

April 17, 2012

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

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

SUBJECT: QUARTERLY REPORT ON THE STATUS OF NEW REACTOR
LICENSING ACTIVITIES - JANUARY 1 TO MARCH 31, 2012

In response to the U.S. Nuclear Regulatory Commission's staff requirements memorandum for COMJSM-00-0003, "Staff Readiness for New Nuclear Plant Construction and the Pebble Bed Reactor" dated February 13, 2001, and SRM-09-0064, "Staff Requirements—SECY-09-0064 - Regulation of Fusion-Based Power Generation Devices," dated July 16, 2009, the enclosed report provides the status of new reactor licensing activities for the quarter beginning January 1 and ending March 31, 2012. The report contains 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, construction inspection, advanced reactors, and international activities.

Enclosure:
As stated

cc: SECY
EDO
OGC
OCA
OPA
CFO

CONTACT: Donna Williams, NRO
(301) 415-1322

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See next page

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*via email

NRO-002

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SUBJECT: QUARTERLY REPORT ON THE STATUS OF NEW REACTOR LICENSING
ACTIVITIES – JANUARY 1 TO MARCH 31, 2012

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Office of New Reactors
Quarterly Report on the Status of New Reactor
Licensing Activities
January 1 to March 31, 2012

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INTRODUCTION AND SUMMARY

New Reactor Program Overview

Since its inception in 2006, the U.S. Nuclear Regulatory Commission's (NRC's) Office of New Reactors (NRO) has continued to successfully serve the public interest by enabling the safe, secure, and environmentally responsible use of nuclear power in meeting the Nation's future energy needs. The office's work is characterized by significant activities and accomplishments in its core responsibility areas of new reactor licensing, vendor and construction inspections, and advanced reactor activities, as well as its international leadership.

NRO has made substantial progress in its review of several of the active combined license applications (COLAs), including issuance of combined licenses (COLs) for four units, issuance of final safety evaluation reports (FSERs) and final environmental impact statements (FEISs), and completion of the reviews for several design certification (DC) applications and amendments. These accomplishments demonstrate the office's commitment to fulfilling its mission, and mark the significant progress that NRO has made in implementing the licensing process under Title 10 of the *Code of Federal Regulations* (10 CFR) Part 52, "Licenses, Certifications, and Approvals for Nuclear Power Plants."

As part of the agency's response to the Fukushima accident in Japan, the new reactor program is addressing the Fukushima Near-Term Task Force recommendations as approved by the Commission. Consistent with the Commission direction provided in SRM-SECY-12-0025, "Proposed Orders and Requests for Information in Response to Lessons Learned from Japan's March 11, 2011, Great Tohoku Earthquake and Tsunami," dated March 9, 2012, the staff ordered Vogtle Electric Generating Plant Units 3 and 4 (NPF-91 and NPF 92) to address the portions of Tier 1 Recommendations 4.2 and 7.1 not already covered by the referenced certified design or COL review. The Order required Vogtle, prior to fuel load, to address requirements for mitigation strategies to sustain core cooling, containment and spent fuel pool cooling capability functions indefinitely.

With regard to Recommendation 7.1 for spent fuel pool level indication, the Order requires Vogtle to provide additional design information to ensure missile and falling debris protection, equipment qualification for extended water saturation conditions, display indications, and the capability to connect portable power supplies to the instrumentation.

In addition 10 CFR 50.54(f) letter sent to operating reactors was also sent to Vogtle to address Tier 1 Recommendation 9.3 for enhanced emergency planning communication and staffing organization.

The staff has begun meeting with AREVA, MHI, and South Texas Project to understand their plans for incorporating changes into their respective designs to effectively address the design-related Fukushima items. The NRO staff is continuing to follow the Fukushima lessons learned follow-up activities on operating reactors to maintain technical consistency, as appropriate.

NRO and Region II worked together to develop an inspection program and put into place the structure and procedures required to conduct the new reactor construction oversight program for ongoing and near-term construction activities. This new inspection program (1) incorporates key elements in 10 CFR Part 52, such as inspections, tests, analyses, and acceptance criteria

(ITAAC); (2) incorporates lessons learned from the inspection program used in the previous construction era (1970–1980) for plants licensed under 10 CFR Part 50, “Domestic Licensing of Production and Utilization Facilities”; and (3) considers modular construction at remote locations. The staff developed a construction assessment program that includes a regulatory framework, use of a construction significance determination process, and adoption of a construction action matrix.

Since its creation in 2008, NRO’s Advanced Reactor Program has been dedicated to preparing for the review of the next generation nuclear plant (NGNP) license application and future applications involving small modular reactors (SMRs). Recently, NRO has conducted significant pre-application activities with multiple SMR vendors. In addition, NRO has made substantial progress in resolving the key policy, licensing, and technical issues facing SMRs, and developing the guidance necessary to support the staff’s review. NRO has also continued to implement supporting initiatives aimed at ensuring the NRC’s readiness to review future SMR licensing applications. For example, similar to the design-centered working group meetings, NRO has continued to engage with the Nuclear Energy Institute (NEI), industry representatives and other stakeholders to address potential challenges facing future SMR application reviews.

The NRC has strengthened its leadership role in the international arena by cooperating with other national nuclear regulatory authorities to address new reactor design reviews and construction oversight. NRO’s participation in the Multinational Design Evaluation Program (MDEP) has enhanced the NRC’s effectiveness and efficiency.

Quarterly Status

NRO continues to focus on the licensing reviews and construction oversight activities necessary to address industry plans for near-term applications. This includes supporting the completion of the review of the DC applications and COLAs with active near-term programs for construction.

The Commission affirmed the Westinghouse AP1000 DC amendment final rule on December 22, 2011, and it became effective on December 30, 2011. The Advanced Boiling Water Reactor (ABWR) Aircraft Impact Assessment DC amendment became effective on January 17, 2012. The staff is reviewing two DC applications (U.S. Evolutionary Power Reactor (EPR) and U.S. Advanced Pressurized Water Reactor (US APWR)). The Economic Simplified Boiling Water Reactor (ESBWR) DC is in rulemaking. The NRC received two ABWR DC renewal requests in early fiscal year (FY) 2011. The NRC issued COLs for four units, Vogtle Units 3 and 4, and Summer Units 2 and 3. As of March 31, 2012, the NRC had 10 COLAs under active review.

The agency’s experience with these applications has demonstrated the success of 10 CFR Part 52 and the design-centered review approach in achieving standardization on a selected design. This standardization has resulted in a clear safety focus and resource savings. Although some reviews have been complicated by applicant revisions, the NRC staff continues to make progress on the applications currently under review. To minimize schedule uncertainty for all applications, applicants should limit design and siting modifications and work aggressively to resolve open issues. Some DC and COL applicants have revised the submittal dates for responses to requests for additional information (RAIs), thereby causing schedule delays. The NRC is working with applicants to overcome these challenges, and the staff is focused on resolving the remaining technical issues.

For program definition and budgetary control, NRO programs are broken down into subprograms encompassing new reactor licensing, advanced reactors, and oversight.

During this reporting period, major accomplishments for the new reactor licensing subprogram included issuance of COLs for Vogtle Units 3 and 4, issuance of COLs for Summer Units 2 and 3, issuance of Orders and 50.54(f) letters to Vogtle Units 3 and 4 to implement Commission direction on the resolution of several Fukushima Near-Term Task Force (NTTF) recommendations, and completion of the Safety Evaluation with Open items for the EPR design certification.

During this reporting period, major accomplishments for the oversight subprogram include the commencement of a 12 month pilot of the new construction assessment program on January 1, 2012, at the Vogtle construction site. Additionally, the staff issued the proposed final rule to amend to the regulations in 10 CFR 52.99, "Inspection During Construction," related to verification of nuclear power plant construction activities through ITAAC under a combined license under 10 CFR Part 52. The staff also held a public meeting in support of the proposed 10 CFR Part 21 rulemaking and on the current initiatives associated with counterfeit, fraudulent, and substandard items (CFSI).

During this reporting period, major accomplishments for the advanced reactor subprogram include the issuance of two reports documenting the agency's NGNP Working Groups' assessment of five white papers submitted by the NGNP project. The staff also issued a letter to the U.S. Department of Energy (DOE) with a proposed outline of the scope of NGNP activities to be completed by the staff during 2012 that will support the Secretary of Energy's interest in making progress with the NRC on a licensing framework. Activities will focus on policy and technical issues associated with source term, containment functional performance, licensing basis event selection, and emergency planning. The NRC is addressing other topics, such as emergency planning and modular plant licensing, as part of its resolution of generic SMR issues.

This report summarizes the following areas covering the second quarter of FY 2012: new reactor licensing reviews and rulemaking (organized by design center), licensing support, construction inspection activities, advanced reactors, international activities, and funding.

NEW REACTOR LICENSING REVIEWS AND RULEMAKING

At the beginning of each design center discussion, a table highlights key public milestone dates for each project.

AP1000

Project	FSER	FEIS	Rulemaking	Licenses Issued
AP1000 DCR Amendment	August 5, 2011	N/A	December 30, 2011	N/A
Vogtle Electric Generating Plant, Units 3 and 4	August 5, 2011	March 2011	N/A	February 10, 2012
Summer, Units 2 and 3	August 17, 2011	April 2011	N/A	March 30, 2012
Bellefonte, Units 3 and 4	Suspended	Suspended	N/A	TBD
Levy County, Units 1 and 2	April 2012	April 2012	N/A	TBD
William States Lee III, Units 1 and 2	November 2012	October 2012	N/A	TBD
Shearon Harris, Units 2 and 3	September 2013	January 2014	N/A	TBD
Turkey Point, Units 6 and 7	November 2013	February 2014	N/A	TBD

AP1000 Design Certification Rule Amendment

General Information

Design: AP1000
 Application Type: Design Certification Rule (DCR) Amendment
 Docket Date: January 18, 2008

Review Status

The AP1000 DC amendment rule was affirmed by the Commission on December 22, 2011, and published in the Federal Register (76 FR 82079). The rule became effective on December 30, 2011.

Vogtle Electric Generating Plant Combined License Application

General Information

Design Type: AP1000
Application Type: Reference Combined License (RCOL)
Location: Waynesboro, GA
Docket Date: May 30, 2008

Review Status

On March 28, 2008, Southern Nuclear Operating Company submitted a COLA for two AP1000 units to be located at its Vogtle site near Augusta in Burke County, GA. The initial application also referenced the Vogtle early site permit (ESP) application, Revision 5, dated December 23, 2008. The NRC staff issued the safety evaluation report (SER) for an ESP application for the Vogtle site in February 2009 and the ESP on August 26, 2009. Since then, the NRC has issued three amendments to the ESP (on May 21, 2010; June 25, 2010; and July 9, 2010).

The NRC staff issued the Vogtle 3 and 4 COL final safety evaluation report (FSER) on August 5, 2011. The Commission's mandatory hearing for Vogtle was held on September 27-28, 2011. On February 9, 2012, the Commission found the staff's review adequate to make the necessary regulatory safety and environmental findings. On February 10, 2012, the NRC staff issued the COLs and limited work authorizations (LWAs) for Vogtle Units 3 and 4.

Review Completion Dates:

Original:	FSER—December 2010	Actual: FSER— August 5, 2011 (complete)
	DSEIS—Issued September 2010	FSEIS— March 2011 (complete)

Virgil C. Summer Nuclear Station Combined License Application

General Information

Design Type: AP1000
Application Type: Subsequent Combined License (SCOL)
Location: Fairfield County, SC
Docket Date: July 31, 2008

Review Status

The NRC staff briefed the Advisory Committee on Reactor Safeguards (ACRS) AP1000 subcommittee on the Summer COLA on January 10-11, 2011, and briefed the ACRS full committee on February 10, 2011. The ACRS issued a favorable letter report on February 17, 2011, concluding there is reasonable assurance that Summer Units 2 and 3 can be built and operated without undue risk to public health and safety. The staff responded to the ACRS letter report in a letter dated March 26, 2011.

The NRC issued the FSER on August 17, 2011. The NRC published the FEIS in April 2011. With completion of both the FEIS and the FSER, the staff provided its testimony in SECY-11-0115, "Staff Statement in Support of the Uncontested Hearing for Issuance of Combined Licenses for the Virgil C. Summer Nuclear Station, Units 2 and 3," dated August 19, 2011. The Commission's mandatory hearing for Summer was held October 12-13, 2011. On March 30, 2012, the Commission found the staff's review adequate to make the necessary regulatory safety and environmental findings, and the NRC staff issued the COLs.

Review Completion Dates:

Original:	FSER—February 18, 2011	Current:	FSER—August 17, 2011 (complete)
	FEIS—February 3, 2011		FEIS—April 2011 (complete)

Bellefonte Nuclear Station Units 3 and 4 Combined License Application

General Information

Design Type:	AP1000
Application Type:	SCOL
Location:	Jackson County, AL
Docket Date:	January 18, 2008

Project Schedule Risks

None

Review Status

In a letter dated September 29, 2010, TVA requested that the NRC defer most of its review of the AP1000 COLA for Bellefonte Units 3 and 4. By letter dated November 24, 2010, the NRC agreed to defer the Bellefonte Units 3 and 4 COLA reviews indefinitely, but agreed to review hydrology topics following the receipt of critical hydrology studies.

On August 18, 2011, the Tennessee Valley Authority (TVA) Board approved plans for the completion of Bellefonte Unit 1, with the goal of having it completed and operational by 2020. Despite the decision on the completion of Bellefonte Unit 1, the COLA for Units 3 and 4 remains a viable option for TVA. However, the completion and operation of Unit 1 (and potentially Unit 2) would necessitate additional site studies and significant revisions to the environmental report and the site safety analysis report (SSAR) supporting the COLA.

Review Completion Dates:

Original:	FSER—March 2011	Current:	FSER—suspended
	FEIS—January 2010		FEIS—suspended

Levy County Combined License Application

General Information

Design Type: AP1000
Application Type: SCOL
Location: Levy County, FL
Docket Date: October 6, 2008

Project Schedule Risks

Environmental Review

Least Environmentally Damaging Practicable Alternative

The NRC is preparing an EIS for the Levy project with the U.S. Army Corps of Engineers (USACE) as a cooperating agency. USACE is required to perform its own least environmentally damaging practicable alternative (LEPDA) analysis to issue a permit under Section 401(b)(1) of the Clean Water Act. USACE determined that a LEDPA analysis developed by the applicant required additional clarification on avoidance and minimization of impacts to wetlands and alternatives to ground water use. USACE issued a position letter containing RAIs on these matters to the applicant on June 23, 2011. To date, analyses and conclusions provided by the applicant appear acceptable to USACE for classifying the site as LEDPA without the use of groundwater or pending acceptance by USACE that the Department of the Army permit can be specially conditioned for the use of ground water. The applicant is currently developing a groundwater testing and wetlands monitoring plan to address USACE criteria for conditioning the use of ground water.

Cultural Resources Survey for Transmission Line Corridors

The Seminole Tribe of Florida has requested that cultural resources surveys for collecting information on historic and archeological sites along transmission line corridors be completed before concluding consultation under Section 106 of the National Historic Preservation Act. The applicant has completed its cultural resources work plan in consultation with the Florida Division of Historical Resources and the plan has been reviewed by the Seminole Tribe. USACE has developed draft conditions to address the timing of cultural resources surveys, to coordinate survey results with the Seminole Tribe, and to provide mechanisms to protect cultural resources. USACE representatives met with the Seminole Tribe of Florida on December 15, 2011. Their discussions included the concept of the conditional issuance of permits to include a Cultural Resources Assessment Survey prior to ground disturbing activities. The consultation letter sent by USACE to the Seminole Tribe provided 30 days for a response. Since no response was received the USACE and NRC consider consultation to be concluded. If a U.S. Department of the Army permit is issued for this project, the permit will be specifically conditioned to require that Progress Energy conduct Phase I Cultural Resource Assessment Surveys before initiating ground disturbing activities, including construction of transmission lines.

Fukushima Lessons Learned

SECY-12-0025 describes the staff's commitment to address all Commission-approved Fukushima actions prior to licensing. On March 9, 2012, the Commission approved, with certain modifications, the recommendations of SECY-12-0025 in SRM-12-0025. On March 15, 2012, the staff requested the applicant to provide additional information required by the Orders and the request for information letters described in SECY-12-0025 and approved by the Commission in SRM-12-0025. By letter dated March 28, 2012, the applicant indicated that it will provide responses in August 2012.

Review Status

The NRC staff has completed all technical reviews for the Levy County COLA, and has issued all safety evaluation (SE) chapters without open items to the applicant. ACRS subcommittee meetings were completed on October 18 – 19, 2011. The ACRS full committee meeting was held December 1, 2011. The final SER and FEIS are scheduled for issuance in April 2012. The NRC staff is preparing an approach to address the new information related to Fukushima actions that will be received after issuance of these documents.

Review Completion Dates:

Original:	FSER—May 5, 2011	Current:	FSER—April 2012
	FEIS—September 22, 2010		FEIS—April 2012

William States Lee III Combined License Application

General Information

Design Type:	AP1000
Application Type:	SCOL
Location:	Cherokee County, SC
Docket Date:	February 25, 2008

Project Schedule Risks

Structure Soil Interaction (SSI)

The SSI analysis requires rework because of an error found in the backfill calculations. This has caused a delay that will affect the Phase B public milestones for the safety review. The NRC staff issued an RAI on November 9, 2011, and the final response was received March 21, 2012. The staff will audit the revised calculations during the week of April 19, 2012.

Ninety-Nine Islands Reservoir Seasonal Flow Limitations

Lee Nuclear Station's proposed cooling water withdrawals from the Ninety-Nine Islands Reservoir are based on the applicant's non-conservative interpretation of the Ninety-Nine Islands Hydroelectric project license, issued by the Federal Energy Regulatory Commission (FERC). The license specifies the minimum flows that must be released through the

hydroelectric dam during certain times of the year. In November 2011, Duke applied for and FERC approved a license amendment that reduced uncertainty in the flow requirements. However, FERC has stated that Duke must meet all the minimum flow requirements, not just the lowest flow. Pending FERC's confirmation that Duke would be required to meet all minimum flow requirements, NRC staff will facilitate a number of public teleconferences between Duke and FERC to discuss the implications of the license interpretation. The EIS schedule will be reassessed following discussions between Duke and FERC.

Review Status

The NRC issued the DEIS on December 13, 2011, with a comment period ending on March 6, 2012. The NRC staff will be binning and responding to comments through May 2012.

The ACRS subcommittee is currently scheduled to review the advanced FSER without open items the week of June 5, 2012.

Review Completion Dates:

Original:	FSER—February 2011	Current:	FSER—November 2012
	FEIS—March 2010		FEIS—October 2012

Shearon Harris Combined License Application

General Information

Design Type:	AP1000
Application Type:	SCOL
Location:	Wake County, NC
Docket Date:	April 17, 2008

Project Schedule Risks

Issuance of Draft Environmental Impact Statement

The NRC staff, working with USACE as a cooperating agency, has identified several issues that remain unresolved for the environmental review. The NRC staff anticipates that clarifying resolution strategies for these issues will lead to a revised environmental review schedule. The review team (the NRC and USACE staff) is working with the applicant and relevant Federal and State agencies to determine necessary actions and schedules for resolving these issues. In a letter dated January 13, 2011, the NRC transmitted to the applicant three environmental review RAIs on the need for power from two proposed AP1000 units at the Shearon Harris site, alternative system needs, and geographic information system data requirements. The NRC staff received responses on March 31, 2011, and September 29, 2011, and is reviewing the responses.

LEDPA Analysis and Alternative Selection Process

USACE requires information to make its LEDPA decision under the Clean Water Act. USACE provided comments to the NRC on April 15, 2010, regarding supplemental information provided by the applicant on September 14, 2009. USACE identified deficiencies in the applicant's alternative sites analysis regarding alternative reservoir levels for the Shearon Harris site and aquatic impacts to the proposed and alternative sites. The applicant provided a revised analysis to USACE on September 22, 2010. The NRC staff reviewed the applicant's revised LEDPA analysis response for potential impact on the DEIS content and schedule with respect to the NRC's alternative siting guidance in NUREG-1555, "Standard Review Plans for Environmental Reviews for Nuclear Power Plants," issued March 2000. Consultation between USACE and the U.S. Environmental Protection Agency (EPA) staff is ongoing and the NRC will be informed when once these discussions are completed.

National Historic Preservation Act Consultation

Uncertainty about the applicant's schedule for completing archaeological surveys could affect the NRC staff's ability to complete National Historic Preservation Act consultation. While the NRC staff can complete an impact assessment for the DEIS, it may not be possible to conclude the National Historic Preservation Act consultation until the applicant completes more in depth (Phase II and III) surveys and provides the results to the State Historic Preservation Officer (SHPO). The NRC staff and USACE have discussed with SHPO a path forward in line with SHPO's expectations. This is likely to result in separate memoranda of agreement (MOA) for USACE and the NRC. The applicant drafted an MOA and submitted it to SHPO on September 22, 2010. The SHPO staff completed its review and submitted a revised draft MOA to the NRC on May 6, 2011. The staff's review of the revised draft MOA is ongoing.

Review Completion Dates:

Original: FSER—April 2011
FEIS—May 2010

Current: FSER—September 2013
FEIS— January 2014

Turkey Point Combined License Application

General Information

Design Type: AP1000
Application Type: SCOL
Location: Homestead, FL
Docket Date: September 4, 2009

Project Schedule Risks

Regional Geology and Seismology review

The regional geology/seismology review involves a first-time review of various seismology parameters and models for the Caribbean region. The NRC staff informed the applicant, through a public teleconference call on March 6, 2012, that the responses received for geology,

seismology and geotechnical engineering areas are not acceptable because they are either incomplete or unclear and, in many cases, conclusions are not supported.

Site Selection Process

The NRC staff has identified issues with the site selection process as part of the environmental review. The applicant may need to perform additional analysis to resolve these issues. The staff transmitted a first round of RAIs to the applicant in spring 2011 and received responses from May through November 2011. The NRC staff assessed the responses and determined that followup RAIs are necessary. Additional RAIs and resolution of this issue may impact the environmental schedule.

Fukushima Recommendations

The responses to two RAIs issued on December 20, 2011, related to Section 2.4.6 (tsunami) are expected by July 26, 2012, as stated by the applicant.

Review Status

NRC staff is finalizing followup RAIs and continuing to prepare the preliminary DEIS. These tasks are expected to be completed in the third quarter of FY12.

The responses to two RAIs related to tsunamis are expected in July 2012. Upon receipt and review of the RAI responses, the NRC staff will revise the schedule, as necessary.

Review Completion Dates:

Original: FSER – December 2011
 FEIS – October 2012

Current: FSER—November 2013
 FEIS—February 2014

Economic Simplified Boiling Water Reactor (ESBWR)

Project	FSER	FEIS	Rulemaking
ESBWR DC	March 2011	N/A	TBD
Fermi 3	May 2013	November 2012	N/A

ESBWR Design Certification Review

General Information

Design: ESBWR
Application Type: DC
Location: N/A
Docket Date: December 1, 2005

Rulemaking

The NRC staff provided the proposed DCR to the Commission on January 7, 2011, in SECY-11-0006, "Proposed Rule: Economic Simplified Boiling-Water Reactor Design Certification." The Commission issued its SRM on March 8, 2011. The NRC issued the FSER and final design approval on March 9, 2011. The NRC published the proposed rule in the *Federal Register* (76 FR 16549; March 25, 2011). The public comment period closed on June 7, 2011. The NRC received 10 public comment submissions, one of which was received after the close of the public comment period. All 10 public comment submissions are being addressed in the final rule.

On January 19, 2012, the staff informed GE Hitachi (GEH) that issues have been identified that are relevant to the conclusions in the staff's March 9, 2011, FSER. Specifically, errors were identified in the benchmarking GEH used as a basis for determining fluctuating pressure loading on the steam dryer, and errors have been identified in a number of GEH's modeling parameters. The staff informed GEH that these errors may affect the conclusions in the staff's FSER and need to be addressed before the staff completes the ESBWR DC. The staff conducted an audit of the steam dryer analysis at the GEH offices in March 2012. The staff will reestablish a rulemaking schedule after GEH responds to the staff RAIs.

Fermi Unit 3 Combined License Application

General Information

Design: ESBWR
Application Type: RCOL
Location: Monroe County, MI
Docket Date: November 25, 2008

Project Schedule Risks

Soil Property Requirements

By letter dated December 9, 2010, the applicant provided revisions to its application including additional ITAAC to reflect the incorporation of soil property requirements associated with the ESBWR DCD Revisions 7 and 8. In June 2011, the applicant stated that it planned to use a site-specific soil-structure interaction (SSI) analysis as the means for complying with the DCD. This is a significant change in the applicant's approach to resolving the concern regarding backfill design. The NRC staff issued over 20 RAIs related to the SSI analysis. By letter dated February 16, 2012, the applicant provided complete responses to some of the RAIs and indicated that the remainder of the RAI responses will be provided no later than April 30, 2012. Additional RAIs were issued on February 27, 2012. The staff plans to conduct an audit of the SSI analysis in April 2012.

Fukushima Recommendations

The NRC staff plans to issue an RAI requesting the applicant to address design changes in response to lessons learned from Fukushima as described in SECY-12-0025. The staff will assess the impact on the review schedule after discussing with the applicant its proposed schedule for responding to this RAI.

Review Status

The staff published the DEIS in October 2011 and the public comment period ended on January 11, 2012. All public comments have been sorted and binned and first drafts of comment responses have been completed. The NRC staff has started the process of determining what changes will be incorporated into the FEIS.

Review Completion Dates:

Original: FSER—September 2012
 FEIS—November 2012

Current: FSER—May 2013
 FEIS—November 2012

Advanced Boiling Water Reactor (ABWR)

PROJECT	FSER	FEIS	Rulemaking
AIA DCR Amendment	Completed October 14, 2010	N/A	January 2012
South Texas Project (STP) Units 3 and 4	TBD	March 2011	N/A

ABWR Design Certification Rule Amendment for Aircraft Impact

General Information

Design: ABWR
Application Type: DCR Amendment
Docket Date: November 23, 2009
Application Submittal Date: June 30, 2009

Project Schedule Risks

None

Review Status

The Commission affirmed the amendment on November 1, 2011. The Office of Management and Budget approval of the information collection was received on November 30, 2011 and the final rule was published in the *Federal Register* (76 FR 78096; December 16, 2011). The rule became effective on January 17, 2012.

South Texas Project Combined License Application

General Information

Design: ABWR
Application Type: RCOL
Location: Matagorda County, TX
Docket Date: November 27, 2007
Revision 6 Submittal Date: August 30, 2011

Project Schedule Risks

Seismic Analysis

Sections 3.7 and 3.8 of the application did not contain sufficient detail for the NRC staff to reach safety conclusions on issues of seismic analysis and SSI. Between August 2010 and May 2011, the NRC staff conducted several audits and meetings with the applicant, which resulted in several rounds of RAIs. The NRC staff and the applicant are continuing to resolve seismic and SSI issues, as well as issues related to the applicability of a computer code used in the evaluation of structures. With the issuance of Regulatory Guide 1.221, "Design Basis

Hurricane and Hurricane Missiles for Nuclear Power Plants” in October 2011, a new RAI was issued to the applicant requesting an evaluation of its impact on the existing design. The staff conducted an audit in late February 2012. The staff is continuing its review and waiting for the applicant’s final response to the RAI.

Flow-Induced Vibration

In early 2010, the applicant changed its approach for addressing the area of flow-induced vibration. Rather than citing Kashiwazaki-Kariwa Unit 6 as the prototype, the applicant determined that STP Unit 3 should serve as the prototype. This change required the applicant to submit a significant amount of new information, thereby delaying the review of safety analysis report Section 3.9.2. The NRC staff has conducted several audits and issued multiple RAIs in this area. The applicant submitted documentation of its Comprehensive Vibration Assessment Program in June 2011. On October 25, 2011, the staff audited the validation and verification of a computer code that was used to support the design of reactor internal components. The staff conducted further audit activities on this subject during the week of January 17, 2012.

Spent Fuel Pool Criticality and Structural Evaluation (Chapter 9)

The original application did not address several COL information items that require new spent fuel storage structural and criticality evaluations. Several open questions relate to the structural acceptability of the spent fuel storage racks. The staff held an audit the week of January 17, 2012, to verify the calculations supporting RAI responses and to evaluate the applicant’s dynamic analyses. The staff continues to review RAI responses while waiting for the applicant’s resolution of the open issues.

Radwaste Building Safety Classification

The applicant has proposed to design the Radwaste Building to safety classification RW II-b. In its determination to design to classification RW II-b, the applicant made assumptions regarding the performance of the Radwaste Building during certain accidents that do not appear to be substantiated in the FSAR; furthermore, the applicant did not address the safety classification of the Turbine Building although it houses the off-gas system. The staff is preparing RAIs to request that the applicant substantiate their assumptions regarding the Radwaste Building and to address the Turbine Building design.

Foreign Ownership

In Revision 6 to the COL application, the staff was informed that Toshiba Corporation could obtain up to 90 percent ownership of the applicant. On December 13, 2011, the staff issued a letter to the applicant informing it that (1) it does not meet the requirements of 10 CFR 50.38, “Ineligibility of Certain Applicants”; (2) its negation action plan does not remove the possibility of foreign ownership, control or domination; (3) the staff is suspending its review of the foreign ownership section of the application; (4) the staff would continue its review of the balance of the application; and (5) no license would be issued until the requirements of 10 CFR 50.38 are met. On February 23, 2012, the applicant revised the general financial information to state that NRG Energy (a Delaware corporation) would retain about 90 percent ownership of Nuclear Innovation

North America and that further funding of the project would be in the form of loans from Toshiba. The applicant and senior NRO staff discussed this subject in a public meeting on March 5, 2012.

Financial Qualification

The applicant expects to obtain a DOE loan guarantee but does not believe that it will get this loan guarantee until after receipt of a COL. The applicant is exploring options for meeting the requirements of 10 CFR 50.33. The staff met with the applicant in December 2011 and January 2012. The applicant provided initial responses to the staff’s RAIs in January and supplementary RAI responses in February 2012. The staff is reviewing these responses.

Environmental Review

The NRC published the FEIS on February 24, 2011. The Atomic Safety and Licensing Board (ASLB) heard testimony on two admitted environmental contentions in August 2011 and October 2011 and have ruled in favor of the NRC staff on both of them.

Review Status

Significant open items remain in Chapters 1, 3, and 9, and the NRC staff has suspended review of the foreign ownership section of the application.

Review Completion Dates

Original: FSER—September 2011
FEIS—March 2011

Current: FSER—TBD
FEIS—February 2011—complete

ABWR DESIGN CERTIFICATION RENEWAL

Project	FSER	FEIS	Rulemaking
Toshiba ABWR DC Renewal*	TBD	TBD	TBD
GEH ABWR DC Renewal*	TBD	TBD	TBD

*The NRC staff has not yet begun its review of the applications.

Toshiba ABWR Design Certification Renewal Application

General Information

Design: ABWR
Application Type: DC Renewal
Docket Date: December 14, 2010

Project Schedule Risks

None

Review Status

On November 2, 2010, Toshiba tendered an ABWR DC renewal application. By letter dated December 14, 2010, the NRC informed Toshiba that it had completed the acceptance review for Toshiba's ABWR DC renewal application and that it had determined that the application was acceptable for docketing. By letter dated February 9, 2011, Toshiba notified the NRC staff of its intent to submit a revised application no later than June 30, 2012, and requested that the technical review begin after the revision is submitted. Public meetings were held June 23, 2011, and March 28, 2012, to discuss Toshiba's proposed changes to the PRA.

General Electric Hitachi ABWR Design Certification Renewal Application

General Information

Design: ABWR
Application Type: DC Renewal
Docket Date: February 14, 2011

Project Risk

None

Review Status

In December 8, 2010, GE-Hitachi Nuclear Energy Americas, LLC, tendered an ABWR DC renewal application. By letter dated February 14, 2011, the NRC stated that it had completed the acceptance review for the renewal application and that the application was acceptable for docketing. The NRC staff has informed the applicant that additional amendments should be included in the ABWR renewal. In accordance with the applicant's request, the staff will share a list of additional amendments with the applicant to consider for incorporation in the application. The NRC staff will issue a letter to the applicant describing the changes in April 2012.

U.S. Evolutionary Power Reactor (EPR)

Project	FSER	FEIS	Rulemaking	Comments
U.S. EPR DC	TBD*	N/A	June 2013	Response to open items delayed to August 2013.
Calvert Cliffs, Unit 3	TBD*	May 20, 2011	N/A	Critical path RAI responses delayed to July 2013
Nine Mile Point, Unit 3	suspended	suspended	N/A	Suspended at the applicant's request.
Bell Bend	TBD*	TBD	N/A	Critical path RAI responses delayed to March 2014.
Callaway, Unit 2	suspended	suspended	N/A	Suspended at the applicant's request.

*New schedule to be developed by April 30, 2012

U.S. EPR Design Certification Application

General Information

Design: U.S. EPR
 Application Type: DC
 Docket Date: February 25, 2008

Project Schedule Risks

Seismic and Structural

Although there are no major technical issues that pose schedule risk at this time, a significant amount of work is left to be completed by AREVA to close out open items in Phase 4 of the DC review. On February 21, 2012, AREVA submitted a new schedule that shows that AREVA responding to open items by August 2013.

Fuel Assembly Mechanical Design

AREVA has indicated that use of the most limiting end of life conditions instead of beginning of life conditions for seismic analyses of the fuel assembly has predicted a plastic deformation of the grid assembly. AREVA has submitted a path-forward plan to resolve the issue without doing further tests to demonstrate coolability and control rod insertability for the plastically deformed grid. The staff has determined that this plan is acceptable.

Instrumentation and Controls (I&C)

Design changes resulting from the review of Chapter 7 of the FSAR are having a significant effect on I&C technical specifications. The component based approach to TS adopted by the

applicant is a first of a kind initiative used only in the EPR design. EPR final safety analysis report chapter 16, "Technical Specification," Phase 4 review efforts in this area have been expanded as a direct result of the extensive revision (i.e., incorporation of new material and large scale changes to previously approved information). The incorporation of the I&C design changes is adding to the complexity of the U.S. EPR component-based TS. On February 21, 2012, AREVA submitted a new schedule that delayed the response to open items to August 2013. The NRC staff will evaluate and issue a revised review schedule by April 30, 2012, which will reflect AREVA's February 21, 2012, RAI response schedule.

Fukushima Lessons Learned

On December 7, 2011, the staff held a public meeting with AREVA at which AREVA presented a proposal for a path forward to address Fukushima-related concerns. AREVA stated that the U.S. EPR design is robust enough to withstand Fukushima-like, beyond design basis earthquake and flooding events. AREVA plans to submit a closure plan to address the NRC requirements following the staff's issuance of RAIs.

Review Status

The staff has issued SERs with open items for all 19 chapters. ACRS subcommittee presentation is complete for all chapters and 14 chapters have been presented to the full committee. The remaining five chapters are tentatively scheduled to be presented May 10-12, 2012.

On February 21, 2012, AREVA submitted a new schedule that delayed the response to open items to August 2013. The NRC staff will evaluate and issue a revised review schedule by April 30, 2012, which will reflect AREVA's February 21, 2012, open item closure schedule.

Review Completion Date:

Original: FSER—May 2011

Current: FSER —TBD

Calvert Cliffs Combined License Application

General Information

Design: U.S. EPR
Application Type: RCOL
Location: Lusby, MD
Docket Date: January 25, 2008 (Part 1), and June 3, 2008 (Part 2)

Project Schedule Risks

Organizational and Financial Information

On November 3, 2010, the counsel for Calvert Cliffs Unit 3 Nuclear Project, on behalf of the applicants, filed a letter with the ASLB indicating that Électricité de France, a foreign business

entity, had acquired Constellation's 50 percent interest in UniStar. On November 4, 2010, Constellation filed a Schedule 13D with the U.S. Securities and Exchange Commission confirming this transaction. Based on this information, the NRC staff issued an RAI asking the applicants to justify how they comply with the requirements of 10 CFR 50.38. The applicants responded to the NRC staff's RAI on January 31, 2011. The NRC staff reviewed the RAI response and concluded that the proposed ownership structure did not comply with the requirements of 10 CFR 50.38. While the NRC will continue to review the remaining portions of the application, the agency will not issue a license until the requirements of 10 CFR 50.38 are met.

Review Status

The schedule for the FSER will be reevaluated based on (1) the pending submittal of information on seismic analyses, (2) delayed response dates for RAIs, and (3) not meeting the foreign ownership, control, or domination requirements contained in 10 CFR 50.38. In addition, the RCOL schedule must remain sequenced with the EPR DC review schedule. On February 21, 2012, the applicant submitted its schedule for responding to the outstanding RAIs, delaying the critical path RAI responses to July 2013. In coordination with the development of the new DC schedule, the NRC staff will issue a new schedule for the COLA and the contested and mandatory hearings by April 30, 2012.

Review Completion Dates:

Original:	FSER—August 2011	Current:	FSER—TBD*
	FEIS—April 2010		FEIS—May 20, 2011

* New schedule to be developed by April 30, 2012

Nine Mile Point Unit 3 Combined License Application

General Information

Design:	U.S. EPR
Application Type:	SCOL
Location:	Oswego, NY
Docket Date:	December 12, 2008

Review Status

On December 1, 2009, UniStar submitted a letter requesting that the NRC temporarily suspend the Nine Mile Point Unit 3 COLA review, including any supporting reviews by external agencies, until further notice. The NRC staff responded to UniStar on March 26, 2010, informing it of the agency's plans to discontinue all activities on the COLA review in an orderly manner and to preserve the work that had been accomplished.

On December 9, 2010, UniStar requested an exemption from 10 CFR 50.71(e)(3)(iii) which requires the applicant to make annual updates to the FSAR, and proposed delaying its FSAR update submittal until December 31, 2012. The NRC granted the exemption request on May 26, 2011.

Bell Bend Nuclear Power Plant Combined License Application

General Information

Design: U.S. EPR
Application Type: SCOL
Location: Luzerne County, PA
Docket Date: December 19, 2008

Project Schedule Risks

Site Layout

The applicant proposed site layout changes to reduce impacts to “exceptional value” wetlands to satisfy USACE’s need for a Section 404 permit under the Clean Water Act. The NRC staff will revisit large portions of the geology, seismic design, and hydrology reviews based on the revised submittals. The applicant submitted a complete revised environmental report on December 19, 2011. An application revision was received on March 23, 2012, and the schedule for the associated RAI responses was received on March 14, 2012. The full scope of the changes is currently projected for submission by July 2012.

Water Storage

The Susquehanna River Basin Commission (SRBC) issues permits for water withdrawal from the Susquehanna River. The SRBC informed the applicant that it does not intend to approve water withdrawal during low-flow periods unless there is low-flow augmentation (water storage). The applicant is developing a pooled assets approach among its facilities within the Susquehanna River Basin, such that overall water withdrawal from the Susquehanna River remains at current levels. The applicant submitted a one-dimensional instream flow incremental methodology (IFIM) study to SRBC on June 29, 2011, as part of the joint permit application to the USACE. The results from the IFIM study will inform the SRBC’s decision on water withdrawal. The applicant’s pooled assets plan includes two mines and one hydroelectric plant owned by the applicant. The SRBC could make a final decision on the applicant’s permit application by December 2012.

Alternative Sites Analysis

USACE and EPA have concerns about the alternative sites analysis used by the applicant. USACE is requesting a detailed description of environmental impacts at all candidate sites before making its LEDPA decision. The applicant has performed a sensitivity analysis on several criteria in the alternative site analysis to satisfy USACE concerns. The applicant revised its alternative site analysis as part of the joint permit application submitted on June 29, 2011. The joint permit application contains responses to USACE and EPA concerns, and addresses open issues with SRBC on consumptive use. The NRC staff and the USACE have evaluated the revised alternative sites analysis and will be discussing it further with the applicant during the upcoming supplemental site audit. The NRC staff will then perform its own evaluation of the alternative sites in the draft EIS and make a determination on whether or not the Bell Bend site is the preferred alternative.

Review Status

The NRC staff plans on completing the sufficiency review for the revised environmental report and restarting the EIS scoping in May 2012. The NRC staff is revising the safety review schedule taking into account the newly submitted information and evolving changes in the DC and RCOL schedules.

Review completion dates:

FSEER issue date: TBD

FEIS issue date: TBD

Callaway Plant Unit 2 Combined License Application

General Information

Design: U.S. EPR
Application Type: SCOL
Location: Callaway County, MO
Docket Date: December 12, 2008

Review Status

The NRC has currently suspended the technical reviews on this application. The NRC staff will reevaluate all schedules issued in the letter dated May 26, 2009, if and when the applicant requests the resumption of reviews.

In a letter dated November 22, 2010, Ameren Missouri, a subsidiary of Ameren Corporation, notified the NRC that it anticipated submitting an ESP application in the second half of 2011. Union Electric Company (doing business as Ameren Missouri) would be the applicant and license holder. Ameren stated that it would keep the NRC informed of its progress and any changes to this schedule. In its letter, Ameren also stated that it intends to maintain the present COLA as a suspended application and provide further correspondence on any future direction related to its status.

U.S. Advanced Pressurized Water Reactor (US-APWR)

Project	FSER	FEIS	Rulemaking
US-APWR DC	May 2014	N/A	October 2014
Comanche Peak, Units 3 and 4	July 2014	May 2011	N/A
North Anna, Unit 3	TBD	TBD	N/A

US-APWR Standard Design Certification

General Information

Design: US-APWR
Application Type: DC
Docket Date: February 29, 2008

Project Schedule Risks

Structural Design Changes

The applicant has changed the design-basis seismic model and analysis methodology for the reactor building complex which requires additional staff review. The lumped mass stick model was changed to a detailed three-dimensional finite element model. The applicant submitted to NRC a revised completion plan for the seismic and structural analyses in September 2011. The NRC staff's safety review scope expanded because the applicant is re-performing the seismic analysis, including the soil structure interaction (SSI), of the nuclear island. The applicant submitted a plan to update the completion plan for the seismic and structural analysis on January 5, 2012. A public meeting was held on March 29, 2012, to discuss the revised seismic completion plan. The applicant informed the staff of proposed design changes including combining the nuclear island structures on a common basemat. The applicant also revised its analytical approach for the sliding and overturning stability analyses and for the SSI analysis. The applicant committed to submit revised technical reports reflecting the revised design and analysis by the end of July 2012.

Sump Design

MHI issued a Generic Safety Issue (GSI)-191 closure plan letter to the NRC in May 2011 and has completed additional strainer head loss testing and core inlet blockage testing. The staff audited and inspected the additional sump head loss testing in June 2011 and audited and inspected the additional core inlet blockage testing in July 2011. The applicant submitted an updated closure plan in December 2011. The updated closure plan includes design changes to aid the resolution of debris transport time, additional testing if necessary, and revisions to technical reports. A proposed schedule is included in the updated closure plan for future submittals and planned interactions with the NRC staff to facilitate closure of the remaining issues related to GSI-191. The NRC staff held a public meeting in February 2012 to discuss MHI's progress to date and MHI's plans to perform two additional tests by July 2012. MHI has submitted the strainer head loss test plan and the CIB test plan.

Fukushima Lessons Learned

The applicant briefed the staff on Fukushima lessons-learned and potential impacts on the US-APWR Design Certification at a February 7, 2012, public meeting.

Review Status

The staff is developing the SER with open items. The ACRS review of the SER with open items has been completed for eight chapters. The staff plans to update the review schedule in April 2012.

FSER Completion Date:

Original: September 2011

Current: May 2014

Comanche Peak Combined License Application

General Information

Design: US-APWR
Application Type: RCOL
Location: Somervell County, TX
Docket Date: December 2, 2008

Project Schedule Risks

Seismic

Based on MHI's changes to the design basis seismic model and analysis methodology for the reactor building complex, Luminant, in its letter dated September 30, 2011, provided an integrated seismic closure plan. This closure plan included commitment dates for assessing changes to the standard plant seismic design, and resolving the SASSI subtraction method issues. The applicant plans to provide a revised seismic closure plan for the COL in the near future and the NRC plans to hold a public meeting in May 2012.

Hydrology

The NRC staff determined that Luminant provided inadequate responses to the staff's RAIs on watershed analysis, onsite flooding, ground water, and the postulated release of radiological effluent. In addition, Luminant discovered an error in its precipitation calculations, which will result in changes to the site grading plan. The staff conducted an audit on June 7-9, 2011, to review Luminant's ground water analysis. In August 2011 and October 2011, Luminant provided its supplemental response to the staff's RAIs on ground water. Luminant intends to provide a revised ground water analysis which includes a site-specific ground water model. The NRC staff held a public meeting on March 27, 2012, to discuss the current deficiencies in the applicant's analyses and to obtain a new schedule for the revised site grading plan, surface water flooding, and groundwater and radioactive transport analyses.

Administrative and Financial Information

The NRC staff determined that Luminant did not provide sufficient information in Part 1 of the application, "Administrative and Financial Information," with regard to negation of foreign ownership. The NRC staff issued RAIs in March 2010 and October 2010. Luminant provided its responses to these RAIs in June 2010 and December 2010, respectively. The NRC staff reviewed Luminant's responses and determined that they did not address the negation of foreign ownership. The staff informed Luminant of this open item in January 2011. Subsequently, by letter dated July 28, 2011, Luminant requested that the staff's review of foreign ownership and control be considered a Phase 2 open item because of the possibility of future changes in foreign ownership for the Comanche Peak Nuclear Power Plant. In its December 7, 2011, revised schedule letter, the NRC approved Luminant's request that foreign ownership and control be considered a Phase 2 open item.

Risk-Informed Technical Specifications

In its COLA, Luminant requested NRC staff approval to use risk-informed TS. The NRC staff held public meetings on November 3, 2010, and January 11, 2011, to discuss the preliminary approaches for resolving technical issues. Luminant submitted its draft TS methodology to the NRC staff for review in March 2011, which was discussed during a March 2011 public meeting. On June 30, 2011, Luminant submitted its TS for NRC staff review. The NRC staff reviewed the submittal and issued RAIs in September 2011. Luminant provided its response to the staff's RAIs on October 21, 2011. The NRC staff reviewed Luminant's RAI response and conducted a public conference call in April 2012. The staff expects to issue one final RAI as a result of the conference call.

Review Status

By letter dated December 7, 2011, the NRC staff issued a letter to Luminant containing a change to the safety review schedule. This schedule change was the result of delays arising from the US-APWR DC review schedule.

Review Completion Dates:

Original:	FSER—December 2011	Current: FSER—July 2014
	FEIS—January 2011	FEIS—May 2011 (complete)

North Anna 3 Combined License Application

General Information

Design:	US-APWR
Application Type:	SCOL
Location:	Louisa County, VA
Docket Date:	January 28, 2008

Project Schedule Risks

Seismic and Structural Analysis

Because of changes in design basis seismic model and analysis methodology in US-APWR DCD, the applicant is assessing the impact of the revised methodology on the North Anna 3 seismic analysis. There will be some impact on the review schedule depending on timing of the information provided to the NRC staff.

In May 2011, the NRC staff held a public meeting with Dominion to discuss ground motion response spectra (GMRS) and related issues in the North Anna 3 application. In November 2011, Dominion notified the NRC staff, under 10 CFR Part 21, that the August 23, 2011, earthquake near the North Anna site exceeded at low frequencies the safe-shutdown earthquake (SSE) response spectra established in the North Anna Early Site Permit. Dominion stated that the data also exceeded the site 250 foot elevation GMRS and the hard rock SSE developed for the North Anna Unit 3 COLA based on the ESP SSE spectra. Dominion is assessing whether any changes should be made to the North Anna Unit 3 COLA. Dominion plans to complete its assessment by the end of July 2012. The NRC staff is also assessing the impacts of the August 23, 2011, earthquake on information presented in the North Anna 3 COLA. An additional RAI was issued in November 2011 regarding the GMRS issue. The staff is reviewing the recent response submitted by the applicant in February 2012.

Review Status

The NRC staff has recently revised the review schedules for the US-APWR DCD and the Comanche Peak reference combined license application (RCOLA). Since the North Anna 3 schedule incorporates the changes in the review schedule for the DCD and RCOLA, the North Anna 3 COLA review schedule is expected to change. The staff will develop the North Anna 3 schedule after Dominion provides its seismic closure plan to the NRC staff.

Environmental Review

The NRC staff is reviewing Dominion's documentation supporting the recent changes to their environmental report (Revision 4 received December 2011). Another COLA revision (Revision 5) was received in March 2012, which the staff will review for potential changes to the benefits assessments as published in the February 2010 COL SEIS. In addition, the staff has identified new and potentially significant information related to the change in the reservoir management plan and associated changes in evaporation rates as a result of Virginia's water withdrawal permitting process. An updated review schedule is being prepared to reflect additional review efforts that have been realized on the project as a result of new information and significant delays in RAI responses by Dominion.

Review completion dates:

Original: FSER—February 2011

Current: FSER— TBD

Original: FEIS— April 2010

Current: FSEIS—TBD

EARLY SITE PERMITS

PROJECT	FSER	FEIS	Rulemaking
Victoria	April 2014	March 2014	N/A
Public Service Enterprise Group (PSEG) Incorporated	April 2014	June 2014	N/A

Victoria County Station Early Site Permit Application

General Information

Design: Plant Parameter Envelope Approach
(No design specified at this time)

Application Type: ESP

Location: Victoria, TX

Docket Date: June 7, 2010

Project Risks

None

Schedule Status

On December 1, 2011, the NRC staff issued a revised schedule to the applicant and the new dates are reflected below. The applicant is planning to submit Revision 1 to its application in the near future.

Environmental Review

The NRC published in the *Federal Register* (75 FR 67406; November 2, 2010) a notice for environmental scoping, with the scoping period closing on January 3, 2011. The NRC issued the notice related to the hearing and opportunity to petition for leave to intervene on November 23, 2010, with opportunity to intervene closing on January 24, 2011. Oral arguments for the 23 contentions took place on March 16-17, 2011. On June 30, 2011, the ASLB admitted five environmental contentions. The NRC issued the scoping summary report on July 27, 2011.

The staff conducted an alternative sites audit in December 2011 and the environmental site audit in January, 2012.

Review Completion Dates:

Original:	FSER—April 2013	Current:	FSER—April 2014
	FEIS— August 2013		FEIS—March 2014

PSEG Incorporated Early Site Permit Application

General Information

Design: Plant Parameter Envelope Approach
(No design specified at this time)
Application Type: ESP
Location: Salem County, NJ
Docket Date: August 4, 2010

Project Risks

None

Schedule Status

The staff issued a schedule revision letter on December 23, 2011, reflecting revised public milestones.

Review Completion Dates:

FSER—April 2014

FEIS— June 2014

OTHER LICENSING ACTIVITIES

Expected New Applications during FY 2012

The staff is anticipating two additional ESP application submittals (Callaway and Blue Castle).

Review schedules and other pertinent information are available on the NRC's public Web page at <http://www.nrc.gov/reactors/new-reactors.html>.

LICENSING SUPPORT

Guidance Activities

Regulatory Guides

The Web site for the Office of Nuclear Regulatory Research (RES) describes its program to update the NRC's regulatory guides (RGs). The Web site also identifies those RGs for which NRO is the lead office for preparing the update.

Changes During Construction under 10 CFR Part 52

Interim Staff Guidance (ISG) COL/ISG-025, "Changes during Construction Under 10 CFR Part 52" was published in the *Federal Register* (77 FR 1749; January 11, 2012) for use and comment. The public comment period ended March 26, 2012. The ISG discusses the Preliminary Amendment Request (PAR) review process that is established through a license condition in the initial COL licenses. The PAR process enables the COL licensee to request to proceed with the installation and testing of certain proposed plant changes that require a license amendment while the NRC is reviewing that license amendment request. Following closure of the comment period, the staff will evaluate the comments received and prepare the ISG for final concurrence and issuance.

Standard Review Plan

NUREG-0800, "Standard Review Plan for the Review of Safety Analysis Reports for Nuclear Power Plants: LWR Edition" (also referred to as the SRP), is the primary document the NRC staff uses in reviewing and evaluating proposed licensing actions for nuclear power plants. It contains guidelines to ensure that NRC staff evaluations lead to clear and defensible findings that demonstrate that public health and safety will be maintained.

The SRP contains approximately 250 sections covering the entire scope of a nuclear power plant. Updating the SRP and other associated guidance documents helps to ensure that staff evaluations reflect the latest information and knowledge related to the safe operation of nuclear power plants. The comprehensive program to review and update the SRP occurs on a 4-year cycle, subject to availability of staff resources. It involves a review of all sections of the SRP to determine which sections require an update and to budget and schedule the resources necessary to perform the updates. Preliminary results indicate that approximately 220 sections may require technical updates for the agency offices (Office of Nuclear Reactor Regulation, Office of Nuclear Security and Incident Response (NSIR), RES, and NRO). The staff is currently estimating resources for this update and formulating plans for updating the SRP guidance in a timely manner. These plans will also take into account the requirement to develop guidance for the Advanced Reactor Program (ARP) and development of Design Specific Review Plans as directed by the SRM for SECY-11-0024, "Use of Risk Insights to Enhance the Safety Focus of Small Modular Reactor Reviews," dated May 11, 2011.

The staff continues to develop guidance as needed and efforts are underway to issuance guidance on fitness for duty (SRP Section 13.7) and access authorization (SRP Section 13.6.4). These are new sections that are being added to NUREG-0800.

Rulemaking Activities

Design Certification Rulemakings

The status of DC rulemakings can be found earlier in this document under the associated safety review of each DC application.

ITAAC Maintenance Rulemaking

The NRC staff developed the final rulemaking to amend the regulations related to the verification of nuclear power plant construction activities through ITAAC under a COL. The NRC staff provided the final rulemaking package to the Commission for review in SECY-12-0030, "Final Rule: Requirements for Maintenance of Inspections, Tests, Analyses, and Acceptance Criteria," (RIN 3150-A177) on February 23, 2012. The new provisions in the amended rule require a licensee to report new information materially altering the basis for determining that inspections, tests, or analyses were performed as required or that acceptance criteria were met, and to notify the NRC of completion of all ITAAC activities. These licensee notifications support the finding that the Commission must make under 10 CFR 52.103(g), which states that all ITAAC in the COL must be met, before the NRC will allow fuel load and operation. These notifications also ensure that interested persons have access to information on ITAAC at a level of detail sufficient to address the Atomic Energy Act threshold for requesting a hearing on ITAAC closure. If approved by the Commission, the NRC staff expects to publish the final rule and the revision of RG 1.215 (Draft Regulatory Guide 1250) during the third quarter of FY 2012.

CONSTRUCTION INSPECTION ACTIVITIES

Construction Inspection Program

The NRC has the infrastructure in place to support FY 2012 inspection activities to verify quality construction and the completion of ITAAC. Safety-related construction officially began at Vogtle Units 3 and 4, on March 8, 2010, with the start of engineered backfill operations authorized under a limited work authorization (LWA). Construction inspectors from the NRC Region II Center for Construction Inspection (CCI) and Headquarters technical staff have conducted multiple inspections on the ITAAC included in the LWA for Vogtle Units 3 and 4. The staff has also conducted multiple inspections of the quality assurance program associated with LWA activities, in accordance with Inspection Procedure 35007, "Quality Assurance Program Implementation During Construction and Pre-Construction Activities." CCI opened the Vogtle construction resident inspector's office with a construction senior resident inspector and resident inspector in 2010. The latest construction milestone was the completion of the basemat/mudmat for the Unit 3 nuclear island in April 2011. Installation of the rubber waterproof membrane has been completed in Unit 3 and is ongoing in Unit 4. CCI has conducted LWA ITAAC inspections on the activities noted above. Summer continues with its site preparation and preconstruction activities.

During this quarter, CCI increased staff at both Vogtle and Summer construction resident inspector's offices. Each office now has a construction senior resident inspector and two construction resident inspectors. CCI issued a quarterly inspection report for Vogtle Units 3 and 4 covering October through December 2011. No findings were identified in the report. Following the issuance of the Vogtle Units 3 and 4 COL in January 2012, the Vogtle construction resident inspection staff started to execute the full Inspector Manual Chapter 2503 program.

Inspections, Tests, Analyses, and Acceptance Criteria

In July, 2011, the staff completed a simulated ITAAC closure and verification demonstration project. As a next step, the staff is collaborating with internal and external stakeholders to expand the example set of ITAAC closure notifications collected in NEI 08-01 "Industry Guideline for the ITAAC Closure Process under 10 CFR Part 52." The industry is developing and will add 27 additional closure notifications, representing 327 ITAAC, to NEI 08-01. The example closure notifications will then cover approximately 80 percent of the AP1000 ITAAC which will provide licensees with more examples for preparing ITAAC closure notification submittals.

During the demonstration exercise, the staff and industry identified that further clarification and guidance was needed for the AP1000 "functional arrangement" ITAAC. Specifically, the scope of structures, systems and components covered by this ITAAC was questioned. The staff worked very closely with both internal and external stakeholders in several public workshops to reach a shared understanding of the scope of inspection that will be required to successfully complete these ITAAC. As a result, a detailed section describing the scope of "functional arrangement" and a "functional arrangement" example closure notification are expected to be added to the next revision of NEI 08-01. Staff also worked to gain a common understanding

with industry on the expectations for completing the design reliability assurance program (D-RAP) ITAAC, and continue to resolve issues involving the intent of specific ITAAC.

In support of full construction at Vogtle and Summer , the staff is developing office instructions (OIs) describing the process for the staff's recommendation to the Commission on the 10 CFR 52.103(g) finding and the ITAAC closure verification process. The staff expects to issue the OI for the ITAAC closure verification process mid-2012.

Construction Reactor Oversight Process

In SRM SECY-10-0140, "Options for Revising the Construction Reactor Oversight Process Assessment Program," dated March 21, 2011, the Commission directed the staff to develop a construction assessment program that includes a regulatory framework, the use of a construction significance determination process to determine the significance of findings identified during the construction inspection program, and the adoption of a construction action matrix to determine the appropriate NRC response to degrading licensee performance. The staff completed development of the new assessment process and began a 12 month pilot of the new program on January 1, 2012, at the Vogtle construction site. The pilot will also be conducted at the Summer construction site beginning in April 2012. The staff will provide updates to the Commission and brief ACRS as directed in the SRM.

Quality Assurance and Vendor Inspections

During this quarter, the NRC staff conducted four vendor inspections, and supported Region II in an additional inspection. The NRC staff continued its participation in several quality assurance and inspection outreach activities including meetings related to the Nuclear Procurement Issues Committee, American Society of Mechanical Engineers, Section III, and Nuclear Quality Assurance, as well as the Nuclear Energy Institute. The NRC staff continues to make progress on actions in response to the Office of the Inspector General audit of the vendor inspection program. During this quarter the staff conducted public meetings in support of the proposed 10 CFR Part 21 rulemaking and on the current initiatives associated with CFSI. In addition, the NRC staff progressed with the implementation of the Vendor Inspection Program Plan, including use of the vendor selection prioritization strategy, initiation of the knowledge management and training activities, and planning and coordination for the Third Biennial Vendor Oversight Workshop. The NRC staff also initiated actions to create and manage an internal database of vendor information for use in preparing for and facilitating inspection activities. The staff continued with its plans for improving 10 CFR Part 21 through the development of several regulatory bases to support proposed rulemaking activities (SECY-11-0135, "Staff Plans to Develop the Regulatory Basis for Clarifying the Requirements in Title 10 of the *Code of Federal Regulations* Part 21, 'Reporting of Defects and Noncompliance,'" dated September 29, 2011).

Operator Licensing

Efficient and effective licensed operator training and examination will be critical to ensure that an adequate number of licensed operators are available to meet new reactor schedules. The industry has developed schedules for operator training and licensing. NRC is working to have ready all of the tools needed to support these schedules. Additionally, the staff has been working on a new examination format for highly integrated control rooms. During the training of industry instructors, mock exams will be developed and administered to the trainees by a

consensus group of NRC staff and industry training personnel. The experience gained during the administration of the mock exams will be assessed to determine what changes to the current operator licensing exam format are necessary. Staff will incorporate those into NUREG-1021, "Operator Licensing Examination Standards for Power Reactors." NUREG-1021 will also be modified to allow design-specific written exams to large numbers of operators. This approach will substantially reduce the number of NRC examiners needed to conduct the examination, and these examinations will be given to a large number of candidates by sharing resources from all of the Regions.

The industry recognized that the current Knowledge and Abilities Catalogs needed to be modified to include the new highly integrated control room environment. The staff issued the draft AP1000 catalog in November 2011, and the draft ABWR catalog in December 2011.

Development of the AP1000 simulator remains on schedule. The development and installation of two generic digital control rooms has been completed. The staff is in the process of securing engineering support for developing core and thermal-hydraulic simulator models. The ABWR simulator development has been placed on hold based on industry schedules. The project is in a position that it could be restarted in the future, if necessary.

ADVANCED REACTORS

The NRC staff has undertaken a variety of activities to prepare for applications for SMRs that may arrive as early as calendar year (CY) 2013. The NRC staff has evaluated past advanced reactor experience and interacted with stakeholders to identify issues that should be addressed to support design and licensing reviews of SMR designs and deployment. Although approached by vendors and advocates for a variety of reactor technologies, the NRC staff has focused its attention on the NGNP program and on iPWRs.

Next Generation Nuclear Plant

In a letter dated October 17, 2011, the Secretary of Energy forwarded the recommendations of the DOE Nuclear Energy Advisory Committee (NEAC) regarding readiness to proceed with Phase 2 of the NGNP Project per the Energy Policy Act of 2005. NEAC reviewed progress in NGNP research, design, and pre-application licensing discussions (project Phase 1, as described in the Energy Policy Act of 2005). NEAC recommendations include beginning design activities, accelerating efforts to form a public-private partnership to provide end-user input into design and licensing activities, and continuing interaction with the NRC on regulatory framework development. NEAC also recommended that licensing under 10 CFR Part 50 be adopted, as opposed to the existing plan to license the facility using a COL issued under 10 CFR Part 52.

The Secretary of Energy stated that DOE will not proceed with Phase 2 design activities at this time, given current fiscal constraints, competing priorities, projected cost of the prototype, and the inability to reach agreement on cost sharing arrangements with the industry. The October 17, 2011, letter stated that the NGNP project will focus on high temperature gas-cooled reactor (HTGR) research and development, interactions with the NRC on the licensing framework, and the establishment of a public-private partnership.

On February 15, 2012, the staff issued two reports documenting the Agency's NGNP Working Groups' assessment of five white papers submitted by the NGNP project. The white papers discussed fuel qualification, mechanistic source terms, defense-in-depth approach, licensing basis event selection, and safety classification of systems, structures, and components. The Working Groups did not identify any fundamental issues that would prevent development of related licensing submittals that meet regulatory requirements. The assessment reports reflect the considered opinions of the members of the Working Groups but are not formal staff positions in the context of future licensing activities.

On February 15, 2012, the staff also issued a letter to DOE with a proposed outline of the scope of NGNP activities to be completed by the staff during CY 2012 that will support Secretary Chu's interest in making progress with the NRC on a licensing framework. Activities will focus on policy and technical issues associated with source term, containment functional performance, licensing basis event selection, and emergency planning. The NRC is addressing some topics, such as emergency planning and modular plant licensing, as part of its resolution of generic SMR issues.

Integral Pressurized-Water Reactors

NuScale Power, LLC

In response to Regulatory Issue Summary 2011-02 Revision 1, "Licensing Submittal Information and Design Development Activities for Small Modular Reactor Designs," dated December 27, 2011, NuScale Power, LLC, announced a new DC application submittal date with an objective of obtaining design certification from the NRC under 10 CFR Part 52, Subpart B. The new date is being withheld as proprietary information.

On February 29 - March 1, 2012, a closed meeting was held between the NRC and representatives from NuScale Power (NuScale). NuScale presented technical information related to their Topical Reports on Dynamical System Scaling Methodology and Loss of Coolant Accident Phenomena Identification and Ranking Table. They also presented an overview of the NuScale testing programs, which include the integral tests at the 1/3 height and length scale test facility at Oregon State University in Corvallis, OR, the helical coil steam generator testing in Italy, and the fuel critical heat flux test program Canada. Testing is scheduled to begin in FY 2012, to provide scaled prototypic integral test data for codes and methods development. The test facility will be available for NRC directed tests.

NuScale is in the process of building a full scale control room mockup/simulator at its Corvallis office for a full 12 module plant. The facility is scheduled to be ready for a demonstration to the NRC in the third quarter of 2012.

The next meeting with NuScale is a closed meeting tentatively scheduled for May 8 - 10, 2012, to discuss seismic analysis methodology, safety analysis codes and methods and fuel solutions.

Babcock and Wilcox (B&W) mPower™

In response to RIS 2011-02, B&W announced a new DC application submittal date of the fourth quarter of CY 2013 in support of the TVA Clinch River construction permit application.

The NRC staff has been engaged in pre-application activities with B&W since mid-2009. To date, the NRC has received technical reports on the following topics: quality plan for the DC, plant design overview, critical heat-flux test and correlation development plan, core nuclear design codes and methods qualification, integrated system test (facility description and test plan), instrument setpoint methodology, control rod drive mechanism design and development, and the security design assessment and program plan.

The NRC staff is providing feedback to B&W through meetings and other appropriate methods. During this quarter, the NRC staff held detailed technical meetings with B&W on the mPower™ balance of plant, electrical systems, and the use of third-party certification for the I&C quality assurance program. B&W also provided a detailed overview of their design. The next meeting with B&W is scheduled for April 26, 2012, to discuss hydrology, LOCA and Non-LOCA analysis methodology. In addition, B&W will host a visit by the ACRS to their facilities in Lynchburg, VA.

The NRC staff has begun development of a design-specific review standard (DSRS) for the mPower™ design to identify the review plan for the mPower™ DC application anticipated by the NRC. The DSRS will function like the SRP and will identify safety and risk categorization for the systems, structures, and components associated with the mPower™ design. The staff will engage public stakeholders before issuing the final mPower™ DSRS.

Tennessee Valley Authority

In a November 5, 2010, letter, TVA described six key assumptions for possible licensing and construction of up to six B&W mPower SMR modules at the Clinch River site in Roane County, Tennessee. TVA described a plan to request a construction permit under 10 CFR 50, and also discussed plans for concurrent review of a 10 CFR 52 DC application.

The NRC staff requested additional details regarding the key assumptions in a December 1, 2010, letter. A public meeting with TVA was held on December 14, 2010, to further discuss TVA's assumptions. Following these interactions, TVA submitted an addendum to the original key assumptions on December 22, 2010. The NRC responded to TVA on January 31, 2011, stating that there are no legal or licensing issues that would prevent TVA from applying for a construction permit and operating license under 10 CFR Part 50.

On February 10, 2012, TVA responded to RIS 2011-02, Revision 1, stating that it presently plans to apply for a construction permit between the fourth quarter of CY 2013 and the fourth quarter of CY 2014.

NRC staff and TVA are conducting a series of meetings to discuss the regulatory framework for the proposed Clinch River construction permit application. In these meetings, TVA presents its assessment of existing guidance, including regulations, regulatory guides, the Standard Review Plan, generic communications, and industry guidance. TVA's goal is to identify the set of information needed to provide a complete application. NRC staff provides feedback in the meetings to assist this effort. Four meetings have been held so far to discuss TVA's proposals (September 20, November 3, and November 30, 2011, and on January 24, 2012). A fifth meeting is tentatively planned for June 2012.

Other iPWR Vendors

Two other vendors have contacted the NRC to propose submitting small light-water reactor designs for NRC review. Holtec is developing the Holtec Inherently Safe Modular Underground Reactor design and is also planning to submit a DC application. On July 21, 2011, Holtec representatives presented their plans for submitting a future licensing application. The NRC staff intends to meet with Holtec, as resources allow, to gain an understanding of the vendor's design.

Westinghouse is developing an SMR design and is planning to submit a DC application. The NRC staff met with Westinghouse to discuss the schedule and plans on April 11, 2011. In addition, on July 12, 2011, NRO staff held another meeting with Westinghouse representatives at Westinghouse headquarters in Cranberry, Pennsylvania, to discuss plans for its SMR – an iPWR approximately 225 megawatts electric.

Other Reactor Technologies

The NRC staff has occasional interactions with potential applicants using other advanced reactor designs, such as sodium-cooled fast reactors, lead-bismuth-cooled fast reactors, and fluoride salt-cooled high-temperature reactors. The NRC staff activities related to these designs are limited to low-level efforts (e.g., knowledge management) and nonresource intensive interactions with vendors (e.g., occasional meetings). NRO has had no interactions or development progress for fusion technologies during this reporting period.

Generic Policy Issues

In SECY-10-0034, "Potential Policy, Licensing, and Key Technical Issues for Small Modular Nuclear Reactor Designs," dated March 28, 2010, the NRC staff committed to providing the Commission with periodic updates (through this quarterly report) on its development and implementation of issue resolution plans related to advanced reactors. The SRM "COMGBJ-10-0004/COMGEA-10-0001, Use of Risk Insights to Enhance Safety Focus of Small Modular Reactor Reviews," dated August 31, 2010, also instructed the NRC staff to provide an update on the issue resolution plans described in SECY-10-0034. An update on the NRC staff's activities in this area follows.

License Structure for Multimodule Facilities

One policy issue being assessed is the license structure for multimodule facilities. NRO issued SECY-11-0079, "License Structure for Multi-Module Facilities Related to Small Modular Nuclear Power Reactors," on June 12, 2011, to describe the different license structure alternatives and to present the NRC staff's recommendations. The staff considered papers on this topic submitted by the NGNP Program and NEI in developing the Commission paper. The configurations of multimodule facilities are also a topic within other issue resolution plans and will need to be addressed in the proposed approaches for resolving those broader issues. Examples include the need to address risk assessments for multimodule facilities, the handling of multimodule facilities in the NRC fee structure, and the requirements for liability and property insurance.

Manufacturing License Requirements for Future Reactors

Under current NRC regulations, the NRC may approve an application for a manufacturing license authorizing the manufacture of nuclear power reactors offsite and their shipment to a location that has been issued a construction permit or COL. The staff has not identified any policy issues with the regulations governing manufacturing licenses or their implementation; however, in SECY-10-0034, the staff indicates that potential manufacturing license applicants could face a number of licensing issues. The staff intends to develop a SECY paper to inform the Commission regarding this issue.

Risk-Informed Licensing Approaches

In SRM COMGBJ-10-0004/COMGEA-10-0001, the Commission directed the staff to develop a framework to apply risk insights in the licensing of SMRs to improve the efficiency and safety focus of its reviews. In SECY-11-0024, the NRC staff proposed a more risk-informed and more integrated review framework for pre-application and application review activities pertaining to iPWR designs. The proposed iPWR review framework is consistent with current regulatory requirements and Commission policy statements and builds on the NRC staff's current application review process. The proposed design-specific review plans would be derived from the framework and be prepared for the anticipated near-term iPWR design applications. In its recommendations in SECY-11-0024, the staff incorporated issues described in SECY-10-0034, related to defense-in-depth, licensing-basis event selection, and PRAs.

The staff also proposed an approach for creating, over the longer term, a new risk-informed and performance-based regulatory structure for licensing advanced reactor designs (e.g., non-light water reactors including HTGRs and liquid-metal reactors). This regulatory structure would build on insights from iPWR reviews and ongoing interactions with the NGNP program. In the SRM for SECY-11-0024, dated May 11, 2011, the Commission approved the staff's use of the risk-informed and integrated review framework for staff pre-application and application review activities pertaining to iPWR design applications, as well as consolidating current risk-informed regulatory structure activities into the staff's plan for longer-term development of a new risk-informed regulatory structure. The staff is currently developing the first design-specific review standard for the mPower™ design using this new framework.

Appropriate Source Term, Dose Calculations, and Siting

The NRC staff continued activities regarding a mechanistic source term (MST) for applicability to small modular reactors and the NGNP project. The MST working group completed meetings and issued a report documenting the group's results in September 2011. The staff shifted the focus of source term activities to support the staff's plans for informing the Commission regarding possible approaches for scalable emergency planning zones. In December 2011, the staff issued a memo to the Commission describing ongoing and planned activities to address methods for determining a MST and to describe the applications where use of a source term determined by such methods would be appropriate. The staff has emphasized to industry stakeholders the expectation that any specific proposals related to MST or changes to emergency planning zones should be provided by the industry for staff consideration. The staff will continue communication and coordination with stakeholders and will provide an update in a future Commission paper.

Appropriate Requirements for Operator Staffing for Small or Multimodule Facilities

Given the low power output, modular nature, and passive design of advanced reactors, the NRC staff is addressing the appropriateness of proposed changes to staffing requirements set forth in 10 CFR 50.54(m) for these reactors. The NRC staff established a working group and developed an issue resolution plan to resolve the issue for near-term applications and to inform long-term decisions, research, and potential rulemaking. In the near term, the NRC staff is focusing on developing the technical basis and guidance to support the review of submittals related to human factors engineering. In addition, the staff is focusing on providing the tools to address exemption requests to 10 CFR 50.54(m) for the first round of anticipated SMR COLAs. NRO established a user need with RES for long-term rulemaking efforts and has also contracted with the DOE national laboratories to support development of regulatory guidance documents and training with both near-term and long-term deliverables.

The NRC staff is actively seeking stakeholder interaction by discussing this topic at regular SMR generic topic meetings, reviewing position papers from an American Nuclear Society special committee and NEI, and evaluating topical reports and white papers from potential vendors. The NRC staff issued SECY-11-0098, "Operator Staffing for Small or Multi-Module Nuclear Power Plant Facilities," in July 2011 to inform the Commission of the staff's ongoing efforts and plans for resolution regarding on-site licensed operator staffing requirements for SMRs. Since the establishment of the working group, it has become clear that requests for near-term application exemptions from 10 CFR 50.54(m) will focus on task and workload analyses to form the technical basis of the exemption. Task and workload analyses are methods following established NRC guidance and for which the agency has extensive experience and an existing framework.

Offsite Emergency Planning and Preparedness Requirements

The NRC staff discussed this issue at several public meetings on SMR generic topics and is reviewing position papers, including NGNP's proposal, and other sources, to gain insights into possible approaches to establishing emergency planning and preparedness (EP) requirements for SMRs that may be proposed by the industry. NEI has formed a task force that is addressing EP for SMRs. The NRC staff completed a series of internal meetings that identified possible policy and key technical issues associated with EP requirements. The staff has also identified emergency planning zones as a key issue affecting SMR EP licensing activities and programs. The NRC staff completed an information paper (SECY-11-0152 "Development of an Emergency Planning and Preparedness Framework for Small Modular Reactors") in October 2011 describing an example of offsite EP requirements that could be scaled to be commensurate with the SMR accident source term, fission product release, and associated dose characteristics. The staff will continue communication and coordination with stakeholders but has emphasized that specific proposals in this area should come from the industry for staff review.

Security and Safeguards Requirements

The NRC staff issued an information paper to the Commission, SECY-11-0184, "Security Regulatory Framework for Certifying, Approving, and Licensing Small Modular Reactors" on December 29, 2011, informing the Commission of the staff's assessment of the current security regulatory framework for certifying, approving, and licensing small modular nuclear reactors. The paper concludes that the current security regulatory framework is adequate for the review

of iPWR designs. The NRC staff continues to address this topic during routine meetings with the SMR community and is in contact with vendors to solicit more detailed information on certain aspects of their designs. The NRC staff expects a position paper from NEI in late 2012. The NRC staff is continuing to work with Sandia National Laboratories on contracts for preliminary vital equipment identification, target set analysis, and source term evaluation. The NRC staff is also continuing its work with the Naval Surface Warfare Center on research related to underwater explosions that will help inform the staff during the evaluation of shared pool designs.

NRC Annual Fees

The NRC staff assessed the public comments received in response to an advance notice of proposed rulemaking issued in 2009 that sought views on possible changes to the current NRC annual fee structure to incorporate SMRs. An NEI task force has presented a position paper to the NRC staff for consideration in the development of a possible variable fee structure for SMRs. The NRC staff assessed the industry position paper and considered it while developing a memorandum to the Commission dated February 7, 2011, which describes a variable annual reactor fee approach based on licensed thermal power. The NRC staff will prepare a proposed rule to codify the variable annual fee for reactors and expects to provide the proposed rule to the Commission in a timeframe commensurate with SMR deployment plans..

Insurance and Liability Requirements

The NRC staff conducted internal meetings and has met with the NEI working group evaluating possible approaches to address SMR insurance and liability requirements, including those requirements related to the Price-Anderson Act. This issue was discussed at several public workshops throughout 2010 and 2011, and NEI issued a position paper on insurance and liability on June 6, 2011. The NRC staff issued an information paper to the Commission, SECY-11-0178, "Insurance and Liability Regulatory Requirements for Small Modular Reactors" on December 22, 2011. This paper describes a staff-identified potential inequality in the SMR insurance requirements related to one particular SMR design. The staff will work with the affected vendor to address this issue.

Decommissioning Funding Requirements

The NRC staff assessed an industry position paper submitted by NEI on November 2, 2011, that addressed requirements for decommissioning funding assurance for SMR facilities. The NRC staff issued a paper to the Commission, SECY-11-0181, "Decommissioning Funding Assurance for Small Modular Reactors", on December 22, 2011, discussing its planned approach, both in the near- and long-terms, for ensuring that SMR licensees provide reasonable assurance that funding will be available for decommissioning SMRs.

Environmental Reviews

The NRC staff has begun addressing environmental reviews associated with SMR licensing with potential applicants. The staff participated in industry conferences and public meetings to discuss the NRC's environmental review process, applicable regulatory requirements, and staff expectations for environmental information to be provided in licensing applications. The staff has also begun analyzing regulatory and policy issues associated with the environmental review

for SMR licensing. The staff is also planning a series of internal meetings with staff from across the NRC to identify and address key issues.

INTERNATIONAL ACTIVITIES

During this period, NRO participated in multilateral and bilateral activities by attending conferences, workshops, and meetings; hosting assignees from other regulators; supporting requests for expert participation by the International Atomic Energy Agency and participating in Multinational Design Evaluation Program (MDEP) working group activities.

The NRC actively participates in MDEP by chairing the MDEP Steering Technical Committee, chairing the AP1000 Working Group, chairing the Digital I&C Working Group, and participating in the EPR, Vendor Inspection Cooperation, and Codes and Standards Working Groups. On February 1-3, 2012, the NRO Deputy Director led a meeting of the MDEP Steering Technical Committee in Paris. During the week of January 23-27, several NRO staff participated in a meeting of the MDEP EPR Working Group in Finland, including a visit to the EPR plant under construction. During the week of February 20, NRO staff chaired a meeting of the Digital I&C Working Group in Paris, and participated in a meeting of the International Electrotechnical Commission in Germany. During the week of March 12, 2012, NRO staff participated in a meeting of the Codes and Standards Working Group in Paris.

NRO staff and managers also participated in the following cooperative international activities:

During the week of February 6, the NRO Office Director traveled to China to meet with the China National Nuclear Safety Administration (NNSA) to discuss current and future cooperative activities between NRC and NNSA. Mr. Johnson's discussion focused on the areas of cooperation that will be agreed upon at the March 2012 NRC-NNSA Steering Committee Meeting.

During the week of March 26, 2012, an NRO Division Director chaired a meeting of the NEA Working Group on the Regulation of New Reactors in Paris.

COMMITTED AND OBLIGATED FUNDING

The tables below reflect the FY 2012 committed and obligated funding by fiscal year quarter.

NRO CASE WORK ONLY

FY 2012 Funding	1st Quarter	2nd Quarter	3rd Quarter	4th Quarter	Cumulative
Commitments	\$1,156,054	\$617,144	--	--	--
Obligations	\$1,098,054	\$295,498	--	--	--

NRO — TOTAL FUNDS

FY 2012 Funding	1st Quarter	2nd Quarter	3rd Quarter	4th Quarter	Cumulative
Commitments	\$4,172,567	\$3,155,998	--	--	--
Obligations	\$4,026,840	\$2,208,023	--	--	--