From: Rankin, Jennivine
Sent: Tuesday, July 28, 2020 6:29 AM
To: Vogtle PEmails
Subject: FW: DRAFT Transition Plan Documents
Attachments: DRAFT Transition Plan.pdf; DRAFT Transition Plan for Table 2.pdf

For discussion at the July 30th public meeting.

From: Rankin, Jennivine
Sent: Monday, July 27, 2020 4:21 PM
To: Roberts, Kelli Anne <KROBERTS@southernco.com>
Cc: King, Mike <Michael.King2@nrc.gov>; Hall, Victor <Victor.Hall@nrc.gov>; Johnson, Andrea <Andrea.Johnson@nrc.gov>
Subject: DRAFT Transition Plan Documents

Hi Kelli –

Please see attached an early draft of the NRC staff's Transition to ROP for VEGP Units 3 and 4 plan.

These will be put into ADAMS and made publicly available tomorrow to support the Thursday, July 30th public meeting discussion.

Thank you,
Jennie

Hearing Identifier: Vogtle_COL_Docs_Public
Email Number: 581

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UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555-0001

July XX, 2020

MEMORANDUM TO: Marissa Bailey, Director
Division of Construction Oversight
Region II

Mark Miller, Director
Division of Reactor Projects
Region II

Mark Franke, Director
Division of Reactor Safety
Region II

FROM: Michael King, Director
Vogtle Project Office
Office of Nuclear Reactor Regulation

Chris Miller, Director
Division of Reactor Oversight
Office of Nuclear Reactor Regulation

SUBJECT: TRANSITION TO REACTOR OVERSIGHT PROCESS FOR VOGTLE ELECTRIC GENERATING PLANT, UNITS 3 AND 4

The Vogtle Project Office and the Division of Reactor Oversight have worked with Region II to develop a plan to provide an effective and efficient transition of the Vogtle Electric Generating Plant, Units 3 and 4, from the Construction Reactor Oversight Process to the Reactor Oversight Process. The staff anticipates that it will continue to refine this plan as it gains experience with the transition process. The Vogtle Readiness Group will approve any deviations from this transition plan and determine whether future updates are warranted.

Enclosures:
1. Reactor Oversight Process Transition Plan for Vogtle Electric Generating Plant, Units 3 and 4
2. Figure 1 Transition to Reactor Oversight Process
3. Figure 2 Integrated Inspection Plan for Vogtle Units 1–4
4. Table 1 Performance Indicator Validity Summary

CONTACT: Andrea M. Johnson, NRR/VPO
301-415-2890

SUBJECT: TRANSITION TO REACTOR OVERSIGHT PROCESS FOR VOGTLE ELECTRIC GENERATING PLANT, UNITS 3 AND 4, DATED:

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OFFICE	NRR/DRA:D	RII/DRP:D	RII/DRS:D	OGC	
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REACTOR OVERSIGHT PROCESS TRANSITION PLAN FOR VOGTLE ELECTRIC GENERATING PLANT, UNITS 3 AND 4

Background

On February 10, 2012, the U.S. Nuclear Regulatory Commission (NRC) issued Southern Nuclear Operating Company Inc., combined licenses (COLs) for Vogtle Electric Generating Plant (Vogtle) Unit 3, License No. NPF-91, and Unit 4, License NFP-92. Both units are Westinghouse Electric Company 2-Loop Advanced Passive 1000 (AP1000) pressurized-water reactors.

A COL authorizes construction and provides conditional authority to operate the plant, subject to verification that the acceptance criteria in the inspections, tests, analyses, and acceptance criteria (ITAAC) are met. Under Title 10 of the *Code of Federal Regulations* (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.

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 operation) not to exceed power levels described in the updated final safety analysis report.

In SECY-18-0091, "Recommendations for Modifying the Reactor Oversight Process for New Large Light Water Reactors with Passive Safety Systems Such as the AP1000 (Generation III+ Reactor Designs)," dated September 12, 2018, the staff addressed the Commission's direction to (1) propose an approach for any revisions to the significance determination process (SDP) for new reactors, (2) develop any necessary updates to the performance indicators (PIs), and (3) further explore how the current Safety System Functional Failure PI would be applied to passive, safety-related components in Generation III+ reactors.

SECY-18-0091 discusses the staff's review of the Reactor Oversight Process (ROP) applicability to AP1000 units, which found that certain PIs would no longer be applicable to the AP1000 design and recommended deletion of those from the baseline inspection program. Additionally, the review specified that limited modifications of the ROP baseline inspection procedures (IPs) would be necessary to address unique aspects of the AP1000 design. In Staff Requirements Memorandum (SRM)-SECY-18-0091, dated February 24, 2020, the Commission approved the deletion of the Mitigating System Performance Index (MSPI) PIs for the AP1000 design, with no new PIs being developed during initial operation and limited modifications being made to the baseline inspection program, as described by the staff in the SECY paper.

Subsequently, the NRC staff completed the review of the ROP applicability to AP1000 units specific to the ROP baseline IPs. It identified unique sample sizes for each ROP baseline IP, based on the number and availability of safety-related structures, systems, and components (SSCs). Additionally, the NRC identified IPs that could be performed sitewide due to a common program and site organizational structure. The NRC has documented the proposed integrated inspection plan in SECY-20-0050, "Planned Revisions to the Baseline Inspection Program for the AP1000 Reactor Design," dated June 2, 2020.

The NRC construction inspection manual chapters (IMCs) establish the staff's approach to implementing the construction inspection programs for Vogtle Units 3 and 4. Completion of the inspection program in IMC 2514, "AP1000 Reactor Inspection Program—Startup Testing Phase," issued February 2019, verifies that the licensee is meeting the requirements and conditions of the facility license for initial fuel loading, precritical testing, initial criticality, low-power physics testing, and power ascension testing. For the purposes of this memorandum, the unit begins commercial operation upon completion of the IMC 2514 inspection requirements, which the staff will communicate promptly to the licensee through a closeout meeting with a followup letter documenting the completion of these requirements. The date of the closeout meeting (as documented in the followup letter) will be the transition to commercial operation milestone for the purpose of the activities discussed in this memorandum.

Objectives

This memorandum describes the transition plan for Vogtle Units 3 and 4 and includes the following regulatory objectives. Satisfying these seven objectives will provide for the efficient transitioning from construction oversight to the ROP:

(1) Describe inspections and assessments performed before and after the 10 CFR 52.103(g) finding, for both ITAAC and operational programs, and the transition to the ROP.

(2) Outline Region II roles and responsibilities during the transition period.

(3) Describe the transition to the ROP before both units are in commercial operation and baseline inspections described in SECY-20-0050 are fully implemented.

(4) Provide guidance on resident inspector ROP baseline inspection samples and hours for the transition period after Unit 3 or 4 enters the ROP.

(5) Provide a conceptual integrated inspection plan for Units 1–4 (Figure 2).

(6) Describe the transition of each ROP cornerstone (Figure 1).

(7) Describe when PIs become valid (Table 1).

Regulatory Oversight Transition Plan for Vogtle Units 3 and 4

Before making a 10 CFR 52.103(g) finding, the staff conducts regulatory oversight under the Construction Reactor Oversight Process (cROP), as described in IMC 2506, "Construction Reactor Oversight Process General Guidance and Basis Document," issued February 2020. The staff conducts inspections of ITAAC under IMC 2503, "Construction Inspection Program: Inspections of Inspections, Tests, Analyses and Acceptance Criteria (ITAAC) Related Work,"

issued March 2020, and of construction and operational programs under IMC 2504, "Construction Inspection Program: Inspection of Construction and Operational Programs," issued April 2019. The staff dispositions the findings identified during these inspections using the cROP SDP in IMC 2519, "Construction Significance Determination Process," issued December 2017. The staff conducts assessments 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," issued April 2020.

I. Inspection and Assessment of ITAAC Following the 10 CFR 52.103(g) Finding

If inspections are required after the 10 CFR 52.103(g) finding for ITAAC that are subject to a hearing during interim operations, these inspections will be conducted using the applicable IPs in IMC 2503. Any findings identified during these inspections will be dispositioned using the ROP and IMC 0609, "Significance Determination Process," issued March 2020, 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 probabilistic risk assessment (PRA) (i.e., initiating events (IEs), mitigating systems (MSs), barrier integrity (BI)), the staff shall treat the finding in the same manner as an old design issue under the ROP. The finding will not be counted in the ROP Action Matrix, but the appropriate supplemental inspection must be successfully completed to close the finding. These findings will not be required to remain open for four full quarters; they will be closed after satisfying all of the objectives of the applicable supplemental IP.

II. Inspection and Assessment of Operational Programs

A. Before the 10 CFR 52.103(g) Finding

The COL contains operational programs required by NRC regulations (see Table 13.4-201 in the updated final safety analysis report (Agencywide Documents Access and Management System (ADAMS) Accession No. ML20181A555). Some of the required milestones are due before the 10 CFR 52.103(g) finding will be made. Operational program inspections completed before the 10 CFR 52.103(g) finding are a part of the cROP baseline inspection program. Inspectors assess the significance of findings that are identified before the 10 CFR 52.103(g) finding using the guidance in IMC 2519. Before the 10 CFR 52.103(g) finding, the Office of Nuclear Reactor Regulation (NRR) participates in the Region II assessment of the licensee's performance in accordance with IMC 2505. The final cROP assessment before the 10 CFR 52.103(g) decision includes a review of any relevant open issues to ensure that each ROP cornerstone is ready to be monitored through the ROP. During this assessment, the staff will determine the initial ROP Action Matrix column placement for the unit. These operational program inspections are credited for both Unit 3 and Unit 4 and documented in a single quarterly integrated inspection report (generated from the Construction Inspection Program Information Management System (CIPIMS)), separate from other construction (e.g., ITAAC) inspections.

If a greater-than-green finding 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 staff 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 close the greater-than-green finding 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.

For any greater-than-green inspection finding that remains open after the 10 CFR 52.103(g) finding and is mapped to the ROP cornerstones that are more reliant on a PRA (i.e., IEs, MSs, BI), the staff shall treat the finding in the same manner as an old design issue under the ROP. The finding will not be counted in the ROP Action Matrix, but the licensee will be required to have the appropriate supplemental inspection completed to close the finding. Any greater-than-green inspection finding documented before the 10 CFR 52.103(g) finding will not be required to remain open for four full quarters; it will be closed after satisfying all of the objectives of the applicable supplemental IP.

The staff will disposition findings identified during security inspections and will assign them to the appropriate Action Matrix using the ROP SDP in IMC 0609.

Once the staff has made a 10 CFR 52.103(g) finding for a unit, it will transition regulatory oversight for that unit to the ROP, and all ROP cornerstones will be monitored. Region II will issue a letter within 30 days of the 10 CFR 52.103(g) finding to inform the licensee of the transition to the ROP and of the NRC's planned level of inspection, assessment, and enforcement.

B. After the 10 CFR 52.103(g) Finding

The IMC 2504 inspection program will continue beyond the 10 CFR 52.103(g) finding to allow for initial test program (ITP) inspections that may extend beyond 10 CFR 52.103(g). The staff will conduct these inspections using dedicated procedures from within each program (ROP IPs for ROP baseline inspections and operational program IPs for operational program inspections). Some aspects of IMC 2504 may not be completed before the 10 CFR 52.103(g) finding (e.g., inspections of radiation monitoring equipment if it is not installed at the time of inspection); in these cases, the inspection staff will complete the outstanding inspection items at the earliest opportunity, using the appropriate inspection program. Where possible and appropriate, the staff will credit inspections across inspection programs, as discussed in Section VI.B. The staff will use the IMC 0609 SDP for inspection findings and will assess the licensee's performance under the requirements in IMC 0305, "Operating Reactor Assessment Program," issued November 2019. The assessment will consider the results of all inspection activities conducted on site (e.g., ROP baseline, operational program, startup testing), including any greater-than-green operational program findings that remain open under the cROP, as noted in the paragraph above. The staff will issue a single assessment letter that will 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.

While Unit 4 is still under construction (before its 10 CFR 52.103(g) finding), the staff will document Unit 3 baseline inspection results in ROP inspection reports dedicated to Unit 3. The staff will document the Unit 3 ROP baseline inspection report in the Inspection, Scheduling, Tracking, and Reporting (ISTAR) system and enter the combined Units 3 and 4 operational and construction program inspections as well as startup inspections in CIPIMS. Any Unit 3 operations program findings will require manual entry into the Replacement Reactor Program System Plant Issues Matrix. As noted above, all Vogtle Unit 3 inspection activities documented in the combined CIPIMS inspection report for Vogtle Units 3 and 4 are to be considered part of the Vogtle Unit 3 ROP assessment.

C. Additional Inspection Guidance After the 10 CFR 52.103(g) Finding

As noted above, the staff will conduct inspections under IMC 2514 during startup testing and under IMC 2515, "Light-Water Reactor Inspection Program—Operations Phase," issued December 2019, 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 AP1000 site plus the required supplemental inspections for greater-than-green findings and additional inspections for PIs that are not yet valid, as discussed below. Once the NRC has made a 10 CFR 52.103(g) finding for both units, the IMC 2515 ROP inspections will comprise applicable portions of the baseline inspection program for a dual-unit AP1000 site, plus the required supplemental inspections for greater-than-green findings and additional inspections for PIs that are not yet valid (see Table 1). The staff will disposition the findings identified during these inspections using the ROP SDP in IMC 0609.

III. Region II Construction to Operations Transition Plan

Region II plans, schedules, and conducts the Vogtle 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 Vogtle units. The NRC assigns resident inspectors to Vogtle Units 3 and 4 with responsibility for construction inspection, assessment, and enforcement and, later, for operational inspection, assessment, and enforcement. Based on lessons learned from the implementation of transition from construction to operation for Watts Bar Nuclear Plant, Unit 2, Region II plans to maintain the Division of Construction Oversight as the lead organization for Vogtle Units 3 and 4 until Unit 4 begins commercial operation. This will reduce organizational stress and maintain a consistent and strong focus on Vogtle Units 3 and 4 during this period of high workload. The resident staff for Vogtle Units 3 and 4 are qualified ROP inspectors with ROP inspection experience.

A. General

Region II is primarily responsible for the oversight of Vogtle Units 3 and 4 construction and operational activities, including the licensing of the AP1000 reactor operators. The Vogtle Unit 3 and 4 reactor site under construction contains a construction resident inspector office (RIO). Region II manages the oversight of construction activities through the RIO and the regional inspection staff. To support the inspection of construction activities, the RIO staff includes a senior resident inspector (SRI), four resident inspectors, and an initial testing program SRI. Additional resources from the Region II office supplement the resident inspectors during times of peak workload or for inspections requiring a specific expertise. Region II, NRR, and the Office of Nuclear Security and Incident Response (NSIR) provide specialized technical support in engineering, safety, security, operational programs, and quality disciplines during construction and startup activities for the Vogtle units under construction.

B. Preoperational and Initial Startup Testing and ROP Transition

The 10 CFR 52.103(g) finding for each unit is a significant regulatory milestone that marks the transition from construction to operation. However, inspection oversight programs will transition from construction to operation before the NRC makes this finding, as operational program and preoperational testing inspections occur. As the construction activities transition to system or component testing, preoperational testing, and initial startup of the reactors, the cognizant

Branch Chief(s) will coordinate with the SRI to assign inspection responsibilities for both the unit transitioning to operation and the remaining construction activities for the second unit. The cognizant Branch Chief(s) will retain overall project responsibility within the branch(es) and will ensure onsite continuity with the site SRI. Region II management will identify a resident inspector to support inspection of the remaining unit under construction and the lead unit once it becomes operational. Additionally, Region II will identify an SRI for testing and a resident inspector to support testing activities—from initial test program development to preoperational testing, including hot functional testing, and initial plant startup. The duties and responsibilities of the cognizant Branch Chief(s), SRI, and supporting inspection staff will provide oversight continuity through startup until the second unit has reached commercial operation.

During this period when Unit 3 is under the ROP and Unit 4 is under the cROP, the cognizant Branch Chief and Vogtle Units 3 and 4 RIO will maintain leadership roles for both oversight programs at Vogtle Units 3 and 4. The resident inspectors will manage Vogtle Unit 3 as a standalone single-unit plant under the ROP, documenting the results of ROP baseline inspections in quarterly inspection reports in ISTAR. Region II, Division of Construction Oversight, will lead the emergency response, event notifications, allegations, enforcement, and notices of enforcement discretion at Vogtle Unit 3. The resident staff for Vogtle Units 3 and 4 will also maintain the lead role for ITAAC inspections until the NRC makes the 10 CFR 52.103(g) finding for Unit 4, at which time both units will be in the ROP. During this period, Region II inspectors, NRR, and NSIR will continue to provide support as requested.

When Vogtle Unit 3 or 4 enter the ROP, the resident inspectors will implement the resident baseline inspection program according to Table 2[1], found in ADAMS Accession No. ML20191A398, based on SSC availability and accessibility and plant risk. However, it may not be possible to complete the minimum number of samples defined in Table 2, based on when Vogtle Unit 3 or 4 enters the ROP cycle and fuel is loaded. In addition, based upon plant conditions, it may not be possible for the RIO to complete minimal samples for specific IPs for several reasons including, but not limited to, the following:

- the SSC not being in an operating status that warrants inspections based upon risk or availability of samples
- the need to focus additional time in a specific inspection area
- the prioritization of IPs based upon risk

In addition, consistent with the NRC's Principles of Good Regulation, the staff will seek opportunities to optimize the application of inspection resources to all inspections across the four Vogtle units during the transition period. The NRC will credit completed inspections conducted under IMC 2503, IMC 2504, and IMC 2514 for IMC 2515 inspections with similar inspection objectives, where appropriate. During the period of transition before both Vogtle Units 3 and 4 are in commercial operation, the NRC will provide Region II the following additional flexibility in completing the ROP baseline inspection (Table 2 in ADAMS Accession No. ML20191A398) without the need for a deviation. If a required ROP sample is not available for inspection, the sample should be entered into the Reactor Program System (RPS) as "Complete—opportunity to apply full procedure not available," in accordance with IMC 0306, "Planning, Scheduling, Tracking, and Reporting of the Reactor Oversight Process," issued

[1] Table 2 is incorporated by reference but maintained separately from this memorandum; revisions to Table 2 will be approved by the Vogtle Readiness Group.

November 2019.

C. Oversight after Both New Units Under Construction Achieve Commercial Operation

After both Vogtle Units 3 and 4 begin commercial operation, the construction branch will merge into Region II, Division of Reactor Projects (DRP), and the IMC 2515 project inspection and oversight will come under DRP and the Region II Division of Reactor Safety. The NRC will establish resident inspector staffing for long-term post commercial operation in collaboration with NRR, considering the site's existing operating units and the ROP implementation requirements for Vogtle Units 3 and 4. The level of resident inspector staffing will depend on the initial startup phase of the plants and, for the longer term, the level needed to implement the ROP.

After the integration of Vogtle Unit 3 and 4 operations programs (e.g., emergency preparedness, security, radiation protection, fire protection) into Vogtle Unit 1 and 2 operations programs, the agency will inspect these programs as "Sitewide Implementation: Maximum Samples," as reflected in SECY-20-0050. For these inspections, the ranges of inspection samples and hours for Vogtle Units 3 and 4 and Vogtle Units 1 and 2 are identical since all of the operating units are being inspected together. The staff anticipates that the number of samples completed in an inspection cycle will be the maximum specified in the subject IP unless plant conditions or other circumstances preclude maximum sample completion.

D. Resources

The NRC will address Region II resources necessary to support oversight as the AP1000 units proceed from construction through operation. Region II, NRR, and NSIR will coordinate to develop resource plans, which will be entered into the budget development process to ensure that adequate funding and staffing exist in the appropriate business lines from construction through full-power operation.

VI. Reactor Oversight Process Transition Plan for Vogtle Units 3 and 4

A. After Both Units Are in Operation

SECY-20-0050 informs the Commission of the staff's planned revisions to the baseline IPs to ensure adequate oversight once Vogtle Units 3 and 4 are in commercial operation. Enclosures 1 and 2 of the SECY describe the revised baseline IP sample sizes and bases for all ROP inspection programs. The SECY also discusses the staff's plan to perform program inspections common to all four units when Vogtle Units 3 and 4 are in commercial operation. The final organizational structure for Vogtle (i.e., if programs are run in a sitewide manner or if they are divided between the legacy and new units) will directly impact the planned changes. Therefore, the staff will continue to evaluate the performance of program inspections to optimize ROP completion.

B. Baseline Inspection Completion Following the 10 CFR 52.103(g) Finding for Each Unit (before both Vogtle Units 3 and 4 are in commercial operation)

This section describes the ROP during the transition period after Vogtle Unit 3 (or Vogtle Unit 4) has entered the ROP but both units are not yet in commercial operation.

If current schedules for the 10 CFR 52.103(g) finding do not shift significantly, the NRC will credit completed inspections conducted under IMC 2503 and IMC 2504 for IMC 2515 inspections with similar inspection objectives. Based on an NRC evaluation, only the baseline IPs in the table below will be performed at Vogtle Units 3 and 4 during the 2020–2021 biennial and 2020–2022 triennial cycles. All other biennial and triennial IPs were determined to be equivalent to inspections conducted under IMC 2503 and IMC 2504.

IP Number	IP Title
71111.11B	Licensed Operator Requalification and Performance
71124	Operational and Public Radiological Protection—limited scope inspection, as needed
71130.03	Contingency Response—Force-on-Force Testing*

*IP 71130.03 will be conducted as a sitewide inspection during the transition period, with the results of this inspection documented in a standalone inspection report.

As shown in Figure 2, the biennial and triennial cycle inspections that will be performed following the 10 CFR 52.103(g) finding for Vogtle Units 3 and 4 will be limited to those baseline inspections that are not being credited through an equivalent IMC 2503 or IMC 2504 inspection. Routine biennial and triennial baseline inspections will start in the next baseline inspection cycle in accordance with IMC 2515.

Based on the plant startup schedule relative to the biennial/triennial inspection cycle, it may be necessary for the regional specialists to adjust the scope of program-related inspections. In this event, the staff will document completion of the IP in the RPS as "Complete—opportunity to apply full procedure not available." Inspectors may reference this memorandum in the comment accompanying the completion status in accordance with IMC 0306.

Inspections included in this "Limited" portion of Figure 2 include the following:

- Vogtle Unit 3:
  - 71111.11B—Licensed Operator Requalification Program and Licensed Operator Performance—within 3 months of initial fuel load
  - 71130.03—Contingency Response Force-on-Force Testing—in 2022 for both units
  - 71124.03—In-Plant Radioactivity Control and Mitigation—adjusted scope
  - 71124-04—Occupational Dose Assessment—adjusted scope
  - 71124.05—Radiation Monitoring Instrumentation—adjusted scope
  - 71124.08—Radioactive Solid Waste Processing and Radioactive Material Handling, Storage and Transportation—adjusted scope
- Vogtle Unit 4:
  - 71111.11B—Licensed Operator Requalification Program and Licensed Operator Performance—within 3 months of initial fuel load

– 71130.03—Contingency Response Force-on-Force Testing—in 2022 for both units

For the "limited" inspections noted above, the staff will document completion of ROP samples in accordance with IMC 0306. The staff will document ROP samples that it has determined to be equivalent to IMC 2503 or 2504 inspection samples in the RPS as "Complete—By Reference." The staff will complete ROP samples that do not have an equivalent IMC 2503 or 2504 inspection sample or will document samples in the RPS as "Complete—opportunity to apply full procedure not available."

V. Performance Indicators

PIs do not exist under the cROP. Certain PIs under the ROP (e.g., MSPI) do not apply to Vogtle Units 3 and 4 in their current format because of the AP1000's passive design features. 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, the Commission directed the staff to develop appropriate PIs and thresholds for new reactors, specifically for those PIs in the IEs and MSs cornerstones, or to develop additional inspection guidance to address identified shortfalls to ensure that all cornerstone objectives are met. In response to SRM-SECY-13-0137, the staff determined that new PIs were not practical and evaluated the need for a revision to the existing IPs to address those areas that the PIs will not address. During this evaluation, the staff found that sufficient industry data on the active components within the AP1000 passive safety systems did not exist. The staff also discovered that, due to the low number of expected demands for these active components, along with their variable risk worth, a risk-informed PI focused on unreliability could change by several orders of magnitude by simply increasing the number of demands or revising the risk worth through plant modifications or PRA updates. The staff concluded that the limited data set did not support the statistical analysis and conclusions needed to predictably and appropriately assess licensee performance in a PI. In SECY-18-0091, the staff notified the Commission that all PIs, with the exception of the MSPI indicators, would be applied to the AP1000 units. In SRM-SECY-18-0091, the Commission approved the staff's recommendation to eliminate the MSPI indicators for the AP1000 design without a replacement PI.

Validity of Performance Indicators After a 10 CFR 52.103(g) Finding

Following transition to the ROP, the NRC expects licensees to submit PI data in accordance with the guidance in Nuclear Energy Institute (NEI) 99-02, "Regulatory Assessment Performance Indicator Guideline," Revision 7, dated August 31, 2013, and IMC 0608, "Performance Indicator Program," issued February 2019. Table 1 provides a timetable that includes start dates for the PIs. The NRC staff will review the PI data to determine their accuracy and completeness in accordance with IP 71151, "Performance Indicator Verification." 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 transition to the full ROP will occur with the understanding that not all PIs will be immediately valid at the time of transition.

The PIs for emergency preparedness, security, occupational radiation safety, and public radiation safety cornerstones will begin to be reported upon issuance of the 10 CFR 52.103(g) finding. The staff will expect licensees to begin reporting these PI data for the quarter in which

the 10 CFR 52.103(g) finding is issued. IMC 0305 specifies the regulatory response for a valid PI that crosses a significance threshold after the issuance of a 10 CFR 52.103(g) finding.

The staff will also begin to conduct inspections within the IEs, MSs, and BI cornerstones at the 10 CFR 52.103(g) finding. The associated IE PIs will be valid once sufficient time has passed to accumulate enough representative data to provide a valid assessment result. This period of time varies depending on the PI. IE cornerstone PI IE04 (Unplanned Scrams with Complications) will become valid after the completion of IMC 2514 and the unit begins commercial operation.

IE01 (Unplanned Scrams per 7,000 Critical Hours) and IE03 (Unplanned Power Changes per 7,000 Critical Hours) 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 commercial operations commence. For example, if the unit first reaches commercial operations in June 2021, the data for IE01 and IE03 in the subsequent four quarters would be collected and reported, but the first time that this reported quarterly data will be used as an active input into the Action Matrix for assessment purposes would be for the second quarter of 2022 (data submitted in July 2022).

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

The staff may conduct additional inspections in the event of an unplanned scram or unplanned power change or for a review of other events that a valid PI would normally capture. The total number of samples completed for an IP 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. As the licensee approaches four quarters after either the IEs or MSs PIs have been monitored, if new information indicates that a PI may still not provide accurate assessment value, the frequently asked question process will be used in accordance with NEI 99-02 and IMC 0608 to determine how to proceed.

Figure 1 Transition to Reactor Oversight Process

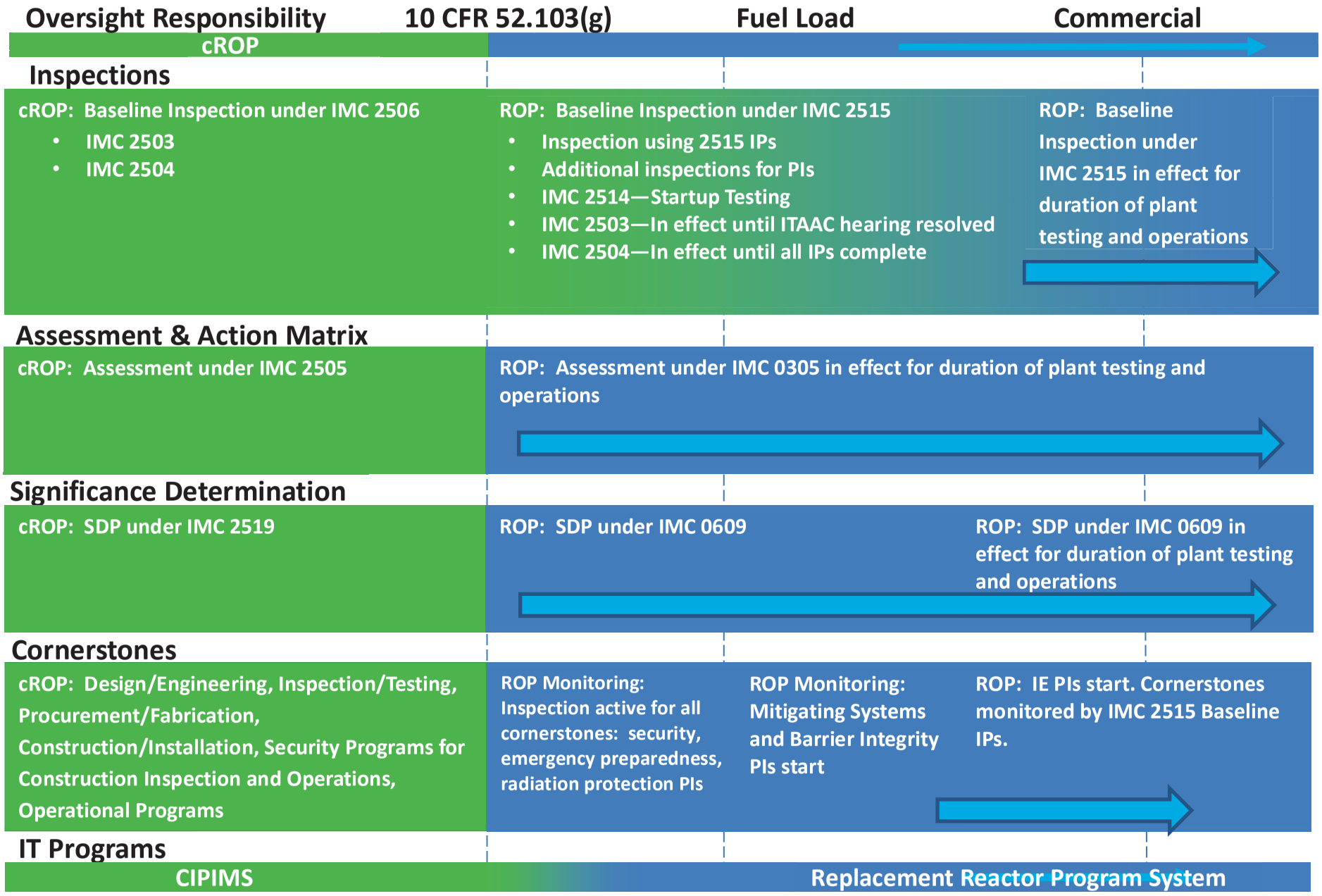

Figure 2 Integrated Inspection Plan for Vogtle Units 1–4

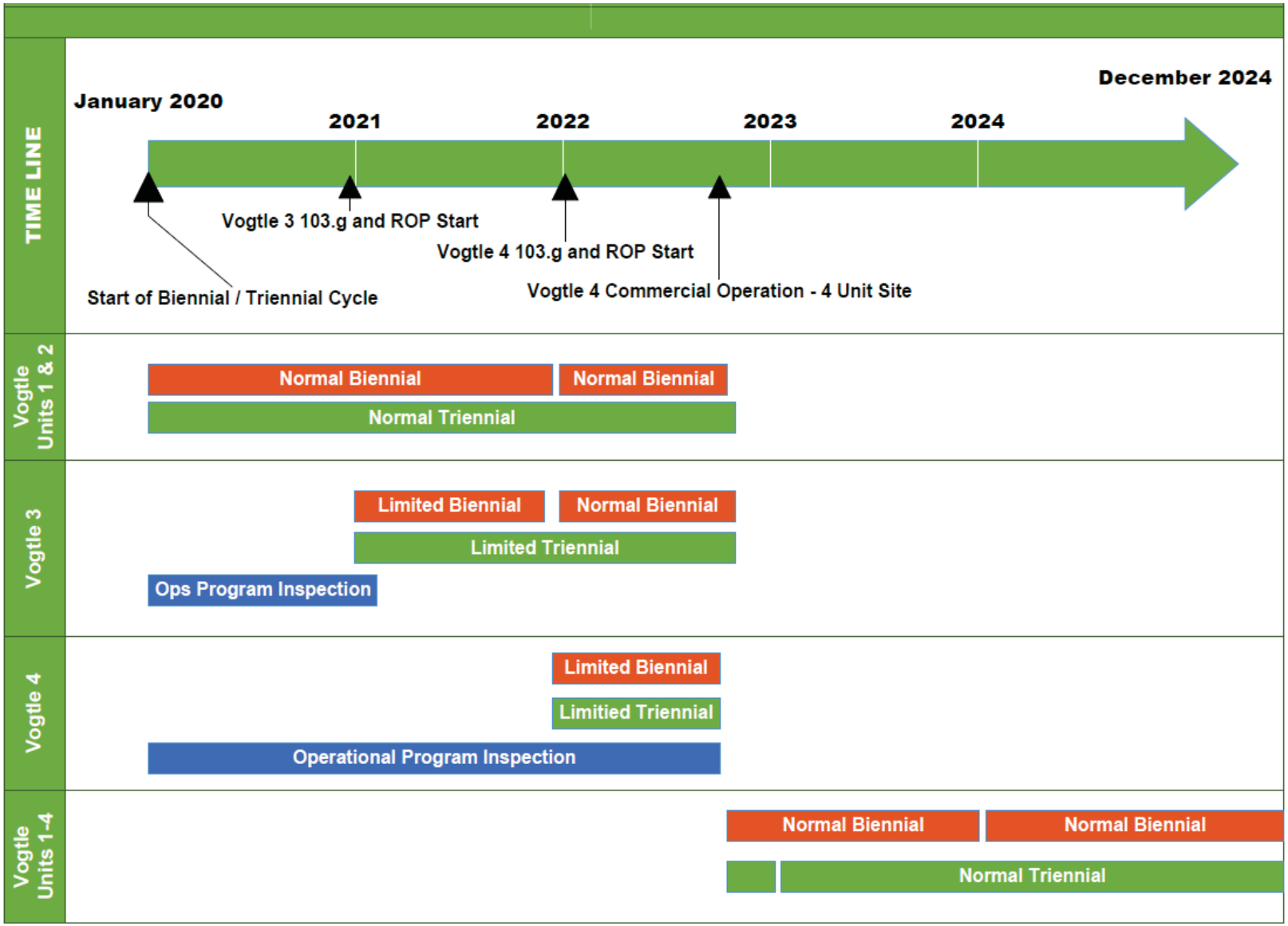

Table 1 Performance Indicator Validity Summary*

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 commercial operation.	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 multiplied by the ratio of 7,000 hours to the total number of hours the reactor was critical in the previous four quarters. For the AP1000, this PI becomes valid the fourth full calendar quarter after commercial operation.	**Yes**
IE03: Unplanned Power Changes per 7,000 Critical Hours	This PI becomes valid four full calendar quarters after the unit reaches commercial operation.	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 multiplied by the ratio of 7,000 hours to the total number of hours the reactor was critical in the previous four quarters. For the AP1000, this PI becomes valid the fourth full calendar quarter after commercial operation.	**Yes**
IE04: Unplanned Scrams with Complications	This PI becomes valid at commercial operation.	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 is valid the quarter in which the reactor becomes critical after the IE cornerstone has been transitioned to the ROP. For the AP1000, the startup testing inspection program will be complete at the start of commercial operation; therefore, the plant should be capable of steady-state operation.	**Yes**

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

PI	When a PI Becomes Valid	Comments	Additional Inspection
MS05: Safety System Functional Failures	This PI becomes valid the quarter in which the reactor first becomes critical.	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 becomes valid the quarter in which the reactor first becomes critical.	**No**
MS06, MS07, MS08, MS09, MS10: MSPI	These PIs are not applicable as currently written.	The staff has determined that this MSPI does not apply to the AP1000 design as written and that new PIs would not be practical. The staff will evaluate the need for any revisions to IPs to address areas that the MSPI PIs will not address.	**N/A**
BI01: Reactor Coolant System (RCS) Specific Activity	When this PI applies to a new plant, 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 specifies the modes in which the specific activity shall be within limits.	**No**
BI02: RCS Leakage	For a new plant, this PI becomes valid when the applicable modes for the RCS leakage TS requirements area are entered.	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 specifies the modes in which the leakage shall be within limits.	**No**

PI	When a PI Becomes Valid	Comments	Additional Inspection
EP01: Drill/Exercise Performance	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. 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 except for 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. 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 except for 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.	This indicator monitors timely and accurate licensee performance in emergency preparedness (EP) drills, exercises, and actual events when presented with opportunities for classification of emergencies, notification of offsite authorities, and development of protective action recommendations. The indicator is calculated as a ratio (expressed as a percentage) of the number of timely and accurate classifications, notifications, and protective action recommendations during the previous eight quarters to the total number of opportunities to perform these actions during the previous eight quarters. For a new plant at an existing site, the indicator should be valid the first quarter after the emergency preparedness 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 emergency response organization (ERO) for all units).	**No**
EP02: ERO Drill Participation	When this PI applies to a new plant at an existing site, the indicator will be valid the first quarter after the emergency preparedness cornerstone has been transitioned to the ROP if the site has one ERO for all units. When this PI applies to a new plant 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	This indicator monitors the participation of ERO members assigned to fill key positions in emergency preparedness performance-enhancing experiences. The indicator is calculated as a ratio (expressed as a percentage) 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.	**No**

PI	When a PI Becomes Valid	Comments	Additional Inspection
	except for 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. When this PI applies to a new plant 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 except for 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.	For a new plant at an existing site, the indicator should be valid the first quarter after the emergency preparedness 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).	
EP03: Alert and Notification System (ANS) Reliability	When this PI applies to a new plant at an existing site, the indicator will be valid the first quarter after the emergency preparedness cornerstone has been transitioned to the ROP if the site has one ANS for all units. When this PI applies to a new plant 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 emergency preparedness cornerstone has been transitioned for that unit and should start reporting the overall indicator value for the fourth full ROP quarter. When this PI applies to a new plant 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	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.	**No**

PI	When a PI Becomes Valid	Comments	Additional Inspection
	reporting the indicator value for the fourth full ROP quarter. 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.		
OR01: Occupational Exposure Control Effectiveness	When this PI applies to a new plant, it becomes valid the quarter that the occupational radiation safety cornerstone is transitioned to the ROP.	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.	**No**

PI	When a PI Becomes Valid	Comments	Additional Inspection
PR01: Radiological Effluent Technical Specifications (RETS)/Offsite Dose Calculation Manual (ODCM) Radiological Effluent Occurrence	When this PI applies to a new plant, it becomes valid the quarter that the public radiation safety cornerstone is transitioned to the ROP.	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 RETS and the 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.	**No**
PP01: Protected Area Security Equipment Performance Index	When this PI applies to a new plant, it becomes valid the quarter that the security cornerstone is transitioned to the ROP.	This indicator monitors the availability of security equipment. The PI value is the sum of two indices divided by two. 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.	**No**

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Table 2 - Vogtle Unit 3 and Vogtle Units 3&4 Resident Inspector Inspection Samples and Hours

Inspection Activity	Inspection Manual Chapter (IMC) or Inspection Procedure (IP) Title	Minimum Samples Vogtle 3	Sample Range Vogtle 3	Hours Range Vogtle 3	Sample Range Vogtle 3&4[1]	Hours Range Vogtle 3&4
IMC 2515 Appendix D	Plant Status	N/A	N/A	641	N/A	699
IP 71111.01	Adverse Weather Protection	1	1-4	18-24	1-3-4[2]	18-24
IP 71111.04	Equipment Alignment (Partial)	1	1-2	2-4	2-3-4	4-8
IP 71111.04	Equipment Alignment (Complete)	0[3]	0-1[3]	0-6	0-1-2[3]	0-12
IP 71111.05	Fire Protection (Annual)	1	1-1	5	1-1-1	5
IP 71111.05	Fire Protection (Quarterly)	3	3-4	4-6	6-7-8	9-12
IP 71111.06	Flood Protection	1	1-1	8-12	1-1-2	8-12
IP 71111.07	Heat Sink Performance (Annual)	1	1-1	6-8	1-1-1	6-8
IP 71111.11	Licensed Operator Requalification Program and Licensed Operator Performance (Quarterly)	8	8-8	32	8-8-8	32
IP 71111.12	Maintenance Effectiveness	1	1-2	10-20	3-4-5	30-50
IP 71111.13	Maintenance Risk Assessments and Emergent Work Control	4	4-5	20-25	7-8-9	35-45
IP 71111.15	Operability Determinations and Functionality Assessments	5	5-6	28-33	9-10-11	50-60
IP 71111.18	Plant Modifications	1	1-2	9-18	2-2-3	18-27
IP 71111.19	Post Maintenance Testing	5	5-6	18-21	9-10-11	31-39
IP 71111.20	Refueling and Other Outage Activities	1	1-1	62-92	1-1-1	62-92
IP 71111.22	Surveillance Testing	4	4-5	25-35	6-7-8	45
IP 71114.01	Exercise Evaluation	1	1-1	11-15	1-1-1[2]	11-15
IP 71114.06	Drill Evaluation	3	3-3	9-20	3-3-3[2]	9-20
IP 71130.11	Material Control & Accounting (MC&A)	1	1-1	8-24	1-1-1	8-24
IP 71151	Performance Indicator Verification	12	12-12	13-18	12-12-12	37-45
IP 71152	Problem Identification and Resolution (Annual)	4	4-8	61-81	4-6-8	64-84
IP 71152	Problem Identification and Resolution (Semiannual)	2	2-2	16-24	2-2-2	16-24
IP 71153	Follow-Up of Events Notices of Enforcement Discretion	1	1-1	32	1-1-1	40

Note 1: The Vogtle 3&4 Sample Range identified in this column is formatted as Minimum-Nominal-Maximum as identified in SECY-20-0050 and/or the subject IP.
Note 2: Vogtle 3&4 Sample Range of 1-3-4 for IP 71111.01; 1-1-1 for IP 71114.01; 3-3-3- for IP 71114.06; and 4-6-8 and 2-2-2 for IP 71152 represents Site-Wide Implementation and Maximum Samples as identified in SECY-20-0050.

Note 3: At least one complete Equipment Alignment inspection sample is required to be completed unless plant conditions or other unusual circumstances impact sample performance.