

REPORT SYNOPSIS

The U.S. Nuclear Regulatory Commission (NRC) carries out its mission through a licensing and regulatory system comprising several activities. One of these activities involves licensing the operators of civilian nuclear reactors. NRC is responsible for licensing issues and regulatory policy concerning reactor operators, including the initial licensing and requalification examinations.

Title 10, Code of Federal Regulations, Part 55, *Operators' Licenses*, provides that applicants for reactor and senior reactor licenses pass a written examination and an operating test. NRC license examiners have historically prepared initial operator licensing examinations. During 1999, NRC amended Part 55 by adding a new section that allows facility licensees to develop and submit proposed initial examinations for NRC review and approval.

The overall objective of this review was to determine whether NRC effectively exercises its oversight to ensure that facility licensees implement initial operator licensing testing programs in accordance with established standards for power reactors.

As facility licensees voluntarily take on more responsibility for administering initial operator licensing examinations, NRC will need continued vigilance in licensing the operators of civilian nuclear reactors. We found that NRC has criteria to exercise its discretionary authority to administer examinations, and the Agency continues to actively oversee the operator licensing process. We believe NRC's pilot program examinations and inspections support the decision to allow licensees to voluntarily prepare and administer initial examinations. We also found that licenses for power reactor operators were renewed as required in Regions II and IV, and there were no backlogs.

Controlling security and integrity of the operator licensing examinations is vital to ensure the credibility and reliability of the testing programs. This is evidenced by the requirement that all personnel who receive detailed knowledge of any portion of the NRC licensing examination acknowledge their responsibilities by reading and signing an *Examination Security Agreement*. Because the Office of the Inspector General previously received concerns about examination security, we also reviewed the security comments contained in NRC examination reports. We found that security measures were not consistently addressed. Our report provides two recommendations for improvement.

TABLE OF CONTENTS

REPORT SYNOPSIS	i
INTRODUCTION	1
BACKGROUND	1
RESULTS OF AUDIT	3
INCONSISTENT REPORTING OF SECURITY MEASURES LESSENS THE VALUE OF REGIONAL EXAMINATION REPORTS	3
CONCLUSION	5
RECOMMENDATIONS	6
OIG COMMENTS ON AGENCY RESPONSE	6
APPENDICES	
I OBJECTIVE, SCOPE, AND METHODOLOGY	
II AGENCY RESPONSE TO DRAFT REPORT	
III NRC ORGANIZATIONAL CHART	
IV MAJOR CONTRIBUTORS TO THIS REPORT	
V OFFICE OF THE INSPECTOR GENERAL PRODUCTS	

INTRODUCTION

The U.S. Nuclear Regulatory Commission (NRC) carries out its mission through a licensing and regulatory system comprising several activities. One of these activities involves licensing⁽¹⁾ the operators of civilian nuclear reactors. NRC is responsible for licensing issues and regulatory policy concerning reactor operators, including the initial licensing and requalification examinations. During 1990, the Office of the Inspector General (OIG) evaluated NRC's program for licensing reactor operators.⁽²⁾ We initiated the 1990 review because of revisions in the program. The OIG report indicated that then recent revisions to the program had a positive impact on NRC's regulation of the operator licensing area.

We performed this current review because of recent program changes which allow licensees to prepare and administer initial operator licensing examinations. The specific objectives of this review were to determine (1) under what circumstances and criteria will NRC exercise its discretion and reject a licensee's determination to prepare, proctor, and grade the initial written examinations and prepare the operating tests, (2) if NRC's pilot program⁽³⁾ results support the decision to implement a new examination process for licensees on a voluntary basis, and (3) if licenses for power reactor operators are renewed as required. Because OIG previously received concerns about examination security, we also reviewed the security comments contained in NRC examination reports. Appendix I contains a detailed description of our objective, scope, and methodology.

BACKGROUND

Based on Section 107 of the Atomic Energy Act of 1954, as amended, and Section 202 of the Energy Reorganization Act of 1974, as amended, NRC licenses reactor operators and senior reactor operators. Title 10, Part 55, *Code of Federal Regulations* (10 CFR Part 55), titled *Operators' Licenses*, requires that applicants for reactor and senior reactor operator licenses pass a written examination and an operating test. NRC license examiners have historically prepared the initial operator licensing examinations using facility licensee provided reference materials. During 1999, NRC amended Part 55 by adding a new section that allows facility licensees

¹ As used in this report, whenever the terms licensing, examinations, and tests are used, these always refer to actions associated with operator licensing only, not to a license authorizing the operation of a civilian nuclear power reactor.

² *Review of NRC's Operator Licensing Program*, OIG 89A-15, May 25, 1990.

³ As part of NRC's voluntary pilot program, from October 1995 - April 1996, NRC reviewed and approved 22 operator licensing examinations. This program allowed the facility licensees their first opportunity to prepare an examination under NRC's initial operator licensing examination process.

to voluntarily develop and submit proposed initial examinations for NRC review and approval. This amendment was implemented based on the results of facility licensees developing initial operator licensing examinations during NRC's pilot program.

Specifically, facility licensees may now elect to (1) prepare, proctor, and grade the required written examinations, and (2) prepare the required operating tests that NRC uses to evaluate the competence of individuals applying for operator licenses. Licensees that elect to prepare examinations (1) must do so in accordance with NRC operator licensing examination standards and requirements for power reactors, (2) must establish, implement, and maintain procedures to control examination security and integrity of testing programs,⁽⁴⁾ and (3) must submit each written examination and operating test to NRC for review and approval. NRC will continue to oversee the initial operator licensing examination process. Finally, 10 CFR 55.40 contains a safety net provision which allows NRC to reserve the right to prepare the examinations and tests and to exercise its [NRC's] discretion to reject a facility licensee's determination to prepare, proctor, and grade the written examinations and prepare the operating tests.

4

This includes the requirement that personnel who will receive detailed knowledge of the NRC licensing examination, acknowledge their responsibility to maintain examination security by reading and signing an *Examination Security Agreement*.

RESULTS OF AUDIT

We found that NRC has criteria to exercise its discretionary authority to reject a licensee's determination to prepare, proctor, and grade the written examinations and prepare the operating tests. Although NRC has not exercised this authority, the Agency can use this discretion whenever the staff loses confidence in the licensee's ability to conduct examinations, especially when there are significant allegations that an examination has been compromised. The Agency also conducts periodic, on-site inspections, supplemented by NRC's requalification examinations at facilities where NRC believes that "ineffective training is causing operators to commit errors." NRC will prepare initial examinations upon request by licensees and retains the authority to develop examinations on a case-by-case basis. Finally, NRC Headquarters (HQ) conducts regional office visits to review the operator licensing functions at the regions.

We believe NRC's pilot program examinations and inspections support the decision to allow licensees to voluntarily prepare and administer initial examinations. We also found that licenses for power reactor operators were renewed as required in Regions II and IV, and there were no backlogs.

During our review of the pilot program examinations, we found that examination security was a vital component of this process. NRC stresses this importance by requiring that all personnel who will receive detailed knowledge of any portion of an NRC licensing examination, acknowledge their responsibility to maintain examination integrity by reading and signing an *Examination Security Agreement*. As a result, we reviewed NRC examination reports to determine if security compromises were evident. We found that security comments were not consistently documented in these reports.

INCONSISTENT REPORTING OF SECURITY MEASURES LESSENS THE VALUE OF REGIONAL EXAMINATION REPORTS

Because OIG previously received concerns about examination security, we also reviewed the security comments contained in NRC examination reports. Our review found that examination security measures were not consistently documented by inspectors in regional examination reports. Existing standards and guidance for administering initial and requalification examinations in the "Operator Licensing Examination Standards for Power Reactors," NUREG-1021, Revision 8,⁽⁵⁾ and the NRC Inspection Manual (Inspection Procedure 71001), both provide for the review

⁵ These standards were developed to assist NRC examiners and facility licensees in understanding the processes associated with initial and requalification examinations and to ensure equitable and consistent administration of examinations for all applicants.

of examination security.⁽⁶⁾ However, we found that because of inconsistent reporting, it was not always possible to know if security measures were reviewed, or whether security was determined to be acceptable with no issues. Some reports discussed security with findings, some had no findings, and in other cases security was not mentioned at all. Because security is not consistently addressed, we believe the value of these management reports is reduced.

In accordance with 10 CFR 55.49, licensees and applicants shall not engage in any activity that compromises the integrity of any application, test, or examination required by 10 CFR 55. 10 CFR 55.40 requires licensees that elect to prepare their own examinations to establish, implement, and maintain procedures to control examination security and integrity. NRC examiners monitor and ensure the integrity of the examination process. If they perceive that a compromise has occurred, they must immediately report it to the responsible regional supervisor so that necessary actions can be taken.

Within 30-45 days after an operator licensing examination is administered, the applicable NRC Region prepares an examination report, which contains an analysis of examination effectiveness, and documents the examination results to the facility licensee and HQ. NRC Inspection Manual Chapter 0610, Revised, provides guidance on inspection/examination report content, format, and style. The Manual provides that reports clearly communicate significant results to interested parties and provide conclusions about the effectiveness of the programs or activities inspected. All NRC inspectors are required to prepare inspection reports in accordance with this Manual. Also, inspectors have the primary responsibility for ensuring that observations and findings are accurately reported.

The Manual also provides that report conclusions should be logically drawn and supported by observations and findings that are consistent with NRC policies and requirements. The most basic results of an inspection are the facts an inspector gathers through watching work activities, interviewing licensee employees, reviewing records, and other inspection methods. Inspectors are expected to rely on their own training and insight to make judgments about which issues are worth pursuing and which are not.

OIG reviewed Fiscal Year (FY) 1998 regional examination reports and discussed FY 1999 examination report content with regional officials. Our purpose was to evaluate (1) facility licensees' continuing progress in preparing and administering initial written examinations and preparing operating tests in accordance with 10 CFR 55, and (2) the consistency of documenting security measures in regional examination reports. Our review of 38 of 56 examination reports for FY 1998 found that only 6 contained any inspectors' observations, comments, or analysis about examination security measures. For the reports with no comments, we could not determine if security measures were, in fact, reviewed or whether security was

⁶ NRC and facility licensee personnel must be attentive to examination security measures to ensure compliance with 10 CFR 55.

evaluated as acceptable with no comments being reported.

We discussed this matter with Agency officials, who assured us that examination security measures are a high priority. Further, if nothing is reported on these matters, management believes there were no issues to report. However, they agreed that examination security observations, comments, or analysis should be reported as a standard feature in all regional examination reports.

Although our review of examination reports focused on testing programs and security issues, there may be other areas for which NRC management may need documented information related to an examination issue. We believe that documenting other issues (as determined by management) would result in examination reports of a greater value for assessing the effectiveness of a licensee's operator licensing program.

CONCLUSION

As licensees take on more responsibility for administering initial operator licensing examinations, NRC will need continued vigilance in licensing the operators of civilian nuclear reactors. NRC has criteria to exercise its discretionary authority to administer operator licensing examinations and continues to actively oversee the process. We believe NRC's pilot program results support the decision to allow licensees to voluntarily prepare and administer initial examinations. Also, we found that licenses for power reactor operators were renewed as required in Regions II and IV, and there were no backlogs.

Controlling security and integrity of the operator licensing examinations is vital because the testing programs evaluate the competence of individuals applying for operator licenses. However, we found that security measures were not consistently addressed.

We recognize that the Inspection Manual does not provide standardized guidance as to what should be reported, and the Agency relies on inspectors to make judgments about issues to be addressed. Although our review only disclosed inconsistent reporting of security, it is possible that other operator licensing examination areas may require increased emphasis in the examination reports. We believe that consistent reporting of examination security measures (and possibly other areas) would make the reports more valuable to NRC management. Our report provides two recommendations for improvement.

RECOMMENDATIONS

To ensure that NRC properly evaluates the security and integrity of a facility licensee's examination program, we recommend that the Executive Director for Operations direct the following concerning NRC examination reports:

1. Include a section in the examination reports with inspectors' observations, comments, or analysis on operator licensing examination security and integrity. This would include both the content and physical security of examinations.
2. Determine the potential need for consistent reporting of other areas within examination reports that may be vital to evaluating the adequacy of a licensee's examination program.

OIG COMMENTS ON AGENCY RESPONSE

On May 12, 2000, the Deputy Executive Director for Reactor Programs responded to our draft report. His response is included as Appendix II to this report. He agreed with our recommendations and provided time frames for planned corrective action. We believe those actions will address the intent of our recommendations. We have made the wording change suggested by the Deputy Executive Director.

OBJECTIVE, SCOPE, AND METHODOLOGY

The overall objective of this review was to determine whether the U.S. Nuclear Regulatory Commission (NRC) effectively exercises its oversight to ensure that facility licensees implement initial operator licensing testing programs in accordance with established standards for power reactors. To accomplish our overall objective, we developed sub-objectives which included determining (1) the circumstances and criteria under which NRC would exercise its discretion and reject a licensee's determination to prepare, proctor, and grade the written initial examinations and prepare the operating tests, (2) if NRC's pilot program results support the decision to implement a new examination process for licensees on a voluntary basis, and (3) if licenses for power reactor operators are renewed as required.

We examined the methods and procedures NRC Headquarters and Regions rely on to ensure that the operator licensing program functions effectively. Our methodology included a review of prior Office of the Inspector General work, an analysis of all pertinent regulations and NRC guidance, including the pilot program, which supported proposed changes to the program (new examination process on a voluntary basis). We also reviewed the "Operator Licensing Examination Standards for Power Reactors," NUREG-1021, Revision 8, NRC Inspection Procedures, and Title 10, Code of Federal Regulations, Part 55.

To determine the adequacy of controls within the license renewal application process, we visited Regions II and IV and selected a statistical sample of their 10 CFR Part 55 docket folders.¹ We interviewed staff in the Office of Nuclear Reactor Regulation, other NRC offices, Regions II and IV, and the Nuclear Energy Institute.

We reviewed related management controls and conducted our audit from August to October 1999 and January to February 2000 in accordance with generally accepted Government auditing standards.

¹ Term derived from 10 CFR Part 55. File contains all relevant documentation necessary for operator license application decisions and maintenance.

AGENCY RESPONSE TO DRAFT REPORT

MEMORANDUM TO: S. Russell Irish, Acting Assistant
Inspector General for Audits

FROM: Frank J. Miraglia, Jr.,
Deputy Executive Director for Reactor Programs

SUBJECT: COMMENTS ON DRAFT AUDIT REPORT -- REVIEW
OF NRC'S OPERATOR LICENSING PROGRAM

This responds to your memorandum of April 25, 2000, which forwarded the subject audit report (OIG/99A-15) for staff review and comment. We value your independent assessment of the operator licensing program and appreciate the opportunity to offer the following comments:

1. With regard to Recommendation 1, the staff agrees that it would be beneficial to include a discussion of examination security in every examination report. ES-201 of Revision 8 of NUREG-1021, "Operator Licensing Examination Standards for Power Reactors," already requires examiners to review the facility licensees' security procedures, brief the facility contact on the NRC's examination security requirements and guidelines, monitor the integrity of the examination process, and immediately report any potential compromises to their supervisors. In light of the importance that the NRC has placed on examination security, it makes sense that this issue should also be addressed in the examination reports.

We believe that the most efficient way to implement this recommendation will be to briefly describe, within the "Scope" section of the examination report, those security items and activities that were inspected. In accordance with Section 06.06.a of NRC Manual Chapter 0610 (as revised on 4/26/00), this description should be complete, factual, and concise, to aid the reader in putting any findings into context. The "Findings" section of the report will follow up with a detailed discussion of the salient security observations and findings or a simple statement that no findings were identified during the examination. The staff plans to incorporate this clarified guidance in Supplement 1 to Revision 8 of NUREG-1021, which is currently available for public comment and will be issued in final form later this year.

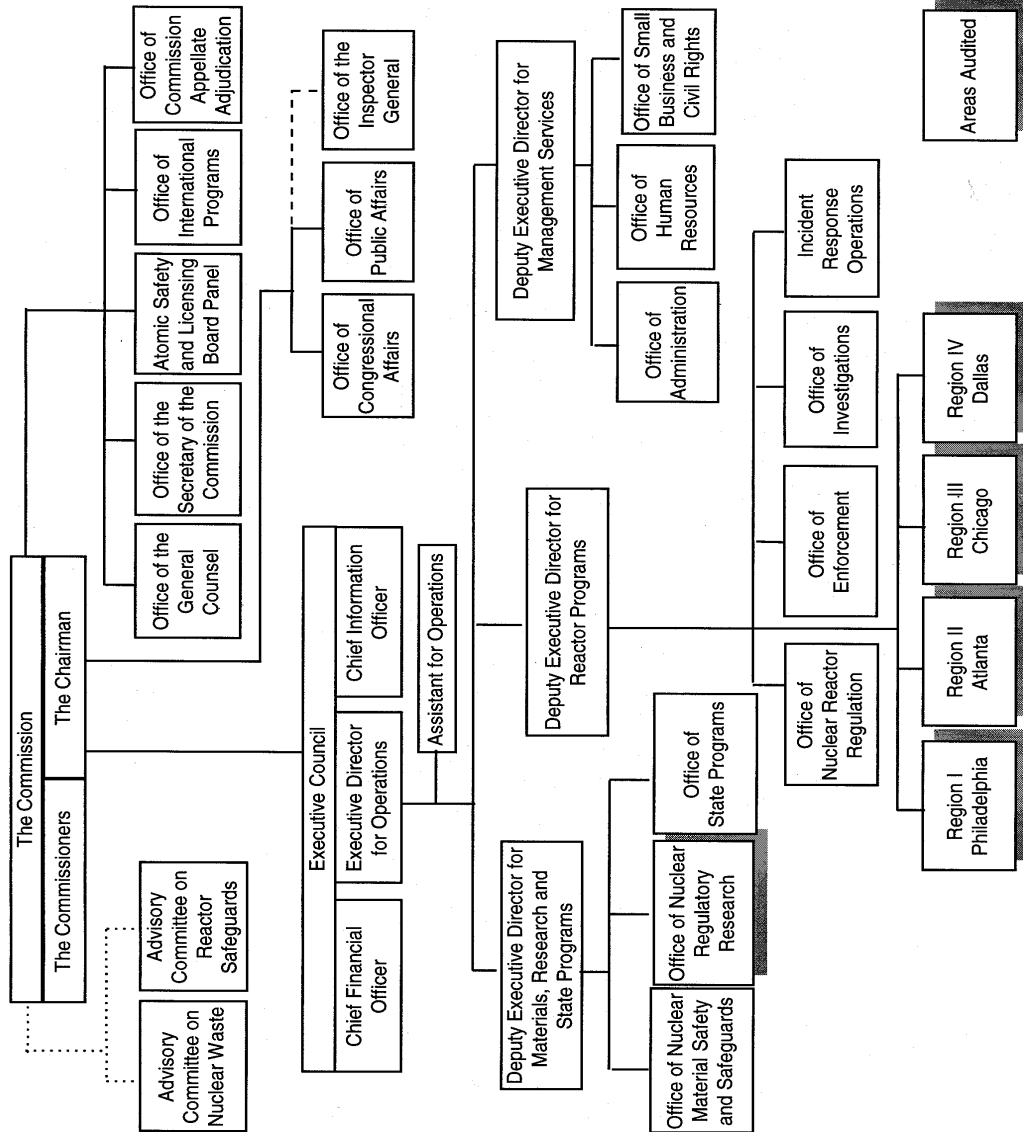
2. With regard to Recommendation 2, the staff agrees that consistent reporting of issues in the examination reports is important for evaluating and maintaining the

adequacy of facility licensees' examination programs. Pursuant to that goal, draft Supplement 1 to Revision 8 of NUREG-1021 has proposed to clarify Section E.3 of ES-501, which addresses the preparation of examination reports, by establishing specific thresholds for evaluating the adequacy of facility-prepared licensing examinations. The staff will consider the need for further clarification in this area before issuing final Supplement 1 later this year.

3. One additional comment and suggestion is provided regarding the first paragraph in the "Results of Audit" section of the report. The sentence which states that "[t]he Agency also conducts periodic, on-site inspections, supplemented by NRC's annual examinations at facilities where NRC believes that 'ineffective training is causing operators to commit errors'" appears to be inaccurate, in that the NRC does not conduct annual examinations at facilities having ineffective programs. We suggest that you consider replacing "annual" with "requalification," which will make this a true statement, consistent with Section B of ES-601 of Revision 8 of NUREG-1021.

Thank you for considering the staff's comments regarding your draft report. Please contact Mr. Glenn Tracy, Chief of the Operator Licensing, Human Performance, and Plant Support Branch if you have any questions regarding these issues.

NRC ORGANIZATIONAL CHART



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OFFICE OF THE INSPECTOR GENERAL PRODUCTS

INVESTIGATIVE

1. *INVESTIGATIVE REPORT - WHITE COVER*

An Investigative Report documents pertinent facts of a case and describes available evidence relevant to allegations against individuals, including aspects of an allegation not substantiated. Investigative reports do not recommend disciplinary action against individual employees. Investigative reports are sensitive documents and contain information subject to the Privacy Act restrictions. Reports are given to officials and managers who have a need to know in order to properly determine whether administrative action is warranted. The agency is expected to advise the OIG within 90 days of receiving the investigative report as to what disciplinary or other action has been taken in response to investigative report findings.

2. *EVENT INQUIRY - GREEN COVER*

The Event Inquiry is an investigative product that documents the examination of events or agency actions that do not focus specifically on individual misconduct. These reports identify institutional weaknesses that led to or allowed a problem to occur. The agency is requested to advise the OIG of managerial initiatives taken in response to issues identified in these reports but tracking its recommendations is not required.

3. *MANAGEMENT IMPLICATIONS REPORT (MIR) - MEMORANDUM*

MIRs provide a "ROOT CAUSE" analysis sufficient for managers to facilitate correction of problems and to avoid similar issues in the future. Agency tracking of recommendations is not required.

AUDIT

4. *AUDIT REPORT - BLUE COVER*

An Audit Report is the documentation of the review, recommendations, and findings resulting from an objective assessment of a program, function, or activity. Audits follow a defined procedure that allows for agency review and comment on draft audit reports. The audit results are also reported in the OIG's "Semiannual Report" to the Congress. Tracking of audit report recommendations and agency response is required.

5. *SPECIAL EVALUATION REPORT - BURGUNDY COVER*

A Special Evaluation Report documents the results of short-term, limited assessments. It provides an initial, quick response to a question or issue, and data to determine whether an in-depth independent audit should be planned. Agency tracking of recommendations is not required.

REGULATORY

6. *REGULATORY COMMENTARY - BROWN COVER*

Regulatory Commentary is the review of existing and proposed legislation, regulations, and policies so as to assist the agency in preventing and detecting fraud, waste, and abuse in programs and operations. Commentaries cite the IG Act as authority for the review, state the specific law, regulation or policy examined, pertinent background information considered and identifies OIG concerns, observations, and objections. Significant observations regarding action or inaction by the agency are reported in the OIG Semiannual Report to Congress. Each report indicates whether a response is required.