



Implementation Plan To Ensure NRC Staff Readiness for AP1000 Operations

11/16/17

EXECUTIVE SUMMARY

The U.S. Nuclear Regulatory Commission (NRC) is the licensing and regulatory authority for commercial nuclear reactors in the United States. The NRC has implemented a licensing review process for new reactors that differs significantly from the process used to license the current fleet of approximately 100 operating reactors in the United States. Title 10 of the *Code of Federal Regulations* (10 CFR) Part 52, “Licenses, Certifications, and Approvals for Nuclear Power Plants,” codifies this process, which provides for early site permits and certification of standardized designs, both of which could then be referenced in an application for a combined license (COL) to construct and operate a nuclear reactor. The development of the 10 CFR Part 52 COL regulatory and inspection framework introduced the concept of inspections, tests, analyses, and acceptance criteria (ITAAC) as a codified, preapproved set of performance standards that a COL licensee must successfully complete.

A COL authorizes construction and provides conditional authority to operate the plant, subject to verification that the acceptance criteria in the ITAAC are met. Under 10 CFR 52.79, “Contents of applications; technical information in final safety analysis report,” the NRC requires the applicant to provide information necessary to support the findings that it will construct and operate the facility in conformance with public health and safety and the common defense and security. The applicant must also provide ITAAC to verify that the facility has been constructed in accordance with its design and that the emergency planning program commitments are satisfied. Following issuance of the COL, the NRC verifies that the prescribed inspections, tests, and analyses have been performed and finds, before operation of the facility, that all of the prescribed acceptance criteria are met. This finding is commonly referred to as the 10 CFR 52.103(g) finding.

In 2012, the NRC granted COLs for the construction and operation of four Advanced Passive 1000 (AP1000) units, with two each at the Vogtle Electric Generating Plant (Vogtle) and Virgil C. Summer Nuclear Station (V.C. Summer). In anticipation of the eventual operation of these units, the NRC established a transition working group (TWG) to develop an integrated plan that identifies all regulatory functions necessary to support the transition of the regulatory oversight and licensing for these new reactors from construction to operations. The report titled, “Assessment of the Staff’s Readiness to Transition Regulatory Oversight and Licensing as New Reactors Proceed from Construction to Operation,” dated September 9, 2014 (Agencywide Documents Access and Management System (ADAMS) Accession No. ML14031A386), summarizes the TWG results. The report includes 21 readiness issues (RIs) with associated options and recommendations. Recommendation RI-19A states that the Directors of the Offices of New Reactors (NRO), Nuclear Reactor Regulation (NRR), and Nuclear Security and Incident Response (NSIR), and the Administrator of Region II should reach formal agreement on the transfer of the four AP1000 units at the Vogtle and V.C. Summer sites, from NRO to NRR, and should clarify the responsibilities for licensing and operational oversight through the transfer.

On January 13, 2015, the Deputy Executive Director for Reactor and Preparedness Programs; the Directors of NRO, NRR, and NSIR; and the Region II Administrator unanimously concluded the following:

- Regulatory oversight will be transferred from NRO to NRR on a unit basis when the 10 CFR 52.103(g) finding for the respective unit is made, or shortly thereafter.
- Licensing project management for all AP1000 units will be transferred from NRO to NRR

when the last of the four units under construction receives its 10 CFR 52.103(g) finding, or shortly thereafter.

Since that decision was made, the Commission issued Staff Requirements Memorandum (SRM)-SECY-16-0075, “Staff Requirements—SECY-16-0075—Proposed Merger of the Offices of New Reactors and Nuclear Reactor Regulation,” dated September 15, 2016, (ADAMS Accession No. ML16260A075) to approve the merger of NRO and NRR, and to require the staff to complete the consolidation of the two offices by September 30, 2020. Current construction schedules indicate that the last AP1000 unit currently under construction may receive its 10 CFR 52.103(g) finding after the required consolidation date; therefore, the staff plans to transfer licensing project management for AP1000-related work as part of the broader office consolidation plan.

In January 2015, the Division of Engineering, Infrastructure, and Advanced Reactors in NRO was tasked with developing this implementation plan to clarify new reactor operational regulatory oversight and licensing responsibilities through the transfer from NRO to NRR. The NRC made this draft publicly available in January 2017. In June 2017, the NRC transferred responsibility for this implementation plan to the Division of Construction Inspection and Operational Programs in NRO. This plan is intended to be a living document and will be revised, as necessary, as new plans are developed and decisions are made while addressing the RIs identified in the TWG report. In addition, external factors may require revisions to this plan. Further, the completion of actions identified in this plan, such as the development of new reactor performance indicators, may require revisions to this plan.

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IMPLEMENTATION PLAN TO ENSURE U.S. NUCLEAR REGULATORY COMMISSION STAFF READINESS FOR AP1000 OPERATIONS

In January 2015, the U.S. Nuclear Regulatory Commission's (NRC's) Division of Engineering, Infrastructure, and Advanced Reactors in the Office of New Reactors (NRO) was tasked with developing this implementation plan to clarify new reactor operational regulatory oversight and licensing responsibilities through the transfer from NRO to the Office of Nuclear Reactor Regulation (NRR). This plan is intended to be a living document and will be revised, as necessary, as new plans are developed. External factors, such as new AP1000 combined license (COL) or design certification (DC) renewal applications, may require revisions to this plan. Additionally, the Commission issued SRM-SECY-16-0075, "Staff Requirements—SECY-16-0075—Proposed Merger of the Offices of New Reactors and Nuclear Reactor Regulation," dated September 15, 2016, (Agencywide Documents Access and Management System (ADAMS) Accession No. ML16260A075) to approve the merger of NRO and NRR and to require the staff to complete the consolidation of the two offices by September 30, 2020. The NRR/NRO merger implementation teams are considering certain readiness issues (RIs) identified by the transition working group (TWG) as part of the broader office consolidation plan. Further, the completion of actions identified in this plan may require revisions to the plan.

I. Background

The NRC was established by the Energy Reorganization Act of 1974 and is the licensing and regulatory authority for commercial nuclear reactors in the United States. The NRC has implemented a licensing review process for new reactors that is significantly different from the process used to license the current fleet of approximately 100 operating reactors in the United States. Title 10 of the *Code of Federal Regulations* (10 CFR) Part 52, "Licenses, Certifications, and Approvals for Nuclear Power Plants," codifies this process, which provides for early site permits (ESP) and certification of standardized designs, both of which could then be referenced in an application for a COL to construct and operate a nuclear reactor. The development of the COL regulatory and inspection framework under 10 CFR Part 52 introduced the concept of inspections, tests, analyses, and acceptance criteria (ITAAC) as a codified, preapproved set of performance standards that a COL licensee must successfully complete. On August 8, 2005, the President signed the Energy Policy Act of 2005 and, as a result, the NRC saw a substantial increase in the number of utilities and other entities planning to submit DC, COL, ESP, and limited work authorization applications.

A COL authorizes construction and provides conditional authority to operate the plant, subject to verification that the acceptance criteria in the ITAAC are met. Under 10 CFR 52.79, the applicant must provide information necessary to support the findings that the facility will be constructed and operated in conformance with public health and safety and the common defense and security. The applicant must also provide ITAAC to verify that the facility has been constructed in accordance with its design and that the emergency planning program commitments are satisfied. Before operation of the facility, the Commission must find that all ITAAC in the COL are met. This finding is commonly referred to as the 10 CFR 52.103(g) finding.

As the licensee completes the construction of structures, systems, and components (SSCs) subject to ITAAC, the licensee will perform the inspections, tests, and analyses for these SSCs and document the results onsite. The NRC inspectors will inspect a sample of the ITAAC. For each ITAAC, 10 CFR 52.99(c)(1) requires the licensee to submit an ITAAC closure notification (ICN) to the NRC that explains its basis for concluding that the inspections, tests, and analyses have been performed and that the acceptance criteria are met. The licensee must also notify the NRC when all ITAAC are complete, as required by 10 CFR 52.99(c)(4). These notifications, together with the results of the NRC's inspection process, serve as the basis for the NRC's 10 CFR 52.103(g) finding on whether the acceptance criteria in the COL are met. The 10 CFR 52.103(g) finding is the culmination of the staff's construction inspection program, ICN reviews, and ITAAC completion verifications. In accordance with 10 CFR 52.103(h), the ITAAC no longer constitute regulatory requirements after the 10 CFR 52.103(g) finding has been made. Once the 10 CFR 52.103(g) finding is made, the licensee may proceed to the operational phase, which begins with initial fuel load and precritical testing followed by initial criticality, low-power, and power ascension testing. Upon submission of the notification of successful completion of power ascension tests, the licensee is authorized to operate the facility at steady-state reactor core power levels (full-power operations) not to exceed power levels described in the final safety analysis report.

The regulations in 10 CFR 52.103, "Operation under a combined license," provide an opportunity for interested persons to request a hearing on the licensee's conformance with the acceptance criteria in the ITAAC. The NRC is required, at least 180 days before anticipated fuel loading of the reactor, to publish a notice of intended operation to give the public an opportunity to request a hearing on whether the facility as constructed complies, or on completion will comply, with the acceptance criteria of the license. To be granted, a request for a hearing must show, prima facie, that one or more of the acceptance criteria in the COL have not been, or will not be met, and the specific operational consequences of nonconformance that would be contrary to providing reasonable assurance of adequate protection of public health and safety.

The Atomic Energy Act of 1954, as amended (AEA), provides for the possibility of interim operation, which is operation of the plant pending the completion of an ITAAC hearing. The potential for interim operation arises if the Commission grants a hearing request that satisfies the requirements of Section 189a(1)(B)(ii) of the AEA. If the hearing request is granted, Section 189a(1)(B)(iii) of the AEA directs the Commission to allow interim operation if it determines, after considering the petitioners' prima facie showing and any answers thereto, that there will be reasonable assurance of adequate protection of public health and safety during a period of interim operation. As is evident from the statutory text, Congress included the interim operation provision to prevent an ITAAC hearing from unnecessarily delaying plant operation if the hearing extends beyond the scheduled fuel load.

Under 10 CFR 52.103(c), the Commission will make the adequate protection determination for interim operation acting as the presiding officer. In accordance with 10 CFR 2.341(a), parties are prohibited from seeking further Commission review of a Commission decision allowing interim operation. Because Section 185b of the AEA requires the Commission to find that the acceptance criteria are met before operation, interim operation cannot be allowed until the Commission finds, under 10 CFR 52.103(g), that all acceptance criteria are met, including those acceptance criteria that are the subject of an ITAAC hearing. The Commission has delegated the 10 CFR 52.103(g) finding to the staff. Thus, if a hearing is ongoing, operation will not be allowed until both the Commission makes the adequate protection determination for interim operation and the staff makes the 10 CFR 52.103(g) finding for all ITAAC. If a hearing is in progress but the Commission has not yet made this adequate protection determination, the

Commission-approved ITAAC hearing procedures (81 FR 43284; July 1, 2016) provide that the staff will not make the 10 CFR 52.103(g) finding until the Commission has made a positive adequate protection determination or the presiding officer has issued an initial decision after hearing in favor of the licensee. The 10 CFR 52.103(g) finding will not be made in this circumstance because it would not yet allow operation but would have the effect of triggering a number of regulatory and license provisions pertaining to operation, including the 40-year term of the license and the implementation of technical specifications and other operational programs.

Interim operation was intended for situations in which the petitioner's prima facie showing relates to alleged safety consequences that will not arise during the interim operation allowed or in which mitigation measures can be taken to preclude potential safety consequences during interim operation. For example, if a petitioner has raised a question about the long-term safety of the plant and the NRC has decided that a hearing on the issue is warranted, interim operation could be allowed if the NRC can determine that the plant is safe to operate during an interim period.

Section 203 of the Energy Reorganization Act of 1974 specifies that the Director of NRR shall be delegated the principal licensing functions involving reactor facilities. With the projected growth of new reactor work, the agency needed to be prepared to provide sufficient focus on safety, security, and emergency preparedness (EP) for operating facilities, and for the anticipated new reactor licensing and construction inspection work. To meet these challenges, the NRC was reorganized in 2006 by dividing NRR into two offices, thus resulting in the establishment of NRO. NRR is focused on maintaining the safety, security, and EP of operating facilities, and NRO is focused on the anticipated new reactor licensing and construction work. In addition, the NRC created a dedicated construction inspection organization for new reactors in Region II that reports to the Deputy Regional Administrator.

The creation of NRO was consistent with the directive by the Energy Reorganization Act of 1974 that NRR be delegated the principal licensing regulation functions involving reactor facilities because NRR was still responsible for some 1,500 reactor facility licensing actions at that time, programmatic oversight of operating reactors, and enforcement—all of which could reasonably be considered principal licensing functions. A memorandum titled, "Delegation of Authority to the Director of the Office of New Reactors," dated November 17, 2006 (ADAMS Accession No. ML062900300), and revised on March 22, 2011 (ADAMS Accession No. ML103140191), delegated lead authority to NRO for activities related to new nuclear reactor facilities during preliminary preapplication interactions with potential applicants, industry groups, or other stakeholders, and states that NRO will continue as the lead office during the licensing and construction of those facilities. The 2011 delegation memorandum also stated that NRO will retain licensing authority for such facilities until the resolution of all technical and adjudicatory issues associated with the Commission's finding that the prescribed inspections, tests, and analyses have been performed, and that all of the prescribed acceptance criteria have been met (i.e., the 10 CFR 52.103(g) finding); whereas, licensing authority for these facilities will reside with NRR during their period of operation. The memorandum further states that a future delegation memorandum will address the NRC organizational roles and responsibilities for licensing and oversight of new nuclear reactor facilities as they commence operation. The agency anticipated a period of transition for licensing authority and regulatory oversight from NRO to NRR as these facilities commence operation.

In 2012, the NRC granted COLs for the construction and operation of AP1000 units, with two each at the Vogtle Electric Generating Plant (Vogtle) and Virgil C. Summer Nuclear Station

(V.C. Summer). Currently, construction is well underway for new AP1000 reactor units at Vogtle Units 3 and 4. The NRC established a TWG in 2013 to develop an integrated plan that identifies all regulatory functions necessary to support the transition of new reactors from construction to operation. The report titled, "Assessment of the Staff's Readiness to Transition Regulatory Oversight and Licensing as New Reactors Proceed from Construction to Operation," dated September 9, 2014 (ADAMS Accession No. ML14031A386), summarizes the TWG results. The 2014 report included 21 RIs with associated options and recommendations. Recommendation RI-19A states that the Directors of NRO, NRR, the Office of Nuclear Security and Incident Response (NSIR), and the Administrator of Region II should reach formal agreement on the transfer of AP1000 plants under construction at the Vogtle and Virgil C. Summer Nuclear Station (V.C. Summer) sites¹, and should clarify the responsibilities for licensing and operational oversight through the transfer.

On January 13, 2015, the Deputy Executive Director for Reactor and Preparedness Programs; the Directors of NRO, NRR, and NSIR; and the Administrator of Region II unanimously concluded that regulatory oversight will be transferred from NRO to NRR on a unit basis at the 10 CFR 52.103(g) finding for the respective unit; whereas, licensing project management for all AP1000 units will be transferred from NRO to NRR when the last unit under construction receives its 10 CFR 52.103(g) finding, or shortly thereafter.

Since that decision was made, the Commission issued SRM-SECY-16-0075 to approve the merger of NRO and NRR, and to require the staff to complete the consolidation of the two offices by September 30, 2020. Given the current construction schedules, the staff plans to transfer licensing project management for the AP1000 design center as part of the broader office consolidation plan. The NRC subsequently assigned Recommendation RI-19A to the NRR/NRO merger Licensing Work Group for resolution.

Recommendation RI-18A tasks NRO's Division of Engineering, Infrastructure, and Advanced Reactors with developing the implementation plan to transfer AP1000 licensing and oversight responsibilities from NRO to NRR. In June 2017, this task was transferred to the Division of Construction Inspection and Operational Programs (DCIP).

This implementation plan is predicated on the following assumptions:

- NRO will remain as an independent office until the merger occurs, no later than September 30, 2020, and will generally maintain its current organization, or a similar structure, with project management, technical, and oversight divisions.
- The NRC expects the staff to make incremental organizational changes to NRO and NRR before the 2020 merger, and the agency does not expect these changes to significantly affect this implementation plan.
- NRO and NRR will leverage existing communications forums (e.g., NRR Executive Team Significant Topics Briefings, NRO Program Meetings) to ensure effective coordination and management oversight on transition implementation.

¹ Since the issuance of the 2014 TWG report, South Carolina Electric & Gas Company announced that it had stopped construction of V.C. Summer Units 2 and 3, as documented in a letter dated August 17, 2017 (ADAMS Accession No. ML17229B487)

The staff has developed a design centered review approach that is based on a concept of industry standardization of COL applications referencing a particular DC (e.g., COL applications referencing the AP1000 reactor DC). Within the AP1000 design center—

- The licensee for the AP1000 units at Vogtle anticipates transitioning from construction to operation, including the Commission’s 10 CFR 52.103(g) finding, fuel load, startup testing, and readiness for commercial operation after 2020. This timetable is approximate and subject to change.
- The NRC has issued the licenses for Levy Nuclear Plant, Units 1 and 2 (Levy), and William States Lee III Nuclear Station, Units 1 and 2 (Lee), and will complete the remaining active AP1000 COL application review (i.e., Turkey Point Nuclear Generating, Units 6 and 7 (Turkey Point)) before the first 10 CFR 52.103(g) finding for the units currently under construction. The Lee and Turkey Point licensees do not have definitive construction schedules for their sites and are not anticipated to be under construction at the time the final unit under construction receives its 10 CFR 52.103(g) finding (the Levy licensee has announced plans to request termination of its licenses).

All RI recommendations contained in the TWG report have been assigned to lead organizations or individuals and are being tracked by DCIP. Appendix A lists the RIs and recommendations that are listed in the 2014 TWG report. The Appendix reflects the status of the recommendations as of the date of this plan. The TWG report provides additional information on actions that are being taken in response to RIs that are not specifically addressed in this implementation plan.

II. AP1000 Licensing Readiness Implementation Plan

In the design centered review approach, the first COL application for a given design is designated the reference COL (RCOL) application, and later COL applications are designated subsequent COL (SCOL) applications. The staff performs a single review of information appearing in an RCOL application, and if identical information (designated as “standard”) appears in a later SCOL application, the staff confirms that the appropriate information submitted by the SCOL applicant is identical to that previously reviewed for the RCOL application. The staff also evaluates any site-specific differences to ensure that they do not affect the SCOL application analysis.

Leveraging industry standardization is best achieved through project management of licensing actions for a design center in a single organization. In the design-centered review approach, the staff conducts one review for each issue associated with a particular design; reaches a decision on each issue; and, if possible, relies on that decision in reviewing subsequent applications. The design center should manage preoperational licensing actions that affect a design, and the NRC expects the AP1000 design center to remain as a unitized organization in NRO before the consolidation. The appropriate postmerger organizational structure will be developed as part of the broader office consolidation plan.

Currently, both NRR and NRO have licensing organizations. The staff in NRO provides project management for new reactors licensed under 10 CFR Part 52, and the staff in NRR provides project management for currently operating reactors licensed under 10 CFR Part 50, “Domestic Licensing of Production and Utilization Facilities.” This licensing readiness implementation plan covers planned actions and timing to transition licensing functions for new reactors from NRO to NRR.

- A. NRO's Division of New Reactor Licensing (DNRL) leads, manages, and facilitates new reactor DC, ESP, and COL application reviews and new reactor preapplication activities. DNRL is also responsible for project management of preliminary amendment requests, license amendment requests, and exemption requests for issued COLs. This division develops and maintains the necessary technical and programmatic support for new reactor licensing activities, oversees interaction with stakeholders on issues related to large light-water reactors and small modular reactors, and issues DCs and COLs. Licensing Branch 4 in DNRL is responsible for the project management of licensing activities involving the AP1000 design center.
- B. NRR's Division of Operating Reactor Licensing (DORL) is responsible for managing operating nuclear power plant licensing actions. It also manages the review and processing of license amendments and other requests requiring NRC approval, and it serves as the contact for NRC Headquarters for licensees, NRC regional offices, and other stakeholders in matters related to assigned facilities.

The delegation memorandum dated November 16, 2006, and revised on March 22, 2011, recognized that there will be a period of transition of licensing authority and regulatory oversight from NRO to NRR as these facilities commence operation. Given that the NRR/NRO merger is scheduled to occur no later than September 30, 2020, the staff plans to transfer licensing project management for the AP1000 design center as part of the broader office consolidation plan. The NRR/NRO merger implementation team will determine appropriate revisions to delegations of authority to reflect (1) regulatory authority for new reactor units after the 10 CFR 52.103(g) finding, and (2) the Commission's delegation of authority to staff for the making of the 10 CFR 52.103(g) finding. This will continue to be tracked as Recommendation RI-18B.

- C. The transfer of AP1000 licensing will be evaluated and executed as part of the NRR/NRO merger implementation plan. To complete the transfer, the staff anticipates the following actions:
 - 1. As part of the budget process to implement the NRR/NRO merger plan, NRO and NRR should determine the appropriate staff resources necessary for project management of all ongoing and anticipated AP1000 licensing activities, and ensure that these resources are appropriately apportioned in the Operating Reactor Business Line and New Reactor Business Line budget requests.
 - 2. Before the transfer, DORL, with support from DNRL, should review and update NRR office instructions to account for differences between 10 CFR Part 52 and 10 CFR Part 50. The NRR/NRO merger implementation team has recommended that work on joint office instructions should begin in the near term. This will continue to be tracked under Recommendation RI-03.
 - 3. NRO will work with NRR to transfer tracking of all AP1000 licensing activities from the Enterprise Project Management System to the Replacement Reactor Program System.
 - 4. In a July 19, 2017, memorandum between NRO and NRR, it was determined that qualified project managers (PMs) in both NRO and NRR will be recognized as

qualified PMs for any transition activities related to AP1000 plants based on the existing core competencies flowing from existing qualification programs. It was determined that existing qualified PMs may need classroom, self-study, or on-the-job training to attain or refresh certain competencies depending on future job placement and functions. Because the needs will be case specific, the requirement for such training will be established through discussions between the PMs and their respective Branch Chief before any reassignment of the PMs.

5. The NRR Technical Reviewer Qualification Program and training materials should be updated to cover the AP1000 design and licensing basis. This is being tracked as Recommendation RI-20B.

III. AP1000 Regulatory Oversight Transition Implementation Plan

NRO is responsible for regulatory oversight (i.e., inspection, assessment, and enforcement) for the AP1000 construction activities. Figure 1 presents a graphical representation of the transition from the Construction Reactor Oversight Process (cROP) to the Reactor Oversight Process (ROP). This regulatory oversight transition implementation plan covers required actions and the timing for the transition of AP1000 regulatory oversight from NRO to NRR. Regulatory oversight will transition to a merged NRR and NRO organization before the first 10 CFR 52.103(g) finding.

- A. Regulatory Oversight before the 10 CFR 52.103(g) Finding. Before the 10 CFR 52.103(g) finding, the staff will perform regulatory oversight under the cROP, as described in Inspection Manual Chapter (IMC) 2506, "Construction Reactor Oversight Process General Guidance and Basis Document," dated February 20, 2017. The staff will conduct inspections of ITAAC under IMC 2503, "Construction Inspection Program: Inspections of Inspections, Tests, Analyses and Acceptance Criteria (ITAAC) Related Work," dated July 5, 2012, and of construction and operational programs under IMC 2504, "Construction Inspection Program—Inspection of Construction and Operational Programs," dated October 24, 2012. Findings that are identified during these inspections will be dispositioned using the cROP significance determination process (SDP) in IMC 2519, "Construction Significance Determination Process," dated July 15, 2013. The staff will conduct an assessment of the licensee's performance before the 10 CFR 52.103(g) finding under the requirements in IMC 2505, "Periodic Assessment of Construction Inspection Program Results," dated January 6, 2017.
- B. Baseline ITAAC-Related Inspections. All construction baseline inspection program ITAAC-related inspections will be completed and all ITAAC findings must be closed before the 10 CFR 52.103(g) finding.
- C. Operational Programs and License Conditions. As outlined in SECY-05-0197, "Review of Operational Programs in a Combined License Application and Generic Emergency Planning Inspections, Tests, Analyses, and Acceptance Criteria," dated October 28, 2005 (ADAMS accession No. ML052770225), operational programs and their implementation milestones are identified in the COL as license conditions. These programs require conduct of an inspection to verify that the respective operational program, as developed, incorporates the key requirements given in the COL application (e.g., the final safety analysis report) that the NRC staff relied on in making its safety determination during the COL review. Appendix B lists 19 operational programs. Additional operational programs and associated implementation milestones may be

identified and incorporated into the licensing bases on a site-specific basis or as a result of rulemaking.

- D. Inspections of Operational Program Development before the 10 CFR 52.103(g) Finding. Certain operational programs have implementation milestones that will occur before the 10 CFR 52.103(g) finding (including, but not limited to, radiation protection, security, fire protection, and EP operational programs). Therefore, the required inspections of the development of these operational programs will be completed before the 10 CFR 52.103(g) finding. The significance of operational program development findings identified before the 10 CFR 52.103(g) finding will be determined using the guidance in IMC 2519.
- E. Finding Associated with Operational Program Development Inspections. All green findings associated with operational program development inspections will be closed before implementation of the ROP. If there is a greater-than-green finding identified before the 10 CFR 52.103(g) finding, the staff must conduct the required supplemental inspection specified in the cROP Action Matrix. If the staff successfully completes the supplemental inspection before the 10 CFR 52.103(g) finding, it will close the greater-than-green finding, and the finding will also be considered closed for future assessment purposes under the ROP Action Matrix. However, if the staff does not complete the required supplemental inspection before the 10 CFR 52.103(g) finding, the greater-than-green finding will remain open and will be assigned to the ROP cornerstone that is most closely related to the finding, and the finding will be considered as an input to the ROP Action Matrix upon initial implementation of the ROP. For any greater-than-green inspection finding that remains open after the 10 CFR 52.103(g) finding and is mapped to the cornerstones that are more reliant on a probabilistic risk assessment (PRA) (i.e., initiating events (IEs), mitigating systems (MSs), barrier integrity), the staff shall treat the finding in the same manner as an old design issue under the ROP. The finding will not count in the ROP Action Matrix, but the licensee will be required to have the appropriate supplemental inspection completed in order to close the finding. Any greater-than-green inspection finding documented prior to the 10 CFR 52.103(g) finding will not be required to remain open for four full quarters; it will be closed upon satisfactorily meeting all of the objectives of the applicable supplemental inspection.
- F. Inspections of Operational Program Implementation. The applicable ROP baseline inspection procedures should be conducted to review activities associated with the implementation of operational programs that have been implemented before the 10 CFR 52.103(g) finding. For example, upon implementation of the radiation protection program, the ROP 71124.XX baseline inspection procedures will be used to inspect radiation protection activities. Findings identified during these inspections will be dispositioned using the ROP SDP in IMC 0609, "Significance Determination Process," dated April 29, 2015, and will be assigned to the operational programs cornerstone in the cROP Action Matrix. If there is a greater-than-green finding associated with the implementation of operational programs that is identified before the 10 CFR 52.103(g) finding, the staff must conduct the required supplemental inspection specified in the cROP Action Matrix. If the supplemental inspection is successfully completed before the 10 CFR 52.103(g) finding, the staff will close the greater-than-green finding, and the finding will be considered closed for future assessment purposes under the ROP Action Matrix. However, if the required supplemental inspection is not completed before the 10 CFR 52.103(g) finding, the greater-than-green finding will remain open and will be

assigned to the ROP cornerstone that is most closely related to the finding, and the finding will be considered as an input to the ROP Action Matrix upon initial implementation of the ROP.

- G. Inspections of Operational Program Development after 10 CFR 52.103(g) Finding. Certain operational programs have implementation milestones that will occur after the 10 CFR 52.103(g) finding (including, but not limited to, inservice inspection, inservice testing, and preservice testing programs). Therefore, the required inspections of the development of these operational programs may be completed after the 10 CFR 52.103(g) finding, depending on the licensee's readiness for the inspections. Inspection planning will need to take into account the implementation of these and other operational programs, as described in Exhibit 5 to IMC 2506. Inspections of the development of operational programs after the 10 CFR 52.103(g) finding will be conducted using the applicable inspection procedures in IMC 2504. The significance of operational program development findings identified after the 10 CFR 52.103(g) finding will be determined using the guidance in IMC 2519. The operational program development findings identified after the 10 CFR 52.103(g) finding will be assigned to the ROP cornerstone that is most closely related to the finding, and significance of the finding will be considered for determining the appropriate ROP Action Matrix column in accordance with IMC 0305. For any greater-than-green inspection finding that is mapped to the cornerstones that are more reliant on a PRA (i.e., IEs, MSs, barrier integrity), the staff may treat the finding in the same manner as an old design issue under the ROP. The finding will not count in the ROP Action Matrix, but the licensee will be required to have the appropriate supplemental inspection completed in order to close the finding. These findings will not be required to remain open for four full quarters; they will be closed upon satisfactorily meeting all of the objectives of the applicable supplemental inspection.
- H. Performance Assessment before the 10 CFR 52.103(g) Finding. Before the 10 CFR 52.103(g) finding for a unit, NRR and NRO will participate in the Region II assessment of the licensee's performance in accordance with IMC 2505. This assessment will include a review of any relevant open issues to ensure that each cornerstone is ready to be monitored by the ROP. During this assessment, the proper initial ROP Action Matrix column placement will be determined for the unit. Once the 10 CFR 52.103(g) finding has been made for a unit, regulatory oversight for that unit will be transitioned to the ROP, and all ROP cornerstones will be monitored. Region II will transmit a letter to the licensee to inform the licensee of the transition to the ROP and of the NRC's planned level of inspection, assessment, and enforcement.
- I. Applicability of the ROP to AP1000 Units. Recommendations RI-11A and RI-11B highlight the need for the staff to review the ROP to ensure that it applies to AP1000 units and to make adjustments, as necessary. This work must be completed before the first unit receives its 10 CFR 52.103(g) finding.
- J. Inspection Guidance after the 10 CFR 52.103(g) Finding. After the 10 CFR 52.103(g) finding, inspections will be conducted under an updated version of IMC 2514, "Light Water Reactor Inspection Program—Startup Testing Phase" during startup testing, and IMC 2515, "Light-Water Reactor Inspection Program—Operations Phase," dated March 28, 2017, for licensee activities other than startup testing. The inspection programs under IMC 2514 and IMC 2515 will overlap between the 10 CFR 52.103(g) finding and completion of the IMC 2514 inspection requirements. The IMC 2515 ROP

inspections will initially comprise applicable portions of the baseline inspection program for a single-unit site plus the required supplemental inspections for greater-than-green findings and additional inspections for performance indicators (PIs) that are not yet valid as discussed below. Once both units on a site have received a 10 CFR 52.103(g) finding, the IMC 2515 ROP inspections will comprise applicable portions of the baseline inspection program for a dual-unit site plus the required supplemental inspections for greater-than-green findings, and additional inspections for PIs that are not yet valid. Findings identified during these inspections will be dispositioned using the ROP SDP in IMC 0609. If a required ROP sample is not available for inspection, the sample should be entered into the Reactor Program System as “Complete—full sample not available” in accordance with Section 05.02.d.2(e) of IMC 0306, “Planning, Tracking, and Reporting of the Reactor Oversight Process,” dated December 25, 2015.

- K. ITAAC Inspections after the 10 CFR 52.103(g) Finding. After the 10 CFR 52.103(g) finding, ITAAC may be the subject of an ongoing hearing. (Section I and Section V.E discuss ITAAC hearings and interim operations in more detail.) If inspections are required after the 10 CFR 52.103(g) finding for ITAAC that are subject to a hearing during interim operations, they will be conducted using the applicable inspection procedures in IMC 2503. Findings identified during these inspections will be dispositioned using the cROP SDP in IMC 2519 and will be assigned to the ROP cornerstone that is most closely related to the finding for consideration in the ROP Action Matrix. For any greater-than-green inspection finding that is mapped to the cornerstones that are more reliant on a PRA (i.e., IEs, MSs, barrier integrity), the staff may treat the finding in the same manner as an old design issue under the ROP. The finding will not count in the ROP Action Matrix, but the licensee will be required to have the appropriate supplemental inspection completed in order to close the finding. These findings will not be required to remain open for four full quarters; they will be closed upon satisfactorily meeting all of the objectives of the applicable supplemental inspection.
- L. Performance Assessment after the 10 CFR 52.103(g) Finding. The assessment of the licensee’s performance after the 10 CFR 52.103(g) finding will be conducted under the requirements in IMC 0305, “Operating Reactor Assessment Program,” dated November 17, 2016. This would include any greater-than-green operational program development or implementation findings that remain open under the cROP, as noted in the paragraphs above. The staff will issue a single assessment letter that would focus on the ROP assessment and status after the 10 CFR 52.103(g) finding. The letter will also note any open operational program findings or cROP-related issues.
- M. New Reactor SDP Development. In SRM-SECY-13-0137, “Staff Requirements—SECY-13-0137—Recommendations for Risk-Informing the Reactor Oversight Process for New Reactors,” dated June 30, 2014 (ADAMS Accession No. ML14181B398), the Commission directed the staff to enhance the SDP by developing a structured qualitative assessment for events or conditions that are not evaluated in the supporting plant risk models and by emphasizing the use of the existing quantitative measures of the change in plant risk for both operating and new reactors. The Commission also directed the staff to develop guidance to address circumstances that are unique to new reactors (e.g., passive SSCs because of the uncertainty of their reliability or other SSCs with limited operational experience). The staff is required to submit a paper to the Commission with its proposed approach for any revisions to the SDP for new reactors at least 1 year before the scheduled implementation of any changes to the ROP. The staff is in the process of modifying the ROP SDP under Recommendation RI-10.

N. Performance Indicators. PIs do not exist under the cROP. Certain PIs under the ROP (e.g., mitigating systems performance index (MSPI) PIs) do not apply to new AP1000 reactors in their current format because of the AP1000's passive design features. In SRM-SECY-13-0137, the Commission directed the staff to develop appropriate PIs and thresholds for new reactors, specifically for those PIs in the IE and MS cornerstones, or to develop additional inspection guidance to address identified shortfalls to ensure that all cornerstone objectives are adequately met. The staff has determined that new PIs would not be practical and will evaluate the need for any revisions to inspection procedures to cover those areas, specifically in the MS cornerstone of the ROP that PIs will not address. The staff concluded that sufficient industry data on the active components within the passive safety systems does not currently exist. Because of the low numbers of expected demands for these components, along with their variable risk worth, a risk-informed PI focused on unreliability could change by several orders of magnitude by simply adding extra demands or changing the risk worth through plant modifications or PRA updates. The staff concluded that the limited size of the data set does not support the statistical analysis and conclusions needed to predictably and appropriately assess licensee performance.

O. Validity of Performance Indicators after the 10 CFR 52.103(g) Finding. Following the transition to the ROP, licensees are expected to submit data for PIs in accordance with the guidance in Nuclear Energy Institute (NEI) 99-02, (ADAMS accession No. ML13261A116) "Regulatory Assessment Performance Indicator Guideline," and the procedures in IMC 0608, "Performance Indicator Program," dated September 26, 2012. The NRC staff will review the PI data to determine their accuracy and completeness in accordance with Inspection Procedure 71151, "Performance Indicator Verification," dated May 3, 2017. The PIs that do not provide valid indications of performance because of a low number of critical hours or other reasons will be referred to as invalid PIs. The NRC will characterize these PIs appropriately on the agency's Web site with an explanation as to why they are considered invalid. The transfer to the full ROP will occur with the understanding that not all PIs will be immediately valid at the time of transition.

The cornerstones for EP, security, occupational radiation protection, and public radiation protection will begin to be reported upon issuance of the 10 CFR 52.103(g) finding. Licensees will be expected to report these PI data for the quarter that the 10 CFR 52.103(g) finding is issued going forward. IMC 0305 will specify the regulatory response for a valid PI that crosses a significance threshold after the issuance of a 10 CFR 52.103(g) finding.

The remaining PIs will be valid once sufficient time has passed to accumulate enough representative data to provide a valid assessment result. This period of time differs depending on the PI. IE cornerstone PI IE04 (Unplanned Scrams with Complications) will become valid after the completion of IMC 2514. However, IE01 (Unplanned Scrams per 7,000 Critical Hours) and IE03 (Unplanned Power Changes per 7,000 Critical Hours) will be invalid when oversight is transitioned to the ROP. PIs IE01 and IE03 measure the rate of IEs over the total number of critical hours in the previous four quarters. To establish the necessary baseline of critical hours to prevent falsely inflating the indicator value, these indicators will become valid after four full calendar quarters have passed once the critical hours have occurred. For example, if the unit first reaches criticality in December 2019, the data for IE01 and IE03 in the subsequent four quarters

would be collected and reported, but the first quarter information used as an active input into the Action Matrix for assessment purposes would be for the fourth quarter 2020 (data submitted in January 2021).

The ROP Working Group will adjudicate any new or modified MS cornerstone PIs. The frequently asked question process or revisions to NEI 99-02, or both, will provide guidance for initial implementation of these PIs.

Additional inspections may be conducted in the event of an unplanned scram or unplanned power change or for review of other events that a valid PI would normally capture. The total number of samples completed for an inspection procedure may exceed the maximum specified from the inspection of these occurrences. The purpose of these inspections is to ensure that an event has been accurately assessed for significance and inclusion in the assessment process in the form of any dispositioned findings.

Table 1 describes each PI and includes bases for each one. Note that this implementation plan is intended to be a living document and will be revised as necessary. Additional detail will be added and modifications will be made as the PIs for new reactors are developed over the next several months. As the licensee approaches four quarters after either the IE or MS cornerstones have been monitored, if new information shows that a PI may still not provide accurate assessment value, the frequently asked questions process will be used in accordance with NEI 99-02 and IMC 0608 to reach a conclusion on how to proceed.

IV. Region II Construction to Operations Transition Implementation Plan

Region II plans, schedules, and conducts the AP1000 ITAAC, construction, and operational program inspections. The Region II transition plan provides for inspection and assessment continuity through full-power operations at each of the AP1000 units. Resident inspectors are assigned to the AP1000 site with responsibility for construction inspection, assessment, and enforcement and, later, for operational inspection, assessment, and enforcement. The lessons learned from the implementation of the Watts Bar Nuclear Plant, Unit 2 (Watts Bar), preoperational, startup, and IMC 2515 program are being captured and will be used to further inform the transition implementation plan.

- A. General. Region II is primarily responsible for the oversight of AP1000 construction and operational activities, including the licensing of the AP1000 reactor operators. The AP1000 reactor site under construction has a construction resident inspection office (RIO). The region manages the oversight of construction activities through the RIO and the regional inspection staff. Currently, the RIO has five resident inspectors, including four resident inspectors and one senior resident inspector (SRI), to support the inspection of ongoing construction activities. Additional resources from the regional office supplement the residents in times of peak workload or for inspections requiring a specific expertise. Region II and NRO provide specialized technical support in engineering, safety, operational programs, and quality disciplines during construction and startup activities for the AP1000.
- B. Preoperational and Initial Startup Testing. The 10 CFR 52.103(g) finding for each unit is a significant regulatory milestone; however, inspection oversight will be transitioning from construction to operations before this finding is made as operational program and

preoperational testing inspections occur. As the construction activities transition to system/component testing, preoperational testing, and initial startup of the reactors, the cognizant Branch Chief will work with the SRI to assign inspection responsibilities for both the unit transitioning to operations and the remaining construction activities for the second unit, will retain overall project responsibility within the branch, and will ensure onsite continuity with the site SRI. The site will have a senior test inspector and a test inspector assigned to support testing activities from initial test program development, to preoperational including hot functional testing, to initial plant startup. The duties and responsibilities of the cognizant Branch Chief, SRI, and supporting inspection staff will provide oversight continuity through startup until the second unit has reached full-power operation.

- C. Oversight after Both New Units Under Construction Achieve Full Power. After both new units at the Vogtle, Units 3 and 4 site achieve full-power operations (around the time of commercial operations), the construction branch will merge into the Division of Reactor Projects (DRP), and the IMC 2515 project inspection and oversight will be under the cognizance of DRP and the Division of Reactor Safety. The long-term postcommercial operations resident inspector staffing will be established with consideration of the site's existing operating units and the AP1000 ROP implementation requirements in collaboration with NRR. The level of resident inspector staffing will consider the initial startup phase of the plants and, for the longer term, the enhanced safety and low level of risks inherent in the AP1000 design.
- D. Resources. The NRC will address Region II resources necessary to support oversight as the AP1000 units proceed from construction through operations. Region II, NRO, NRR, and NSIR will coordinate on the resource planning, which will be input to the budget development process to ensure that adequate funding and staffing exist in the appropriate business lines from construction through full-power operations.

V. Headquarters Construction to Operations Transition Implementation Plan

Currently, NRO has responsibility for AP1000 licensing, oversight, and technical support. This headquarters' construction to operations transition implementation plan summarizes previously discussed plans, and covers the transition of licensing and oversight from NRO to NRR and the plans for technical support for these processes as the transition of AP1000 licensing and oversight progresses.

- A. Oversight Transfer as Part of the NRR/NRO Office Merger. Regulatory oversight under the ROP will transition to a merged NRR and NRO organization before the first 10 CFR 52.103(g) finding. The addition of two operating units to the approximately 100 operating units already under NRR regulatory oversight should not require additional oversight resources; therefore, the NRC will adjust staffing as part of the broader NRR/NRO merger effort and the normal budget process. The merged organization will have new reactor expertise for operational program development findings or any other issues that may not be familiar to NRR personnel.
- B. Licensing Project Management. The NRC will transfer project management of licensing actions for the Vogtle units that are under construction and licensing management of AP1000 COL application reviews, AP1000 DC renewal reviews, and AP1000 COL licensing activities to NRR by September 30, 2020, as part of the office merger effort. NRO's DNRL AP1000 PMs will be transferred to NRR to continue project management

for the AP1000 design center licensing work; the NRR/NRO merger implementation team will resolve the details of this transition.

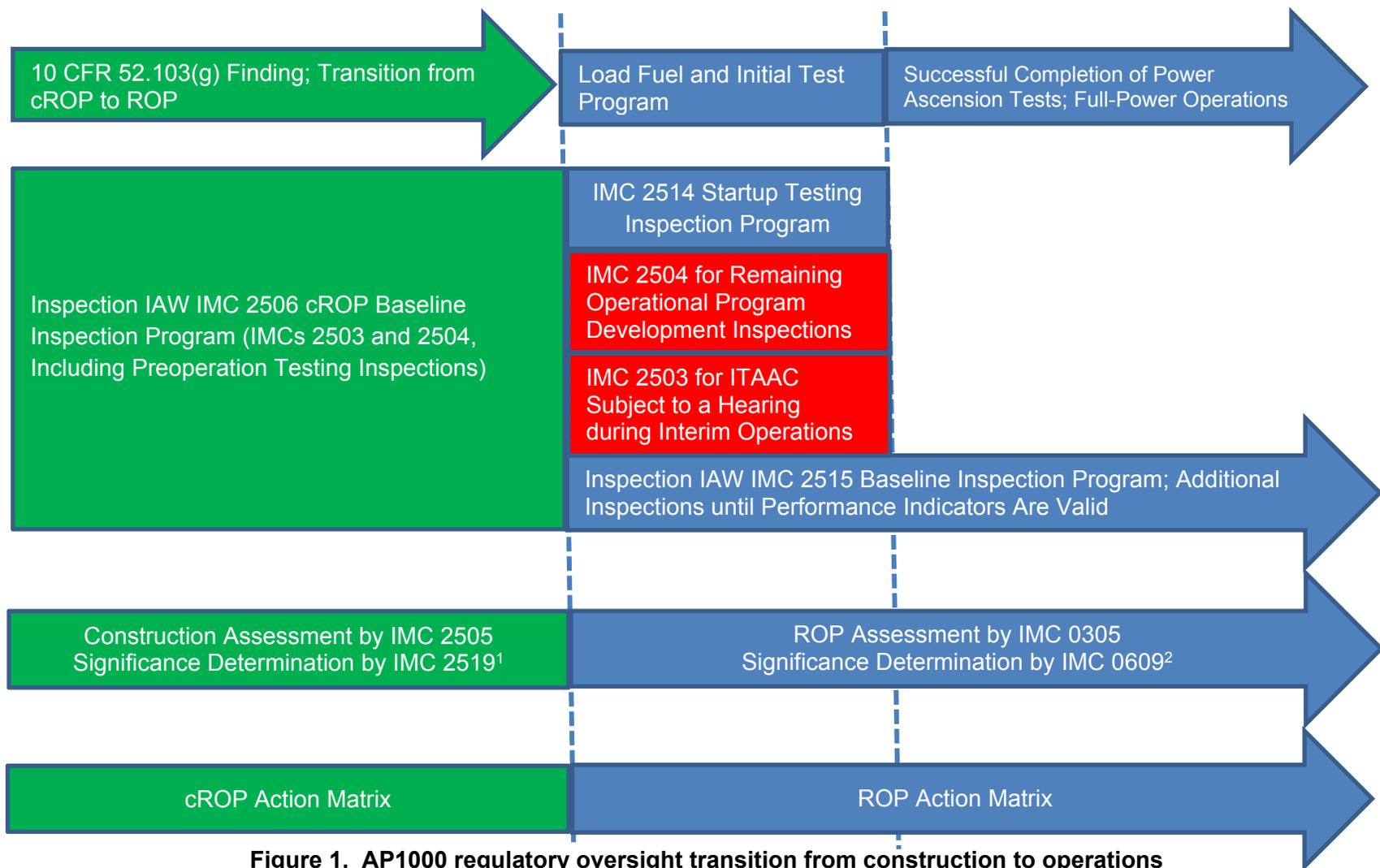
- C. NRC Centers of Expertise. The NRC's Centers of Expertise (COEs) help ensure consistency in the areas in which they have been or will be formed. This implementation plan does not affect any of the already established COEs. .
- D. Technical Support. AP1000 technical support in areas that are not covered by COEs will continue to be required after the transfer of the AP1000 design center to NRR. This support may reside in NRO until the merger occurs. Through the budgeting process, NRO and NRR will estimate the full-time equivalents needed to provide AP1000 technical support and should request resources for this technical support in the Operating Reactor Business Line. TWG Report Recommendation RI-20A states that the "NRR and NRO technical divisions should assess potential options for ensuring technical consistency, timely reviews, and licensing oversight for Vogtle and V.C. Summer licensees and for other new reactor projects." However, because the offices will be merged before the first unit under construction receives its 10 CFR 52.103(g) finding, RI-20A is closed.
- E. ITAAC Hearings. The NRC staff has established a process to address ITAAC hearings. Before the staff can make the 10 CFR 52.103(g) finding that the acceptance criteria for all ITAAC are met, Section 189a(1)(B)(i) of the AEA requires the NRC to publish a notice of intended operation in the *Federal Register*. This notice shall state that any person whose interest may be affected by operation of the plant may, within 60 days, ask the Commission to hold a hearing on whether the facility as constructed complies, or on completion will comply, with the acceptance criteria of the license.

To be granted, a request for hearing must show, prima facie, that one or more of the acceptance criteria in the COL have not been met, or will not be met, and the specific operational consequences of nonconformance that would be contrary to providing reasonable assurance of adequate protection of public health and safety. If the hearing request is granted and the Commission determines that there will be reasonable assurance of adequate protection of public health and safety during a period of interim operation while ITAAC hearings are pending, the staff may make the 10 CFR 52.103(g) finding that the acceptance criteria in the ITAAC are met, which would allow interim operation of the reactor pending the outcome of the hearing. Interim operation was intended for situations in which the petitioner's prima facie showing relates to alleged safety consequences that will not arise during the interim operation allowed, or in which mitigation measures can be taken to preclude potential safety consequences during interim operation. For example, in cases where a petitioner has raised a question about the long-term safety of the plant and the NRC has decided that a hearing on the issue is warranted, interim operation could be allowed if the NRC can determine that the plant is safe to operate during an interim period.

The staff submitted SECY-13-0033, "Allowing Interim Operation under Title 10 of the *Code of Federal Regulations* Section 52.103," to the Commission on April 4, 2013 (ADAMS Accession No. ML12289A928), and the Commission issued the associated SRM on July 19, 2013 (ADAMS Accession No. ML13200A115). SECY-13-0033 informed the Commission of issues associated with interim operation in the event that an ITAAC hearing is pending. In the SRM, the Commission approved the staff's recommendation that the Commission delegate the 10 CFR 52.103(g) finding to the

staff, and the Commission directed the staff, the Office of the General Counsel, and the Office of Commission Appellate Adjudication to develop options for the ITAAC hearing formats for the Commission's review and approval. An intra-agency working group developed the ITAAC hearing procedures and submitted SECY-15-0010, "Final Procedures for Hearings on Conformance with the Acceptance Criteria in Combined Licenses," dated January 20, 2015 (ADAMS Accession No. ML14343A704 (package)). SECY-15-0010 provided the draft final procedures for ITAAC hearings for the Commission's approval. Under the Commission's direction in the associated SRM to SECY-15-0010 (ADAMS Accession No. ML16092A099 (package)), the staff finalized the ITAAC hearing procedures and published the procedures in the *Federal Register* on July 1, 2016. This was tracked as Recommendation RI-14A and is closed.

NRO, in close coordination with NRR, will be the lead technical office for the ITAAC hearing process and must keep NRR informed of any actions resulting from the ITAAC hearing process that will affect the plant when it comes under NRR regulatory oversight (i.e., when it is allowed to operate during an interim period under the COL). If an ITAAC hearing is ongoing after the consolidation of NRO and NRR, the broader merger team will need to consider how to oversee the ITAAC hearing process in NRR. This is being tracked as Recommendation RI-14C.



Notes:

- ¹ This involves significance determination for findings associated with implemented operational programs in accordance with IMC 0609.
- ² IMC 2519 will be used for significance determination for findings associated with operational program development inspections and ITAAC that are subject to a hearing.

Table 1. PI Validity Summary²

PI	When a PI Becomes Valid	Comments	Additional Inspection
IE01: Unplanned Scrams per 7,000 Critical Hours	This PI becomes valid four full calendar quarters after the unit reaches criticality.	This indicator measures the rate of unplanned scrams over the previous four quarters. The indicator value is the number of unplanned scrams while the reactor was critical in the previous four quarters times the ratio of 7,000 hours to the total number of hours the reactor was critical in the previous four quarters. For new plants, the indicator should become valid after four quarters once the IE cornerstone has been transitioned to the ROP.	Yes
IE03: Unplanned Power Changes per 7,000 Critical Hours	This PI becomes valid four full calendar quarters after the unit reaches criticality.	This indicator measures the rate of unplanned power changes over the previous four quarters. The indicator value is the number of unplanned power changes in the previous four quarters times the ratio of 7,000 hours to the total number of hours the reactor was critical in the previous four quarters. For new plants, the indicator should become valid after four quarters once the IE cornerstone has been transitioned to the ROP.	Yes.
IE04: Unplanned Scrams with Complications	The PI becomes valid the quarter in which the reactor first becomes critical.	This indicator measures the number of unplanned scrams with complications while the reactor was critical during the past four quarters. The indicator value is not dependent on the number of hours the reactor has been critical. For new plant startups, the PI should be valid the quarter in which the reactor becomes critical after the IE cornerstone has been transitioned to the ROP.	No

² This PI validity summary is based on current plans that may change as new reactor PIs are developed.

MS05: Safety System Functional Failures	This PI becomes valid when the mitigating systems cornerstone becomes valid.	This indicator monitors the number of events or conditions that prevented or could have prevented the fulfillment of the safety function of structures or systems in the previous four quarters. For a new plant, the PI should become valid when the MS cornerstone has been transitioned to the ROP.	No
MS06, MS07, MS08, MS09, MS10: Mitigating Systems Performance Index (MSPI)	These PIs are not applicable as currently written.	The staff has determined that the MSPI does not apply to the AP1000 as written and that new PIs would not be practical. The staff will evaluate the need for any revisions to inspection procedures to cover those areas that the MSPI PIs will not address.	TBD
BI01: Reactor Coolant System (RCS) Specific Activity	For a new plant for which this PI is applicable, the PI becomes valid when the applicable modes for the RCS-specific activity technical specification (TS) requirements are entered.	This indicator monitors the maximum monthly RCS activity in accordance with the TS and is expressed as a percentage of the TS limit. The indicator is determined by multiplying 100 by the ratio of the maximum monthly value of calculated activity to the TS limit. The indicator is not dependent on the number of critical hours. A plant's TS specify the modes in which the specific activity shall be within limits.	No

<p>BI02: Reactor Coolant System Leakage</p>	<p>This PI becomes valid when the barrier integrity cornerstone becomes valid.</p>	<p>This indicator monitors the maximum monthly RCS leakage in accordance with the TS and is expressed as a percentage of the TS limit. The indicator is determined by multiplying 100 by the ratio of the maximum monthly value of identified (or total) leakage to the TS limit. The indicator is not dependent on the number of critical hours. A plant's TS specify the modes in which the leakage shall be within limits.</p>	<p>No</p>
<p>EP01: Drill/Exercise Performance</p>	<p>For a new plant (for which the indicator will be applicable) at an existing site, the indicator will be valid the first quarter after the EP cornerstone has been transitioned if the site has one emergency response organization (ERO) for all units.</p> <p>For a new plant (for which the indicator will be applicable) at an existing site, the indicator will be valid the fourth full quarter after the ROP takes effect if the new unit's ERO is separate from the other unit's or units' ERO. The licensee should still report the data elements minus the overall indicator value beginning the first quarter after the ROP is in effect for that unit and should start reporting the overall indicator value for the fourth full ROP quarter.</p> <p>For a new plant (for which the indicator will be applicable) at a new site, the indicator should be valid the fourth full quarter after the ROP takes effect. The licensee should still report the data elements minus the overall indicator value beginning the first quarter after the ROP is in effect for that unit and should start reporting the overall indicator value for the fourth full ROP quarter.</p>	<p>This indicator monitors timely and accurate licensee performance in EP drills, exercises, and actual events when presented with opportunities for classification of emergencies, notification of offsite authorities, and development of protective action recommendations (PARs). The indicator is calculated as a ratio (expressed as a percent) of the number of timely and accurate classifications, notifications, and PARs during the previous eight quarters to the total number of opportunities to perform these actions during the previous eight quarters.</p> <p>For a new plant at an existing site, the indicator should be valid the first quarter after the EP cornerstone has been transitioned to the ROP without any grace period if the indicator is reported as a sitewide value rather than calculated separately per unit (i.e., the site has one ERO for all units).</p>	<p>No</p>

<p>EP02: Emergency Response Organization (ERO) Drill Participation</p>	<p>For a new plant (for which the indicator will be applicable) at an existing site, the indicator will be valid the first quarter after the EP cornerstone has been transitioned to the ROP if the site has one ERO for all units.</p> <p>For a new plant (for which the indicator will be applicable) at an existing site, the indicator will be valid the fourth full quarter after the ROP takes effect if the new unit's ERO is separate from the other unit's or units' ERO. The licensee should still report the data elements minus the overall indicator value beginning the first quarter after the ROP is in effect for that unit and should start reporting the overall indicator value for the fourth full ROP quarter.</p> <p>For a new plant (for which the indicator will be applicable) at a new site, the indicator will be valid the fourth full quarter after the ROP takes effect. The licensee should still report the data elements minus the overall indicator value beginning the first quarter after the ROP is in effect for that unit and should start reporting the indicator value for the fourth full ROP quarter.</p>	<p>This indicator monitors the participation of ERO members assigned to fill key positions in EP performance-enhancing experiences. The indicator is calculated as a ratio (expressed as a percent) of the number of ERO members assigned to key positions that have participated in a performance-enhancing evaluated drill, exercise or training, or actual event during the previous eight quarters to the total number of key positions assigned to ERO members.</p> <p>For a new plant at an existing site, the indicator should be valid the first quarter after the EP cornerstone has been transitioned to the ROP without any grace period if the indicator is reported as a sitewide value rather than calculated separately per unit (i.e., the site has one ERO for all units).</p>	<p>No</p>
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<p>EP03: Alert and Notification System (ANS) Reliability</p>	<p>For a new plant (for which the indicator will be applicable) at an existing site, the indicator will be valid the first quarter after the EP cornerstone has been transitioned to the ROP if the site has one ANS for all units.</p> <p>For a new plant (for which the indicator will be applicable) at an existing site, the indicator will be valid the fourth full quarter after the ROP takes effect if the new unit's ANS is separate from the other unit's or units' ANS. The licensee should still report the data elements minus the overall indicator value beginning the first quarter after the EP cornerstone has been transitioned for that unit and should start reporting the overall indicator value for the fourth full ROP quarter.</p> <p>For a new plant (for which the indicator will be applicable) at a new site, the indicator will be valid the fourth full quarter after the ROP takes effect. The licensee should still report the data elements minus the overall indicator value beginning the first quarter after the ROP is in effect for that unit and should start reporting the indicator value for the fourth full ROP quarter.</p> <p>The Federal Emergency Management Agency (FEMA) operability testing results should be used to establish the four-quarter average if the ROP takes effect before or upon completion of the FEMA operability testing.</p>	<p>This indicator monitors the reliability of the offsite ANS and is a percentage of the sirens that are capable of performing their safety function. The indicator is calculated as the ratio (expressed as a percentage) of the number of successful siren tests in the previous four quarters to the total number of siren tests in the previous four quarters.</p>	<p>No</p>
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<p>OR01: Occupational Exposure Control Effectiveness</p>	<p>For a new plant for which this PI will be applicable, this PI becomes valid the quarter that the occupational radiation safety cornerstone is transitioned to the ROP.</p>	<p>This indicator does not depend on the operational status of the plant (e.g., critical hours) and is intended to be valid during extended shutdowns and subsequent startups. For startups after extended shutdowns and for new plant startups, a total of four quarters after startup would not need to elapse for the data to be valid. Data can be valid before completing four quarters.</p>	<p>No</p>
<p>PR01: RETS/ODCM Radiological Effluent Occurrence</p>	<p>For a new plant for which this PI will be applicable, the PI becomes valid the quarter that the public radiation safety cornerstone is transitioned to the ROP.</p>	<p>This indicator calculates the number of radiological effluent occurrences (dose rates from liquid and gaseous effluents that exceed the rates listed in NEI 99-02) per site in the previous four quarters. The occurrences are based on radiological effluent technical specifications (RETS) and the Offsite Dose Calculation Manual (ODCM). This indicator is independent of the operational status of the plant (e.g., critical hours) and is intended to be valid during extended shutdowns and subsequent startups. For new plant startups, a total of four quarters after startup would not need to elapse in order for the data to be valid. Data can be valid before completing four quarters after startup.</p>	<p>No</p>

<p>PP01: Protected Area (PA) Security Equipment Performance Index</p>	<p>For a new plant for which this PI will be applicable, this PI becomes valid the quarter that the security cornerstone is transitioned to the ROP.</p>	<p>This indicator monitors the availability of security equipment. The PI value is the sum of two indices divided by 2. The two indices are the number of compensatory hours (the hours a security officer needs to be posted because of the unavailability of security equipment) in the previous four quarters divided by the product of a normalization factor and 8,760 hours. This indicator is independent of the operating mode of the plant and is intended to be valid during extended shutdowns and subsequent startups. For new plant startups, a total of four quarters after startup would not need to elapse for the data to be valid. Data can be valid before completing four quarters after startup.</p>	<p>No</p>
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APPENDIX A
LIST OF READINESS ISSUES AND RECOMMENDATIONS

Readiness Issue (RI)-01: License amendments and exemption requests often require very short review time by the staff to avoid impacting the construction schedule.

- Recommendation RI-01A: The U.S. Nuclear Regulatory Commission's (NRC's) Office of New Reactors (NRO) should continue to leverage the two month look-ahead for the construction projects to project potential technical expertise needs, with the basic understanding that NRO will need to maintain its broad technical capabilities to evaluate and complete requested regulatory approvals.

Lead Organization: NRO/Division of New Reactor Licensing (DNRL)
Status: Complete

- Recommendation RI-01B: NRO should continue to leverage decisions, as well as relevant construction experience, for applicability to the various licensing actions within the design center (e.g., to both active Combined Operating Licenses (COLs) and COL applications).

Lead Organization: NRO/DNRL
Status: Complete

RI-02: Enterprise Performance Management (EPM) may not be the most effective method of tracking regulatory approvals.

- Recommendation RI-02: Reevaluate the tracking of short-turnaround License Amendment Requests (LARs) to determine the best method to plan, track, and monitor these activities. For the longer term, there is a need to assess the compatibility of NRO's LAR tracking mechanisms with the Office of Nuclear Reactor Regulation's (NRR's) approach for scheduling resources.

Lead Organization: NRO/DNRL
Supporting Organization: NRO EPM Champions Forum, NRR/Division of Operating Reactor Licensing (DORL)
Status: Complete

RI-03: NRR licensing Office Instructions (OIs) typically do not address nuances unique to the Part 52 licensing process.

- Recommendation RI-03: Before the transition of a COL licensee to licensing support provided by NRR, the NRR OIs should be updated to include nuances unique to the Part 52 licensing process (e.g., Tier 1, Tier 2, and Tier 2* designations discussed in the Design Certification Rule (DCR)). DNRL to work with DORL to either update the current guidance or provide supplemental guidance.

Lead Organizations: NRO/DNRL and NRR/DORL
Status: In Progress

RI-04: Currently, NRO relies on NRR's guidance for addressing Title 10 of the *Code of Federal Regulations* (10 CFR) 2.206 petitions. However, the process by which the NRC reviews 10 CFR 2.206 petitions does not contain all of the aspects of the 10 CFR 52.103(f) process.

- Recommendation RI-04: Develop guidance for those aspects of the 10 CFR 52.103(f) process that are not currently part of the 10 CFR 2.206 process, such as interactions between the staff and the Commission, and the immediate action determination required by 10 CFR 52.103(f). Additional consideration should be given to whether action on 10 CFR 52.103(f) petitions should be delegated to the staff in a way similar to the Commission's delegation of the 10 CFR 52.103(g) finding to the staff.

Lead Organization: *NRO/DNRL*
Support Organization: *NRR/DPR*
Status: *In Progress*

RI-05: While inspection guidance documents have been developed and issued for all ongoing construction activities, several documents for the future inspection of construction and testing activities have yet to be issued (although it is anticipated that the unissued documents will not be needed for several more years).

- Recommendation RI-05: Ensure that procedure development and issuance continues to be tracked until all required procedures for the future inspection of construction and testing activities have been issued.

Lead Organization: *NRO/Division of Construction Inspection and Operational Programs (DCIP)*
Status: *Complete*

RI-06: Inspection Manual Chapters (IMCs) 2503 and 2504 are not applicable after the 10 CFR 52.103(g) finding has been made. However, as described in Section 3.2.1.1, if Inspections, Tests, Analyses, and Acceptance criteria (ITAAC) are the subject of an ongoing hearing, inspections of activities covered in these IMCs might be required after the 10 CFR 52.103(g) finding. In addition, some required operational programs, such as those associated with start-up testing, might not be fully implemented before the 10 CFR 52.103(g) finding.

- Recommendation RI-06: Modify or replace IMC 2514 to (1) refer to contents of relevant inspection procedures (IPs) listed in IMC 2503 in case ITAAC hearing-related issues extend beyond the 10 CFR 52.103(g) finding and ensure that IMC 2514 "Light Water Reactor Inspection Program Startup Testing Phase," contains necessary guidance for different scenarios that may be encountered (ITAAC hearings, etc.); and (2) refer to relevant Inspection Procedures (IPs) listed in IMC 2504 for operational program inspections that may be conducted after the 10 CFR 52.103(g) finding.

Lead Organization: *NRR/Division of Inspection and Regional Support (DIRS)*
Support Organization: *NRO/DCIP*
Status: *In Progress*

RI-07: While the new reactor initial test program inspection procedures have been fully developed and issued, IMC 2514, does not match the newly developed ITP inspection procedures.

- Recommendation RI-07: IMC 2514 should be revised and reissued or replace to support the new reactors startup testing inspection program. Interactions between NRO and NRR are necessary in order to ensure that appropriate guidance is established for new reactors. This should be informed by the implementation of IMC 2514 during Watts Bar Unit 2 startup testing.

Lead Organizations: NRR/DIRS
Status: In Progress

RI-08: The current guidance provides that the transition from the Construction Reactor Oversight Program (cROP) to the Reactor Oversight Program (ROP) will occur at the 10 CFR 52.103(g) finding. There may be findings identified prior to the 10 CFR 52.103(g) finding that would be best screened using the ROP Significance Determination Process (SDP). Likewise, there may be findings identified subsequent to the 10 CFR 52.103(g) finding that would be best screened using the cROP SDP.

- Recommendation RI-08: Consider modifying the cROP to allow the use of the ROP SDP screening tools for findings that are associated with operational programs that have been implemented and, if unidentified, the condition could have persisted during plant operation. In addition, consider modifying the ROP to allow the use of the cROP SDP for findings that are associated with the development of operational programs that may occur after the 10 CFR 52.103(g) finding. Also, provide appropriate guidance for the assignment of findings to a cornerstone in the oversight process that is in effect at the time of the identification of the findings.

Lead Organizations: NRO/DCIP; NRR/DIRS
Status: In Progress

RI-09: The new AP1000s will not have any operating experience in the United States of America, which should be a consideration during the first several operating cycles of the new reactors and for the use of Performance Indicators (PIs). In addition, certain PIs (e.g., mitigating systems performance index) might not be applicable to new reactors.

- Recommendation RI-09A: Continue to track the implementation of Commission direction in the SRM to SECY-13-0137, "Recommendations for Risk-Informing the Reactor Oversight Process for New Reactors," dated December 17, 2013 (ADAMS Accession No. ML13263A351) regarding the evaluation of current PIs.
- Recommendation RI-09B: Determine when PIs become relevant (i.e., number of operating hours/quarters, etc.).

Lead Organization: NRR/DIRS
Support Organizations: NRO/DCIP, NRO/Division of Safety Systems, Risk Assessment, and Advanced Reactors (DSRA), Region II
Status: In Progress

RI-10: The lower risk values raised questions about how to apply acceptance guidelines for changes to the licensing basis and regulatory response in the ROP.

- Recommendation RI-10: Continue to track the implementation of Commission direction in the SRM to SECY-13-0137, dated December 17, 2013 (ADAMS Accession No. ML13263A339) regarding the operating reactor SDP.

Lead Organization: NRR/DIRS

Support Organizations: NRO/DCIP, NRO/DSRA, Region II

Status: In Progress

RI-11: The existing ROP baseline inspection procedures might not be entirely applicable to new reactors. During ROP development, The Office of Research (RES) developed risk information matrices (RIMs) to help in the development of the inspectable areas, frequency, sample sizes, and hours. The RIMs were developed for most Pressurized-Water Reactors (PWRs) and Boiling-Water Reactors (BWRs) at the time based on the Individual Plant Examination (IPE), IPE External Events (IPEEE) and Risk Achievement Worth (RAW).

- Recommendation RI-11A: Revisit Appendices I, “Basis Documents for Inspectable Areas”; II, “Cornerstone Charts”; and III, “Risk Information Matrices,” to Attachment 3, “NRC Nuclear Power Reactor Baseline Inspection Program,” to SECY-99-007. Determine whether NRC should develop a RIM for AP1000 to select inspectable areas, frequency, sample sizes, and hours. Determine whether NRC needs to reconstruct the cornerstone charts (i.e., inspectable areas and attributes) for AP1000 reactors. Use the risk models for the AP1000s to identify the risk importance of Structures Systems and Components (SSCs).
- Recommendation RI-11B: Perform a review of ROP baseline inspection procedures to determine whether existing inspection procedures and other guidance documents are practical and adequate for new reactors.

Lead Organization: NRR/DIRS

Support Organizations: NRO/DCIP, NRO/DSRA, Region II

Status: In Progress

RI-12: The staff anticipates a surge in ITAAC Closure Notifications (ICNs) towards the end of the plant construction period.

- Recommendation RI-12: We currently anticipate that the increasing ICN verification workload can be handled by resources within NRO. However, a staffing analysis considering the anticipated ICN verification workload will continue to be periodically updated and the results input to the budget formulation process so that adequate licensing and technical resources are requested in the budget process and will be available to complete ICN verification reviews commensurate with the anticipated number of submittals during the later stages of construction.

Lead Organization: NRO/DCIP

Support Organization: Region II

Status: In Progress

RI-13: The NRC will be implementing the provisions of 10 CFR 52.103(g) for the first time for Vogtle, Units 3 and 4, to transition from construction to operation. The staff has been developing procedures outlining the 10 CFR 52.103(g) finding process and related staff actions, but these procedures are not yet complete.

- Recommendation RI-13: Ensure that procedure development and issuance continues to be tracked until, under the SRM, all required procedures for the 10 CFR 52.103(g) finding process and related staff actions have been issued.

Lead Organization: NRO/DCIP
Support Organization: NRO/DNRL
Status: In Progress

RI-14: The ITAAC hearing process procedures are not yet complete.

- Recommendation RI-14A: The staff, the Office of the General Counsel (OGC), and the Office of Commission Appellate Adjudication (OCAA) will continue to develop internal implementation processes to be approved soon after the ITAAC hearing procedures are finalized (e.g., within 6 months).

Lead Organization: NRO/DCIP, NRO/DNRL, and OGC
Support Organizations: The Office of Administration (ADM), NSIR, OCAA, and Region II
Status: Complete

- Recommendation RI-14B: Training on the ITAAC hearing process should be developed and provided to affected staff (principally DNRL and DCIP) between 18 and 24 months before scheduled fuel load.

Lead Organization: OGC
Support Organizations: NRO/DCIP, and NRO/DNRL
Status: In Progress

- Recommendation RI-14C: The detailed transition plan should identify NRO as the lead technical office during the ITAAC hearing process, but NRR should be kept informed of any actions resulting from the hearing process. To the extent that possible actions resulting from the ITAAC hearing process are decided or implemented during a period in which NRR is the lead office for the plant, NRO will need to coordinate with NRR on the implementation of these actions.

Lead Organization: NRO/DNRL and OGC
Status: Complete

RI-15: Limited staff training for incident responders has occurred for the AP1000 design.

- Recommendation RI-15: NRC should continue training on the AP1000 design to ensure the staff is adequately trained for AP1000 incident response activities. Evaluate existing incident response training programs and, as needed, develop AP1000 training and qualification programs similar to those that have been developed for other diverse reactor designs for Headquarters Operations Officer (HOO)/Headquarters Emergency.

Response Officer (HERO) and staff responders, including regional and Continuity of Operations (COOP) responders. Ensure Headquarters (HQ) and Regional Incident Response Centers (IRCs) contain site specific information needed to respond to an event

Lead Organization: Nuclear Security and Incident Response (NSIR)/Division of Preparedness and Response (DPR)

Support Organizations: Region I, II, III, and IV

Status: In Progress

RI-16: The AP1000 Emergency Response Data System (ERDS) data sets and associated screens are not completed.

- Recommendation RI-16: Continue to track the development of ERDS data sets and associated screens.

Lead Organization: NSIR/DPR

Status: In Progress

RI-17: Currently, many reports available in Reactor Program System (RPS) do not have an option to select 10 CFR Part 52 docket and/or NRO resource expenditures.

- Recommendation RI-17: Fully incorporate Vogtle Units 3 and 4 into all RPS modules and reports during the RPS Replacement Project.

Lead Organization: NRR/DIRS

Support Organizations: NRO/DCIP, Region II

Status: In Progress

RI-18: There is not yet a detailed integrated transition plan that addresses among other things, step-by-step transition of responsibilities, internal and external communication plan, roll over of IT and support processes, as well as knowledge transfer – technical, design-specific information and administrative, Part 52-specific nuances.

- Recommendation RI-18A: NRO and NRR should develop a detailed integrated transition implementation plan to include all organizational aspects of the transition. The plan should include the HQ organizational strategy for transition, taking into consideration the recommendations of the Working Group (WG), to ensure that oversight, licensing, and technical support for new reactors is provided in the most efficient and effective manner. This plan should also be input into the budget formulation process when considering appropriate projects and technical staff for the transition plans for Vogtle. A detailed communication plan should be developed to support the integrated transition plan.

Lead Organizations: NRO/DCIP

Support Organizations: NRO/DE, NRO/DNRL, NRO/Division of Site Safety and Environmental Analysis (DSEA), NRO/DSRA, NRR/Division of Engineering (DE), NRR/DIRS, NRR/DORL, NRR/Division of Policy and Rulemaking (DPR), NRR/Division of Risk Assessment (DRA), NRR/Division of Safety Systems (DSS), and Region II

Status: Complete

- Recommendation RI-18B: The staff should revise the 2011 delegation memo to address the NRC organizational roles and responsibilities for licensing and oversight of new nuclear reactor facilities as they commence operation. The delegation memo should include the Commission's delegation of authority to staff for the making of the 10 CFR 52.103(g) acceptance criteria finding.

Lead Organizations: NRO/DNRL

Support Organizations: NRR/DIRS, and NRR/DORL

Status: In Progress

RI-19: The WG's anticipated transition of AP1000 units from NRO to NRR oversight needs further discussion among Agency senior managers to gain full alignment and clarity of responsibilities for licensing and operational oversight. Additionally, the NRR and NRO Project Manager (PM) qualification programs do not completely align with each other.

- Recommendation RI-19A: The Directors of NRO, NRR, and NSIR, and the Regional Administrator of RII need to discuss the WG's anticipated transition of AP1000 units from NRO to NRR and reach formal agreement on the transition approach, and to provide clarity of responsibilities for licensing and operational oversight.

Lead Organizations: NRO/DNRL

Support Organizations: NRR/DORL

Status: In Progress

- Recommendation RI-19B: The NRR and NRO PM qualification programs should be reviewed for consistency. NRO and NRR should supplement their PM qualification program with features specific to 10 CFR Parts 50 and 52, as appropriate.

Lead Organizations: NRO/DNRL and NRR/DORL

Support Organizations: Technical Qualifications WG under NRO's Human Capital Forum

Status: Complete

RI-20: The transition of the licensing oversight of Vogtle to NRR can introduce technical availability and consistency issues.

- Recommendation RI-20A: NRR and NRO technical divisions should assess potential options for ensuring technical consistency and timely reviews and licensing oversight for Vogtle licensee as well as other new reactor projects. These options should include expanding the COE [Center of Expertise] concept to additional areas, or matrixing or detailing staff to support licensing reviews.

Lead Organization: NRR/NRO Merger WG

Status: Complete

- Recommendation RI-20B: NRR should supplement its technical staff qualification program with features specific to 10 CFR Part 52.

Lead Organization: NRR/NRO Merger WG

Status: Complete

RI-21: A comprehensive regional new reactor staffing and budget plan, taking into consideration the recommendations in the Region II Resource Management Strategic Initiative (RMSI), has not been agreed upon by NRR, NRO, NSIR and Region II. No official guidance has been developed to describe how operating new reactors will be considered with regard to resident inspector office staffing and other issues such as 4-unit sites, sites with unique budget models, 2-unit sites with units of different designs, etc.).

- Recommendation RI-21: An integrated new reactor construction and operations staffing plan should be developed and agreed on between Region II, NRO, NRR, and NSIR and input into the budget development process to ensure that adequate regional staffing and funding exists in the appropriate business lines from plant construction through full-power operations. It is the WG's recommendation that the AP1000s, once operating, be treated as separate 2 unit sites, independent of existing units, for purposes of budgeting and staffing.

Lead Organizations: NRO/DCIP, NRR/DIRS, NSIR/DPR, and NSIR/Division of Security Operations (DSO)

Support Organizations: Region II

Status: In Progress

APPENDIX B
OPERATIONAL PROGRAMS REQUIRED BY NUCLEAR REGULATORY COMMISSION
(NRC) REGULATION AND PROGRAM IMPLEMENTATION
(Copied from Standard Review Plan, Section 13.4, Operational Programs, Attachment, with some modifications)

The list in the table below is provided for information only.

Item	Program Title	Program Source (Required By)	Final Safety Analysis Report (Standard Review Plan) Section
1.	Inservice Inspection Program	Title 10 of the <i>Code of Federal Regulations</i> (10 CFR) 50.55a(g)	5.2.4 6.6
2.	Inservice Testing Program	10 CFR 50.55a(f) 10 CFR Part 50, Appendix A	3.9.6 5.2.4
3.	Environmental Qualification Program	10 CFR 50.49(a)	3.11
4.	Preservice Inspection Program	10 CFR 50.55a(g)	5.2.4 6.6
5.	Reactor Vessel Material Surveillance Program	10 CFR 50.60 10 CFR Part 50, Appendix H	5.3.1
6.	Preservice Testing Program	10 CFR 50.55a(f)	3.9.6
7.	Containment Leakage Rate Testing Program	10 CFR 50.54(o) 10 CFR Part 50, Appendix A (GDC 32) 10 CFR Part 50, Appendix J 10 CFR 52.47(a)(1)	6.2.6
8.	Fire Protection Program	10 CFR 50.48	9.5.1
9.	Process and Effluent Monitoring and Sampling Program:		
	• Radiological Effluent Technical Specifications/Standard Radiological Effluent Controls	10 CFR 20.1301 and 20.1302 10 CFR 50.34a 10 CFR 50.36a 10 CFR Part 50, Appendix I, Sections II and IV	11.5
	• Offsite Dose Calculation Manual	Same as above	11.5
	• Radiological Environmental Monitoring Program	Same as above	11.5
	• Process Control Program	Same as above	11.4

Item	Program Title	Program Source (Required By)	Final Safety Analysis Report (Standard Review Plan) Section
10.	Radiation Protection Program	10 CFR 20.1101	12.5
11.	Nonlicensed Plant Staff Training Program	10 CFR 50.120 10 CFR 52.78	13.2.2
12.	Reactor Operator Training Program	10 CFR 55.13 10 CFR 55.31 10 CFR 55.41 10 CFR 55.43 10 CFR 55.45	13.2.1
13.	Reactor Operator Requalification Program	10 CFR 50.34(b) 10 CFR 50.54(i) 10 CFR 55.59	13.2.1
14.	Emergency Planning	10 CFR 50.47 10 CFR Part 50, Appendix E	13.3
15.	Security Program Physical Security Program Safeguards Contingency Program Protection of Digital Computer and Communication Systems and Networks Training and Qualification Program	10 CFR 50.34(c) 10 CFR 73.55 10 CFR 73.56 10 CFR 73.57 10 CFR Part 26 10 CFR 50.34(d) 10 CFR Part 73, Appendix C 10 CFR 73.54 10 CFR Part 73, Appendix B	13.6.1
16.	Quality Assurance Program Operation	10 CFR 50.54(a) 10 CFR Part 50, Appendix A (GDC 1) 10 CFR Part 50, Appendix B	17.5
17.	Maintenance Rule	10 CFR 50.65	17.6
18	Motor-Operated Valve Testing	10 CFR 50.55a(b)(3)(ii)	3.9.6
19	Initial Test Program	10 CFR 50.34 10 CFR 52.79(a)(28)	14.2