

October 16, 2009

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 – JULY 1 – SEPTEMBER 30, 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 July 1, 2009, through September 30, 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 July 1 – September 30, 2009

New Reactor Licensing

The U.S. Nuclear Regulatory Commission (NRC) expects to license 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 licensing activities. Based on these interactions, the NRC staff has received a significant number of new reactor COL applications (COLAs) since 2007. As of September 30, 2009, the NRC staff has received 18 COLAs for a total of 26 new nuclear units.

Over the past few years, NRC has taken steps to improve the licensing process that serve to increase the effectiveness, efficiency and predictability of licensing a new reactor while maintaining NRC's focus on safety and security. The revision of 10 CFR 52 (titled, "Licenses, Certifications, and Approvals for Nuclear Power Plants") is one of the key accomplishments that contribute to this improvement. At this time, the NRC staff is making good progress on the applications it currently has under review. However, the reviews have been complicated because some applicants are revising both the proposed designs and request for additional information response submittal dates, thereby causing schedule delays and resource impacts. NRC is working with applicants to overcome these challenges.

It appears to the agency that about one-third of the COL applicants intend to begin construction as soon as their COLAs are approved. The others still desire the COL but for longer-term use. The NRC is responding with a set of goals that reflect the evolving plans of new reactor applicants and that align its resources on the licensing reviews expected to result in new plant operation beginning during calendar years (CYs) 2016 – 2017. The agency is sequencing its work to focus on those COLAs with strong near-term construction intentions and the necessary supporting activities. As this process matures, the NRC will seek the continued support of Congress to sustain these efforts.

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), and Mitsubishi Heavy Industries, Ltd.'s (MHI's) US-Advanced Pressurized Water Reactor (US-APWR).

The ESBWR DC application was submitted on August 24, 2005. GEH submitted Revision 5 to the ESBWR design control document (DCD) on June 1, 2008. The NRC staff's updated review schedule for the ESBWR DC was provided to GEH on February 18, 2009. The ESBWR DCD review has high project schedule risks related to GEH's Spent Fuel Rack Design, Steam Dryer Analysis methodology, Aircraft Impact Analysis, and Setpoint methodology. GEH's inability to address open items in a timely manner and with high-quality information continues to impact the review schedule. Although GEH submitted Rev. 6 of the DCD on August 31, 2009, and has recently submitted the majority of the information required to support preparation of the final safety evaluation report (FSER), several deliverables were submitted late and several issues remain open. As a result, in October 2009, the NRC staff expects to revise the schedule for issuance of the FSER to reflect a 3-month delay from August 16, 2010, to November 2010.

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. The NRC staff published its review schedule for the AP1000 Amended DC on February 15, 2008. Revision 17 to the AP1000 DCD was submitted the week of 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 request for additional information (RAI) responses and new submittals.

The AP1000 DC amendment has high project schedule risks related to Westinghouse's shield building design and containment sump. Regarding the shield building design, the NRC staff has been meeting with Westinghouse and discussing the shield building design for quite some time. Specifically, the NRC staff met with Westinghouse on March 18-19, April 13-17, and May 4-8, 2009, to discuss an important Westinghouse design methodology document that was due May 22, 2009. On May 22, 2009, Westinghouse submitted a shield building design methodology report on the analytical techniques and testing methods used to demonstrate the safety of the design. The NRC reviewed the May 22, 2009, design methodology report and found that it did not contain the full AP1000 design methodology that the NRC staff was expecting. Following the May 22, 2009, submittal, the NRC staff had additional, detailed discussions with Westinghouse on the continuing lack of information on the design methodology, in meetings and regulatory audits with Westinghouse on June 15-16, July 14, and August 10-14, 2009. In a letter dated August 31, 2009, Westinghouse submitted a comprehensive design methodology report to the NRC, the purpose of which was to resolve the continuing issues the NRC staff had with the Westinghouse shield building design. The NRC staff is currently evaluating this report.

The NRC staff issued a supplemental RAI in August 2009 on containment sump issues. On August 27, 2009, the NRC staff issued a letter advising that the schedule will be impacted for the chapter related to containment sump review. A public meeting on containment sump issues was held on September 2, 2009, and on September 16, 2009, a teleconference with Westinghouse and the NRC staff took place on issues discussed at the public meeting. Westinghouse submitted its responses to containment sump issues on September 22, 2009, and the NRC staff is now evaluating the responses. The test plan, as well as certain aspects of the sump design, is being evaluated also. Submittal of supporting documentation has been postponed until the testing is complete and the design has been finalized.

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. The NRC staff issued an RAI early in the review asking the applicant to provide justification for the proposed US EPR containment design. Phase 1 of the review for US EPR DC was completed on January 28, 2009. The schedule was revised on February 19, 2009, adding one month to the FSER schedule because certain questions were not answered by the vendor until more than 30 days after issuance. The FSER schedule was revised again on June 25, 2009, until the FSER completion date from June 2011 to September 2011.

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 informed the NRC staff that it will submit Revision 2 of the DCD in late October 2009. The revision will include design changes that will require additional NRC staff review. The NRC staff will review the DCD revision to determine if the review can be completed within the current schedule.

South Texas Project Nuclear Operating Company (STPNOC) submitted on June 30, 2009, an application to amend the ABWR DC rule to address the requirements of the aircraft impact rule. The NRC staff completed the acceptance review and docketed the amendment application. The NRC staff accepted the DC Rule Amendment application but requested, in a letter dated September 9, 2009, that STPNOC submit a supplemental Environmental Report to support this application.

The status of the DCs that are currently under review is provided in the table below:

Applicant	Design Type	Application Date	Acceptance Date	Status
GEH	ESBWR	Various	Various	Review schedule published. Safety review underway.
Westinghouse	AP1000 DC Amendment	05/26/07	01/18/08	Review schedule published. Safety review underway.
AREVA Nuclear Power	US EPR	12/11/07	02/26/08	Review schedule published. Safety review underway.
MHI	US-APWR	12/31/07	02/29/08	Review schedule published. Safety review underway.
STP	US-ABWR DC Rule Amendment	06/30/2009	09/09/2009	Review schedule to be determined.

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. The NRC staff issued the VEGP ESP and LWA on August 26, 2009.

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 that it has decided to pursue an ESP rather than a COL. Exelon plans to submit the application either late in the fourth quarter of 2009 or in the first quarter of 2010.

Combined License Applications:

As of September 30, 2009, the staff has received eighteen (18) COLAs for review. The current status of the COLAs that are currently under review is provided in the table below.

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 staff conducted a public outreach meeting.</p> <p>The first part of the application was submitted on July 13, 2007.</p> <p>The 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>The third part of the COLA was submitted on March 17, 2008.</p> <p>The staff issued the schedule for the review of the full COLA on August 18, 2008, establishing a schedule to complete the Safety Evaluation Report (SER) by August 2011, Draft Environmental Impact Statement (EIS) by February 2009, and Final EIS by May 2010.</p> <p>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.</p> <p>The safety review schedule was revised on February 19, 2009, because of changes of the US EPR design certification schedule.</p> <p>The FSER was rescheduled for completion in April 2012.</p> <p>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.</p>

Applicant	Design Type	Status
		<p>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 17, 2009.</p> <p>The current schedule reflects completion of the Safety Evaluation Report (SER) by July 2012, DEIS by March 2010 and Final Environmental Impact Statement (FEIS) by February 2011.</p> <p>As of September 30, 2009, there is a lack of documentation regarding seismic analyses, geotechnical and financial information. UniStar has committed to provide seismic information by December 29, 2009, geotechnical information by October 9, 2009, and financial information by November 13, 2009.</p>

<p>South Texas Project Nuclear Operating Company (STPNOC) (South Texas Project [STP])</p>	<p>ABWR (Reference Plant)</p>	<p>On June 27, 2007, the staff conducted a public outreach meeting.</p> <p>The application was submitted on September 20, 2007.</p> <p>STPNOC has chosen Toshiba, Inc. (Toshiba) as the engineering and procurement contractor for the new STP units.</p> <p>The staff completed its review of the results of STPNOC's due diligence assessment to determine whether STPNOC had demonstrated that Toshiba was qualified to supply the certified ABWR design. In July 2009, the staff conducted an inspection of Toshiba facilities in Japan to help in making its own independent determination. The results of the staff's inspection of the Toshiba facilities is documented in an inspection report dated August 28, 2009. Any final determination that the staff makes regarding Toshiba's qualification in this area will be documented in the staff's SER for the STP COLA.</p> <p>Revision 2 of the STPNOC's application was received on September 24, 2008.</p> <p>The 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>A full scope review of the STP COLA is now underway.</p> <p>The FEIS is scheduled for completion in March 2011.</p> <p>The FSER is scheduled for completion in September 2011. STPNOC provided a revised analysis of alternative sites in June 2009. A site visit to the new alternative site was conducted by NRC staff in late August 2009.</p> <p>The NRC staff has recently issued a fourth round of RAIs related to hydrology, in part due to questions raised by previous RAIs. If the responses to these RAIs are timely and sufficient, the NRC staff believes it will be able to meet the published environmental review schedule.</p> <p>On September 18, 2009, STPNOC submitted Revision 3 of the COLA.</p>
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<p>Tennessee Valley Authority (TVA) (Bellefonte)</p>	<p>AP1000 (Reference Plant - in transition to Subsequent COL)</p>	<p>On September 11, 2007, the staff conducted a public outreach meeting.</p> <p>The application was submitted on October 30, 2007.</p> <p>The staff issued a review schedule on February 15, 2008.</p> <p>The safety and environmental reviews are currently underway.</p> <p>The hydrology review is delayed pending receipt of data from the applicant. TVA's tentative schedule for providing hydrology information is January 2010.</p> <p>The NRC staff issued an SER with open items for Chapters 1, 4, 5, 10, 11, 12, 14, 16, 17, and 19 on or before June 24, 2009, to support an Advisory Committee on Reactor Safeguards (ACRS) meeting on July 23 and 24, 2009.</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 on whether it will complete Units 1 and 2. TVA has indicated that it intends to make a decision sometime in 2011.</p> <p>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.</p> <p>The FSER is scheduled for completion in March 2011.</p>
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<p>Dominion Virginia Power (Dominion) (North Anna)</p>	<p>ESBWR (Reference Plant)</p>	<p>On October 24, 2007, the staff conducted a public outreach meeting.</p> <p>The application was submitted on November 27, 2007.</p> <p>The safety and environmental reviews are currently underway.</p> <p>The Final Supplemental EIS is scheduled for completion in April 2010.</p> <p>The FSER is scheduled for completion in February 2011.</p> <p>On December 19, 2008, the NRC published the draft Supplemental Environmental Impact Statement (SEIS) for the COL for North Anna Unit 3.</p> <p>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].</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 NRC 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 ESBWR or chose another option. The applicant's schedule calls for a technology decision by the end of December 2009.</p>
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<p>Duke Energy (William States Lee III)</p>	<p>AP1000</p>	<p>On August 30, 2007, the 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 describing its three 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 Environmental Report was submitted to the NRC, which describes the applicant's plan for Make-Up Pond C. The sufficiency review is underway.</p> <p>The Environmental Impact Statement (EIS) Scoping Summary Report was issued on September 11, 2008. The FEIS completion date has not yet been determined. 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.</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 DCA review and the need for sequencing the reviews, 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 staff conducted a public outreach meeting.</p> <p>The application was submitted on February 19, 2008.</p> <p>The safety and environmental reviews are currently underway.</p> <p>The FEIS was initially scheduled for completion on 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>The FSER is scheduled to be completed by April 2011.</p> <p>However, the schedule will be revised to reflect the revised review schedule for the AP1000 DCA review and the need for sequencing the reviews.</p>

<p>Entergy Operations, Inc. (EOI) (Grand Gulf)</p>	<p>ESBWR</p>	<p>On February 21, 2008, the staff conducted a public outreach meeting.</p> <p>The application was submitted on February 27, 2008.</p> <p>By letter dated January 9, 2009, EOI requested that the 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. Entergy plans to reconsider the GEH ESBWR reactor technology, which was the basis for the COL. The staff responded to the request and has worked with other Federal agencies supporting the staff to suspend the COLA review in a timely and orderly manner in an effort to preserve appropriately the work that has been accomplished.</p> <p>This review remains suspended.</p>
<p>Southern Nuclear Operating Company (SNC) (Vogtle)</p>	<p>AP1000 (in transition to become the Reference COL)</p>	<p>On July 17, 2008, the staff conducted a public outreach meeting.</p> <p>The application was submitted on March 31, 2008.</p> <p>The staff is currently conducting the safety and environmental reviews.</p> <p>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 Vogtle ESP proceeding.</p> <p>On August 26, 2009, the NRC issued the VEGP ESP and LWA. The recently issued VEGP ESP facilitates the COLA review.</p> <p>The staff issued a revised safety review schedule on June 30, 2009. The FSER is scheduled for completion in April 2011. Vogtle is not scheduled for Phase 3 Safety Review, meeting with ACRS, as part of the RCOL transition plan.</p> <p>The NRC received the ER Revision 1 on September 24, 2009.</p> <p>The NRC received the Vogtle Units 3 and 4 LWA request October 2, 2009.</p>

<p>South Carolina Electric & Gas (SCE&G) (Virgil C. Summer)</p>	<p>AP1000</p>	<p>On August 27, 2007, the 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>In a letter dated July 30, 2009, the NRC received Revision 1 of Summer Units 2 and 3 COL Application. 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.</p> <p>The FEIS and FSER are scheduled for completion in February 2011. However, the review schedule is expected to change to reflect the revised schedule for the AP1000 DCA review.</p>
<p>AmerenUE (Callaway)</p>	<p>US EPR</p>	<p>On July 9, 2008, the staff conducted a public outreach meeting.</p> <p>The application was submitted on July 24, 2008.</p> <p>Callaway's 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 staff conducted a public outreach meeting.</p> <p>The application was submitted on July 30, 2008.</p> <p>The safety and environmental reviews are underway.</p> <p>The FEIS is scheduled for completion in September 2010.</p> <p>The FSER is currently scheduled for completion in May 2011. However, the review schedule is expected to change to reflect the revised schedule for the AP1000 DCA review.</p> <p>In a letter dated May 1, 2009, Progress Energy formally withdrew an LWA request associated with the Levy County site in Florida.</p> <p>By letter dated September 16, 2009, the NRC staff informed PEF of a 2 1/2 months safety review schedule change for the Levy County COLA. The material properties and characteristics of the Levy County site result in a more complicated review and an anticipated higher number of RAIs in the geotechnical and structural engineering areas. This complexity and the applicant's failure to timely respond to RAIs have affected the schedule. The FSER completion date was changed from May 2011 to July 2011.</p>

<p>Exelon Nuclear Texas Holdings, LLC (Exelon) (Victoria County Station)</p>	<p>ABWR</p>	<p>On August 7, 2008, the staff conducted a public outreach meeting.</p> <p>The application was submitted on September 3, 2008.</p> <p>The staff completed its acceptance review on October 30, 2008.</p> <p>By letter dated November 24, 2008, Exelon Nuclear Texas Holdings, LLC advised the staff that it expected to designate an alternate reactor technology.</p> <p>The staff suspended most of the COLA review and its development of a review schedule.</p> <p>FEMA's review of offsite emergency preparedness continues because it is independent of any future reactor technology selection. The existing application remains docketed.</p> <p>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. Exelon plans to submit the application either late in the fourth quarter of 2009 or in the first quarter of 2010.</p>
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<p>Detroit Edison Energy (Fermi)</p>	<p>ESBWR</p>	<p>On August 20, 2008, the staff conducted a public outreach meeting.</p> <p>The application was submitted on September 18, 2008.</p> <p>By letter dated June 30, 2009, 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 is revising the site layout for relocation of the cooling tower, which also affects the meteorological monitoring tower. The changes to the safety analysis report were received on August 26, 2009, and the schedule impacts are to be assessed.</p> <p>The staff conducted a QA Inspection of the Applicant's NQA Program during the week of August 17 – 21, 2009.</p>
<p>Luminant Generation Company, LLC (Luminant) (Comanche Peak)</p>	<p>US-APWR</p>	<p>On August 20, 2008, the staff conducted a public outreach meeting.</p> <p>The application was submitted on September 19, 2008.</p> <p>Safety and environmental reviews are underway.</p> <p>The FEIS is scheduled to be completed by January 2011. The EIS Scoping Summary Report will be issued on July 2, 2009.</p> <p>The FSER is scheduled to be completed by December 2011. Phase I of the Safety Review, Issue RAIs, is on schedule to be completed by November 2009.</p> <p>Revision 1 to the COLA is scheduled to be submitted to the NRC in November 2009. It should incorporate Luminant's RAI responses.</p>
<p>Entergy Operations, Inc. (EOI) (River Bend Station)</p>	<p>ESBWR</p>	<p>On November 18, 2008, the staff conducted a public outreach meeting.</p> <p>The application was submitted on September 25, 2008.</p>

		<p>The staff completed its acceptance review on December 4, 2008.</p> <p>By letter dated January 9, 2009, EOI requested that the 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 Emergency Preparedness Reviews, which FEMA performs and which are independent of any future selected reactor technology.</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 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 staff stagger the review of the Nine Mile Point Unit 3 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 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.</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.</p> <p>The NRC's response to the applicant's letter dated August 17, 2009, was issued on September 28, 2009. The response letter suspends 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 USGS, and Lake Ontario ice effect study by US Army Corps of Engineers (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 Draft EIS 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.</p>

PPL Bell Bend, LLC (Bell Bend)	US EPR	<p>On August 19, 2008, the 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 is scheduled to be completed by March 2011. However, issues for environmental review necessitate re-design to address storm-water management and availability of water resources as well as other potential design changes that can impact the 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>
Florida Power and Light (FPL) (Turkey Point)	AP1000	<p>On March 26, 2009, the staff conducted a public outreach meeting.</p> <p>The COL application was tendered on June 30, 2009.</p> <p>The staff completed its acceptance review on September 4, 2009. The application was accepted for docketing but the staff cannot develop the review schedules until the applicant provides additional information.</p> <p>The staff has identified the following technical and environmental review areas that will affect the length of the review schedule: Regional Geology description, Soil Dynamic Properties, Use of Generic Curves for Dynamic testing of soil, Hydrology, and DCD changes requiring additional information.</p>
Alternate Energy Holdings (Hammett)	US EPR (1 unit)	<p>The application is expected in the 4th Quarter of FY 2009. The NRC staff has not received any updates from the potential applicant.</p>
Amarillo Power	US EPR (2 units)	<p>The application is expected in the 4th Quarter of FY2009. The NRC staff has not received any updates from the potential applicant.</p>

Transition Power Development LLC (Transition) (Blue Castle Generation Project)	TBD (2 units)	The application for an ESP or COLA 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>. The staff has also posted detailed review schedules for COLAs and DCs on the NRC's public website. *Other Licensing Activities:*

Site Safety Audits - Geology, Seismology & Geotechnical Engineering were conducted at Comanche Peak during the week of July 27, 2009, and at Levy during the week of Sep 21, 2009.

A Quality Assurance Inspection was conducted at Fermi the week of August 17, 2009.

Department of Homeland Security (DHS) Site Visits (Coordinated with the Office of Nuclear Security and Incident Response) were conducted at Comanche Peak during the week of July 6, 2009, and at Bell Bend during the week of August 10, 2009.

Technical Review Meetings on Hydrology were conducted at Fermi the week of June 8, 2009, and at Comanche Peak during July 7 – 10, 2009.

Regulatory Infrastructure Activities

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 and COLAs. The NRC staff has also established schedules for the review of the applications.

DC Rulemaking:

A potential scheduling issue that has been introduced by the concurrent reviews of DC applications and related combined COLAs relates to the need to complete the DC rulemaking prior to the completion of hearings and issuance of a Combined License (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. Including the development of the rulemaking packages, public comment periods, reviews by the Commission, the Office of the Federal Register, and the Office of Management and Budget, 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 for this rulemaking. If the various identified improvements are implemented, the staff believes that the DC rulemakings could be completed in about one year and could be timed to minimize possible delays in the COL licensing process. The staff is currently implementing the identified improvements.

The Commission approved the staff's request to establish NRO as a lead rulemaking office similar to NRR and the Office of Federal and State Materials and Environmental Management Programs (FSME) on February 27, 2009. The Commission asked the staff to report on efficiency and effectiveness gains in a future self-assessment. The staff is scheduled to issue its first report in September 2011.

On June 12, 2009, a final rule regarding Aircraft Impact Assessment (AIA) was published in the *Federal Register* (74 FR 28111) 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 NRC staff has completed its review of an Nuclear Energy Institute (NEI) guidance document related to the performance of the aircraft impact assessment (NEI 07-13, "Methodology for Performing Aircraft Impact Assessments for New Plant Designs") and issued DG-1176, "Guidance for the Assessment of Beyond-Design-Basis Aircraft Impacts," for public comment on July 10, 2009. The comment period closed on September 8, 2009. The NRC staff is also developing application content and NRC staff review guidance.

The NRC staff continues to hold discussions with NEI and Design Center Working Groups on the development of guidance for mitigating strategies for loss of large areas due to explosions or fires. The NRC staff has developed Interim Staff Guidance (ISG) for NEI 06-12, which provides guidance to assist applicants and licensees in developing regulatory submittals that describe their approach to complying with 10 CFR 50.54(hh)(2) and 10 CFR 52.80(d). The ISG will be issued for comment in October 2009.

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

regulatory guide 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 regulatory guide (RG) RG-5.71, "Cyber Security Programs for Nuclear Facilities." The regulatory guide 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 is scheduled to brief the ACRS on the draft final RG-5.71 on October 23, 2009.

The NRC staff is working on the Access Authorization and Physical Protection Requirements for Nuclear Power Plant Construction rulemaking. This rulemaking would require the implementation of access authorization and physical protection measures during the reactor construction phase.

Advanced Reactors:

The NRC has established an Advanced Reactor Program (ARP) to plan for future applications involving small and medium-sized reactors (SMRs). The ARP is currently working with the 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 and medium-sized LWRs. The NGNP program remains one of the primary focus areas of the ARP as the NRC 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 staff to support the small and medium sized LWR work. Leveraging its efforts on the NGNP program, the staff has begun to identify the generic policy and technical issues associated with licensing of small and medium-sized LWRs. As resources allow, the ARP is also interacting with various designers of SMR technologies.

The staff continued to focus its pre-application review efforts on advanced reactor designs in a more integrated manner. Focusing the attention of the 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 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 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 staff conducted a workshop on generic licensing issues for small and medium-sized reactors.

Several letters have been received regarding licensing plans for various small and medium-sized reactors. A summary is provided below:

Reactor	Application Type	Projected Application Schedule
NGNP	Combined License (or Design Certification)	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)	Design Certification	2012
B&W mPower Design	Design Certification	Late 2011
NuScale	Design Certification	June 2011

As directed in the SRM related to SECY-09-0064, "Regulation of Fusion-Based Power Generation Devices," the 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 Fiscal Year (FY) fourth quarter committed and obligated funding:

NRO CASE WORK ONLY

FY 2009 Funding	Q4
Commitments	\$12,383,109.13
Obligations	\$14,192,311.77

NRO- ALL (NON-PMDA MANAGED WORK)

FY 2009 Funding	Q4
Commitments	\$20,655,246.35
Obligations	\$23,474,497.35

Construction Inspection Activities

The staff continues to refine concepts for inspection, test analysis, and acceptance criterion/criteria (ITAAC) closure and closed ITAAC maintenance prior to 10 CFR 52.103(g) Commission finding. The staff is preparing to issue Regulatory Guide 1.215, "Guidance for ITAAC Closure Under 10 CFR Part 52." The staff conducted nine public meetings within the past year to provide a forum for stakeholders to participate in and comment on staff proposals for ITAAC closure, ITAAC maintenance, and other construction inspection program issues. 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 in the Reactor Program System format. Additionally, the staff updated the Commission in SECY 09-0113 on an interim approach for the assessment program including the evaluation of areas important to safety culture for use on the first Limited Work Authorization. The 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.

As a follow-on to the December 2008 Workshop on Vendor Oversight for New Reactor Construction, the staff provided training on Part 21 and Commercial Grade Dedication to Nuclear Procurement Issue Committee auditors. In addition, the staff completed quality assurance implementation inspections at STP, Fermi, and Vogtle in support of COL licensing reviews, completed a quality assurance implementation inspection at GEH in support of the ESBWR DCD review, and conducted seven additional vendor inspections (a domestic valve manufacturer, a domestic pump manufacturer, a domestic piping supplier, a domestic engineering firm, a foreign manufacturer of steam generator tubing, and two foreign large component forgers/manufacturers).

International Activities

During the period of July 7 - 10, 2009, NRO and Region II staff, consisting of members from the Quality and Vendor Branch 2 (CQVB) and the Region II Center for Construction Inspection, traveled to Japan to perform a vendor inspection at the Japan Steel Works (JSW) to inspect the fabrication of large pressure retaining components for new reactors including South Texas Project and other domestic reactor projects.

During the week of July 13 – 17, 2009, NRO staff, consisting of members from the Quality and Vendor Branch (CQVB), ABWR Projects (NGE2), Containment and Ventilation Branch (SBCV) and Instrumentation and Controls Branch (ICE2), traveled to Japan to perform the Alternate Vendor Qualification Inspection of Toshiba for the South Texas Project (STP) COLA.

During the week of July 20 - 24, 2009, NRO staff, consisting of members from the Quality and Vendor Branch 1 (CQVP) and the Division of Engineering (DE) traveled to France to perform a vendor inspection at Creusot Forge to inspect the fabrication of large forged components for domestic new reactors.

On September 7 – 10, 2009, NRO staff from Instrumentation and Controls Branch 2 (ICE2) traveled to Japan to participate in the International Electrotechnical Commission (IEC) working group meetings in Yokohama, Japan, to give a presentation on MDEP, and to visit the Toshiba Fuchu I&C facility.

On September 10-11, 2009, NRO staff participated along with Chairman Jaczko in the first MDEP conference in Paris, France to communicate MDEP plans and accomplishments.

On September 14-16, 2009, staff from NRO participated in MDEP AP1000 Working Group meetings in Paris, France, on Civil/Structural Engineering and on Squib Valves.

From September 14 - 18, 2009, NRO's DE Deputy Division Director chaired the 4th meeting of the Nuclear Energy Agency/Committee on Nuclear Regulatory Activities (NEA/CNRA) Subcommittee Working Group on the Regulation of New Reactors in Paris, France. The working group provides a forum to examine construction experience and the regulatory issues of the siting, licensing and regulatory oversight of generation III+ and generation IV nuclear reactors.

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

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 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 most of the new reactor applications, and representatives of both agencies are interacting collaboratively to implement the provisions of the MOU.

On June 2-3, 2009, NRC staff held a workshop with the USACE in Bethesda, Maryland, to further facilitate interactions between the agencies related to the MOU.