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FROM: Stephen D. Dingbaum, OIG

DUE: 04/20/11

EDO CONTROL: G20110232
DOC DT: 03/23/11
FINAL REPLY:

TO:

Borchardt, EDO

FOR SIGNATURE OF : ** GRN **

CRC NO:

Virgilio, DEDR

DESC:

Audit of NRC's Implementation of 10 CFR Part 21, Reporting of Defects and Noncompliance (OIG-11-A-08) (EDATS: OEDO-2011-0233)

ROUTING:

Borchardt
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Ash
Muessle
OGC/GC
Miller, FSME
Johnson, NRO
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DATE: 03/31/11

ASSIGNED TO: NRR

CONTACT: Leeds

SPECIAL INSTRUCTIONS OR REMARKS:

Prepare response for the signature of the DEDR. Add Commission and SECY as cc's. Be sure to include the target completion date and identify the point-of-contact for each recommendation. Use attached format.

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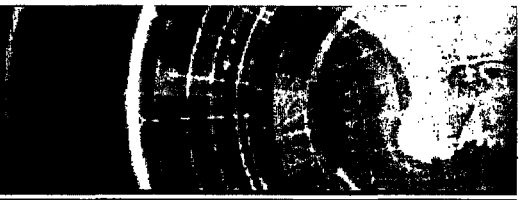

EDATS Number: OEDO-2011-0233 **Source:** OEDO

General Information

Assigned To: NRR
OEDO Due Date: 4/20/2011 11:00 PM
Other Assignees:
SECY Due Date: NONE
Subject: Audit of NRC's Implementation of 10 CFR Part 21, Reporting of Defects and Noncompliance (OIG-11-A-08)
Description:

CC Routing: FSME; NRO; OGC
ADAMS Accession Numbers - Incoming: NONE
Response/Package: NONE

Other Information

Cross Reference Number: G20110232, OIG-11-A-08
Staff Initiated: NO
Related Task:
Recurring Item: NO
File Routing: EDATS
Agency Lesson Learned: NO
OEDO Monthly Report Item: NO

Process Information

Action Type: Memo
Priority: Medium
Sensitivity: External Govt/Int'l Controlled
Signature Level: DEDR
Urgency: NO
Approval Level: No Approval Required
OEDO Concurrence: NO
OCM Concurrence: NO
OCA Concurrence: NO
Special Instructions: Prepare response for the signature of DEDR. Add Commission and SECY as cc's. Be sure to include the target completion date and identify the point-of-contact for each recommendation. Use attached format.

Document Information

Originator Name: Stephen D. Dingbaum
Date of Incoming: 3/23/2011
Originating Organization: OIG
Document Received by OEDO Date: 3/29/2011
Addressee: R. W. Borchardt, EDO
Date Response Requested by Originator: 4/22/2011
Incoming Task Received: Memo

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

OFFICE OF THE
INSPECTOR GENERAL

March 23, 2011

MEMORANDUM TO: R. William Borchardt
Executive Director for Operations

FROM: Stephen D. Dingbaum **/RA/**
Assistant Inspector General for Audits

SUBJECT: AUDIT OF NRC'S IMPLEMENTATION OF 10 CFR PART 21, REPORTING OF DEFECTS AND NONCOMPLIANCE (OIG-11-A-08)

Attached is the Office of the Inspector General's (OIG) audit report titled, *Audit of NRC's Implementation of 10 CFR Part 21, Reporting of Defects and Noncompliance.*

The report presents the results of the subject audit. OIG discussed the audit results and informal agency comments with agency management and staff during an exit conference on February 1, 2011, and during a meeting on February 23, 2011. OIG incorporated the agency's informal comments into this final report as appropriate. NRC management stated that the report will be helpful in adding clarity in the associated regulatory area and opted not to provide formal comments.

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 415-5915 or R.K. Wild, Team Leader, Nuclear Reactor Safety Team, at 415-5948.

Attachment: As stated

Electronic Distribution

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EXECUTIVE SUMMARY

BACKGROUND

The Nuclear Regulatory Commission (NRC) endeavors to protect the public health and safety and the environment through the regulation of the 104 operating nuclear power plants in the United States. The *Energy Reorganization Act of 1974, as Amended, Section 206, Noncompliance*[1] provides the statutory basis for NRC guidance and regulations that pertain to reporting component defects[2] in operating reactors. Specifically, Section 206 requires licensees that operate nuclear power plants to notify NRC of defects in basic components[3] that could cause a substantial safety hazard.[4]

NRC uses Title 10, Code of Federal Regulations, Part 21, *Reporting of Defects and Noncompliance* (Part 21) to implement the provisions of Section 206. The primary NRC office responsible for Part 21 implementation among licensees with operating plants is the Office of Nuclear Reactor Regulation.

PURPOSE

The purpose of this audit was to determine if NRC's implementation of Federal regulations requiring reactor licensees to report defects contained in installed equipment is meeting the intent of the *Energy Reorganization Act of 1974, as Amended, Section 206, Noncompliance.*

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[1] For the purposes of this report, *Energy Reorganization Act of 1974, as Amended, Section 206, Noncompliance* is referred to as Section 206.

[2] A defect is a deviation in a basic component delivered to a purchaser for use in operating nuclear power plants if, on the basis of an evaluation, the deviation could create a substantial safety hazard.

[3] A basic component is a structure, system, or component that assures the integrity of the reactor coolant pressure boundary; the capability to shut down the reactor and maintain it in a safe shutdown condition; or the capability to prevent or mitigate the consequences of accidents. It is, essentially, a safety-related component.

[4] A substantial safety hazard is the loss of safety function to the extent that there is a major reduction in the degree of protection provided to public health and safety. Safety functions are necessary to assure the integrity of the reactor coolant pressure boundary, the capability to shut down the reactor and maintain it in a safe shutdown condition, or the capability to prevent or mitigate the consequences of accidents that could result in certain potential offsite exposures.

RESULTS IN BRIEF

NRC staff has initiated action to better align NRC's defect reporting guidance with Section 206 of the *Energy Reorganization Act.* However, NRC will need to take further action so that NRC's implementation of Part 21 fully meets the intent of Section 206.

Despite Section 206 requirements for licensees that operate nuclear power plants to notify NRC of defects in basic components that could cause a substantial safety hazard, NRC staff have noted Part 21 reporting issues, and Office of the Inspector General (OIG) analysis of industry data indicate that there are apparent unreported Part 21 defects. These reporting issues exist because NRC regulations and guidance for implementing Section 206 are contradictory and unclear, and the NRC Baseline Inspection Program does not include requirements to inspect licensee reporting of Part 21 defects. Unless NRC takes action to fully implement Section 206, the margin of safety for operating reactors could be reduced.

RECOMMENDATIONS

This report makes five recommendations to improve NRC's implementation of Part 21. A list of these recommendations appears on pages 12-13 of this report.

AGENCY COMMENTS

On January 19, 2011, OIG issued the discussion draft of this report to the Executive Director for Operations. OIG subsequently met with NRC management officials and staff during a February 1, 2011, exit conference at which time the agency requested additional time in order to provide informal comments. OIG met with agency management and staff on February 23, 2011, to discuss these comments; afterward, OIG incorporated the informal comments into the draft report as appropriate. NRC management and staff reviewed the revised draft OIG report, found that the report will be helpful in adding clarity in the associated regulatory area, and opted not to provide formal comments.

ABBREVIATIONS AND ACRONYMS

CFR	Code of Federal Regulations
EQVB	Division of Engineering, Quality and Vendor Branch
IP	Inspection Procedure
LER	Licensee Event Report
NRC	Nuclear Regulatory Commission
NRR	Office of Nuclear Reactor Regulation
OIG	Office of the Inspector General

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I. BACKGROUND

The Nuclear Regulatory Commission (NRC) endeavors to protect the public health and safety and the environment through the regulation of the 104 operating nuclear power plants in the United States. The *Energy Reorganization Act of 1974, as Amended, Section 206, Noncompliance*[5] provides the statutory basis for NRC guidance and regulations that pertain to reporting component defects[6] in operating reactors. Specifically, Section 206:

- Requires licensees that operate nuclear power plants to notify NRC of defects in basic components[7] that could cause a substantial safety hazard.[8]

- Requires NRC to define, by regulation, defects which could create a substantial safety hazard.

- Identifies the civil penalties that are to be imposed for noncompliance and posting requirements at licensees' facilities, and authorizes inspections and other enforcement activities needed to ensure compliance with the provisions.

NRC Component Defect Reporting Regulation

Title 10, Code of Federal Regulations (CFR), Part 21, *Reporting of Defects and Noncompliance* (Part 21) implements the provisions of Section 206. Part 21 requires that licensees inform NRC if they obtain

[5] For the purposes of this report, *Energy Reorganization Act of 1974, as Amended, Section 206, Noncompliance* is referred to as Section 206.

[6] A defect is a deviation in a basic component delivered to a purchaser for use in operating nuclear power plants if, on the basis of an evaluation, the deviation could create a substantial safety hazard.

[7] A basic component is a structure, system, or component that assures the integrity of the reactor coolant pressure boundary; the capability to shut down the reactor and maintain it in a safe shutdown condition; or the capability to prevent or mitigate the consequences of accidents. It is, essentially, a safety-related component.

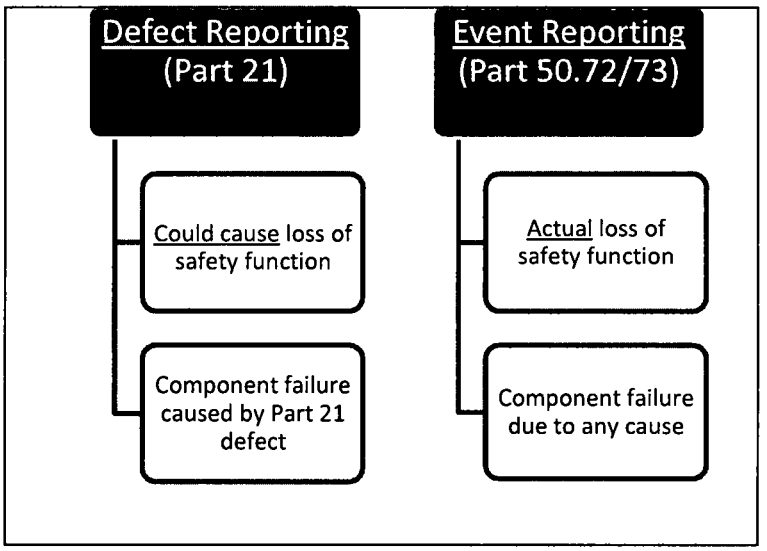
[8] A substantial safety hazard is the loss of safety function to the extent that there is a major reduction in the degree of protection provided to public health and safety. Safety functions are necessary to assure the integrity of the reactor coolant pressure boundary, the capability to shut down the reactor and maintain it in a safe shutdown condition, or the capability to prevent or mitigate the consequences of accidents that could result in certain potential offsite exposures.

information that indicates that basic components fail to comply with regulatory requirements relating to substantial safety hazards or contain defects that could create a substantial safety hazard.

NRC revised Part 21 in 1991. Among other things, the revision was intended to reduce duplicative licensee reporting requirements, and allow for reporting of defects under NRC event reporting regulations. These NRC event reporting regulations are contained in Title 10, CFR, Part 50.72 and Part 50.73 (Part 50 Sections 72/73).[9]

There are differences between Part 21 and Part 50 Sections 72/73 reporting requirements. One difference is that Part 21 concerns itself with component defect reporting, whereas Part 50 Sections 72/73 describe event reporting. Consequently, the thresholds for reporting a component defect under Part 21 are different than those for Part 50 Sections 72/73, as shown in Figure 1.

Figure 1: Defect Reporting vs. Event Reporting Differences



Source: Office of the Inspector General analysis of reporting requirements.

Another difference between the Part 21 defect reporting and Part 50 Sections 72/73 event reporting requirements is that Part 21 defect reporting requires an evaluation *and* report if the defect *could* cause a loss of safety function, whereas Part 50 Sections 72/73 events require

[9] Title 10, CFR, Part 50.72, *Immediate notification requirements for operating nuclear power reactors,* describes how licensees must notify NRC of events and conditions and Title 10, CFR Part 50.73, *Licensee event report system,* describes the type of events and conditions that must be reported to NRC in Licensee Event Reports.

reporting of only *actual* losses of safety function.[10] In addition, Part 21 defect reporting requirements include individual component failures if the failures are caused by a defect. Part 50 Sections 72/73 would not require reporting of an individual component failure unless the failure caused a loss of safety function. Typically, safety functions are supported by multiple redundant components—such as multiple service water pumps—so that loss of a single component does not cause a loss of safety function.

To illustrate the difference, two nuclear power plants could experience the same basic component failure due to a defect that did not cause an event. Some licensees interpret this as reportable under Part 21, whereas others do not, since an event did not occur based on Part 50 Sections 72/73. However, Section 206 (which provides the statutory basis for Part 21) requires reporting of component defects that *could* cause a loss of safety function as well as those that did cause an actual loss of safety function. Part 50 Sections 72/73 only requires reporting if a failure *actually* caused a loss of safety function.

Office of Nuclear Reactor Regulation (NRR) Responsibility for Part 21 Implementation

The primary NRC office responsible for Part 21 implementation among licensees with operating plants is NRR. Two NRR divisions are responsible for monitoring and enforcing Part 21-related issues:

- Division of Engineering, Quality and Vendor Branch (EQVB).

[10] *Part 50 Sections 72/73* require power reactor licensees to notify NRC of any event or condition that at the time of discovery could have prevented the fulfillment of the safety function of structures or systems that are needed to (A) shut down the reactor and maintain it in a safe shutdown condition, (B) remove residual heat, (C) control the release of radioactive material, or (D) mitigate the consequences of an accident. Furthermore, *Part 50 Sections 72/73* state that events required to be reported under *Part 50 Sections 72/73* may include one or more procedural errors; equipment failures; and/or discovery of design, analysis, fabrication, construction, and/or procedural inadequacies. However, individual component failures need not be reported under *Part 50 Sections 72/73* if redundant equipment in the same system was operable and available to perform the required safety function.

- EQVB is primarily responsible for reviewing nuclear reactor operating experience relevant to the quality of components regulated under Part 21. EQVB works closely with NRR's Operating Experience Branch to identify Part 21-related issues. EQVB also provides oversight through inspection and allegation follow-up of quality assurance and Part 21 implementation for component manufacturers.

- Division of Inspection and Regional Support, Operating Experience Branch.

  - The Operating Experience Branch is part of an NRC coordinated program to systematically collect and evaluate licensee operating experience, identify and resolve safety issues in a timely manner, and apply lessons learned from operating experience to support the agency goal of ensuring safety. Such reviews include evaluation of Part 50 Sections 72/73 licensee event reports (LER) for event occurrences that have Part 21 defective component implications.

II. PURPOSE

The audit objective was to determine if NRC's implementation of Federal regulations requiring reactor licensees to report defects contained in installed equipment is meeting the intent of the *Energy Reorganization Act of 1974, as Amended, Section 206, Noncompliance.* The report appendix contains information on the audit scope and methodology.

III. FINDING

NRC staff has initiated action to better align NRC's defect reporting guidance with Section 206 of the *Energy Reorganization Act.* However, NRC will need to take further action so that NRC's implementation of Part 21 fully meets the intent of Section 206.

Section 206 requires licensees that operate nuclear power plants to notify NRC of defects in basic components that could cause a substantial safety hazard. However, NRC staff have noted Part 21 reporting issues, and Office of the Inspector General (OIG) analysis of industry data indicate that there are apparent unreported Part 21 defects. These reporting issues exist because NRC regulations and guidance for implementing Section 206 are contradictory and unclear, and the NRC Baseline Inspection Program does not include requirements to inspect licensee reporting of Part 21 defects. Unless NRC takes action to fully implement Section 206, the margin of safety for operating reactors could be reduced.

Despite Reporting Requirements, There Are Unreported Part 21 Defects

Despite Section 206 requirements for licensees that operate nuclear power plants to notify NRC of defects in basic components that could cause a substantial safety hazard, examples indicate that there are defective components that should be reported under Part 21, but are not. Specifically, NRC headquarters and regional staff and OIG have identified apparent unreported Part 21 defects. Furthermore, NRC staff and licensees described examples of licensees' standard practice for reporting defective components that may result in the under-reporting of defects under Part 21.

Identification of Part 21 Reporting Defects

NRC staff identified examples of apparent unreported defective components that could cause a substantial safety hazard as described in LERs under Part 50 Sections 72/73, but were not reported as Part 21 defective components. Since mid-2009, when NRC inspectors became aware of potentially unreported defects during an inspection of a plant, agency staff have been evaluating LERs for potentially unreported defects under Part 21. Furthermore, NRR staff conducted an analysis of LERs

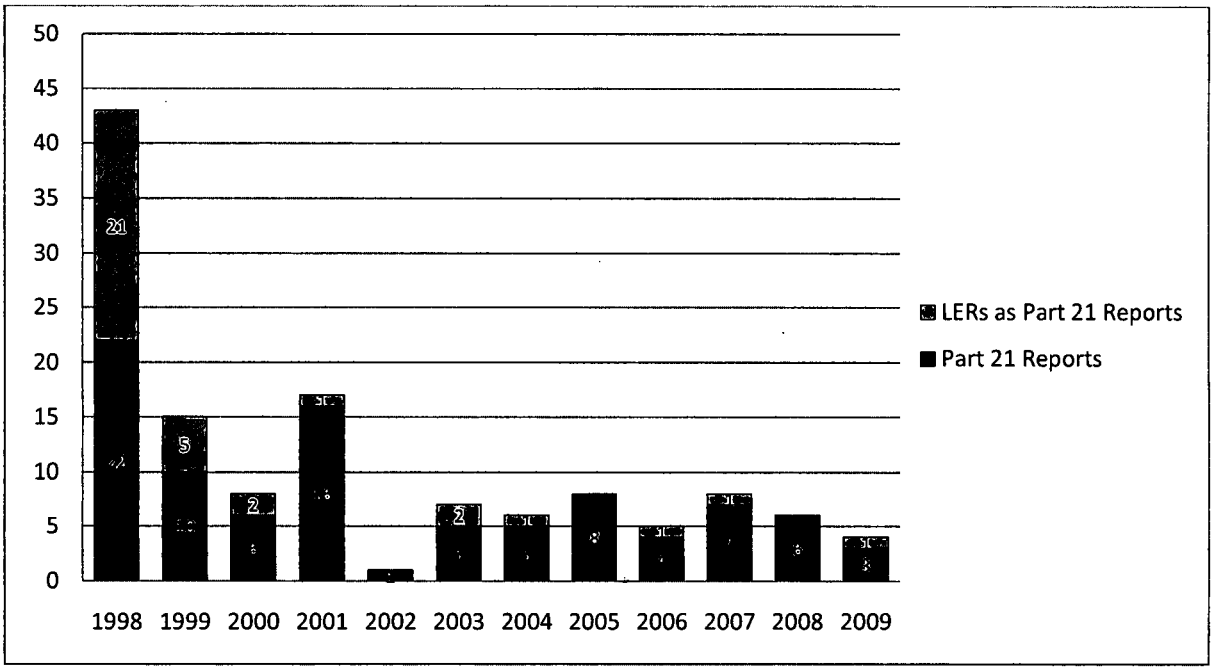
with potential Part 21 implications during the period December 2009 through September 2010, and identified 24 instances of LERs that had Part 21 implications but were not reported under Part 21.

OIG staff also identified examples of apparent unreported defective components. OIG independently analyzed LERs submitted under Part 50 Sections 72/73 and found some describing defective components that could cause substantial safety hazards, but were not reported to NRC under Part 21. During the period June 2009 through June 2010, OIG identified 11 LERs that contained apparent Part 21 reportable defects where the licensee had not indicated that it had conducted a Part 21 evaluation or provided a Part 21 report. Given that the period of review for OIG's analysis of LERs was different than the agency's review period, OIG auditors requested NRR staff to review the OIG analysis results. NRR staff concurred that 5 of the 11 LERs that OIG identified had apparent Part 21 reportable defects. NRR staff either did not support or could not determine if the remaining LERs also had potential Part 21 reportable defects based on the data available in the LERs.

Further, OIG reviewed three reactor control room logs recorded during the 4th quarter of 2009. OIG's analysis indicates that for every safety-related component failure that occurs and is reported, there are several that occur but do not meet the level of reportability using Part 50 Sections 72/73 reporting criteria.

OIG also calculated for each year the number of Part 21 reports filed by licensees since 1998. As Figure 2 indicates, there was a significant decline in the number of Part 21 reports after 2001. Figure 2 also indicates how many Part 21 reports were made through LERs according to Part 50 Sections 72/73 reporting criteria.

Figure 2: Part 21 Reports from Nuclear Power Plants, 1998-2009



Source: OIG analysis of NRC data.

Examples of Licensee Standard Practices for Reporting Defective Components

During the course of the review, OIG met with agency and industry stakeholders to ascertain licensees' standard practices for reporting defective components under Part 21. NRC staff and licensees described to OIG some examples of Part 21 reporting practices that indicate there are unreported defective components.

NRC senior resident inspectors described licensee Part 21 reporting practices that indicate unreported defective components. Four of seven senior resident inspectors interviewed by OIG described a practice wherein licensees (1) evaluate whether a defective component caused an event under 50.72 reporting criteria, but (2) fail to follow up with a Part 21 evaluation or submit a Part 21 report when the 50.72 evaluation concludes that the events caused by the defective component did not reach the threshold for reporting under Part 50 Sections 72/73. Senior resident inspectors provided OIG with the following examples:

- LERs that should have been reported under Part 21, but were not.

- The licensee belief that loss of safety function was required to conduct a Part 21 evaluation and report.[11]

- A licensee that considers Part 50 Sections 72/73 event reporting evaluations to meet Part 21 defect reporting requirements, even if the Part 50 Sections 72/73 evaluation result is that the event is not reportable to NRC.

- A licensee that has opted not to conduct Part 21 evaluations or reports because, according to the licensee, current regulations and guidance do not require this as long as they did an event reporting evaluation.

NRC licensees also described their Part 21 reporting practices in a manner that further indicated the likelihood of unreported defective components. Some industry representatives stated that, as standard practice, they do not notify NRC of Part 21 defects unless the defects are reportable under Part 50 Sections 72/73 event reporting regulations. Based on interviews and analysis, OIG determined that licensees representing at least 28 percent of the operating reactor fleet do not, as standard practice, notify NRC of defects under Part 21 unless they are reportable under event reporting regulations.

NRC Regulations and Guidance for Implementing Section 206 Are Contradictory and Unclear

Part 21 component defect reporting issues exist because NRC regulations and guidance for implementing Section 206 are contradictory and unclear. Specifically, NRC regulations and guidance for implementing Section 206 contain stipulations that have been interpreted as not requiring a report under Part 21 if an LER was not required. This interpretation seemingly contradicts Section 206, which requires reporting of component defects that could cause substantial safety hazards. Furthermore, applicable NRC reportability guidance is not utilized by some licensees and NRC staff, and NRC's Baseline Inspection Program does not include requirements to inspect licensee reporting of Part 21 defects.

[11] As shown earlier in Figure 1, Part 21 requires reporting the defect if a failure *could* cause loss of safety function, not if it actually does.

NRC Regulations and Guidance Are Interpreted as Relieving Licensees of Defect Reporting Obligations

NRC regulations and guidance for implementing Section 206 contain stipulations that some licensees and NRC staff have interpreted as relieving licensees of their obligation to report to NRC defects in basic components that could cause a substantial safety hazard. This includes specific language in Part 21, a 1991 *Federal Register Notice* that summarized Part 21, and NRC guidance on event reporting in NUREG-1022.

The agency introduced some uncertainty regarding event reporting when it revised Part 21 in 1991. Part 21 Section 2(c), states:

> For persons licensed to operate a nuclear power plant under part 50 ... of this chapter, evaluation of potential defects and appropriate reporting of defects under §§ 50.72, 50.73 ... satisfies each person's evaluation, notification, and reporting obligation to report defects under this part.

Moreover, the agency has interpreted language from the July 31, 1991, *Federal Register Notice,* Statement of Consideration as guidance to facilitate implementation of Part 21 Section 2(c). The Statement of Consideration provides the following sentence which can also be seen as contradictory to Section 206:

> If the event is determined not to be reportable under §50.72 or §50.73, then the obligations of Part 21 are met by the evaluation.

Additionally, in October 2000, NRC revised NUREG-1022, which provides event reporting guidelines for Part 50 Sections 72/73. This 115-page guidance document offers a three-paragraph subsection on Part 21, which states (in part):

> The only case where a defect in a basic component of an operating reactor might be reportable under Part 21, but not under §§ 50.72, 50.73 ... would involve parts on the shelf.[12]

This language effectively leaves NUREG-1022 in conflict with Section 206.

The combination of the changes to Part 21 and associated guidance have resulted in a lack of clarity for implementing Section 206. Given these written passages in Part 21.2(c), NUREG-1022, and the July 31, 1991, Statement of Consideration, some licensees have concluded that if they conduct evaluations consistent with event evaluation and reporting thresholds, then they have also met Part 21's evaluation and reporting requirements. Some NRC resident inspectors shared this interpretation as well. One resident inspector indicated to OIG that conducting a Part 50 Sections 72/73 evaluation and/or report fulfilled a licensee's Part 21 requirements. Another resident inspector asserted that Part 21 evaluations and reporting are more the responsibility of the vendor than the licensee.

To resolve confusion about implementing Part 21 component defect reporting and to better align NRC's defect reporting guidance with Section 206, NRC regional office personnel sought clarification from NRC management officials. However, NRC management officials have responded that defect reporting guidance and Part 21 itself have resulted in multiple interpretations of Part 21 reporting requirements, which presents an obstacle towards clarifying Part 21 reporting.[13] Consequently, NRC has not yet established a position that would result in consistent interpretation and application of Part 21 guidance and regulations on the part of NRC staff and resident inspectors, as well as licensees.

[12] Parts on the shelf refer to components that are in a nuclear power plant's inventory that have not been installed.

[13] For example, recent inspections uncovered a potential Part 21 violation at a nuclear power plant that NRC has not resolved for the past 2 years.

Applicable Reportability Guidance Is Not Used

Existing NRC guidance for implementation of Part 21 is applicable, but not all NRC staff and licensees use it. NUREG-0302, *Remarks Presented (Questions/Answers Discussed) at Public Regional Meetings to Discuss Regulations (10 CFR Part 21) for Reporting of Defects and Noncompliance*, published in July 1977, contains guidance for Part 21 implementation and reporting. NUREG-0302 was published in 1977—prior to the changes in 1991 that allowed reporting under Part 50 Sections 72/73 —and, therefore, does not include guidance on reporting Part 21 defects under Part 50 Sections 72/73.

According to agency staff, NUREG-0302 is not frequently used by less experienced staff because it is "35 years old," and is composed of public meeting summaries. Consequently, newer staff are not as familiar with NUREG-0302. Agency staff surmised that less experienced staff are more likely to use recent guidance, such as the Statement of Consideration, NUREG-1022, and less formal information obtained during training. Senior NRR staff also indicated that the question-and-answer format and numbering schematic in NUREG-0302 make it difficult to use. NRR staff agreed that the guidance in NUREG-0302 remains valid to this day, despite its lack of visibility to newer staff.

NRC Baseline Inspection Program Does Not Include Requirements To Inspect Licensee Reporting of Part 21 Defects

The NRC Baseline Inspection Program does not include requirements to inspect licensee reporting of Part 21 defects.[14] Currently, the NRC Baseline Inspection Program does not include a reference to Part 21-related Inspection Procedures (IP). IP 36100, *Inspection of 10 CFR Parts 21 and 50.55(e) Programs for Reporting Defects and Noncompliance,* provides guidance to NRC inspectors for inspecting Part 21 reporting at operating nuclear power plants. Senior resident inspectors told OIG that they are aware of IP 36100, but there was no "hook" in the Baseline

[14] The Baseline Inspection Program is an integral part of the NRC's reactor oversight process. Its objectives are to (1) obtain inspection information and performance indicators to assess safety performance of power reactor licensees, (2) determine the licensee's ability to identify and assess risk and effectively correct issues, (3) verify accuracy and completeness of performance indicators, and (4) provide a mechanism for the NRC to remain cognizant of plant status and conditions.

Inspection Program that would prompt an inspector to consider conducting an inspection using IP 36100.[15]

Incomplete Implementation of Section 206 Could Reduce the Margin of Safety for Operating Reactors

Incomplete implementation of Section 206 could reduce the margin of safety for operating nuclear power reactors as NRC may remain unaware of component failures that have resulted from manufacturing defects. Unless NRC takes further action to sufficiently implement Section 206, staff and stakeholders may not be notified of component defects. For example, given current interpretations of regulations and guidance related to defect reporting, a licensee might not report a basic component that failed due to a design defect. Other licensees that use the same component, as well as component manufacturers, may be unaware of the problem. Absent knowledge of manufacturing defects, NRC and its stakeholders will also not be able to trend such information.

Additionally, NRC inspectors face difficulties in enforcing defect reporting given the lack of clarity in Part 21 and related guidance. As noted earlier, NRC inspectors have found possible Part 21 reporting violations. However, pending resolution of the contradictory and unclear guidance and regulations, the agency has opted not to cite licensees for violations and not issue civil penalties for licensees' failure to notify NRC of defects in basic components that could cause a substantial safety hazard. Therefore, NRC is not fully enforcing the Part 21 regulation as required by Section 206. Furthermore, NRC has not levied any civil penalties or significant enforcement actions for nuclear power plant licensee Part 21 defect reporting lapses in at least the past 8 years.

Recommendations

OIG recommends that the Executive Director for Operations:

1. Revise 10 CFR Part 21 for full conformity with the *Energy Reorganization Act of 1974, As Amended, Section 206, Noncompliance.*

[15] The Baseline Inspection Program does not currently include guidance for how inspectors should check for defective parts. NRR staff have indicated this is a condition that should be corrected.

2. Expedite publication of interim guidance that specifies requirements for Part 21 reporting in accordance with the *Energy Reorganization Act of 1974, As Amended, Section 206, Noncompliance.*

3. Correct the sections of NUREG-1022, *Event Reporting Guidelines 10 CFR 50.72 and 50.73, October 2000,* that are in conflict with the *Energy Reorganization Act of 1974, as Amended, Section 206, Noncompliance* and 10 CFR Part 21.

4. Review, revise as applicable, and reissue NUREG-0302, *Remarks Presented (Questions/Answers Discussed) at Public Regional Meetings to Discuss Regulations (10 CFR Part 21) for Reporting of Defects and Noncompliance*, July 12 - 26, 1977.

5. Incorporate Inspection Procedure 36100, *Inspection of 10 CFR Parts 21 and 10 CFR 50.55(e) Programs for Reporting Defects and Noncompliance* into the NRC Baseline Inspection Program.

IV. AGENCY COMMENTS

On January 19, 2011, OIG issued the discussion draft of this report to the Executive Director for Operations. OIG subsequently met with NRC management officials and staff during a February 1, 2011, exit conference at which time the agency requested additional time in order to provide informal comments. OIG met with agency management and staff on February 23, 2011, to discuss these comments; afterward OIG incorporated the informal comments into the draft report as appropriate. NRC staff reviewed the revised draft OIG report, found that the report will be helpful in adding clarity in the associated regulatory area, and opted not to provide formal comments.

Appendix

SCOPE AND METHODOLOGY

The audit objective was to assess the extent to which NRC's implementation of Federal regulations requiring nuclear power reactor licensees to report defects contained in installed equipment is meeting the intent of the *Energy Reorganization Act of 1974, as Amended, Section 206, Noncompliance.* The audit scope was limited to NRC's regulatory responsibilities as they pertain to commercial nuclear power plants. To address the audit objective, OIG interviewed agency headquarters and regional staff, senior resident and resident inspectors, and selected licensee officials. OIG also reviewed NRC regulations and guidance as well as LERs and Part 21 reports for the period June 2009 through June 2010 and various inspection reports. OIG also analyzed control room logs for three reactor units, as well as agency-collected information pertaining to potentially unreported Part 21 defects.

Key documents reviewed include:

- *Energy Reorganization Act of 1974, as Amended, Section 206, Noncompliance.*
- 10 CFR Part 21, *Reporting of Defects and Noncompliance.*
- NUREG-0302, Rev 1, *Remarks Presented (Questions/Answers Discussed) at Public Regional Meetings to Discuss Regulations (10 CFR Part 21) for Reporting of Defects and Noncompliance.*
- *Federal Register Notice*, Vol. 56, No. 147, Statement of Consideration, Part 21.
- NUREG-1022, Rev 2, *Event Reporting Guidelines for 10 CFR 50.72 and 50.73.*
- Management Directive (MD) 8.18, *NRC Generic Communications Program.*
- Inspection Procedure 36100, *Inspection of 10 CFR Parts 21 and 10 CFR 50.55(e) Programs for Reporting Defects and Noncompliance.*

- Agency Office Instructions.
- Agency Generic Communications.
- Nuclear industry guidance documents.

Auditors conducted interviews with agency and industry employees, including NRC managers and staff members at headquarters and the regions, and members of the nuclear industry.

We conducted this performance audit at NRC headquarters in Rockville, MD, from July 2010 through December 2010, in accordance with generally accepted Government auditing standards. Those standards require that the audit is planned and performed with the objective of obtaining sufficient, appropriate evidence to provide a reasonable basis for any findings and conclusions based on the stated audit objective. OIG believes that the evidence obtained provides a reasonable basis for the report findings and conclusions based on the audit objectives. Internal controls related to the audit objective were reviewed and analyzed. Throughout the audit, auditors were aware of the possibility or existence of fraud, waste, or misuse in the program.

Major contributors to this report were R.K. Wild, Team Leader; Kevin Nietmann, Senior Technical Advisor; Vicki Foster, Audit Manager; Timothy Wilson, Senior Management Analyst; and Diane Furstenau, Student Management Analyst.

Instructions for Responding to OIG Report Recommendations

Instructions for Action Offices

Action offices should provide a written response on each recommendation within 30 days of the date of the transmittal memorandum or letter accompanying the report. The concurrence or clearance of appropriate offices should be shown on the response. After the initial response, responses to subsequent OIG correspondence should be sent on a schedule agreed to with OIG.

Please ensure the response includes:

1. The report number and title, followed by each recommendation. List the recommendations by number, repeating its text verbatim.

2. A management decision for each recommendation indicating agreement or disagreement with the recommended action.

    a. For agreement, include corrective actions taken or planned, and actual or target dates for completion.

    b. For disagreement, include reasons for disagreement, and any alternative proposals for corrective action.

    c. If questioned or unsupported costs are identified, state the amount that is determined to be disallowed and the plan to collect the disallowed funds.

    d. If funds put to better use are identified, then state the amount that can be put to better use (if these amounts differ from OIG's, state the reasons).

OIG Evaluation of Responses

If OIG concurs with a response to a recommendation, it will (1) note that a management decision has been made, (2) identify the recommendation as resolved, and (3) track the action office's implementation measures until final action is accomplished and the recommendation is closed.

If OIG does not concur with the action office's proposed corrective action, or if the action office fails to respond to a recommendation or rejects it, OIG will identify the recommendation as unresolved (no management decision). OIG will attempt to resolve the disagreement at the action office level. However, if OIG determines that an impasse has been reached, it will refer the matter for adjudication to the Chairman.

Semiannual Report to Congress

In accordance with the Inspector General Act of 1978, as amended, OIG is required to report to Congress semiannually on April 1 and October 1 of each year, a summary of each OIG report issued for which no management decision was made during the previous 6-month period. Heads of agencies are required to report to Congress on significant recommendations from previous OIG reports where final action has not been taken for more than one year from the date of management decision, together with an explanation of delays.