

## **Other Options Considered for the Reactor Oversight Process Baseline Inspection Program Revision**

The U.S. Nuclear Regulatory Commission (NRC) staff identified several options for revising the Reactor Oversight Process as part of the comprehensive re-baselining effort to address Section 507, "Improving Oversight and Inspection Programs," of the Accelerating Deployment of Versatile, Advanced Nuclear for Clean Energy Act of 2024 (ADVANCE Act) and Executive Order (EO) 14300, "Ordering the Reform of the Nuclear Regulatory Commission." The staff is providing these options for Commission awareness.

### *Problem Identification and Resolution Inspection*

In Staff Requirements Memorandum (SRM)-SECY-22-0087 (Agencywide Documents Access and Management System (ADAMS) Accession No. [ML23062A686](#)), the Commission approved maintaining the biennial frequency of the problem identification and resolution inspection while revising the inspection to improve its effectiveness. The staff's comprehensive re-baselining effort evaluated several options for the problem identification and resolution inspection to determine efficiencies that could be achieved through innovative approaches.

For the Problem Identification and Resolution team inspection, the staff options included the following:

- Keeping the Problem Identification and Resolution team inspection in the baseline inspection program, decreasing its frequency to triennial, increasing the annual follow-up samples, but maintaining the current team size of four inspectors.
- Keeping the Problem Identification and Resolution team inspection in the baseline inspection program, decreasing its frequency to triennial, and reducing the team size by one member.
- Keeping the Problem Identification and Resolution team inspection in the baseline inspection program, decreasing its frequency to triennial, reducing the team size by two members, and reducing the scope to focus solely on evaluating the licensee's Corrective Action Program.
- Keeping the Problem Identification and Resolution team inspection in the baseline inspection program, decreasing its frequency to quadrennial, but maintaining the current team size of four inspectors. In addition, a small-scale team inspection would be performed at the second year in the 4-year cycle using annual follow-up sample resources (i.e., no increase in hours/resources due to the small-scale inspection), where the scope would include the licensee's Corrective Action Program and safety conscious work environment.
- Maintaining the status quo for the Problem Identification and Resolution team inspection (biennial frequency as directed by the Commission in SRM-SECY-22-0087).
- Reducing the Problem Identification and Resolution team inspection frequency for plants designated as sustained Column 1 performance.

## *Engineering Inspection Program*

The staff reviewed the engineering inspection program with a focus on the requirements specified in Section 507 of the ADVANCE Act and Section 5.g of EO 14300. The staff evaluated several options for changes to the engineering inspections that would improve the efficiency and effectiveness of the program.

For the engineering inspection program, the staff options included the following:

- Maintaining the 4-year inspection cycle for engineering inspections until the end of the current quadrennial cycle, and then reevaluating following the effectiveness review in calendar year 2026 (in time to make revisions for the next cycle beginning in January 2027).
- Maintaining the 4-year inspection cycle for engineering inspections and reducing Focused Engineering Inspections (FEIs) to two per cycle instead of three per cycle. The Comprehensive Engineering Team Inspection (CETI) would be performed with five inspectors instead of the current six inspectors.
- Maintaining the 4-year inspection cycle for engineering inspections with only one new FEI, for a total of three engineering inspections in any 4-year cycle.
- Implementing the preceding option using a 5-year engineering inspection cycle. The staff would maintain three FEIs and one CETI and use the fifth year to conduct a comprehensive effectiveness review of the program.
- Implementing a 4-year inspection cycle. The staff would replace the CETI with two Safety System Design Inspections and one FEI for a total of three engineering inspections in any 4-year cycle.
- Shift to an annual cycle. The staff would replace the CETI and the FEI with an Engineering Work Product inspection and a Risk Significant Components inspection for a total of two engineering inspections per year. Each inspection team would include 2 inspectors.
- Completely revise the engineering inspection program to conduct periodic reviews of risk-significant engineering areas and programs to include an option for engineering response inspections for emergent issues.

Considering the recommendations associated with the engineering inspection program assessment, the staff developed the following three final options.

- 1) Maintaining the 4-year inspection cycle for engineering inspections until the end of the current quadrennial cycle and reducing FEIs to two per cycle with only one new FEI, for a total of three engineering inspections in any 4-year cycle. The CETI would be performed with a reduced team size of five inspectors.
- 2) Shifting to two engineering inspections on an annual cycle, with each inspection team having two inspectors for 1 week of direct inspection. The first inspection would be an

Engineering Work Product inspection; the second inspection would be a Risk Significant Components inspection.

- 3) Shifting to one engineering inspection on an annual cycle, with the inspection using 2.5 inspectors over 2 weeks of direct inspection effort (two inspectors for 2 weeks, one inspector for 1 week). Inspection samples would be risk- and operational experience-informed.