# Audit of the U.S. Nuclear Regulatory Commission's Use of Operating Experience in Emergency Diesel Generators Oversight

OIG-NRC-25-A-10

August 26, 2025

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**MEMORANDUM**

**DATE:** August 26, 2025

**TO:** Michael F. King
Acting Executive Director for Operations

**FROM:** Hruta Virkar, CPA */RA/*
Assistant Inspector General for Audits & Evaluations

**SUBJECT:** AUDIT OF THE U.S. NUCLEAR REGULATORY COMMISSION'S USE OF OPERATING EXPERIENCE IN EMERGENCY DIESEL GENERATORS OVERSIGHT (OIG-NRC-25-A-10)

Attached is the Office of the Inspector General's (OIG) audit report titled: *Audit of the U.S. Nuclear Regulatory Commission's Use of Operating Experience in Emergency Diesel Generators Oversight*.

The report presents the results of the subject audit. Following the August 19, 2025, exit conference, agency staff indicated that they had no formal comments for inclusion in this report.

Please provide information on actions taken or planned on each of the recommendations within 30 days of the date of this memorandum.

We appreciate the cooperation extended to us by members of your staff during the audit. If you have any questions or comments about our report, please contact me at 301.415.1982 or Avinash Jaigobind, Team Leader, at 301.415.5402.

Attachment:
As stated

cc: J. Martin, ADO
D. Lewis, DADO
E. Deeds, OEDO

# Results in Brief

## Why We Did This Review

Title 10 of the Code of Federal Regulations, Part 50, Appendix A, General Design Criteria for Nuclear Power Plants, requires that all commercial nuclear power plants maintain both onsite and offsite electric power systems to ensure the continued operations of structures, systems, and components vital to safety. To comply with this requirement, most commercial nuclear power plants are equipped with EDGs as the predominant means of supplying onsite electrical power in the event of a loss of offsite electrical power.

In 2005, the NRC established the Reactor Operating Experience Program to systematically review operating experience gained from the nuclear power industry, research and test reactors, and new reactor construction. The program provides the means for assessing the significance of OpE information, providing timely and effective communication to stakeholders, and applying the lessons learned to regulatory decisions and programs affecting nuclear reactors.

The audit objective was to determine whether the NRC effectively uses OpE information to inspect Emergency Diesel Generators at operating nuclear power plants.

## *Audit of the U.S. Nuclear Regulatory Commission's Use of Operating Experience in Emergency Diesel Generators Oversight*

OIG-NRC-25-A-10
August 26, 2025

## What We Found

The OIG found that the U.S. Nuclear Regulatory Commission (NRC) effectively uses operating experience (OpE) information to inspect Emergency Diesel Generators (EDGs) at operating nuclear power plants. However, the agency could strengthen the Reactor OpE Program by updating guidance and assessing the program, and ensuring the EDG Technical Review Group (TRG) members know their roles and responsibilities.

Currently, the guidance provided in Office Instruction LIC-401, Office of Nuclear Reactor Regulation (NRR) Reactor Operating Experience, and NRR's Operating Experience Staff Handbook is outdated. In addition, the NRC does not have an assessment process for the Reactor OpE Program. Assessing the Reactor OpE Program periodically could help staff and management determine whether the program meets its objectives and staff are using relevant guidance to process OpE information. Moreover, the NRC lacks policies and procedures for the EDG TRGs, which may lead to inconsistent practices, reduced productivity, and missed opportunities to disposition EDG-related OpE information.

## What We Recommend

The OIG makes seven recommendations to strengthen the Reactor Operating Experience Program implementation process.

# TABLE OF CONTENTS

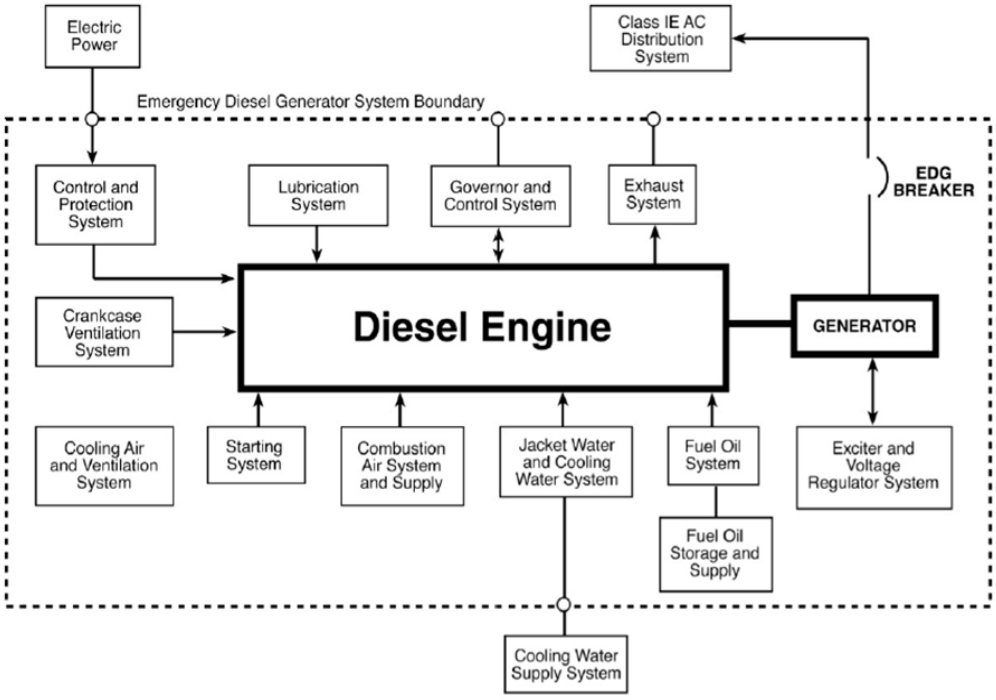
# ABBREVIATIONS AND ACRONYMS

| | |
|---|---|
| 10 C.F.R. | Title 10 of the Code of Federal Regulations |
| EDG | Emergency Diesel Generator |
| GAO | U.S. Government Accountability Office |
| IOEB | Generic Communications and Operating Experience Branch |
| NRC | U.S. Nuclear Regulatory Commission |
| NRR | Office of Nuclear Regulatory Regulation |
| OIG | Office of the Inspector General |
| OpE | Operating Experience |
| TRG | Technical Review Group |

# I. BACKGROUND

Title 10 of the Code of Federal Regulations (10 C.F.R.), Part 50, Appendix A, General Design Criteria for Nuclear Power Plants, requires that all commercial nuclear power plants maintain both onsite and offsite electric power systems to ensure the continued operations of structures, systems, and components vital to safety. To comply with this requirement, most commercial nuclear plants are equipped with Emergency Diesel Generators (EDGs) as the predominant means of supplying onsite electrical power in the event of a loss of offsite electrical power. The EDGs used in nuclear plants are readily available, have a proven record of reliability, and are widely accepted as dependable emergency power sources capable of meeting the required response time and power output demands. Each EDG is a complex support system that has its own support systems to ensure operational readiness and performance. Figure 1 illustrates the EDG support systems.

**Figure 1: Diesel Generator Systems**

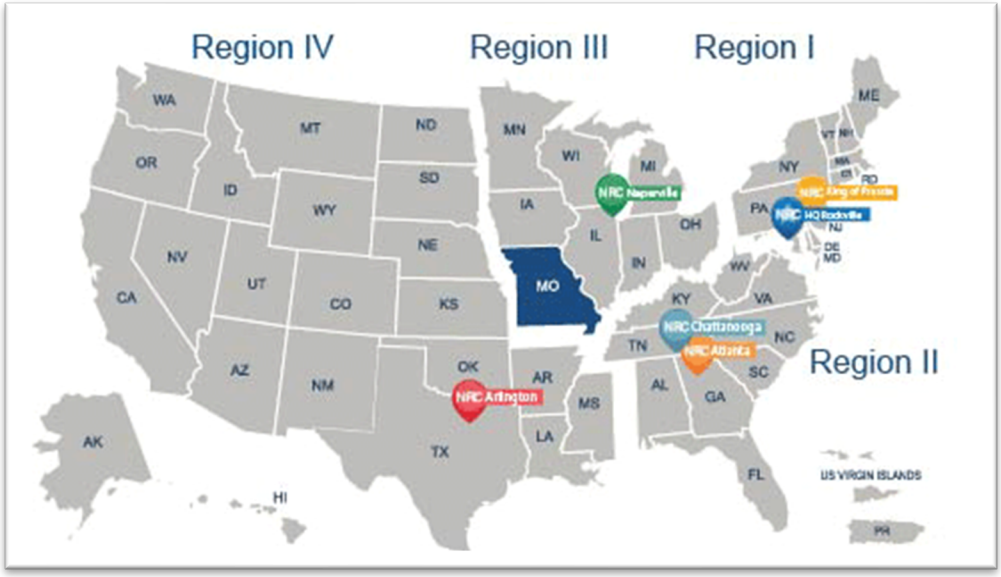



Source: NRC

Currently, there are 94 nuclear power plants in operation across the United States. Collectively, these plants rely on 234 EDGs to provide backup power in case of an offsite power outage.

The NRC's four regional offices oversee the operation of nuclear power plants within their respective geographical areas, except for the Callaway plant in Missouri (Region III), which Region IV oversees. Figure 2 illustrates the states covered by each NRC region.

**Figure 2: NRC Regions**




Source: NRC

## The Reactor Operating Experience Program Implementation Process and EDG Inspections

In 2005, the NRC implemented the Reactor OpE Program to systematically review operating experience gained from the nuclear power industry, research and test reactors, and new reactor construction. The program provides the means for assessing the significance of OpE information, providing timely and effective communication to stakeholders, and applying the lessons learned to regulatory decisions and programs affecting nuclear reactors. OpE information includes information on the performance and deficiencies of power reactors and research and test reactors in all phases, including reactor design, construction, pre-operational testing, operation, and decommissioning.

Various sources of OpE information include daily Event Notifications,[1] Licensee Event Reports, regional daily events briefings, NRC inspection findings, Institute of Nuclear Power Operations documents, notifications made under 10 C.F.R. Part 21

[1] Event Notifications are short-term reports to the NRC of conditions or events related to facilities regulated by the NRC.

("Reporting of Defects and Noncompliance"), reports filed under 10 C.F.R. Part 50.55(e), internal and external NRC studies, information obtained through the licensing process, and information related to security and emergency preparedness issues. International OpE, including publications from the International Atomic Energy Agency and the Nuclear Energy Agency (e.g., International Reporting System for Operating Experience reports), is also considered OpE information. Additionally, information from events or deficiencies in other industries that potentially have instructive value for the nuclear industry may be considered OpE information.

The Reactor OpE Program is part of the NRC's Strategic Plan and is foundational in ensuring the agency meets its safety and security strategies to fulfill its mission. Operating experience helps support the agency's decision-making, risk-informs the oversight process, and contributes to the development of NRC regulations and guidance.

**Operating Experience Program Implementation Process**

The Operating Experience Program Implementation Process consists of four phases (see Figure 3 below):

Phase one: Collect

The first phase of the OpE process involves collecting, storing, and making OpE information available to NRC staff. OpE information is collected from different sources such as Licensee Event Notifications; Part 21 notifications from licensees and vendors; past OpE information that the NRC has gathered and analyzed; generic communications;[2] NRC inspection findings; and, staff concerns.

Phase two: Screen

The collected OpE information is screened to determine its potential safety significance. Screening results are dispositioned as either Level 1 or Level 2 OpE. Level 1 reflects issues that are potentially non-safety significant and are not generic in nature. Level 1 OpE information is sent by email to NRC staff who have expressed interest in receiving such information. Level 1 information may also be communicated to NRC staff in an OpE COMM[3] if the underlying issue has the

[2] Generic communications allow the NRC to communicate and share industry experiences and send information to specific classes of licensees and interested stakeholders.

[3] OpE COMMs are used to disseminate information concerning significant events, adverse trends, or issues of general interest to NRC technical staff, managers, and inspectors. OpE COMMs are brief and factual documents that are developed and posted over a short period of time. In addition to describing the initiating OpE event, many OpE COMMs contain descriptive attachments and/or photographs and

potential to lead to more significant events. In cases where enough information is not available at the initial screening to make a definitive screen, the OpE item is screened as Level 1 and marked as "continue to follow."

Level 2 screens may be applied to an issue that is considered potentially safety significant or generic in nature; therefore, it requires further evaluation. A Level 2 screen may lead NRC staff to recommend opening an Issue for Resolution and assigning an issue manager. The assigned issue manager gathers additional information, as necessary, in preparation for the evaluation phase of the OpE process. Level 2 OpE screens are communicated to NRC staff through an OpE COMM.

Phase three: Evaluate

Level 2 OpEs are evaluated in depth to determine their impact on plant operation and safety and the extent of their generic applicability to other nuclear power plants. The main objective of the evaluation is to formulate recommendations that address the issue at hand and help prevent similar recurrences. The issue manager serves as the lead project manager for any assigned issues for resolution. The issue manager is responsible for coordinating the evaluation of the issue for resolution. The final evaluation is included in a closure memorandum if the issue manager recommendation is that no further action is needed.[4]

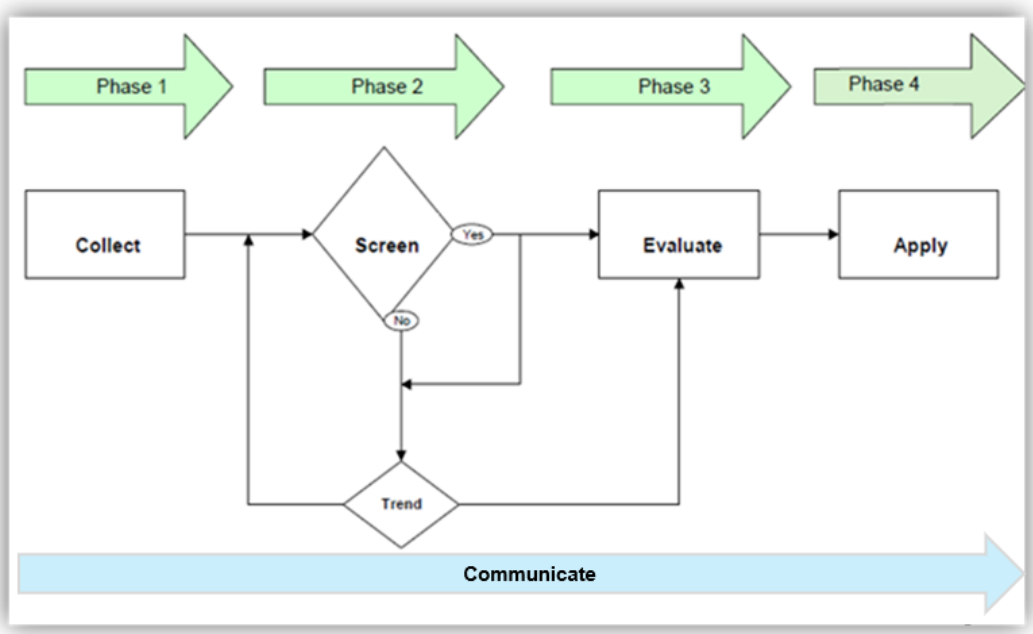
Phase four: Apply

Upon receiving the issue for resolution closure memorandum, the Generic Communication and Operating Experience Branch (IOEB) branch chief determines, in collaboration with other appropriate NRC managers, whether to adopt, in whole or in part, its recommendations. Level 2 OpE recommendations may include, but are not limited to, recommendations that the IOEB communicate OpE results through a COMM or generic communication; that the NRC take a regulatory action; or, that the agency revise certain of its programs.

provide insights to inspectors and/or licensing reviewers. They also include supporting references that provide more detailed information.

[4] The Reactor OpE program is not expected to address and resolve issues of low safety significance. However, events of low safety significance may be reviewed to identify common trends. The OpE Analysis Team analyzes trends in historical data and the grouping of similar events to identify and evaluate related issues or negative trends. The OpE Analysis Team typically focuses on shorter-term, periodic, and specific topic-based analyses and trending products. Trending analyses may also be performed by the TRGs or by the Office of Nuclear Regulatory Research.

**Figure 3: Reactor Operating Experience Program Implementation Process**




Source: NRC

## EDG Inspections

As part of its regulatory oversight process, NRC inspectors conduct inspections at nuclear power plants to ensure licensees meet regulatory requirements. NRC inspectors use guidance from various baseline inspection procedures[5] and consider relevant OpE information to inspect EDGs. For example, inspectors may use baseline inspection procedures such as:

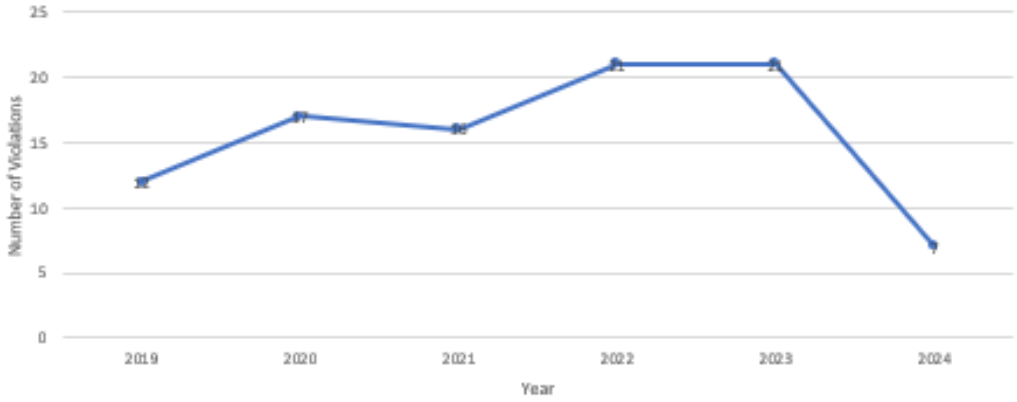
- Inspection Procedure 7111.04, Equipment Alignment;
- Inspection Procedure 7111.12, Maintenance Effectiveness;
- Inspection Procedure 7111.15, Operability Determinations and Functionality Assessments; and,
- Inspection Procedure 7111.24, Testing and Maintenance of Equipment Important to Risk.

[5] The baseline inspection program is considered the minimum inspection effort needed to ensure nuclear plants meet the "safety cornerstone" objectives. NRC resident inspectors and inspectors from the regional offices implement the baseline inspection program at all reactor sites.

## Green Findings Trends

OpE information, such as inspection findings, is screened to identify potential trends that NRC staff, including inspectors, can use to support the inspection of EDGs. To identify potential trends related to EDG inspection findings, the OIG analyzed 94 Green[6] inspection findings related to EDGs from March 2019 to May 2024 and determined that, despite some variability in the number of Green findings from year to year, there was no continuous upward trend in Green findings. Figure 4 illustrates the Green EDG findings between March 2019 and May 2024.

**Figure 4: 2019–2024 EDG Green Findings**

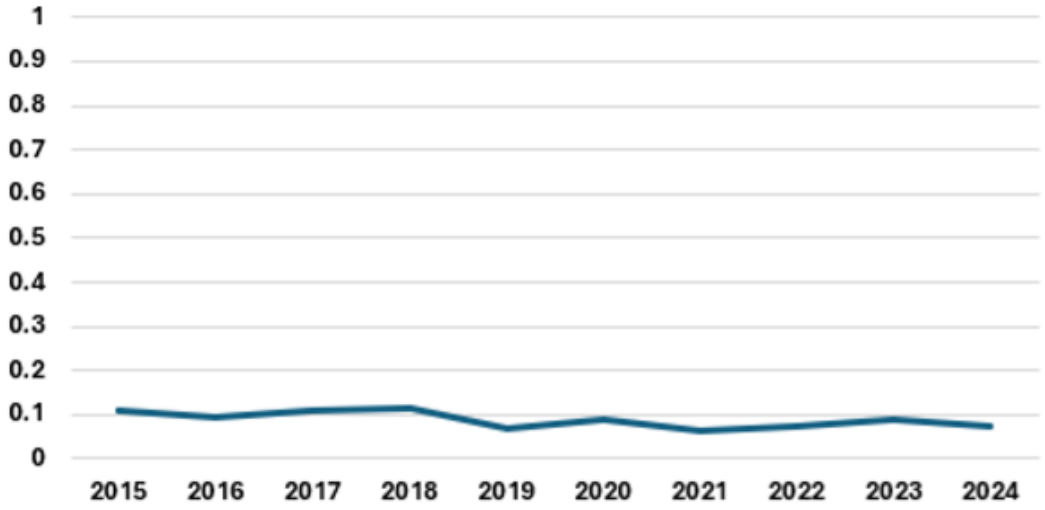



Source: OIG generated based on data from the Reactor Program System

NRC staff have also been monitoring Green EDG findings and have not observed an upward trend. The NRC concluded that the variations in the number of inspection findings over the past 5 years were within expected statistical fluctuations and did not represent any kind of statistically meaningful trend. Figure 5 illustrates the NRC's trending analysis of EDG Green findings as a percentage of all Green findings.

[6] The significance of inspection findings is represented by a color scheme—Green, White, Yellow, and Red. Green is a finding of very low safety or security significance, and Red a finding of high safety or security significance.

**Figure 5: Percentage of Green Findings that are EDG Related**




Source: NRC

## Regulations and Guidance

10 C.F.R. Part 50, Appendix A, General Design Criteria for Nuclear Power Plants, requires that all commercial nuclear plants have an onsite electric power system and an offsite electric power system to support the functioning of structures, systems, and components important to safety. Appendix A states that the safety function for each system, assuming the other system is not functioning, must provide sufficient capacity and capability to assure that (1) specified acceptable fuel design limits and design conditions of the reactor coolant pressure boundary are not exceeded as a result of anticipated operational occurrences; and, (2) the core is cooled, and containment integrity and other vital functions are maintained in the event of accidents. Appendix A states that onsite electric power supplies, including batteries and the onsite electric distribution system, shall have sufficient independence, redundancy, and testability to perform their safety functions, assuming a single failure.[7]

Management Directive (MD)8.7, *Reactor Operating Experience Program*, establishes the NRC's policy for maintaining an effectively coordinated program to review OpE information in a timely and systematic manner. The program provides the means for assessing the significance of OpE information, providing timely and

[7] Independence is the absence of shared components; redundancy is required to achieve the desired operational reliability and to accommodate "downtime" for testing and maintenance. Testability is testing to establish the performance requirements every EDG must meet to perform its design function.

effective communication to stakeholders, and applying the lessons learned to regulatory decisions and programs affecting nuclear reactors.

Office Instruction, LIC-401, Office of Nuclear Reactor Regulation (NRR) Reactor Operating Experience Program, describes a systematic process for implementing the requirements of Management Directive 8.7.

The Operating Experience Staff Handbook, referred to as the Staff Handbook, assists OpE staff in performing their daily activities. It provides detailed step-by-step guidance for implementing the requirements of LIC-401, and assists newly hired staff in understanding how the Reactor Operating Experience Program operates.

Inspection Manual Chapter 2523, NRC Application of the Reactor Operating Experience Program in NRC Oversight Processes, describes the interface between the agency's Reactor Operating Experience Program and the Reactor Oversight Process.[8] It underlines the availability and applicability of OpE information for use within the NRC's inspection and assessment activities.

## Responsible Offices

### Office of Nuclear Reactor Regulation

Within NRR, the Division of Reactor Oversight's Generic Communications and Operating Experience Branch (IOEB) administers a generic communications program and implements the NRC's Reactor OpE Program. IOEB's OpE Clearinghouse and OpE Analysis Teams are responsible for implementing the Reactor OpE Program.

The OpE Clearinghouse team is the centralized multi-office team that performs key functions and activities of the Reactor OpE Program. Core duties include (1) collecting, storing, screening, prioritizing, and distributing OpE information to interested users; (2) conducting and facilitating OpE evaluation and application activities; (3) facilitating communication of OpE insights; and, (4) coordinating NRC OpE activities among organizations performing OpE functions.

The OpE Analysis Team reviews OpE information from various sources in search of adverse trends and indicators of degrading industry performance. It publishes

[8] The NRC established the Reactor Oversight Process to oversee nuclear power plant activities and verify that the nuclear plants are being operated safely, in accordance with NRC rules and regulations. The NRC's regional inspectors apply the Reactor Oversight Process.

products such as OpE Smart Samples,[9] generic communications, End-of-Cycle OpE Notes,[10] and management briefs. In addition, the OpE Analysis Team is responsible for coordinating the Technical Review Group (TRG) process.[11] This coordination includes maintaining a current roster of active TRG members and providing periodic training to the TRG leads and other interested group members.

### EDG Technical Review Groups

The NRC has two EDG Technical Review Groups, one focused on electrical OpEs, and the other on mechanical OpEs. Each TRG member has technical expertise in a particular area, and the TRG leader is a member of the technical branch most closely associated with the issue.

According to IOEB staff, TRG membership is determined upon IOEB request through a collaborative process that begins with IOEB's request and involves the prospective member and their management. In consultation with the appropriate supervisor, TRG leads may also identify and appoint additional members as needed. The leads are expected to keep the IOEB informed of any changes to the group's composition. If an individual staff member expresses interest in joining a TRG by contacting the IOEB directly, the IOEB will forward the request to the relevant TRG lead for consideration. Once the selection is complete, the OpE Analysis Team notifies the selected staff via email.

## II. OBJECTIVE

The audit objective was to determine whether the NRC effectively uses OpE information to inspect Emergency Diesel Generators at operating nuclear power plants.

## III. FINDINGS

The OIG found that the NRC effectively uses operating experience information to inspect Emergency Diesel Generators at operating nuclear power plants. However,

[9] Operating Experience Smart Sample—a document that provides OpE examples to support baseline inspection activities.

[10] An End-of-Cycle OpE Note is an issue-specific publication that is developed to communicate significant OpE information and trends.

[11] The TRG Process consists of three phases: Phase 1, the TRG systematically gathers applicable OpE Information; Phase 2, the TRG prepares and submits the results of their evaluations to the IOEB; and, Phase 3, the IOEB compiles the TRG results, communicates recommendations, if applicable, and tracks the completion.

the agency could strengthen the Reactor OpE Program by updating guidance and assessing the program, and ensuring the EDG TRG members know their roles and responsibilities.

## 1. Strengthen NRC's Reactor OpE Program through Guidance and Program Evaluation

The NRC should review and update the guidance in Office Instruction, LIC-401, to process OpE information and periodically assess the Reactor OpE Program. However, NRC staff are using various informal instruction sheets as guidance to process OpE information, and the NRC has not formally evaluated the Reactor OpE Program since 2012. This has occurred because the guidance provided in Office Instruction, LIC-401 and the Operating Experience Staff Handbook have not been reviewed and are outdated. In addition, the NRC does not have an evaluation process for the Reactor OpE Program. Periodically evaluating the Reactor OpE Program could help staff and management determine if the program continues to meet its objectives and ensure staff use relevant guidance to process OpE information.

### What Is Required

**The NRC should review and update the guidance and periodically assess the Reactor OpE Program**

**What is internal control?**
Internal control is a process used by management to help an entity achieve its objectives.

**How does internal control work?**
Internal control helps an entity:
- Run its operations efficiently and effectively;
- Report reliable information about its operations; and,
- Comply with applicable laws and regulations.

The U.S. Government Accountability Office's Standards for Internal Control in the Federal Government (GAO Green Book)[12] states that management is responsible for internally communicating the necessary quality information to achieve the entity's objective. The GAO Green Book also states that management should implement control activities through policies; specifically, by conducting periodic reviews of policies, procedures, and related control activities for continued relevance and effectiveness in achieving the entity's objectives or addressing related risks.

[12] U.S. Government Accountability Office, *Standards for Internal Control in the Federal Government*, GAO-14-704G, September 2014.

Additionally, NRC Management Directive 8.7, Reactor Operating Experience Program, states that NRR is responsible for conducting periodic assessments of the Reactor OpE Program. Furthermore, one of the NRC's Principles of Good Regulation, *Efficiency*, emphasizes the need to establish mechanisms for evaluating and continuously enhancing the agency's regulatory capabilities.

## What We Found

### NRC staff are using informal instruction sheets and the agency has not assessed the Reactor OpE Program

Instead of relying on the formal guidance provided in LIC-401 and the *Operation Experience Staff Handbook,* NRC staff have been using various informal instruction sheets to process OpE information. The IOEB developed these instruction sheets to address gaps in LIC-401 and the Staff Handbook regarding specific aspects of OpE information processing. The informal instruction sheets, accessible via the OpE SharePoint site,[13] provide guidance on various Reactor OpE Program implementation tasks, including conducting OpE searches, performing Level 2 screenings, and gathering OpE sources and collections. Table 1 illustrates the informal instruction sheets currently in use to implement the Reactor OpE Program process.

[13] NRR's "Operating Experience & Generic Communication Hub" SharePoint site (a.k.a. OpE SharePoint) is the central location for NRC staff to find OpE information to help support day-to-day work activities such as EDG inspections. It includes IOEB OpE analysis and TRG pages.

**Table 1: Informal Instruction Sheets**

| Instruction Sheets | Description |
|---|---|
| Conducting Clearinghouse Meetings | Describes Clearinghouse Team decision process by which OpE information is either disseminated as is or further evaluated. |
| Conducting OpE Searches | Provides a listing of tools and their locations to help users identify OpE information in response to stakeholders' requests. |
| Entering OpE Information in the Reactor Program System, Reactor Operating Experience (ROE) Module | Step-by-step instructions on how staff should enter OpE information that should be tracked into the ROE module. |
| Instructions on Making a New OpE COMM | Instructions on how to generate or revise an OpE COMM. |
| International Activities | Guidance on how assigned staff should enter international OpE in the ROE module. |
| Level 2 Screening | Details the actions to be taken during OpE screening through closure. |
| OpE Source and Collection of Operating Experience | Indicates different OpE collection sources. |
| Training Guide to Search for Clearinghouse Items | Step-by-step training guide to search for issues using the TRG function in the ROE module. |
| Identifying Part 21 and 50.55(e) Reports | Provides a list of reports and methods for submitting them to NRC's staff. |
| Processing and screening Part 21 and 50.55(e) Reports | Step-by-step instruction on processing Part 21 and 50.55(e) reports in the ROE module. |
| Publishing Part 21 and 50.55(e) Reports | Step-by-step instructions on publishing Part 21 and 50.55(e) reports on the NRC public website. |

Source: OIG generated

In addition to these instruction sheets, staff rely on informal knowledge-sharing, such as verbal guidance among team members. According to one staff member, not all instruction sheets are stored in a centralized location on the OpE SharePoint site, and additional instruction sheets are still needed to fully support Reactor OpE Program implementation. When the OIG asked about using these informal instruction sheets, one staff member reported not using them. In contrast, others indicated they consulted the sheets when performing infrequent tasks or when clarification was needed.

Furthermore, the OIG found that NRR had previously conducted biennial evaluations of the OpE Program from 2006 to 2012 but did not perform subsequent evaluations due to resource constraints. In place of formal evaluations, NRR instituted quarterly retreats during which staff discussed potential improvements to the OpE Program, its processes, and strategic goals.

## Why This Occurred

### Guidance has not been revised and is outdated and the NRC does not have an assessment process for the Reactor OpE Program

NRC staff responsible for implementing the Reactor OpE Program stated that the guidance provided in LIC 401, NRR Reactor Operating Experience, and the Operation Experience Staff Handbook, are outdated and of limited use. For instance, staff stated that the Issue for Resolution process, described in LIC-401 and detailed in the Staff Handbook, has not been used since 2018 and no longer reflects the current practice for processing OpE information. Although LIC-401 and the Staff Handbook were last updated in 2019 and 2011, respectively, staff noted that both guidance documents need revisions. Many hyperlinks in the Staff Handbook are either inactive or redirect users to an obsolete server, further limiting the documents' usefulness.

An NRR senior manager further emphasized that the Reactor OpE Program guidance documents, including Management Directive 8.7 and LIC-401, need to be updated to reflect current practices, communication methods, and available OpE search tools and resources. The manager also noted the importance of revising the Staff Handbook to provide clear and comprehensive guidance for both new and current staff on implementing the Reactor OpE Program. This update, in the manager's view, should include instructions for developing, maintaining, and updating key tools and resources, such as the OpE SharePoint site.

Additionally, the NRC currently lacks a formal process to assess the continued relevance and effectiveness of the Reactor OpE Program. While NRR previously used Office Instruction OVRST-300, NRR Audit/Self Program, to assess programs and identify areas for improvement, this instruction was rescinded in 2013. According to an NRC manager, it is unclear whether the agency currently has an equivalent assessment mechanism in place for the Reactor OpE Program.

## Why This Is Important

### Periodically assessing the Reactor OpE Program could help determine whether the program is meeting its objectives

Conducting periodic assessments of the Reactor OpE Program would enable NRC staff and management to evaluate whether the program has met its objectives and whether staff are using relevant, up-to-date guidance to process OpE information. Without regular evaluations, the program may face inefficiencies, missed opportunities for improvement, and reduced overall effectiveness. The absence of such assessments limits the agency's ability to identify and address deficiencies in a timely manner.

Inconsistencies in the guidance used to process OpE information may also negatively impact program implementation. Currently, staff members rely on a mix of informal instruction sheets and outdated formal guidance, such as LIC-401 and the Staff Handbook, which can lead to variations in how OpE information is processed and evaluated. This misalignment increases the risk of inaccuracies and undermines consistency in program execution.

### Recommendations

The OIG recommends that the Executive Director for Operations:

1.1. Establish an assessment process to periodically assess the Reactor OpE Program;

1.2. Update LIC-401 to include a description of the current process by which staff assess the significance of OpE information;

1.3. Update the Staff Handbook to provide step-by-step guidance for implementing the requirements stated in the updated LIC-401; and,

1.4. Include within the updated LIC-401 and Staff Handbook a description of the purpose of "Instruction Sheets" as interim guidance and state where they are located.

## 2. EDG Technical Review Group Members Lack Defined Roles and Responsibilities

The NRC should establish policies and procedures to clearly define Emergency Diesel Generator Technical Review Groups members' roles and responsibilities. However, EDG TRG members are unaware of their roles and responsibilities. This occurs because the NRC does not have policies and procedures in place for the EDG TRGs. Without established policies and procedures, the TRG members may not know what is required of them, and opportunities could be missed to disposition EDG-related OpE information.

### What Is Required

**The NRC should establish policies and procedures to clearly define EDG TRGs members' roles and responsibilities**

According to the GAO Green Book, management should document in policies the responsibilities of each unit within an organization for operational process objectives and related risks, control activity design, implementation, and operating effectiveness. Each unit, with management guidance, defines policies through procedures, ensuring the policies align with objectives and risks that are detailed enough for management to monitor. Those in key roles for the unit may further define policies through day-to-day procedures. Additionally, one of the NRC's Principles of Good Regulation, *Clarity*, states that the agency positions should be readily understood and easily applied.

### What We Found

**EDG Technical Review Groups members are unaware of their roles and responsibilities**

The OIG found that the NRC has two EDG TRGs: one for electrical OpE and the other for mechanical OpE. These two groups evaluate and disseminate OpE information related to EDGs. However, most members of these two EDG TRGs were unaware of their roles and responsibilities in evaluating and dispositioning EDG-related OpE information. In addition, the results of the EDG TRGs evaluations of OpE information have not been added to the agency's OpE SharePoint site.

Of the 14 EDG TRGs members listed on the OpE SharePoint site, one member left the agency in 2022, and nine other members were unaware of their membership in the EDG TRG. One additional member stated that they have not been working in the office, as indicated on the OpE SharePoint site, for approximately 8 years, and they have never evaluated EDG OpE information.

Among the three members who were aware of their EDG TRG membership, one member stated they were newly assigned to the TRG and had requested and received training information from the IOEB, and that they plan to attend the training. The second member stated they received OpE information via emails, but the emails lacked guidance on how to process or use the information. The third member could not recall any current TRG guidance.

In accordance with the OpE Staff Handbook, each EDG TRG is responsible for submitting an annual report to the IOEB summarizing the OpE issues identified by the group. However, the OIG could not locate these reports or other TRG OpE evaluations on the OpE SharePoint site, raising doubt over whether TRG members are aware of the roles and responsibilities associated with preparing the annual reports.

## Why This Occurred

### The NRC does not have established policies and procedures in place for the EDG Technical Review Groups

The NRC does not have established policies and procedures that define the roles and responsibilities of TRG members, nor does it provide instructions on how the EDG TRG functions should be carried out. There is also no guidance on where to document OpE evaluations or how to manage related program documentation, which are core elements typically found in comprehensive procedural guidance. Additionally, the process for selecting members for EDG TRGs and informing them of their membership is undocumented and inconsistently applied, as evidenced by the fact that most EDG TRG members are unaware of their roles and membership.

Inadequate TRG Guidance and Ownership

Although the IOEB is responsible for implementing the Reactor OpE Program and coordinating TRG processes, including maintaining the TRG roster, notifying members of their status, and providing training, there is confusion regarding ownership and responsibilities. An IOEB senior staff member stated that the TRG is

considered outside the scope of the OpE Program. Another senior staff member acknowledged that the three-phase TRG process described in LIC-401 does not function as neatly as written. When asked about TRG-specific guidance, IOEB staff stated that TRGs are led by the TRG leads and are responsible for developing their own guidance. However, a TRG member's manager stated that the IOEB, as the process owner, is responsible for developing TRG guidance and overseeing the OpE Program, not individual branches or the TRGs themselves.

Although LIC-401 briefly describes the TRG process phases, the description consists of just three sentences. It lacks the detail necessary for effective implementation, especially for TRG members from offices other than NRR, who may not be generally aware of LIC-401. For example, one member reported not knowing the document existed until informed by the OIG. After reviewing LIC-401, the member noted that the guidance lacks sufficient detail, and based on the guidance they would not know if they should review OpE event details or look at the summaries. Another member stated they were unaware of LIC-401 and had never been informed of the TRG's three-phase process.

When the OIG asked about EDG TRG roles and responsibilities, IOEB staff referenced a 2005 memorandum, Request for Support in Implementing the New Agency Reactor Experience Program. However, this memorandum directed the NRR to establish roles and responsibilities for the OpE Program staff, not the EDG TRGs. An EDG TRG member confirmed that there is no guidance outlining TRG members' roles and responsibilities, documentation methods, or procedures for analyzing trend information that would be helpful for current members, potential volunteers, and future hires.

Unstructured TRG Membership Assignment

TRG membership selection is not documented due to the lack of established procedures. IOEB staff stated that once selected, members are typically notified via email. However, when the OIG requested copies of these emails, the IOEB staff provided only three emails that were sent to the EDG TRG. An IOEB manager explained that a new hire responsible for the notification process was unfamiliar with the actions required under the program and did not send emails to all TRG members. Another staff member stated that emails are only sent to the TRG lead, although one of the emails reviewed by the OIG was addressed to a non-lead. A member suggested that the membership selection criteria and process be included in future TRG guidance.

Lack of Follow-up Mechanism for TRG OpE Evaluations

Currently, OpE information is screened by the IOEB, and then is submitted through the Reactor Process System to the appropriate TRG for evaluation. However, IOEB staff acknowledged that no formal follow-up mechanism is in place for the TRG to transmit their evaluations back to the IOEB. According to IOEB staff, the primary purpose of the TRG process, which includes OpE evaluation, is communication from the IOEB to the TRGs, and the TRG leads are responsible for reaching out if additional engagement is needed. Regarding the TRG OpE reports, IOEB staff stated that although TRG reports were previously stored on the OpE SharePoint site, this practice was discontinued in 2018, and current TRG work is not entered in the OpE SharePoint site.

Another member described participating in a joint evaluation with IOEB staff via meetings and emails but noted there was no location on the OpE SharePoint site to formally record their evaluation. The member noted that their contribution cannot be retrieved and used for future reference. The TRG member emphasized the value of having a system to record evaluations, particularly for significant OpE issues and trend analyses, as such records would benefit newer staff and future hires.

TRG Training

While the OpE SharePoint site includes training materials and the IOEB offers training sessions twice a year, these resources are underutilized. Most EDG TRG members were unaware of their membership; therefore, they did not review training materials or attend training sessions. Those who knew of their membership reported receiving unclear instruction about their responsibilities, including when and how to engage in OpE reviews. A former member mentioned they were instructed to use a previous TRG report as a template instead of receiving formal guidance. Another member noted it would be helpful to be proactively informed about available training opportunities so that they could attend during their membership.

## Why This Is Important

### Opportunities could be missed to disposition EDG OpE information

Without established policies and procedures, EDG TRG members may lack clarity regarding their roles and responsibilities, which could result in EDG TRGs not evaluating and dispositioning EDG-related OpE information. The absence of procedural guidance could cause confusion about the EDG TRG process, roles,

reporting responsibilities, and overall expectations for participation. Furthermore, even those TRG members who are aware of their past or current membership may assess OpE issues inconsistently, as there is no standardized guidance outlining what is expected during the evaluation process.

Clear and accessible guidance would enhance understanding of TRG roles and responsibilities, promote accurate and consistent evaluation of OpE information, ensure timely access to high-quality data, and enable NRC management to effectively oversee TRG membership and activities. Maintaining an up-to-date OpE SharePoint site would also support current and incoming TRG members by providing access to relevant information, including historical evaluations and reference materials.

**Recommendations**

The OIG recommends that the Executive Director for Operations:

2.1. Develop, communicate, and implement policies and procedures for the EDG TRGs;

2.2. Systematically inform EDG TRG members about their membership, update the OpE SharePoint site to show the current membership of TRGs, and record TRG evaluations in a centralized location; and,

2.3. Provide and promote EDG TRG training to current members on all SharePoint sites.

# IV. CONSOLIDATED LIST OF RECOMMENDATIONS

The OIG recommends that the Executive Director for Operations:

1.1. Establish an assessment process to periodically assess the Reactor OpE Program;

1.2. Update LIC-401 to include a description of the current process by which staff assess the significance of OpE information;

1.3. Update the Staff Handbook to provide step-by-step guidance for implementing the requirements stated in the updated LIC-401;

1.4. Include within the updated LIC-401 and Staff Handbook guidance a description of the purpose of "Instruction Sheets" as interim guidance and indicate where they are located, as needed;

2.1. Develop, communicate, and implement policies and procedures for the EDG TRGs;

2.2. Systematically inform EDG TRG members about their membership, update the OpE SharePoint site to show the current membership of TRGs, and record TRG evaluations in a centralized location; and,

2.3. Provide and promote EDG TRG training to current members on all SharePoint sites.

# V. NRC COMMENTS

Agency management reviewed the discussion draft version of this report and did not have comments. The NRC waived the exit conference with the OIG on August 18, 2025.

# OBJECTIVE, SCOPE, AND METHODOLOGY

## Objective

The audit objective was to determine whether the NRC effectively uses operating experience information to inspect emergency diesel generators at operating nuclear power plants.

## Scope

This audit focused on determining if the NRC effectively uses operating experience to inspect EDGs, and the effectiveness of the OpE implementation process in providing quality OpE information to NRC users to oversee the EDGs at operating nuclear power plants. We conducted this performance audit at NRC headquarters in Rockville, Maryland, from April 2024 to April 2025.

Internal controls related to the audit objective were reviewed and analyzed. Specifically, the OIG reviewed the components of control environment, risk assessments, control activities, information and communication, and monitoring. Within those components, the OIG reviewed the principles of establishing structure, responsibility, and authority organizational structure; assigning responsibility and delegating authority to achieve the entity's objectives; using quality information; communicating internally and externally; evaluating issues and remediating deficiencies; and, designing control activities, including policies for achieving management objectives and responding to risks.

## Methodology

The OIG reviewed relevant criteria for this audit, including, but not limited to:

- U.S. Government Accountability Office, Standards for Internal Control in the Federal Government, GAO-14-704G, September 2014;
- Title 10 of the Code of Federal Regulations (C.F.R.) Part 50, Appendix A, General Design Criteria for Nuclear Power Plants;
- U.S. NRC's Principles of Good Regulations;
- Management Directive (MD) 8.7, Reactor Operating Experience Program;

- Inspection Manual Chapter 2523, NRC Application of the Reactor Operating Experience Program in NRC Oversight Processes; and,

- Nuclear Reactor Regulation (NRR) LIC-401, NRR Operating Experience Program.

The OIG interviewed various NRC employees from the NRR and inspectors from NRC's four regions. The NRR interviews were conducted to learn about the NRC's use of OpE to oversee emergency diesel generators and the implementation of the NRC OpE Program. The interviews with inspectors were conducted to learn if inspectors use operating experience to inform EDG oversight, as well as their satisfaction with the OpE information provided by the IOEB staff.

Furthermore, the OIG reviewed Inspection Manual Chapters and Inspection Procedures to identify if these documents provided references for the use of operating experience. Additionally, the OIG reviewed all four regions' End-of-Cycle report summaries for fiscal years 2019 through 2023 and over 370 inspection reports to identify if the NRC used or planned to use OpE information, and if there is an uptrend of Green findings and related violations. The OIG verified the accuracy of the data received from the Agency against the related system on a sample basis and confirmed sample accuracy.

We conducted this performance audit in accordance with generally accepted government auditing standards. Those standards require that we plan and perform the audit to obtain sufficient, appropriate evidence to provide a reasonable basis for our findings and conclusions based on our audit objective. We believe that the evidence obtained provides a reasonable basis for our findings and conclusions based on our audit objective.

Throughout the audit, auditors considered the possibility of fraud, waste, and abuse in the program.

The audit was conducted by Avinash Jaigobind, Team Leader; Alecia Hylton, Audit Manager; Roxana Hartsock, Audit Manager; Abiola Oshunleti, Senior Auditor; Jennifer Cheung, Senior Auditor; Christopher Tan, Management Analyst; Terri Spicher, Team Leader, Technical Services Section; and, Pete Snyder, Senior Engineer/Technical Advisor.

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## COMMENTS AND SUGGESTIONS

If you wish to provide comments on this report, please email the OIG using this link.

In addition, if you have suggestions for future OIG audits, please provide them using this link.

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Section 5274 of the James M. Inhofe National Defense Authorization Act for Fiscal Year 2023, Pub. L. No. 117-263, amended the Inspector General Act of 1978 to require OIGs to notify certain entities of OIG reports. In particular, section 5274 requires that, if an OIG specifically identifies any non-governmental organization (NGO) or business entity (BE) in an audit or other non-investigative report, the OIG must notify the NGO or BE that it has 30 days from the date of the report's publication to review the report and, if it chooses, submit a written response that clarifies or provides additional context for each instance within the report in which the NGO or BE is specifically identified.

If you are an NGO or BE that has been specifically identified in this report and you believe you have not been otherwise notified of the report's availability, please be aware that under section 5274 such an NGO or BE may provide a written response to this report no later than 30 days from the report's publication date. Any response you provide will be appended to the published report as it appears on our public website, assuming your response is within the scope of section 5274. Please note, however, that the OIG may decline to append to the report any response, or portion of a response, that goes beyond the scope of the response provided for by section 5274. Additionally, the OIG will review each response to determine whether it should be redacted in accordance with applicable laws, rules, and policies before we post the response to our public website.

Please send any response via email using this link. Questions regarding the opportunity to respond should also be directed to this same address.