



OFFICE OF THE INSPECTOR GENERAL

U.S. NUCLEAR REGULATORY COMMISSION

DEFENSE NUCLEAR FACILITIES SAFETY BOARD

Audit of NRC's License Amendment Request Acceptance Review Process

OIG-19-A-05

December 13, 2018



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

**OFFICE OF THE
INSPECTOR GENERAL**

December 13, 2018

MEMORANDUM TO: Margaret M. Doane
Executive Director for Operations

FROM: Dr. Brett M. Baker */RA/*
Assistant Inspector General for Audits

SUBJECT: AUDIT OF NRC'S LICENSE AMENDMENT REQUEST
ACCEPTANCE REVIEW PROCESS (OIG-19-A-05)

Attached is the Office of the Inspector General's (OIG) audit report titled *Audit of NRC's License Amendment Request Acceptance Review Process*.

The report presents the results of the subject audit. Following the December 10, 2018, 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. Actions taken or planned are subject to OIG followup as stated in Management Directive 6.1.

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) 415-5915 or Paul Rades, Team Leader, at (301) 415-6228.

Attachment: As stated



Office of the Inspector General

U.S. Nuclear Regulatory Commission
Defense Nuclear Facilities Safety Board

OIG-19-A-05
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Results in Brief

Why We Did This Review

The Nuclear Regulatory Commission (NRC) has the authority to amend licenses for operating reactors. License amendments are changes to NRC issued licenses where a licensee submits a license amendment request (LAR) to NRC for prior approval if the licensee proposes to modify the license terms and conditions or technical specifications or if a proposed change meets the criteria of Title 10 Code of Federal Regulations, Part 50.90.

NRC reviews license amendment applications to ensure that the applicant's assumptions are technically correct and that the proposed activities will not adversely affect the environment.

The audit objective was to assess NRC's processes for reviewing nuclear power plant LARs, with emphasis on preliminary acceptance/rejection procedures and other actions taken to ensure timely, consistent, and well-supported decisions.

Audit of NRC's License Amendment Request Acceptance Review Process

What We Found

NRC should use quality information to make informed decisions and evaluate the agency's performance in achieving key objectives and addressing risks. However, NRC is using an inefficient and potentially inaccurate process to develop completed acceptance review reports.

This occurs because NRC does not have a mature quality assurance process to ensure verification and validation of completed acceptance review reports data, and has not yet fully addressed ongoing data reliability issues with the agency's Replacement Reactor Program System – Licensing Module.

A thorough acceptance review is integral to the efficient review of a LAR.

What We Recommend

This report makes three recommendations to improve the efficiency of NRC's processes for completing acceptance review reports in the Replacement Reactor Program System – Licensing Module. Agency management stated their general agreement with the finding and recommendations in this report.

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ABBREVIATIONS AND ACRONYMS

DORL	Division of Operating Reactor Licensing
LAR	License Amendment Request
LSPB	Special Projects and Process Branch
NRC	Nuclear Regulatory Commission
NRR	Office of Nuclear Reactor Regulation
OIG	Office of the Inspector General
RRPS	Replacement Reactor Program System
10 CFR	Title 10 Code of Federal Regulations

I. BACKGROUND

License Amendment Request

Through the licensing process, NRC authorizes applicants to construct, operate, and decommission commercial reactors and fuel cycle facilities.

Additionally, NRC has the authority to amend licenses for operating reactors. License amendments are changes to NRC issued licenses where a licensee submits a license amendment request (LAR) to NRC for prior approval if the licensee proposes to modify the license terms and conditions or the technical specifications, or if a proposed change meets the criteria of Title 10 Code of Federal Regulations, Part 50.90.¹ For example, a licensee may want to increase a nuclear power plant's capacity to generate power (a power uprate). A licensee may also wish to modify security measures or make an administrative change.

NRC staff reviews license amendment applications to ensure that the applicant's assumptions are technically correct and that the proposed activities will not adversely affect the environment. A thorough acceptance review is integral to the efficient review of a LAR.

Acceptance Review Process

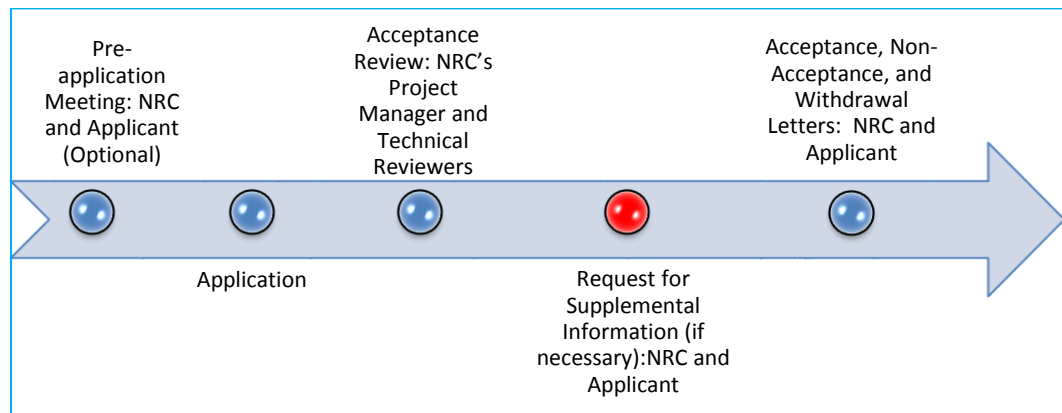
Acceptance reviews are part of the license amendment process. NRC uses the process described in the Office of Nuclear Reactor Regulation's (NRR) *Office Instruction-LIC 109, Revision 2, Acceptance Review Procedures*, to determine whether a LAR is complete and acceptable for docketing. The acceptance review process begins when the applicant submits a LAR. After the applicant submits the LAR, it is reviewed by the assigned NRC project manager and technical reviewers for administrative and technical sufficiency. As to whether the LAR is acceptable or unacceptable, the project manager must notify the licensee or applicant

¹ Application for Amendment of License, Construction Permit, or Early Site Permit.

within 25 business days of the LAR availability in Agencywide Documents Access and Management System.

Additionally, NRC staff may return an application found to be incomplete or technically lacking, and therefore not acceptable for review, to a licensee or applicant to address any identified insufficiencies. This authority may be used before an opportunity for a hearing notice is placed in the Federal Register. See Figure 1 for a simplified version of the acceptance review process.

Figure 1: License Amendment Request Acceptance Review Process



Source: OIG generated from NRR's *Office Instruction LIC 109, Revision 2, Acceptance Review Procedures*.

LAR Acceptance Review Roles and Responsibilities

NRC's NRR, Division of Operating Reactor Licensing (DORL) supports NRC's mission to protect public health, safety and the environment by managing operating nuclear power plant licensing actions. DORL manages the review and processing of license amendments and other requests requiring NRC approval. It also serves as the headquarters contact for licensees, NRC regional offices and other stakeholders in matters pertaining to various commercial nuclear facilities. DORL also provides oversight in the areas of work planning activities (e.g., resource allocation and work prioritization).

Within DORL, there are six licensing branches that have licensing project management responsibility for operating power reactors. These branches handle several plants, which are primarily separated into geographical regions. Each licensing branch is responsible for several power plants. For example, Plant Licensing Branch IV is responsible for multiple reactors in Region IV, which covers the western United States while Plant Licensing Branch I is responsible for the northeastern United States.

DORL Special Projects and Process Branch

The DORL Special Projects and Process Branch (LSPB) has the lead for licensing project management for operating power reactors that are transitioning to decommissioning status, as well as for unique and/or first of a kind applications. The LSPB also coordinates the workload management activities for operating reactor licensing activities, which includes providing stakeholders with the right information and tools for informed planning, decision-making, and performance management. For example, LSPB staff develop acceptance review reports based on information derived from the agency's Replacement Reactor Program System – Licensing Module. LSPB staff have also addressed technical issues for DORL teams that arose when the Replacement Reactor Program System was newly implemented in October 2016.

II. OBJECTIVE

The audit objective was to assess NRC's processes for reviewing nuclear power plant LARs, with emphasis on preliminary acceptance/rejection procedures and other actions taken to ensure timely, consistent, and well-supported decisions. See Appendix A for information on the audit scope and methodology.

III. FINDING

NRC generally processes license amendment request acceptance reviews in accordance with established agency guidance. Acceptance reviews are generally timely, consistent, and well-supported with appropriate information. However, there are opportunities to improve NRC's process for developing acceptance review reports and enhance the reliability of program data used in these reports.

NRC Needs To Improve Processing Acceptance Review Reports

NRC management should use quality information to make informed decisions and evaluate the agency's performance in achieving key objectives and addressing risks. However, NRC is using an inefficient and potentially inaccurate process to develop completed acceptance review reports. This occurs because NRC does not have a mature quality assurance process to ensure verification and validation of completed acceptance review reports data, and has not yet addressed ongoing data reliability issues with the agency's Replacement Reactor Program System – Licensing Module. If this is not addressed, NRC management's ability to make informed decisions about performance could be negatively affected, inaccurate information could be communicated to internal and external stakeholders, and NRC potentially risks making inefficient use of its resources.

What Is Required

NRC Should Process Data Into Quality Information To Make Informed Decisions and Evaluate Its Performance and Risks

According to Federal Government internal controls guidance,² agency managers are responsible for ensuring processed data is accurate, complete, accessible, and timely. Agencies use such information to make informed decisions regarding use and prioritization of resources, as well as evaluating agency performance and potential risk areas that could affect efficiency and effectiveness.

Additionally, NRR's *Office Instruction-LIC 109, Revision 2, Acceptance Review Procedures*, states that staff must notify the licensee or applicant within 25 business days of the receipt of the application by NRC.³

What We Found

NRC Uses an Inefficient Process To Develop Acceptance Review Reports

For the purpose of determining whether NRC is meeting its 25 business days acceptance review metric, NRC staff rely on an inefficient manual process to analyze and report data derived from the agency's Replacement Reactor Program System – Licensing Module into completed acceptance review reports.

To better understand how staff manually analyze and report data derived from the agency's Replacement Reactor Program System – Licensing

² Government Accountability Office's *Standards for Internal Control in the Federal Government* GAO-14-704G, September 2014.

³ For cases in which NRC gives licensees the opportunity to supplement LAR acceptance review packages, NRC aims to complete the process within 53 days.

Module into completed acceptance review reports, OIG analyzed staff data in the completed acceptance review reports from October 2016 through June 2018 and cross-referenced it to data downloaded from the agency's Replacement Reactor Program System – Licensing Module.

Between October 2016 and June 2018, 561 acceptance reviews were completed. According to Replacement Reactor Program System – Licensing Module data, 485 were completed within 25 business days. In addition, there were 18 cases in which licensees supplemented their LAR packages, and NRC processed all of these within 53 business days.

Additionally, 88 of the 561 acceptance reviews showed data quality discrepancies between Replacement Reactor Program System – Licensing Module data and data downloaded by staff to compile acceptance review reports. Data quality issues are reflected in the number and extent of time discrepancies between NRC staff calculations and the data in the agency's Replacement Reactor Program System – Licensing Module. For example, completed acceptance reviews were off +/- by a variable number of business days:

- 38 were off by 1 day
- 20 were off by 2 days
- 24 were off by 3 days, and
- 6 were off by 4-6 days.

Why This Occurred

Acceptance Review Data Quality Assurance Process Needs Improvement

NRC does not have a mature quality assurance process to ensure verification and validation of completed acceptance review reports data. Specifically, acceptance review reports are created manually by a single staff member without additional review of the analysis. Additionally, there is no supervisory review of data used in completed acceptance review reports. This process limits the reliability of the data. Also, staff stated data entered into the Replacement Reactor Program System – Licensing

Module can be subject to change and will affect the acceptance review report data. Further, staff lack a common understanding of how to calculate the 25 business days acceptance review metric.

Subsequent to this audit, staff indicated that the agency had recently signed a Task Order with the Replacement Reactor Program System – Licensing Module contractor and the Office of the Chief Information Officer's Master Data Management program contractor to develop an advanced reporting tool module with greater capability to generate reliable automated reports.

Why This Is Important

NRC Needs Quality Information to Make Informed Decisions, Report Accurately to Stakeholders, and Make Efficient Use of Staff Resources

NRC management needs quality information to make informed decisions regarding licensing actions and staff performance relative to agency metrics. Therefore, a lack of a mature quality assurance process to ensure completed acceptance review reports are processed accurately could lead to inaccurate information being reported. For example, data from the completed acceptance reports are reported at the agency's Quarterly Performance Review Meetings and to Congress.

Furthermore, NRC is operating in a resource constrained environment. Therefore, the most efficient use of staff resources is paramount. NRC could make better use of staff resources by leveraging the automated system already in place, the Replacement Reactor Program System – Licensing Module, to generate reports on acceptance reviews and other licensing actions rather than relying on time-consuming manual processes.

Recommendations

OIG recommends that the Executive Director for Operations

1. Strengthen data verification and validation measures to ensure completed acceptance review reports and data are processed accurately.
2. Identify a single, consistent process for calculating the number of workdays for the acceptance review metric and communicate it to DORL staff.
3. Complete the Replacement Reactor Program System – Licensing Module upgrade efforts to generate automated reports.

IV. AGENCY COMMENTS

An exit conference was held with the agency on December 10, 2018. After reviewing a discussion draft, agency management provided comments that have been incorporated into this report, as appropriate. As a result, agency management stated their general agreement with the findings and recommendations in this report and opted not to provide formal comments for inclusion in this report.

OBJECTIVE, SCOPE, AND METHODOLOGY

Objective

The audit objective was to assess NRC's processes for reviewing nuclear power plant LARs, with emphasis on preliminary acceptance/rejection procedures and other actions taken to ensure timely, consistent, and well-supported decisions.

Scope

The audit focused on identifying NRC's processes for reviewing LAR acceptance reviews. We conducted this performance audit from April 2018 through November 2018 at NRC headquarters in Rockville, Maryland and identified data discrepancies between October 2016 and June 2018. OIG used Replacement Reactor Program System – Licensing Module data as the basis for its audit finding but did not test the reliability of that data. Internal controls related to the audit objective were reviewed and analyzed.

Methodology

To accomplish the audit objectives, OIG reviewed relevant criteria for this audit including

- United States Code of Federal Regulations, Title 10, Part 50.90, *Application for Amendment of License, Construction Permit, or Early Site Permit*
- United States Code of Federal Regulations, Title 10, Part 59, *Changes, tests and experiments*
- Government Accountability Office, *Standards for Internal Control in the Federal Government*
- Office of Nuclear Reactor Regulation, *Office Instruction LIC-109, Acceptance Review Procedures, Revision 2*

Additionally, OIG reviewed and analyzed the following guidance documents

- Office of Nuclear Reactor Regulation, Office Instruction LIC-101, *License Amendments Review Procedures*, Revision 5
- Project AIM 2020, *Achieving Exemplary Nuclear Regulation in the 21st Century – Report on Project AIM 2020*
- NUREG -1614, NRC Strategic Plan Fiscal Years 2018-2022, Volume 7
- NRC Regulatory Issue Summary FY 2015-2016, *Planned Licensing Action Submittals For All Power Reactor Licensees*, Revision 1
- Office of Nuclear Reactor Regulation, *Expectations Memorandum*, April 2016

OIG conducted analyses to determine whether the agency processes license amendment request acceptance reviews timely, consistent, and well-supported with appropriate information. OIG also identified the number of acceptance reviews completed and data discrepancies with how acceptance review dates were calculated from October 2016 through June 2018. Additionally, OIG interviewed NRC staff and management from NRR and external stakeholders.

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 objectives. We believe that the evidence obtained provides a reasonable basis for our findings and conclusions based on our audit objectives.

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

The audit was conducted by Paul Rades, Team Leader; Avinash Jaigobind, Audit Manager; John Thorp, Senior Technical Advisor; Tim Wilson, Senior Management Analyst; and Chanel Stridiron, Auditor.

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COMMENTS AND SUGGESTIONS

If you wish to provide comments on this report, please email OIG using this [link](#).

In addition, if you have suggestions for future OIG audits, please provide them using this [link](#).