

AREVA has changed the analytical methodology to complete the seismic and structural design. This reanalysis is not yet complete. The Chapter 3 Phase 2 completion date has been extended from April 2010 to October 2010 to accommodate review of this methodology change. AREVA plans to submit FSAR markup/RAI responses on new analytical methodology by early May 2010.

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. Twelve MHI US-APWR Topical Reports referenced in the DC are also under NRC staff review. The FSER is scheduled for completion in September 2011. MHI submitted Revision 2 of the DCD on October 27, 2009. The revision included design changes that will require additional NRC staff review. The NRC staff is evaluating the scope of changes in the DCD revision to determine if the review can be completed within the current schedule. 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 analysis to support the review.

MHI is changing 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 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 will submit a letter to the NRC staff with its submittal plan for new seismic design technical reports. The staff will then evaluate the submittal plan and determine if its review can be accomplished within the current schedule or if schedule changes are necessary. MHI will be notified of the staff's review results and any potential schedule changes.

ABWR DC RULE AMENDMENT*:*

South Texas Project Nuclear Operating Company (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 NRC staff requested, in a letter dated September 9, 2009, that STPNOC submit a supplemental Environmental Report (ER) to support this application. STPNOC submitted its supplemental ER on November 10, 2009. The docketing letter for the DCR amendment application and the notice to the *Federal Register* were issued on November 23, 2009. 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.

The NRC staff's initial assessment of the DCR amendment application indicated that there will be a significant revision to the application to minimize the number of COLA information items that impact the STP COLA review. Over 25 RAI questions have been issued to STPNOC for action. Additional RAIs are expected by the end of January 2010 to complete the initial review and RAI issuance. A meeting is planned to discuss STPNOC's proposed responses to these questions.

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

On June 30, 2009, Exelon advised the NRC staff and issued a press release stating the company will pursue an ESP at the Victoria County location rather than a combined license. By letter dated July 1, 2009, Exelon notified the NRC staff that it decided to pursue an ESP rather than a COL. By letter dated October 13, 2009, Exelon informed the NRC staff that it plans to submit the application in March 2010 and that the application will use the plant parameter envelop approach, include a complete emergency plan, and will not include a request for a LWA.

Other ESP Activities:

By letter dated December 2, 2008, PSEG updated the NRC staff on PSEG's intention to submit an application for an ESP during the second quarter of calendar year 2010. PSEG plans to utilize a Plant Parameter Envelope (PPE) Methodology in the ESP application since PSEG has not yet selected a reactor technology. The NRC staff has been providing support to PSEG for their pre-application activities.

Combined License Applications:

As of December 31, 2009, the NRC staff has received eighteen (18) COLAs for review. The status of these COLAs as of December 31, 2009, is provided in the table below.

Applicant	**Design Type**	**Status**
Calvert Cliffs 3 Nuclear Project, LLC and UniStar Nuclear Operating Services, LLC. [UniStar]	US EPR (Reference Plant)	On August 14, 2007, the NRC staff conducted a public outreach meeting. The first part of the application was submitted on July 13, 2007. The NRC staff completed its acceptance review of the partial COLA (first part of the application) on January 25, 2008.

Applicant	Design Type	Status
(Calvert Cliffs)		The second part of the COLA was submitted on March 17, 2008. The third part of the COLA was submitted on March 17, 2008. The NRC staff issued the schedule for the review of the full COLA on August 18, 2008, establishing a schedule to complete the SER by August 2011, Draft Environmental Impact Statement (EIS) by February 2009, and Final EIS by May 2010. The schedule was revised on December 19, 2008, to change all environmental review due dates to "to be determined" pending complete and sufficient responses from UniStar. The safety review schedule was revised on February 19, 2009, because of changes of the US EPR DC schedule. The FSER was rescheduled for completion in April 2012. Due to the intake structure location change, numerous open items from RAIs, and ongoing negotiations between UniStar and the State of Maryland on environmental impact mitigation issues, the Draft Environmental Impact Statement (DEIS) schedule was reexamined. The DEIS schedule was also impacted by issues with the applicant's alternative site selection process. Revised alternatives information was submitted on July 17, 2009. An alternative site audit was held on August 18-19, 2009. Revision 1 of the alternative submittal was received by the NRC staff on August 29, 2009. The NRC staff reviewed the information and determined that RAIs were still needed. The NRC staff developed RAIs that were issued on September 18, 2009. The NRC staff is reviewing this information and working on publication of the DEIS. The current schedule reflects completion of the SER by July 2012, DEIS by March 2010 and Final Environmental Impact Statement (FEIS) by February 2011. However, as of December 31, 2009, there is a lack of documentation regarding seismic analyses, geotechnical and financial information. Electricite de France (EDF) has purchased 49.99% of the Constellation Nuclear Energy Group. This impacts the financial review of the COLA because UniStar needs to submit organizational and financial details after this restructure. UniStar has rescheduled again the submittal date for the information about the corporate structure to January 8, 2010. UniStar does not intend to respond to some RAIs pertinent to FSAR Section 2.3 until January 29, 2010.

Applicant	Design Type	Status
		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. The current phase 1 completion schedule for Chapter 2 is the end of February 2010. Requests for additional information are being generated as needed. Draft EIS is scheduled to be issued to the US Environmental Protection Agency in March 2010. The NRC staff conducted a Writing Session during December 7 -11, 2009. 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 will start review of this new submittal and generate RAIs as needed.
South Texas Project Nuclear Operating Company (STPNOC) (South Texas Project [STP])	ABWR (Reference Plant)	On June 27, 2007, the NRC staff conducted a public outreach meeting. The application was submitted on September 20, 2007. STPNOC chose Toshiba, Inc. (Toshiba) as the engineering and procurement contractor for the new STP units and the staff performed a due diligence assessment to determine whether STPNOC had demonstrated that Toshiba was qualified to supply the certified ABWR design. 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. On September 18, 2009, STPNOC submitted Revision 3 of the COLA. The FEIS is currently scheduled for completion in March 2011. The FSER is currently scheduled for completion in September 2011. STPNOC submitted on June 30, 2009, an application to amend the ABWR DCR to address the requirements of the aircraft impact rule. STPNOC is planning to incorporate by reference the DCR to address aircraft impact in the COLA. On November 16, 2009, STPNOC submitted an application for a Limited Work Authorization 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. At this point, STPNOC may request an exemption from the regulation, continue with the LWA process and submit an environmental report and a site redress plan, or delay construction of the wall until the license has been issued for Units 3 and 4.
Tennessee	AP1000	On September 11, 2007, the NRC staff conducted a public

Applicant	Design Type	Status
Valley Authority (TVA) (Bellefonte)	(Reference Plant - in transition to Subsequent COL)	outreach meeting. The application was submitted on October 30, 2007. The NRC staff issued a review schedule on February 15, 2008. 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 for providing hydrology information by the end of February 2010. However, TVA is currently conducting additional dam stability analysis which may impact the hydrologic analysis. This additional analysis is expected to take up to one year. The NRC staff issued an SER with open items for Chapters 1, 4, 5, 10, 11, 12, 14, 16, 17, and 19 in June 2009 to support an ACRS meeting on July 23 and 24, 2009. 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 staff on whether it will complete Units 1 and 2. TVA has indicated that it intends to make a decision sometime in 2011. On November 5, 2009, TVA provided a draft supplemental EIS (DSEIS) on its website for a single unit at the Bellefonte Nuclear Plant site. The DSEIS supplements the original 1974 FEIS for Bellefonte Nuclear Plant Units 1 and 2. The DSEIS considers the following three alternatives: (1) taking no action, (2) completing and operating one of the existing, unfinished Babcock & Wilcox units, or (3) constructing and operating one new Westinghouse AP1000 nuclear unit. TVA sought public comment through December 28, 2009 on the DSEIS. The impact of this action on the NRC staff's environmental review and the safety review for the Bellefonte 3 and 4 COLAs have not been determined. On TVA's website announcing the DSEIS, TVA states that it intends to continue to pursue a COL for Units 3 and 4 although the DSEIS supports construction of only one unit on site. The NRC staff is currently scheduled to complete the second phase of its safety evaluation, SER with Open Items, by January 2010 without the hydrology and security information. However, the safety review is going to be re-baselined to reflect DC review schedule and change from Reference COL (RCOL) to Subsequent COL (SCOL) status.

Applicant	Design Type	Status
Dominion Virginia Power (Dominion) (North Anna)	ESBWR (Reference Plant)	On October 24, 2007, the NRC staff conducted a public outreach meeting. The application was submitted on November 27, 2007. The safety and environmental reviews are currently underway. The Final Supplemental EIS is scheduled for completion in April 2010. The FSER is scheduled for completion in February 2011. On December 19, 2008, the NRC staff published the DSEIS for the COLA for North Anna Unit 3. In August 2009, the NRC staff completed, on schedule, Phase 2 of its Safety Review, by issuing the SER with Open Items [incorporating COLA Rev 1]. In November 2009, the ACRS completed its review of the SER with Open Items. 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 NRC staff is actively pursuing resolution of open items with the applicant. The applicant has been evaluating technology options in an effort to decide whether to remain with ESBWR or chose another option. The applicant's schedule calls for a technology decision by the first quarter (CY) 2010. 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 applicant proposes that the FSAR update, due in December 2009, be submitted by June 30, 2010. The Advanced SER with no Open Items Issued Schedule will be revised consistent with the ESBWR DC schedule and delayed submittal of the updated FSAR.

Applicant	Design Type	Status
Duke Energy (William States Lee III)	AP1000	On August 30, 2007, the NRC staff conducted a public outreach meeting. The application was submitted on December 13, 2007. The safety and environmental reviews are currently underway. On September 14, 2009, Duke Energy sent a letter to the NRC staff describing its three year delay for commercial operations for the William States Lee III Nuclear Station Units 1 and 2. By letter dated September 24, 2009, a supplement to the ER was submitted to the NRC staff, which describes the applicant's plan for Make-Up Pond C. The NRC staff is currently conducting a review of this submittal. The EIS Scoping Summary Report was issued on September 11, 2008. The environmental review schedule will be revised to reflect the applicant's plans to construct an additional offsite source of make-up water and the applicant's change to its commercial operational schedule. 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 DCA review, the applicant's plans to construct an additional offsite source of make-up water, and the applicant's change to its commercial operational schedule.
Progress Energy Carolinas, Inc. (PEC) (Shearon Harris)	AP1000	On September 18, 2007, the NRC staff conducted a public outreach meeting. The application was submitted on February 19, 2008. The safety and environmental reviews are currently underway. 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. The FSER is scheduled to be completed by April 2011. However, the schedule will be revised to reflect the revised review schedule for the AP1000 DCA review and the need for sequencing the reviews.
Entergy Operations, Inc. (EOI) (Grand Gulf)	ESBWR	On February 21, 2008, the NRC staff conducted a public outreach meeting. The application was submitted on February 27, 2008.

Applicant	Design Type	Status
		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. EOI plans to reconsider the GEH ESBWR reactor technology, which was the basis for its COLA. The NRC staff responded to the request and has suspended its review. The NRC staff is coordinating with other Federal agencies 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.
Southern Nuclear Operating Company (SNC) (Vogtle)	AP1000 (in transition to become the RCOL)	On July 17, 2008, the NRC staff conducted a public outreach meeting. The application was submitted on March 31, 2008. The NRC staff is currently conducting the safety and environmental reviews. The FEIS was scheduled for completion in April 2009. However, the environmental review schedule was changed to "to be determined" to reflect uncertainties in the issuance date for a decision in the VEGP ESP proceeding. On August 26, 2009, the NRC issued the VEGP ESP and LWA. The recently issued VEGP ESP facilitates the COLA review. The NRC staff is currently re-examining the Vogtle FEIS COLA schedule. The NRC staff issued a revised safety review schedule on June 30, 2009. The FSER is scheduled for completion in April 2011; however completion of the FSER is dependent on the AP1000 DCA review schedule. The Vogtle COLA review is not scheduled for Phase 3 Safety Review, meeting with ACRS, as part of the RCOL transition plan. The NRC received the ER Revision 1 on September 24, 2009. The NRC staff received a Vogtle Units 3 and 4 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 conducting an acceptance review to determine whether the LWA request is sufficiently complete to be docketed as part of the COLA review.

Applicant	Design Type	Status
South Carolina Electric & Gas (SCE&G) (Virgil C. Summer)	AP1000	On August 27, 2007, the NRC staff conducted a public outreach meeting. The application was submitted on March 27, 2008. The safety and environmental reviews are underway. In a letter dated July 30, 2009, from SCE&G, the NRC staff received Revision 1 of Summer Units 2 and 3 COLA. Revision 1 of the Summer application includes the annual update of the Final Safety Analysis Report (FSAR) and the semiannual update of the Departure Report and Part 7, respectively. The FEIS and FSER are scheduled for completion in February 2011.
AmerenUE (Callaway)	US EPR	On July 9, 2008, the NRC staff conducted a public outreach meeting. The application was submitted on July 24, 2008. The Callaway COLA review was suspended by request of the applicant in June 2009 and remains suspended.
Progress Energy Florida, Inc. (PEF) (Levy County)	AP1000	On June 5, 2008, the NRC staff conducted a public outreach meeting. The application was submitted on July 30, 2008. The safety and environmental reviews are underway. The FEIS was scheduled for completion in September 2010 but is being reevaluated based on the applicant's proposed response dates for RAIs. Areas that of high schedule risk include floodplain compensation, least environmentally damaging practicable alternative analysis, and groundwater modeling. The FSER is currently scheduled for completion in July 2011. In a letter dated May 1, 2009, PEF formally withdrew an LWA request associated with the Levy County site in Florida. Responses to latest round of NRC staff and US Army Corps of Engineers' (USACEs') RAIs were received in December 2009. The NRC staff is currently revaluating the submittal.
Exelon Nuclear Texas Holdings, LLC (Exelon) (Victoria County Station)	ABWR	On August 7, 2008, the NRC staff conducted a public outreach meeting. The application was submitted on September 3, 2008. The NRC staff completed its acceptance review on October 30, 2008. By letter dated November 24, 2008, Exelon advised the NRC

Applicant	Design Type	Status
		staff that it expected to designate an alternate reactor technology. The NRC staff suspended most of the COLA review and its development of a review schedule. FEMA's review of offsite emergency preparedness continues because it is independent of any future reactor technology selection. The existing application remains docketed. By letter dated July 1, 2009, Exelon notified the NRC staff that Exelon had decided to pursue an ESP rather than a COL for Victoria Station. By letter dated October 13, 2009, Exelon notified the NRC staff it plans to submit its ESP application in late March 2010. The application will use the plant parameter envelop approach for two units, will include a complete emergency plan, and will not request an LWA.
Detroit Edison Energy (Fermi)	ESBWR	On August 20, 2008, the NRC staff conducted a public outreach meeting. The application was submitted on September 18, 2008. By letter dated June 30, 2009, the NRC staff issued a review schedule for the COLA. The FEIS is scheduled for completion August 2011. The FSER is scheduled for completion in March 2012.
Luminant Generation Company, LLC (Luminant) (Comanche Peak)	US-APWR	On August 20, 2008, the NRC staff conducted a public outreach meeting. The application was submitted on September 19, 2008. Safety and environmental reviews are underway. The FEIS is scheduled to be completed by January 2011. The FSER is scheduled to be completed by December 2011. Phase I of the Safety Review, was completed in October 2009. The applicant submitted RCOLA Revision 1, on November 20, 2009. The staff is reviewing RCOLA Revision 1 to determine if there is any impact on the RCOLA schedule. 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. RAIs were issued June 26, 2009. Luminant submitted its RAI

Applicant	Design Type	Status
		responses on August 14, 2009, and September 14, and 17, 2009, and October 8, 2009. The staff determined that the applicant did not address all outstanding RAIs. The applicant submitted subsequent responses to outstanding RAIs on December 18, 2009. The NRC staff is currently reviewing the responses. The staff has determined that the applicant did not provide sufficient information in Part 1, Administrative and Financial Information. On August 31, 2009, Luminant provided its response to the NRC staff's RAIs, resulting in additional RAIs on November 23, 2009. The NRC staff is currently evaluating the schedule impact. 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. The RAIs were issued on July 1, 2009 and the applicant provided its responses on August 28, September 10, and 28, and October 28, 2009. The applicant provided a supplemental response on December 14, 2009, which significantly revised the PSHA. Luminant informed the NRC staff that it will not be able to provide the results of the sensitivity analyses until February 2010. This sensitivity analyses is an input to the PSHA, and the NRC staff had requested this analyses to verify the PSHA. The NRC staff is currently evaluating the schedule impact. Furthermore, in the DCD for the US-APWR, MHI, the DCD applicant, is changing the SSI seismic analysis methodology for all safety-related structures as described in the DC section of this report. After the NRC staff evaluates the DCD submittal plan and determine if DCD schedule changes are necessary, the NRC staff will then determine if there are any schedule impacts on the Comanche Peak RCOLA review schedule.
Entergy Operations, Inc. (EOI) (River Bend Station)	ESBWR	On November 18, 2008, the NRC staff conducted a public outreach meeting. The application was submitted on September 25, 2008. The NRC staff completed its acceptance review on December 4, 2008. 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. This review remains suspended except for Emergency Preparedness Reviews, which FEMA performs and which are

Applicant	Design Type	Status
		independent of any future selected reactor technology.
Nine Mile Point 3 Nuclear Project, LLC and UniStar Nuclear Operating Services, LLC (UniStar) (Nine Mile Point)	US EPR	On August 21, 2008, the NRC staff conducted a public outreach meeting. The application was submitted on September 30, 2008. On February 9, 2009, UniStar submitted a letter requesting that the NRC staff stagger the review of the Nine Mile Point Unit 3 COLA, relative to the current schedule of the Calvert Cliffs Unit 3 RCOL. UniStar requested that some review activities, such as those associated with the Department of Homeland Security (DHS) Audit, Emergency Preparedness (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 commence in September 2010. The NRC staff's response to the applicant's letter dated August 17, 2009, was issued on September 28, 2009. The response letter informed UniStar that the NRC staff will suspend most review activities on the application until at least September 2010, and to continue with the limited-scope activities associated with (i) Hydrologic Engineering, specifically, Lake Ontario tsunami effect study by the US Geological Survey, and Lake Ontario ice effect study by USACE resulting in a technical report with adequate guidance for FSAR review; (ii) 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 Army Corps of Engineers on joint permitting and NYS DEIS activities; and limited maintenance of environmental files and records; and (iii) Emergency Planning, specifically, FEMA review of State and local emergency planning information through completion of Advanced SER Input. In a public meeting on October 8, 2009, UniStar informed the NRC staff that Revision 2 of the COLA will be submitted by September 30, 2010. On December 1, 2009, UniStar submitted a letter requesting that the NRC staff temporarily suspend the Nine Mile Point Unit 3 Nuclear Power Plant Combined License Application review, including any supporting reviews by external agencies, until further notice. UniStar informed the NRC staff that its decision to request the suspension was because the plant was not selected for federal loan guarantees.
PPL Bell Bend, LLC (Bell Bend)	US EPR	On August 19, 2008, the NRC staff conducted a public outreach meeting.

Applicant	Design Type	Status
		The application was submitted on October 10, 2008. The EIS scoping report was completed in August 2009. The FEIS is scheduled to be completed by March 2011. However, several issues for environmental review could impact this schedule. Based on lessons learned from Calvert Cliffs, the applicant has conducted a new alternative site selection process and identified two new alternate sites. The applicant is proposing site layout changes to reduce impacts to "Exceptional Values" wetlands to satisfy USACE needs for Clean Water Act Section 404 permit. The NRC staff will be receiving revised information from the applicant to address the power block move. The submittal schedule was received from the applicant on December 28, 2009. The staff will need to re-address large portions of geology, seismic design and hydrology for these revised submittals. In addition, the Susquehanna River Basin Commission has communicated its position to the applicant that it does not intent to approve water withdrawal during low flow periods unless there is low flow augmentation (water storage). The Impact could be significant depending upon applicant's decision on water storage. The NRC's EIS needs to evaluate impacts of proposed water storage and alternatives (flood abandoned mines, build reservoir, etc.) The applicant is developing its options and indicated information may not be available to the NRC staff for several months. The NRC staff is currently re-examining the Bell Bend COLA environmental project schedule. The FSER is scheduled to be completed by March 2012. This SCOL is dependent on the Calvert Cliffs (RCOL) project's ability to meet its schedule.
Florida Power and Light (FPL) (Turkey Point)	AP1000	On March 26, 2009, the NRC staff conducted a public outreach meeting. The COLA for Turkey Point Units 6 and 7 was tendered by FPL on June 30, 2009. The NRC staff completed its acceptance review on 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.

Applicant	Design Type	Status
		In a letter dated November 9, 2009, FPL submitted additional information in these areas. The staff completed its review of FPL's responses by the end of November to determine whether the responses are sufficient to begin the review and develop a schedule. 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. FPL will be providing more detailed regional geologic/seismic information. Teleconference between the FPL and the NRC staff are expected to occur during the month of January 2010. The NRC staff will begin to develop the schedule in all areas, except geology/seismology with the goal of having a complete review schedule issued no later than by the beginning of March 2010, provided there are adequate resources. For schedule planning purposes, the staff will assume that an SSI will be needed.
Alternate Energy Holdings (Hammett)	US EPR (I unit)	The application was expected in the 4th 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 4th 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)	The application for an ESP or COL is expected in April 2010.
Unannounced (TBD)	TBD (units -TBD)	The application is expected during the 2010-2011 timeframe.
Southern Nuclear Operating Company (SNC) (TBD)	TBD (units TBD)	The application is expected in late 2010.
Unannounced	TBD (2 units)	The application is expected late in FY 2010.

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 First Quarter FY 2010:

Prior to receiving new reactor applications, teams of NRC staff and contractors may conduct a range of activities to evaluate an applicant's readiness to submit its ER. The NRC staff completed a readiness assessment activity for the Salem/Hope Creek (C-2) site during the week of October 19, 2009. A readiness assessment is tentatively scheduled for Salem/Hope Creek (C-3, tentative) for March 1, 2010.

A Site Safety Audit, covering the areas of Geology, Seismology & Geotechnical Engineering was conducted at Fermi during the week of November 2, 2009.

DHS Site Visit [coordinated with the Office of Nuclear Security and Incident Response (NSIR)] was conducted at Turkey Point during the week of November 2, 2009.

The NRC staff conducted a Physical Security Audit at STP as part of the review of the STP COLA review. The audit was conducted on November 17 and 18, 2009.

An audit of selected ABWR design certification departures was conducted at STP on October 27-29, 2009 as part of the Unit 3 and 4 COLA review.

Regulatory Infrastructure Activities

Review Process

The NRC staff continues to perform activities to enhance the efficiency and effectiveness 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. The NRC staff has successfully implemented processes and performed acceptance reviews on DC applications and COLAs. The NRC staff has also established schedules for the review of the applications.

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)

ISG issued by NRO is available to the public on the NRC Web site. The ISGs issued included three final ISGs during first quarter (Q1) FY 2010, which included Evaluation and Acceptance Criteria for Title 10 of the *Code Federal Regulations*, Section 20.1406 (10 CFR 20.1406), "Adverse Flow Effects in Equipment Other Than Reactor Internals and Finalizing Licensing-basis Information."

Five ISGs were issued in a draft form for public comments during 1Q, FY 2010. These include Generic Requirements On Post-combined License Commitments, 10 CFR 50.54 (hh)(2) and 10 CFR 52.80(d) Compliance, Ensuring Hazard-Consistent Seismic Input for Site Response and Soil Structure Interaction, Design Reliability Assurance Program, Review of Evaluation to address Gas Accumulation Issues in Safety Related Systems and Implementation of a Probabilistic Risk Assessment-Based Seismic Margin Analysis for New Reactors.

The staff is currently assessing the need for proposed ISGs in other areas such Gas Turbine Driven Standby Emergency Alternating Current Power System, Construction of New Nuclear Power Plants on Multi-Unit Sites and Construction of New Nuclear Power Plants on Multi-Unit Sites.

Standard Review Plan (SRP)

Plans are being developed by the NRC staff to better integrate the maintenance of the SRP into the roles and responsibilities of technical branches, develop tools such as Wizard, knowledge management activities and a database tool for tracking the guidance updates completed since March 2007, as well as a portal for requesting future updates. Revision 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 March 2010.

In assisting with responsibilities of maintaining and updating NUREG-0800 agency wide, the NRO staff is currently assessing the need for issuing proposed SRP Section 13.6.6, "Cyber Security Program," issuing Revision 1 of SRP Section 14.3.12, "Physical Security Hardware – Inspections, Tests, Analyses, and Acceptance Criteria," and other SRP section requests from the Office of Nuclear Security and Incident Response (NSIR). During 1Q FY 2010, NRO staff assisted the Office of Nuclear Reactor Regulation (NRR) staff in issuing SRP Section 9.5.1.2, "Risk-Informed, Performance Based Fire Protection Program," as final.

Outreach

On October 14, 2009, the staff held a Category 1 closed meeting to discuss the ABWR DC rule amendment application submitted by STPNOC to implement the aircraft impact rule in 10 CFR 50.150.

On October 18-24, 2009, NRO staff met with Japanese regulators (NISA/JNES) and industry on the ABWR design and the Multinational Design Evaluation Program (MDEP) to discuss potential cooperation with the regulator on the ABWR design reviews and construction oversight; to observe manufacturing of ABWR components, particularly modules; and to tour an ABWR under construction. One goal of the exchange was to communicate how the results of MDEP could benefit both the regulator and Japanese industry, get feedback on MDEP goals and activities, and address concerns regarding the use of MDEP common practices.

As a result, of the discussions, NISA agreed to begin cooperative interactions on the ABWR working through small groups of technical staff, beginning with small groups of experts to identify areas of common interest similar to the model used by the MDEP working groups. The NRC staff and NISA also discussed the potential for placing NRC staff at NISA/JNES in the future to gain experience in construction inspection.

On December 17, 2009, NRO staff held a Category 3 public meeting to engage industry and interested stakeholders on continuing topics concerning Inspections, Tests, Analyses, and

Acceptance Criteria (ITAAC) and licensing activities. The meeting was lead by the Technical Specifications & ITAAC Branch (CTSB/CIT) of the Division of Construction, Inspection, and Operational Programs (DCIP) in NRO, with support from the Division of New Reactor Licensing (DNRL), the Division of Engineering, and the NSIR. The staff and stakeholders continued discussions of topics to be addressed in the upcoming revision to RG 1.215, "Guidance for ITAAC Closure Under 10 CFR Part 52," including ITAAC maintenance related examples and the proposed draft thresholds for supplemental reporting, understanding of when changes to ITAAC related structures, systems, and components (SSCs) would require a license amendment, the definition of the term "as-built" as it relates to ITAAC, and applicability of ASME Code Section III and Section XI during construction. DCIP staff also led an informational session on the inspectional aspects of ITAAC at which staff experts discussed various existing DC ITAAC examples and focused on how improvements to terminology could lessen ambiguity.

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.

On January 30, 2009, the staff issued SECY-09-0018, "Design Certification Rulemaking," which details the staff's streamlining effort. If the various identified improvements are implemented, the staff believes that the DC rulemakings could be completed in about 1 year and could 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 plans to make these templates publicly available and discuss them in a public meeting targeted for February 2010. A desktop procedure and training on the streamlined DC rulemaking process are planned for 1Q and 2Q FY 2010, respectively.

In a related activity, the Rulemaking, Guidance and Development Branch of 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 efficiency and effectiveness gains in a future self-assessment. The staff is scheduled to issue that report in September 2011.

Interoffice Rulemaking Contract

NRO is collaborating 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. A working group was established and has drafted a request for procurement action (RFPA). Concurrence on the RFPA package will begin in January 2010 with a target to send the package to the Chairman for approval in February 2010.

Aircraft Impact Assessment Rulemaking

The final rulemaking on aircraft impact assessments (AIA) was published in the *Federal Register* (FR) on June 12, 2009, and became effective on July 13, 2009. The rule 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 has completed its review of a Nuclear Energy Institute (NEI) guidance document related to the performance of the AIA, NEI 07-13, "Methodology for Performing Aircraft Impact Assessments for New Plant Designs," Revision 7, issued May 2009. The staff issued DG-1176, "Guidance for the Assessment of Beyond-Design-Basis Aircraft Impacts," endorsing NEI 07-13, for public comment on July 10, 2009. The public comment period closed on September 8, 2009, and no comments were received.

On December 1, 2009, staff from NRO, RES and representatives from NEI met with the Office of the Advisory Committee on Reactor Safeguards (ACRS) Safeguards & Security Subcommittee to discuss draft RG 1.217, "Assessment of Beyond-Design-Basis Aircraft Impacts," and the industry guidance this RG endorses, NEI 07-13, "Methodology for Performing Aircraft Impact Assessments for New Plant Designs." The staff provided an overview of the aircraft impact rule, the development of the industry guidance, and subsequent endorsement of the guidance by the NRC staff. NEI made a detailed presentation on the history and content of NEI 07-13. The staff will meet with the ACRS Full Committee on February 4, 2010, and plans to issue the final RG shortly thereafter.

Part 21 Rulemaking

The NRO staff has identified several areas in Part 21, that could be enhanced through rulemaking. NRO 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/DNRL is planning to draft a Commission paper discussing the staff's plans for addressing future certification activities related to the ABWR DC. There are currently two parties who have stated their intention to submit renewals for the ABWR DC in FY 2010. In addition, STPNOC submitted a request to amend the ABWR DC to comply with the aircraft impact rule in June 2009. The staff is currently performing its technical review of this application. The staff expects to have the Commission paper issued by the summer of 2010.

Part 73, 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. Two areas of NRO attention are:

- 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 06-06,

Revision 3. The ISG public comment period closed on November 17, 2009 and staff is reviewing the comments. A closed meeting will be held during January with a target of issuing the final version by the end of January 2010.

- Section 73.54 - The security rulemaking included a new provision for cyber security, section 73.54. The final Regulatory Guide 5.71 will be issued in January 2010 and will be publically available. 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."

Cyber Security

The security rulemaking includes a new provision for cyber security. A draft of the associated guidance document was issued for public comment. A meeting on the associated draft RG was held on July 18, 2008. Between February 26 and March 5, 2009, the NRC staff briefed the ACRS Digital I&C Subcommittee and Full Committee on draft RG RG-5.71, "Cyber Security Programs for Nuclear Facilities." The RG was developed in response to the new cyber security rule 10 CFR 73.54. A meeting was held with stakeholders on March 5, 2009, to discuss the draft NEI-08-09, "Cyber Security Plan Template." The NRC staff provided comments on this draft to NEI in June 2009. Revision 3 of NEI-08-09 is under NRC review. The NRC staff briefed the ACRS Digital Instrumentation and Control 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.

Access Authorization and Physical Protection Requirements for Nuclear Power Plant Construction

This rulemaking would require the implementation of physical protection measures during the reactor construction phase; access authorization controls; physical inspections; monitoring of large preauthorized delivery offloading; lockdown measures and procedures for securing the security- and safety-related SSCs; and performance of high-quality security sweeps before the arrival of licensed material and the plant's transition into its operational phase. The working group plans to publish preliminary draft rule language to inform stakeholders of the current status of the NRC's activities and solicit public comments on the information being provided at this time. This draft rule language FR notice is targeted to be published by February 28, 2010. After receiving feedback from stakeholders on the draft rule text, the staff plans to provide a proposed rule to the Commission by September 20, 2010.

ITAAC Rulemaking

NRO/DNRL is developing a proposed rulemaking to address ITAAC-related issues, mainly to require licensee reporting of events that may result in the acceptance criteria for successfully completed ITAAC no longer being met. The current schedule is to have a proposed rule to the Commission by June 30, 2010.

Advanced Reactors:

The NRC staff has established an Advanced Reactor Program (ARP) to plan for future applications involving small modular reactors. The ARP 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 ARP 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 of the ARP as the NRC staff develops the necessary infrastructure to license gas-cooled reactors consistent with the joint NRC/DOE NGNP licensing strategy. On September 18, 2009, DOE issued a financial offer assistance related to developing conceptual designs for NGNP.

The ARP has added a branch 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 continues to enhance the effectiveness and efficiency of other advanced reactor activities by:

- providing the information necessary to develop resource estimates for reviewing the designs for advanced reactors;

- 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 interrelated or cross-cutting regulatory safety issues and beginning to identify reasonable resolution paths for these issues; 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 also met with various international organizations regarding technical and licensing issues associated with small and medium-sized reactors. On October 8-9, 2009, the NRC staff conducted a workshop on generic licensing issues for small modular reactors.

Several letters have been received regarding licensing plans for various reactors. A summary is provided below:

Reactor	Application Type	Projected Application Schedule
NGNP	COL (or DC)	2013
Toshiba 4S (Super Safe, Small & Simple)	Design Approval	October 2010
GE-H PRISM	COL Prototype / Manufacturing License	Late 2012
Westinghouse International Reactor Innovative & Secure (IRIS)	DC	2012
B&W mPower Design	DC	2012
NuScale	DC	2011

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.

Contracting Activities:

The following table reflects the first quarter (Q1) FY2010 committed and obligated funding:

NRO CASE WORK ONLY

FY 2010 Funding	Q1
Commitments	$3,973,369.80
Obligations	$2,736,311.00

NRO- ALL (NON-PMDA MANAGED WORK)

FY 2010 Funding	Q1
Commitments	$5,778,297.64
Obligations	$3,642,381.50

Construction Inspection Activities

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 Regulatory Guide 1.215, "Guidance for ITAAC Closure Under 10 CFR Part 52," in October. 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 and in the September 22, 2009, Commission meeting. Additional activities included developing and issuing NRO Office Instruction NRO-REG-112, "New Reactor Construction Experience Program," and deployment of the Construction Inspection Program Information Management System. Additionally, the NRC staff updated the Commission in SECY 09-0113 on an interim approach for the construction assessment program including the evaluation of areas important to safety culture. The NRC staff intends to continue working with industry and other stakeholders on the development of assessment program policy options and submit these options to the Commission by November 2010.

NRO completed the commitment made to the Commission to revise Inspection Manual Chapters MC 0613, "Documenting 10 CFR Part 52 Construction Inspections" and MC 2505, "Periodic Assessment of Construction Inspection Program Results". The revision addressed safety culture and its respective components and aspects and how they would be documented and assessed. The NRC staff also developed and issued revisions to two Inspection Manual Chapters: MC 0617, "Vendor and Quality Assurance Implementation Inspection Reports," and MC 2504, "Construction Inspection Program - Inspection of Construction and Operational Programs." Additionally, new inspection procedure 35007, "Quality Assurance Program Implementation During Construction," was prepared and issued to provide for a comprehensive quality assurance inspection process for upcoming new construction.

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 strategy documents (digital I&C documents have priority, but piping and human factors strategies are also being developed). The strategy documents will support subsequent RII development of ITAAC inspection procedures geared toward DAC inspection. To date, the process framework has been developed and vetted. Strategy document development is on-going. Over the next quarter, the working group expects to complete all strategy documents, commence development of ITAAC inspection procedures, 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 Regulatory Guide 1.215.

NRO assembled a diverse, inter-office NRC working group to develop construction assessment program options. A senior level construction inspection assessment panel meeting was held on November 16, 2009, to launch the working group. The working group will develop a construction regulatory framework using the Reactor Oversight Program as a basis and will meet periodically with stakeholders during Category 2 and 3 public meetings to solicit their input. By September 2010, the working group will develop a SECY paper with assessment program options for Commission consideration.

The NRC staff conducted three vendor inspections (Curtiss Wright Flow Control Company, a domestic pump/valve manufacturer; Energy Steel and Supply Company, a domestic steel, piping, and replacement safety-related parts and components supplier; and Namco Controls Corp., a domestic switch supplier). The NRC staff participated as an observer during an audit by the Nuclear Procurement Issue Committee (NUPIC of a supplier of AP1000 components.

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.

On December 14, 2009, the NRO staff issued SECY-09-0182, which describes the NRC staff's interactions with foreign regulators through the MDEP specifically, in the Vendor Inspection Cooperation Working Group and the legal constraints of relying on vendor inspection results of foreign regulators. The NRC staff has not identified any legal constraints on leveraging foreign authority vendor inspections results and gaining insights from them to help inform the prioritization of NRO vendor inspection resources. As long as the NRC retains the ultimate authority to decide whether any particular COL holder satisfies NRC requirements, NRO may choose to gain insights from a foreign regulator's vendor inspection results.

International Activities

During the week of September 28 - October 2, 2009, NRO staff members traveled to Japan to perform a vendor inspection at Sumitomo to inspect the fabrication of steam generator tubes for use in US AP1000 reactors.

During the week of October 12-16, 2009, the NRO staff participated in a meeting of the International Laboratory Accreditation Cooperation in Vancouver, Canada.

On October 6-9, 2009, staff from NRO participated in a MDEP ERP Digital I&C Working Group (DICWG) meeting in Korea. NRO staff chaired the working group discussions that included: completing and forwarding letters to the MDEP Steering Technical Committee; discussing proposals and making decisions on various common positions; and discussing lessons learned and insights associated with MDEP EPR DICWG. 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 NRO representatives to the MDEP Steering Technical Committee participated in a meeting of the Steering Committee at the Nuclear Energy Agency offices in Paris.
From October 20 - November 1, 2009, NRO and Region II staff visited China to meet with representatives from the National Nuclear Safety Administration of China (NNSA). The NRC delegation and NNSA provided overviews of their vendor and construction inspection programs. The NRC staff observed ongoing construction of the Westinghouse AP1000 reactor at the Sanmen Nuclear Power Station, the fabrication of AP1000 containment and structural modules, and the fabrication of reactor vessel internals and control rod drives. NNSA agreed to begin cooperation with the NRC in the vendor inspection area, with joint observations of vendor inspections in the U.S.A. and China relative to the manufacture of components for the AP1000. NNSA also agreed to begin a construction inspector exchange program, commencing with one individual from NNSA coming to Region II and one or two NRC inspectors to NNSA in early 2010.

On November 9, 2009, the NRC staff met with a Lithuanian delegation consisting of the Minister for Energy, the Chairman of the National Control Commission for Prices and Energy, Members

of Seimas Parliament to provide an overview of the new reactor design certification process, the status of design certification reviews in progress, and the future DC application activities.

On November 20, the UK regulatory body, NII, provided to NRO advance copies of the "Final Draft" of General Design Assessment (GDA) Step 3 Reports for the AP1000 and the UK EPR designs. The GDA is a 4 step technical assessment process conducted before any site specific license assessments are undertaken. The final reports will be posted on the NII website on November 27. The summary reports will be supported by 15 detailed technical reports which were not made available to the NRC prior to publication. NRO 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, NRO and NII have been sharing information through bilateral and multilateral (MDEP) activities. In areas such as accidents and transients, digital I&C, and Probabilistic Safety Analysis, NRO staff regularly exchanges information at MDEP working group meetings.

On November 30, NRO and OIP staff and management held a video conference with the Chinese regulator, NNSA, to discuss structural engineering issues associated with the AP1000 shield wall design. The Chinese licensee is constructing two units and is within several months of pouring the concrete for part of the shield building wall for which the design is being challenged by the NRC and NII (United Kingdom regulator) reviews as not compatible with existing codes and currently unproven by tests. NNSA management must make a decision on the proposed Westinghouse design before receiving the results of tests which would determine design acceptability, or opt for an alternate design for the containment by late spring of 2010. NRO invited NNSA to attend meetings with Westinghouse on the subject scheduled for December 2009 and January 2010. NRC and NNSA agreed not to make any decisions in the near term and that information from those meetings and other exchanges would contribute to a better understanding of the risks associated with installing the proposed design. NRO will continue to share and discuss related information with NNSA weekly.

On December 7-8, the NRO staff met with five members of the Lithuania State Nuclear Power Safety Inspectorate (VATESI) to provide training on the Part 52 licensing process, development of the Construction Inspection Program, and specific technical issues.

Cooperation between the NRC and the U.S. Army Corps of Engineers (USACE)

NRC and the USACE are actively engaged in the review of new reactor applications under an updated Memorandum of Understanding (MOU) on Environmental Reviews Related to the Issuance of Authorizations to Construct and Operate Nuclear Power Plants, which was signed on September 12, 2008.

In most cases, new reactor applicants will need permits from the USACE under the Federal Water Pollution Control Act (Clean Water Act) and the Rivers and Harbors Act. The NRC staff and the USACE believe cooperation provides the most effective and efficient use of Federal resources for environmental review of new reactor plant applications when an NRC license and an USACE permit will both be needed. Therefore, the goal is for the EIS to provide the environmental basis for NRC's license decision and the USACE's permit decision.

The USACE is a cooperating agency in developing the EIS for all of the COLAs, except for North Anna and Vogtle which reference ESPs. The USACE decided to participate as a commenting agency for those EISs as they did for the associated ESP EISs.