

**Report to Congress on the Security Inspection
Program for Commercial Power Reactors and
Category I Fuel Cycle Facilities: Results and
Status Update**

Annual Report for Calendar Year 2025

U.S. Nuclear Regulatory Commission
Office of Nuclear Security and Incident Response
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ABSTRACT

The U.S. Nuclear Regulatory Commission (NRC) provides this annual report to summarize the results of its security oversight program for the Nation's fleet of commercial nuclear power plants (NPPs) and Category I (CAT I) fuel cycle facilities, given the significance of the nature, form, and quantities of nuclear material at these facilities. This report presents the combined security inspection results for calendar year 2025, including inspections at operating and decommissioning NPPs, plants preparing for restart, and CAT I fuel cycle facilities. It describes how the NRC evaluates licensee performance through the Reactor Oversight Process, the security inspection programs for NPPs and CAT I facilities, and the force-on-force inspection program.

This report fulfills the requirements of section 170D.e of the Atomic Energy Act of 1954, as amended (42 U.S.C. §2210 d.(e)), which requires the NRC to provide the Committee on Environment and Public Works of the Senate and the Committee on Energy and Commerce of the House of Representatives a report, in classified form and unclassified form, that describes the results of each security response evaluation conducted and any relevant corrective action taken by a licensee during the previous year. The NRC also exercises its authority under section 170D.a (42 U.S.C. §2210 d.(a)) to determine the licensed facilities subject to these evaluations.

Paperwork Reduction Act Statement

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1. EXECUTIVE SUMMARY

Calendar Year 2025 Security Inspection Results

In calendar year (CY) 2025, the U.S. Nuclear Regulatory Commission (NRC) performed 162 security inspections at nuclear power plants (NPPs) and Category I (CAT I) fuel cycle facilities to assess the security programs licensees implement to protect and safeguard their sites. By comparison, the NRC completed 180 security inspections in CY 2024. The lapse in appropriations in CY 2025 resulted in a temporary pause in baseline security inspections, which led to a decrease in completed inspections compared to CY 2024. As shown in Table 1, CY 2025 security inspections resulted in a total of 64 findings, a 48-percent decrease compared to the total number of findings in CY 2024. This decrease is due in large part to significant reductions in findings across cybersecurity, access control, and equipment performance, testing, and maintenance inspections, as well as the agency’s shift toward more risk-informed, performance-based inspection activities. Table 1 and Figure 1 also show that the majority of CY 2025 findings were of very low security significance (i.e., Green findings and Severity Level (SL) IV violations). Two findings resulted in escalated enforcement action (no greater-than-Green findings, two greater-than-SL-IV violations). The Official Use Only—Security-Related Information enclosure to this report (i.e., Enclosure 2, nonpublic) contains additional details on each finding.

Table 1: Combined Security Inspection Results for CY 2025

162	Total number of security inspections conducted
64	Total number of inspection findings
57	Total number of Green findings
0	Total number of greater-than-Green findings
5	Total number of SL IV violations
2	Total number of greater-than-SL-IV violations

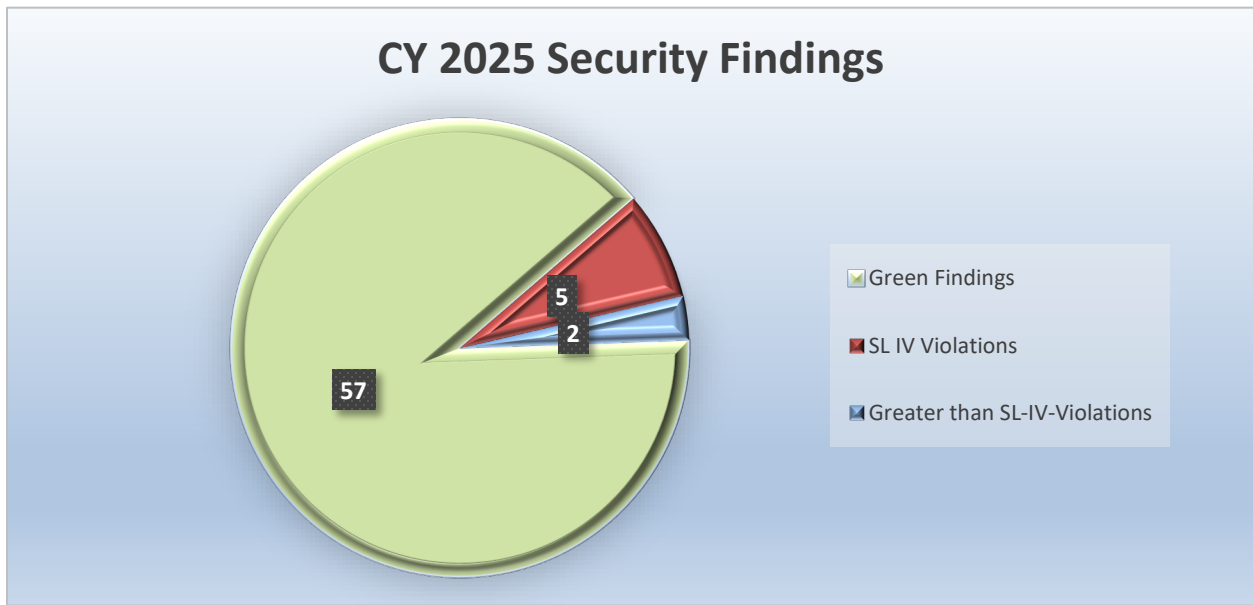


Figure 1: Summary of CY 2025 Security Inspection Program findings

Table 2 summarizes the results of the force-on-force (FOF) inspection program for commercial NPPs and CAT I fuel cycle facilities in CY 2025. The NRC conducted a total of 18 FOF inspections consisting of 33 FOF exercises, including 1 FOF inspection at a CAT I fuel cycle facility. Enclosure 2 presents additional details about FOF inspection results.

Table 2: FOF Inspection Results for CY 2025

18	Total number of FOF inspections conducted
30	Total number of effective exercises
0	Total number of indeterminate exercises
1	Total number of marginal exercises
2	Total number of ineffective exercises
3	Total number of canceled exercises

In response to the Accelerating Deployment of Versatile Advanced Nuclear for Clean Energy Act of 2024 (ADVANCE Act), the NRC implemented key initiatives during CY 2025 to assess and revise existing agency processes, and to report agency progress to Congress. Further, Executive Order (EO) 14300, "Ordering the Reform of the Nuclear Regulatory Commission," dated May 23, 2025, drove several priority initiatives during the CY to streamline agency operations and improve timeliness in key licensing, oversight, and support functions.

In accordance with the ADVANCE Act and EO 14300, the NRC identified opportunities for further revisions to the Reactor Oversight Process (ROP) and inspection and oversight of fuel facilities. On February 3, 2026, the staff submitted two key Commission papers recommending proposed changes across the ROP, including the baseline security inspection program and the FOF inspection program. The Commission considered the recommendations and directed staff to make many of the recommended changes to eliminate redundancy across the ROP, improve inspection efficiency and reduce unnecessary regulatory burden. Most of the ROP program changes will be effective July 1, 2026. Reporting of CY 2025 Security Inspection Results reflects the program in place in CY 2025, however some aspects of the approved changes will be discussed.

The NRC also continues to support restart efforts of three formerly decommissioned large light-water reactors (LWRs), including physical security inspections. The reauthorization of power operations at the Palisades NPP in 2025 under its original operating license marked a significant milestone for the NRC as the first LWR to transition from a decommissioned to an operational state. The NRC is also engaged in restart activities with both the Crane Clean Energy Center and the Duane Arnold Energy Center. Lessons learned and successes gleaned from the Palisades restart will be used to support these restart activities.

2 SECURITY OVERSIGHT FOR COMMERCIAL NUCLEAR POWER PLANTS AND CATEGORY I FUEL CYCLE FACILITIES

2.1 NRC Security Inspections of Licensed Facilities

The NRC protects public health and safety and advances the Nation's common defense and security by enabling the safe and secure use and deployment of civilian nuclear energy technologies and radioactive materials through efficient and reliable licensing, oversight, and regulation for the benefit of society and the environment. Consistent with its security mission, the NRC requires that NPPs and CAT I fuel cycle facilities design, establish, and maintain security programs that provide reasonable assurance of adequate protection against the design-basis threat (DBT) of radiological sabotage. CAT I fuel cycle facilities must protect against an additional DBT of theft or diversion of a formula quantity of strategic special nuclear material (SSNM).¹ These DBTs comprise a set of adversary characteristics, equipment, attack mechanisms, and tactics that NPPs and CAT I fuel cycle facilities must be able to defend against.

To verify that NPPs and CAT I fuel cycle facilities can defend against the applicable DBTs, the NRC regularly performs security oversight functions to assess licensee performance and verify compliance with security requirements. These include monitoring daily licensee activities and performing routine inspections that closely focus on a cross section of areas that the agency has determined have the greatest impact on security. These areas include personnel access authorization; access control; equipment performance, testing, and maintenance; protective strategy evaluation and performance evaluation program; security training; fitness-for-duty programs; material control and accounting; transportation security; cybersecurity; and target set² identification.

The NRC conducts performance-based security response FOF inspections at NPPs and CAT I fuel cycle facilities. The NRC uses FOF inspections to evaluate the effectiveness of a licensee's protective strategy through an integrated response exercise. During the exercise the licensee's security force executes its protective strategy in response to a simulated attack by an opposing force with the characteristics and attributes of the DBT. These simulated attack scenarios are designed to probe and challenge potential weaknesses in the sites' protective strategies. Section 4 of this report contains additional information on FOF inspections.

The NRC's security inspections, including FOF inspections, verify that security programs at NPPs and CAT I fuel cycle facilities have been adequately designed, implemented, and maintained in a manner consistent with regulatory requirements and that they are effectively integrated to adequately protect against the DBTs.

While both NPPs and CAT I fuel cycle facilities licensed by the NRC must provide reasonable assurance of adequate protection against the applicable DBT and are subject to periodic baseline security inspections, including FOF inspections, the sections below detail the

¹ SSNM is defined in Title 10 of the *Code of Federal Regulations* 73.2, "Definitions," as uranium-235 (contained in uranium enriched to 20 percent or more in the uranium-235 isotope), uranium-233, or plutonium.

² A target set is the minimum combination of equipment or operator actions which, if all are prevented from performing their intended safety function or prevented from being accomplished, would likely result in significant core damage or a loss of spent fuel pool coolant inventory and exposure of spent fuel, barring extraordinary actions by plant operations.

differences between the NRC’s oversight and enforcement process framework for these two types of facilities.

2.2 Reactor Oversight Process Framework

The ROP is the NRC’s program for inspecting, measuring, and assessing the safety and security performance of NPPs. The ROP encompasses three strategic performance areas and measures NPP performance in seven specific “cornerstones of safety,” as shown in Figure 3. Performance is also measured across three cross-cutting areas, which can affect each of the cornerstones across all the strategic performance areas. Additional information regarding the ROP can be found on the NRC’s public website at <https://www.nrc.gov/reactors/operating/oversight>.

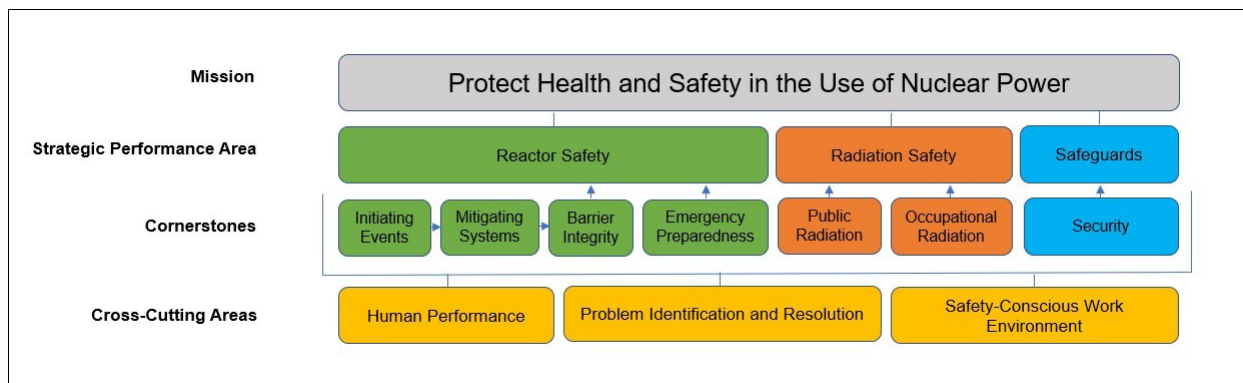


Figure 3: Reactor oversight framework

The NRC evaluates NPP performance under the ROP by analyzing two inputs: performance indicators (PIs) reported by NRC licensees, and inspection findings identified through the NRC's inspection programs.

Performance Indicators

The NRC established PIs to quantitatively measure licensee performance in risk-significant areas of each cornerstone in the ROP. Each PI has objective criteria and thresholds for measuring acceptable performance using a color-coded system. Licensees submit PI data quarterly, and the NRC regularly conducts inspections to verify the accuracy and completeness of the submittals. Publicly available PI data is posted at <https://www.nrc.gov/reactors/operating/oversight/pi-summary.html>.

The NRC established one PI under the security cornerstone that measures the availability of intrusion detection systems at NPPs. This PI provides insight into the effectiveness of the licensees’ maintenance of these systems and describes a method of monitoring security equipment degradation that could adversely impact reliability.

Inspection Findings

Findings identified during NRC security inspections are evaluated under the security significance determination process and assigned a significance level using a color-coded system similar to PIs. These findings can range in significance from Green to Red, as described below and as illustrated in Figure 4:

- **Green** indicates a finding of very low safety or security significance.
- **White** indicates a finding of low-to-moderate safety or security significance.
- **Yellow** indicates a finding of substantial safety or security significance.
- **Red** indicates a finding of high safety or security significance.

Security findings determined to be of very low security significance (i.e., Green) yield no need for further regulatory action after the performance deficiencies have been corrected.³ For those findings that have a greater potential to adversely affect security at an NPP (i.e., White, Yellow, Red), the NRC will apply additional regulatory action as determined by the agency's action matrix. A summary of the NRC's inspection findings is posted at <https://www.nrc.gov/reactors/operating/oversight/pim-summary>.

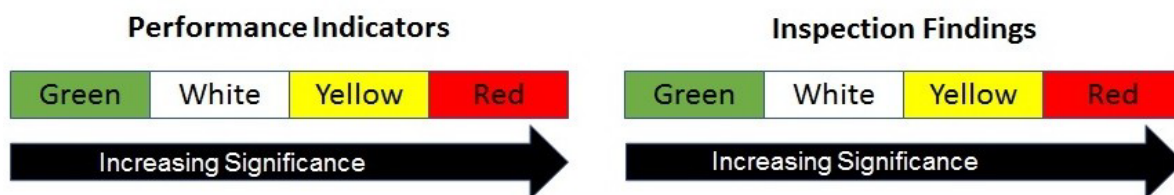


Figure 4: Assessing significance within the ROP

Action Matrix

The NRC uses information from inspection findings and PIs to draw objective conclusions about the licensee's safety and security performance. Information on security findings is identified in the publicly available action matrix summary as having either very low significance (i.e., Green) or greater-than-Green significance (i.e., White, Yellow, or Red). The NRC does not publicly disclose the details of greater-than-Green findings to ensure that information regarding NPP security vulnerabilities is not provided to possible adversaries. The action matrix is available on the NRC's public website at <https://www.nrc.gov/reactors/operating/oversight/actionmatrix-summary>.

Further, depending on the number and significance of inspection findings and PIs at an NPP, the NRC's response may include supplemental inspections, as well as a range of other appropriate regulatory actions, up to and including orders to shut down the NPP. Information on current NPP performance is provided on the NRC's public website at <https://www.nrc.gov/reactors/operating/oversight/plant-by-plant-summaries.html>

2.3 Oversight Process Framework for Category I Fuel Cycle Facilities

The NRC maintains regulatory oversight of safeguards⁴ and security programs at two CAT I fuel cycle facilities: BWX Technologies, Inc., in Lynchburg, Virginia, and Nuclear Fuel Services, Inc., in Erwin, Tennessee. Each CAT I fuel cycle facility is licensed to use and process a formula quantity of SSNM, which must be protected against acts of radiological sabotage as well as theft and diversion.

³ The NRC defines performance deficiency as the licensee's failure to satisfy one or more regulatory requirements or self-imposed standards where such failure was reasonably foreseeable and preventable.

⁴ "Safeguards" refers to the use of material control and accounting programs to verify that all special nuclear material is properly controlled and accounted for. It also refers to the physical protection (or physical security) equipment and security forces.

The NRC conducts periodic security inspections at these facilities to ensure that the licensees maintain adequate protection of their sites. The primary objectives of the NRC's CAT I fuel cycle facility safeguards and security oversight program include determining whether the facilities are operating securely and in accordance with the NRC's regulatory requirements and orders. Other objectives of this oversight program are to detect indications of declining security performance, investigate specific security events and vulnerabilities, and identify generic security issues. The NRC inspects physical security areas related to highly enriched uranium annually, biennially, or triennially using established inspection procedures (IPs). The results of these inspections contribute to an overall assessment of licensee performance. Inspection reports for CAT I fuel cycle facilities can be found on the NRC's public website at <https://www.nrc.gov/info-finder/fc/index.html#facility-list>. As with security violation information for NPPs, detailed information on security violations at CAT I fuel cycle facilities is withheld from public disclosure.

Since CAT I fuel cycle facilities are not subject to the ROP, performance issues identified at these sites are not assigned a color-coded finding. All violations identified at CAT I fuel cycle facilities are assessed and assigned a SL in accordance with the NRC enforcement policy. The NRC has not established PIs for CAT I fuel cycle facility licensees.

2.4 NRC Enforcement Policy

The NRC's enforcement authority derives from the Atomic Energy Act of 1954, as amended, and the Energy Reorganization Act of 1974, as amended. The enforcement program has two goals: (1) deter noncompliance by emphasizing the importance of adherence to NRC requirements, and (2) encourage both prompt identification and prompt, comprehensive correction of violations of NRC requirements. The enforcement policy can be found on the NRC's public website at <https://www.nrc.gov/about-nrc/regulatory/enforcement/enforce-pol.html>.

When inspections and investigations identify violations of NRC requirements, the agency uses three primary enforcement sanctions: notices of violation; civil penalties; and orders to modify, suspend, or revoke a license. Notices of violation and civil penalties are issued based on violations. The NRC may issue orders in response to violations, or because of a public health and safety or common defense and security issue. The NRC's enforcement program applies to both NPP and CAT I fuel cycle facility licensees.

Under its traditional enforcement process, the NRC assesses significance by assigning an SL to all violations. The traditional enforcement process has established four SLs that demonstrate the relative importance of a violation:

- **SL I** violations are those that resulted in, or could have resulted in, serious safety or security consequences.
- **SL II** violations are those that resulted in, or could have resulted in, significant safety or security consequences.
- **SL III** violations are those that resulted in, or could have resulted in, moderate safety or security consequences.
- **SL IV** violations are those that are less serious but are of more-than-minor concern, that resulted in no or relatively inappreciable potential safety or security consequences.

Traditional enforcement is also used at NPPs to address certain aspects of violations (e.g., willfulness and individual actions) that cannot be addressed solely through the ROP. These violations include those that resulted in actual safety or security consequences, affected the NRC's ability to perform its regulatory oversight function, or involved willfulness.

3 PROGRAMMATIC UPDATES

3.1 ADVANCE Act and Executive Order 14300 Initiatives

The ADVANCE Act and EO 14300 require the NRC to reassess and streamline key regulatory functions, including security, to improve operational and oversight efficiency, enhance the timeliness of regulatory actions, and modernize agency processes. Under the ADVANCE Act, the NRC identified 10 initiatives to further risk-inform and improve the efficiency of security inspection and oversight functions for operating reactors and 4 unique initiatives for fuel cycle facilities. To date, the NRC has completed all 10 security operating reactor initiatives and 2 of 4 fuel cycle initiatives. Efficiencies achieved through these initiatives include, but are not limited to: reducing inspection travel costs by optimizing inspection schedules; developing standardized templates for requests for information to ensure consistent document requests and provide clarity for licensees ahead of scheduled inspections; expanding Inspection Manual Chapter (IMC) 0612, "Issue Screening," Section 03.24, "Very Low Safety Significance Issue Resolution," to address security-related inspection issues; evaluating inspection frequency and resources for cybersecurity inspections; and ensuring language in the reactor program system for CAT I fuel facilities aligns with power reactor template language for physical security reports to reduce documentation time.

Further, consistent with the ADVANCE Act and EO 14300, the NRC issued new guidance in June 2025 to implement inspection of only the minimum sample requirements⁵ for the baseline security inspection program. This revised approach allowed the NRC to further risk-inform security inspections and provided flexibility to tailor inspection samples beyond the minimum, if needed, in the event of deficient licensee performance.

3.2 Proposed Reactor Oversight Process Revisions

The NRC staff developed two notable Commission papers detailing proposed changes to the ROP and the baseline security inspection program. The staff's recommendations prioritize risk-informed inspection and oversight, reducing unnecessary regulatory burden, and right-sizing assessments of licensee performance.

Consistent with ADVANCE Act efforts to further risk-inform processes and enhance clarity in operations, the NRC staff proposed revisions to IMC 0609, Appendix E, Part I, "Baseline Security Significance Determination Process for Power Reactors." The proposed changes aim to reduce subjectivity, incorporate additional risk insights, and ensure greater consistency in how security inspection findings are evaluated and dispositioned. By restructuring the process, the staff seeks to more accurately align the risk significance of an inspection finding with the actual impact of the associated performance deficiency.

Additionally, in SECY-26-0014, "Recommendations to Revise the Reactor Oversight Process Baseline Inspection Program," dated February 3, 2026 ([ML25247A048](#)), the staff requested Commission approval to revise both the ROP baseline inspection program and the inspection finding screening process in alignment with the direction provided in the ADVANCE Act and EO 14300. These revisions were approved in SRM-SECY-26-0014 ([ML26084A403](#)), and will enhance efficiency and effectiveness through revising the NRC's process for documenting

⁵ Minimum inspection samples refers to the lowest number of specific, risk-informed inspection activities (samples) required by NRC inspection procedures.

inspection findings of very low safety significance, and consolidating essential inspection elements, thereby reducing direct inspection effort by 38 percent while maintaining coverage of all inspectable areas. Proposed revisions to the security baseline inspection program were submitted separately for Commission approval in SECY-26-0015, “Recommendations for Revising the Security Baseline Inspection Program Including the Force-on-Force Inspection Program,” dated February 3, 2026 ([ML25279A191](#)). Per Commission direction in SRM-SECY-26-0015 ([ML26092A381](#)), the baseline security inspection program areas will be consolidated from 11 IPs to 4, maintaining inspection of all key facets of security programs while reducing resource requirements. The design of Force-on-Force inspections will also evolve from an NRC-planned and conducted design to one with more licensee involvement in planning and exercise conduct that is focused on self-identifying program deficiencies. After the upcoming triennial period (2026-2028), the NRC plans to transition to observing a single licensee-conducted exercise.

3.3 Nuclear Power Plants Reauthorization and Restart Support

In CY 2025, the NRC continued to complete licensing actions and inspection activities for formerly decommissioned facilities seeking to resume commercial operation. On September 28, 2023, Holtec Palisades, LLC, the licensee for Palisades Nuclear Plant, submitted a letter ([ML23271A140](#)), to the NRC requesting reauthorization of power operations. In August 2025, Palisades transitioned to operational status and anticipates a full restart in 2026. Similarly, on September 20, 2024, Constellation Energy Corporation, the licensee for the former Three Mile Island Nuclear Station, expressed interest in returning to an operational status and changing the licensed name to the Crane Clean Energy Center ([ML24310A104](#)), with a projected restart in 2027. Additionally, in January 2025, NextEra Energy Duane Arnold, LLC, the licensee for the Duane Arnold Energy Center, expressed interest in returning the plant to an operational status and resuming commercial operation, aiming to restart in 2029 ([ML25023A270](#)).

In preparation for required physical security inspections to evaluate and assess operational readiness for restarting reactors, the NRC revised and issued IPs effective January 1, 2025, to include new inspection guidance consistent with IMC 2562, “Light-Water Reactor Inspection Program for Restart of Reactor Facilities Following Permanent Cessation of Power Operations.” Once fully transitioned to an operational status, each of these reactors will be subject to requirements under the full ROP, including baseline security inspections.

4 CALENDAR YEAR 2025 SECURITY INSPECTION RESULTS

4.1 Calendar Year 2025 Commercial Nuclear Power Plant Inspection Results

Figure 5 summarizes the results of the security baseline inspection program for NPPs in CY 2025. As indicated in this figure, 59 of the 61 security findings at NPPs issued in CY 2025 were of very low security significance (i.e., Green or SL IV violations). There were no greater-than-Green findings and two greater-than-SL IV findings. These findings were issued across 162 total inspections. Enclosure 2 presents additional details of the inspection findings.

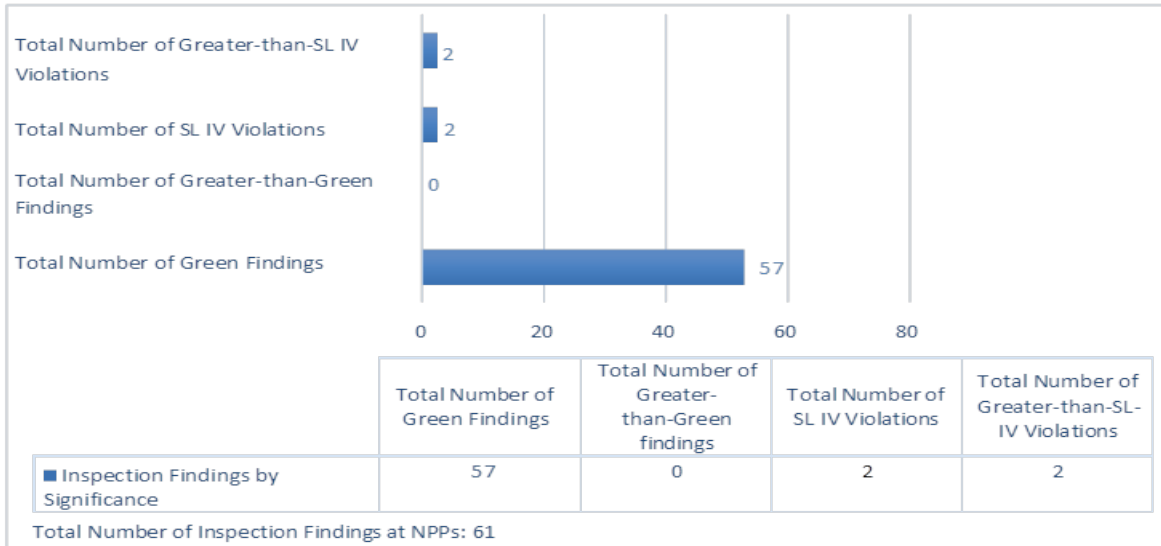


Figure 5: Summary of CY 2025 commercial NPP inspection results

The lapse in appropriations from October 1 to November 12, 2025, limited NRC operations during this period. Many routine agency functions were temporarily paused, including baseline security inspections, follow-up reviews, and scheduled assessment activities. As a result, fewer security inspections were completed in CY 2025 compared to CY 2024.

Table 3 summarizes the number of findings related to each security IP for NPPs. The areas with the most inspection findings within the security baseline inspection program are cybersecurity, protective strategy and performance evaluation programs, and FOF. Cybersecurity inspections have consistently resulted in the highest number of security inspection findings since the baseline cybersecurity inspection program began in CY 2022. CY 2025 marked the completion of the second biennial cybersecurity inspection cycle. The total number of cybersecurity inspection findings is notably higher than the total number of findings for physical security inspection areas. The NRC anticipates that this number will decrease over time as licensee cybersecurity programs mature.

Table 3: Summary of CY 2025 Security Baseline Inspections and Associated Findings for Commercial NPPs by IP 71130, “Security”

IP Section	Number of IP Completions in CY 2025	Number of Findings in CY 2025
01—Access Authorization	12	2
02—Access Control	53	3
03—Contingency Response—FOF Inspections	18	5
04—Equipment Performance, Testing, and Maintenance	15	1
05—Protective Strategy Evaluation and Performance Evaluation Program	22	6
07—Security Training	27	0
08—Fitness-for-Duty Program	12	1
09—Security Plan Changes	53	0
10—Cybersecurity	26	41
11—Material Control and Accounting	25	2
14—Review of Power Reactor Target Sets	22	0
TOTAL	285⁶	61

4.2 Calendar Year 2025 Inspection Results for Category I Fuel Cycle Facilities

The NRC issued three violations in CY 2025 at CAT I fuel cycle facilities across a total of six inspections. All identified violations were of very low significance (i.e., SL IV violations). There were no violations greater than SL IV at CAT I fuel cycle facilities. Enclosure 2 provides additional information on these violations.

Table 4 summarizes the associated findings related to each security IP for CAT I fuel cycle facilities. The only area with inspection findings is access control measures.

⁶ More than one baseline IP is often completed during a security inspection at an NPP. Therefore, the total number IP completions is higher than the total number of inspections documented in table 3.

Table 4: CY 2025 Security Baseline Inspections and Associated Findings for CAT I Fuel Cycle Facilities by IP

IPs	Number of IP Completions at CAT I Fuel Cycle Facilities in CY 2025	Number of CAT I Fuel Cycle Violations in CY 2025
81700.01—SSNM Security Controls	0	0
81700.02—Access Control Measures	2	3
81700.04—Equipment Performance, Testing and Maintenance	2	0
81700.05—Protective Strategy Evaluation	0	0
81700.06—Licensee-Conducted FOF	1	0
81700.07—Security Training	0	0
81700.08—Fitness-for-Duty Program	0	0
81700.09—Security Measures	0	0
81700.10—Protection of Safeguards Information	2	0
81700.11—Annual Observation of Licensee-Conducted FOF	1	0
96001—FOF Inspections at Category I Fuel Cycle Facilities	1	0
TOTAL	9	3

4.3 Calendar Year 2025 Overall Security Inspection Results

Table 5 summarizes the combined number of security inspections and findings for NPPs and CAT I fuel cycle facilities in CY 2025.

Table 5: Combined Security Inspection Results for CY 2025

156	Total number of security inspections conducted at commercial NPPs
6	Total number of security inspections conducted at CAT I fuel cycle facilities
162	Total number of security inspections
57	Total number of Green findings at NPPs
0	Total number of greater-than-Green findings at NPPs
2	Total number of SL IV violations at NPPs
2	Total number of greater-than-SL IV violations at NPPs
3	Total number of SL IV violations at CAT I fuel cycle facilities
0	Total number of greater-than-SL IV violations at CAT I fuel cycle facilities
64	Total number of inspection findings

5. FORCE-ON-FORCE INSPECTIONS

5.1 Force-on-Force Program Description

As conducted in CY 2025, an FOF inspection is a two-phased, performance-based inspection that is designed to help verify and assess a licensee's ability to defend against the applicable DBTs of radiological sabotage, theft or diversion of SSNM, or both, through implementation of its protective strategy. The NRC conducts these FOF inspections at each NPP and CAT I fuel cycle facility on a triennial cycle.

During the first phase of the inspection, NRC security inspectors conduct briefings and site walkdowns to assess the number of defenders, their protective positions, and the licensee's overall protective strategy. The inspectors also conduct tabletop drills on a mock-up of the facility to evaluate the effectiveness of the licensee's security strategy against a series of attack scenarios. The role of local, state, and Federal law enforcement and emergency planning officials is also discussed in the tabletop drills. Using information obtained from the tabletop drills, briefings, site walkdowns, security procedures, and previous inspection reports, the NRC inspection team, with technical support from active-duty members of the U.S. Special Operations Command, develops attack scenarios designed to probe and challenge potential weaknesses in the site's protective strategy.

During the second phase of the inspection, a mock adversary force carries out the attack scenarios developed by the NRC inspection team during a performance-based exercise. At NPPs, the mock adversary force attempts to reach and simulate destroying enough safety equipment to set in motion an event that would damage the reactor's core or spent fuel pool and potentially cause a release of radiation to the environment (referred to as radiological sabotage). At CAT I fuel cycle facilities, a similar process is used to assess the effectiveness of a licensee's protective strategy capabilities relative to the DBTs of radiological sabotage and the theft or diversion of SSNM. The security force at each facility attempts to interdict the mock adversary force and prevent it from achieving radiological sabotage or the theft or diversion of SSNM. During these exercises, the licensee maintains both its normal security force, which is not involved in the exercise and continues to protect the facility, and a second security force that actively participates in the exercise. The use of weapons and explosives is simulated using electronic equipment and other simulations.

The purpose of these exercises is to identify any significant deficiencies in the protective strategy. Any such deficiencies are promptly reviewed, and compensatory measures are established, when appropriate, while the licensee evaluates and implements necessary long-term corrective actions. These exercises provide the most realistic evaluation of the licensee's protective strategy, short of an actual attack.

After the upcoming triennial period (2026-2028), the NRC plans to transition from NRC conducted exercises to observing a single licensee-conducted exercise. The NRC is developing a plan to support this transition, which will be informed by operating experience, insights, lessons, and external stakeholders.

5.2 Force-on-Force Inspections in Calendar Year 2025

CY 2025 marked the third year of the seventh triennial FOF inspection cycle. The NRC staff conducted a total of 17 NRC-evaluated FOF inspections at NPPs during CY 2025. The NRC completed these inspections in accordance with IP 71130.03, "Contingency Response—

Force-on-Force Testing” (nonpublic). One inspection (River Bend) was unable to be completed in CY 2025 due to the suspension of inspection activities resulting from the lapse in appropriations and an unplanned outage at the site. The inspection, including the FOF exercise, was completed during the first quarter of CY 2026. One NRC-evaluated FOF inspection was conducted at a CAT I fuel cycle facility in CY 2025. This inspection was completed in accordance with IP 96001, “NRC Force-on-Force Inspections at Category 1 Fuel Cycle Facilities” (nonpublic).

5.3 Force-on-Force Exercise Results



Figure 6: Mock adversaries make an approach during a NRC FOF exercise to test the licensee’s protective strategy

The NRC categorizes FOF exercise results as (1) effective, (2) indeterminate, (3) marginal, or (4) ineffective.

An effective exercise is one in which the licensee demonstrates effective implementation of its protective strategy in accordance with security plans approved by the NRC, related implementing procedures, regulatory requirements, or other Commission requirements, such as orders or confirmatory action letters.

An indeterminate exercise is one in which the results were significantly skewed by an anomaly or anomalies, resulting in the inability to determine the outcome of the exercise (e.g., site responders neutralize the adversaries by using procedures or practices unanticipated by the design of the site protective strategy or in conflict with the training of security personnel to implement the site protective strategy, or significant exercise control failures were experienced).

A marginal exercise is one in which the licensee’s performance prevented the loss of a complete target set; however, the site’s response force did not neutralize the

adversary before the adversary simulated the loss of a subset of target set elements.

An ineffective exercise is one in which the licensee did not demonstrate effective implementation of its protective strategy in accordance with plans approved by the NRC and related implementation procedures, regulatory requirements, or other Commission requirements, such as orders or confirmatory action letters.

Table 6 summarizes the 18 FOF inspections conducted in CY 2025.

Table 6: CY 2025 FOF Inspections Summary

Total number of FOF inspections conducted at NPPs (two exercises per inspection) using IP 71130.03	17
Total number of FOF inspections conducted at a CAT I fuel cycle facility (two exercises per inspection) using IP 96001	1

Table 7 lists the outcomes for FOF exercises conducted in CY 2025.

Table 7: CY 2025 FOF Exercise Outcomes

Total number of effective exercises	30
Total number of indeterminate exercises	0
Total number of marginal exercises	1
Total number of ineffective exercises	2
Total number of canceled exercises	3 ⁷

Figure 7 shows the number of ineffective FOF exercises per year from 2018 to 2025. The number of ineffective FOF exercises has remained stable, ranging between zero and two per year. All ineffective exercises below resulted in Green findings.

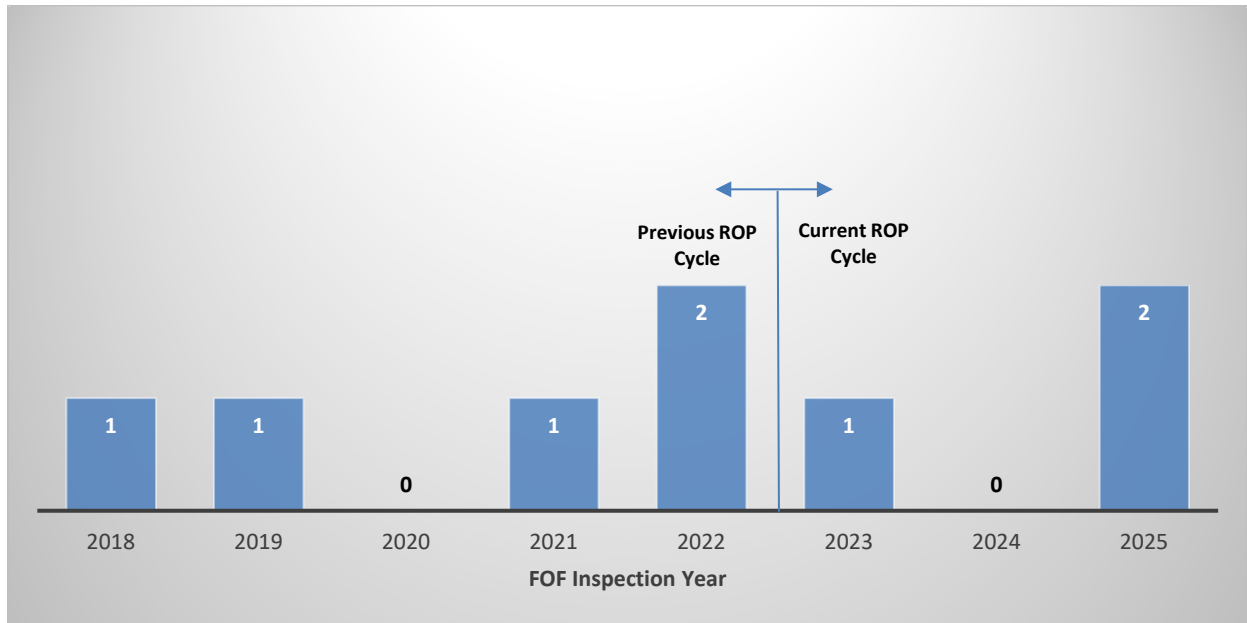


Figure 7: Total ineffective FOF exercises by year

⁷ Two exercises were canceled due to adverse weather conditions, and one was canceled due to the CY 25 lapse in appropriations.

6 CONCLUSION

The NRC remains focused on its public health and safety mission and will continue to leverage available data and risk insights to inform the conduct of inspection and oversight activities. Baseline inspections, including FOF and cybersecurity inspections, continue to provide valuable performance-based insights regarding licensees' readiness to protect their sites. The NRC's security inspections provide confidence in licensee security programs and ensure prompt resolution of any vulnerabilities or deficiencies in site protective strategies and security operations.

The NRC will continue to identify and implement efficiencies within the ROP in accordance with EO 14300 and the ADVANCE Act, including streamlining existing regulatory functions to maintain an agile regulatory posture. As the agency prepares to implement substantial revisions to the ROP, it will remain vigilant in executing key oversight functions to ensure sustained physical security and cybersecurity performance at NRC-licensed facilities and those undergoing restart. The NRC will continue to apply risk-informed, performance-based approaches to security inspection and oversight to promote efficient operations while ensuring that evaluations of licensees' security performance remain meaningful and objective and uphold the common defense and security of the United States.

Additional information on the NRC's security oversight programs can be found on the agency's public website at <https://www.nrc.gov/security.html>.

List of Acronyms and Abbreviations Used in Enclosure 1

ADVANCE Act	Accelerating Deployment of Versatile, Advanced Nuclear for Clean Energy Act
CAT I	Category I
CY	calendar year
DBT	design-basis threat
EO	executive order
FOF	force-on-force
IMC	inspection manual chapter
IP	inspection procedure
LWR	light-water reactor
NPP	nuclear power plant
NRC	U.S. Nuclear Regulatory Commission
PI	performance indicator
ROP	Reactor Oversight Process
SL	severity level
SSNM	strategic special nuclear material