



# OFFICE OF THE INSPECTOR GENERAL

U.S. NUCLEAR REGULATORY COMMISSION

DEFENSE NUCLEAR FACILITIES SAFETY BOARD

## Audit of NRC's Special and Infrequently Performed Inspections

OIG-18-A-13

May 16, 2018



All publicly available OIG reports (including this report)  
are accessible through NRC's Web site at  
<http://www.nrc.gov/reading-rm/doc-collections/insp-gen>



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

**OFFICE OF THE  
INSPECTOR GENERAL**

May 16, 2018

MEMORANDUM TO: Victor M. McCree  
Executive Director for Operations

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

SUBJECT: AUDIT OF NRC'S SPECIAL AND INFREQUENTLY  
PERFORMED INSPECTIONS (OIG-18-A-13)

Attached is the Office of the Inspector General's (OIG) audit report titled *Audit of NRC's Special and Infrequently Performed Inspections*.

The report presents the results of the subject audit. Following the May 9, 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-18-A-13

May 16, 2018

## Results in Brief

### Why We Did This Review

The Nuclear Regulatory Commission (NRC) may conduct special and infrequent inspections using criteria in Inspection Manual Chapter (IMC) 2515 Appendix C. These inspections are in addition to baseline inspections conducted at commercial nuclear power plants in support of the Reactor Oversight Process. NRC conducts these special and infrequent inspections in response to safety and security events at nuclear power plants, and to ensure the safety of infrequent, but major plant licensing and maintenance activities.

NRC conducts IMC 2515 Appendix C inspections to evaluate emergent technical issues not related to plant licensee performance, fulfill NRC's obligations under domestic interagency memoranda of understanding such as information exchanges between NRC and States, Tribes, and local governments, and implement the requirements of Title 10 Code of Federal Regulations (10 CFR) Part 75 for treaties between the United States and the International Atomic Energy Agency.

The audit objectives were to assess NRC's processes for (1) identifying conditions that warrant special and infrequently performed inspections at commercial power reactors under IMC 2515 Appendix C, and (2) conducting these inspections in accordance with agency guidance.

### *Audit of NRC's Special and Infrequently Performed Inspections*

#### What We Found

NRC staff are required to review IMC 2515 Appendix C inspection procedures on a 4-year periodic basis. However, NRC staff do not consistently review all IMC 2515 Appendix C inspection procedures on a periodic basis as required because there is conflicting guidance and low staff awareness of procedural requirements for conducting these reviews. As a result, outdated IMC 2515 Appendix C inspection procedures could reduce the efficiency and effectiveness in the planning and performance of these inspections.

Additionally, NRC management is responsible for developing application controls to achieve validity, completeness, and accuracy of data processed in an information system. However, NRC staff incorrectly coded inspections under IMC 2515 Appendix C in the agency's legacy Reactor Program System. This occurred because application controls in the Reactor Program System, operational before October 2017, were not sufficient to ensure proper coding of inspections to IMC 2515 Appendix C. Reliable data is important for effective management and oversight of NRC's inspection activities.

#### What We Recommend

This report makes six recommendations regarding periodic assessments of IMC 2515 Appendix C inspection procedures and application controls in the Replacement Reactor Program System – Inspections Module.

## TABLE OF CONTENTS

<a href="#"><u>ABBREVIATIONS AND ACRONYMS</u></a> .....	i
I. <a href="#"><u>BACKGROUND</u></a> .....	1
II. <a href="#"><u>OBJECTIVE</u></a> .....	6
III. <a href="#"><u>FINDINGS</u></a> .....	6
A. <a href="#"><u>NRC Staff Do Not Consistently Review All IMC 2515</u></a> <a href="#"><u>Appendix C Inspection Procedures on a Periodic Basis</u></a> .....	6
B. <a href="#"><u>Opportunities To Improve Replacement Reactor Program</u></a> <a href="#"><u>System Data Entry Controls</u></a> .....	11
IV. <a href="#"><u>CONSOLIDATED LIST OF RECOMMENDATIONS</u></a> .....	15
V. <a href="#"><u>AGENCY COMMENTS</u></a> .....	16
 <b>APPENDIXES</b>	
A. <a href="#"><u>OBJECTIVE, SCOPE, AND METHODOLOGY</u></a> .....	17
B. <a href="#"><u>Revision History of IMC 2515 Appendix C Inspection</u></a> <a href="#"><u>Procedures</u></a> .....	19
 <a href="#"><u>TO REPORT FRAUD, WASTE, OR ABUSE</u></a> .....	20
<a href="#"><u>COMMENTS AND SUGGESTIONS</u></a> .....	20



---

## **ABBREVIATIONS AND ACRONYMS**

---

EOC	End-of-Cycle
IMC	Inspection Manual Chapter
NRC	Nuclear Regulatory Commission
NRR	Office of Nuclear Reactor Regulation
OIG	Office of the Inspector General
10 CFR	Title 10 Code of Federal Regulations

---

## I. BACKGROUND

---

### **Special and Infrequently Performed Inspections**

The Nuclear Regulatory Commission (NRC) may conduct special and infrequent inspections using criteria in Inspection Manual Chapter (IMC) 2515 Appendix C. These inspections are in addition to baseline inspections conducted at commercial nuclear power plants in support of the Reactor Oversight Process.<sup>1</sup> NRC conducts these special and infrequent inspections in response to safety and security events at nuclear power plants, and to ensure the safety of infrequent, but major plant licensing and maintenance activities.

NRC conducts IMC 2515 Appendix C inspections to evaluate emergent technical issues not related to plant licensee performance, fulfill NRC's obligations under domestic interagency memoranda of understanding such as information exchanges between NRC and States, Tribes, and local governments, and implement the requirements of Title 10 Code of Federal Regulations (10 CFR) Part 75 for treaties between the United States and the International Atomic Energy Agency (see Figure 1). Regional Administrator authorization is generally required for implementation of IMC 2515 Appendix C inspections.

---

<sup>1</sup> The Reactor Oversight Process is NRC's program to inspect, measure, and assess operating commercial nuclear power plant licensees' safety and security, and to predictably respond to declining performance.

**Figure 1: IMC 2515 Appendix C Inspection Areas**

Element - Appendix C Inspections in Response to	Description
Events	Any radiological, safeguards, or other safety-related operational event at an NRC-licensed facility that poses an actual or potential hazard to public health and safety, property, or the environment.
Infrequent Major Activities at Nuclear Power Plants	Include inspections of licensee activities associated with license renewal, steam generator replacement, or upgrades to digital instrumentation.
Evaluate Emergent Technical Issues Not Related to Licensee Performance	Issues tied to a plant extended shutdown not related to licensee performance or operational concerns such as refueling outages. IMC 2515 Appendix C Inspection Procedures relate to the use of Special Inspections, or Augmented Inspection Teams to assess a licensee's operational readiness to restart operations after an extended shutdown.
Fulfill NRC's Obligations Under Domestic Interagency Memoranda of Understanding	Instruments of Cooperation, an informal Letter of Agreement or a formalized Memorandum of Understanding between the NRC and States, Tribes, and local governments to facilitate common goals.
Implement the Requirements of 10 CFR Part 75 for Treaties Between The United States and The International Atomic Energy Agency	10 CFR part 75 implements the requirements established by treaties between the United States of America and the International Atomic Energy Agency. These treaties include the Application of Safeguards in the United States of America and the Additional Protocol.

Source: OIG generated from NRC IMC 2515 Appendix C.

### **Special, Augmented, and Incident Investigation Inspection Process**

NRC uses the process described in Management Directive 8.3, *NRC Incident Investigation Program*, in accordance with IMC 0309, *Reactive Inspection Decision Basis for Reactors*, to determine the appropriate level of response following an unforeseen safety or security event at a plant.

#### **Management Directive 8.3 Process**

The cognizant Regional Administrator and staff perform an initial review to assess the event's safety or security significance to determine the level of response required. After the initial review, staff screen the event through deterministic criteria<sup>2</sup> and perform risk analysis, if needed, to determine the decision basis for conducting a special inspection, an augmented inspection, or an incident investigation. Based on the results of the Management Directive 8.3 process, NRC may deploy a Special Inspection Team, an Augmented Inspection Team, or an Incident Investigation Team to gather and analyze information to support NRC's regulatory response.

<sup>2</sup> Deterministic criteria consist of a series of yes or no questions to assess the safety or security significance of the event to determine the level of response required.

### Special Inspection Team

A Special Inspection Team consists of technical experts from the NRC region in which the event took place and is generally not augmented by personnel from headquarters, other regions, or contractors. The Special Inspection Team reports directly to the authorizing Regional Administrator. Inspection Procedure 93812, "Special Inspection," provides implementing procedures for the Special Inspection Team.

### Augmented Inspection Team

An Augmented Inspection Team consists of technical experts from the region in which the incident took place, augmented by personnel from headquarters, other regions, or contractors as needed. An Augmented Inspection Team response emphasizes fact-finding and determination of probable cause(s), as well as the conditions and circumstances relevant to issues directly related to the event. The Augmented Inspection Team reports directly to the authorizing Regional Administrator. Inspection Procedure 93800, "Augmented Inspection Team," provides implementing procedures for the Augmented Inspection Team. As an example, NRC convened an Augmented Inspection Team in response to an industrial accident at Arkansas Nuclear One on March 31, 2013, in which a temporary overhead crane fell onto the turbine deck, causing a loss of offsite power to Unit 1 and an automatic shutdown of Unit 2.

### Incident Investigation Team

An Incident Investigation Team consists of technical experts who, to the extent possible, do not have, and have not had previous significant involvement with licensing and inspection activities at the affected facility. A senior manager leads the Incident Investigation Team to perform this single NRC investigation of a significant event. There have been no incident investigations performed over the past 10 years, from 2008 through 2017.

### **Other Infrequent Inspections Process**

NRC reviews licensees' performance over a 12-month period as part of the process described in IMC 0305, *Operating Reactor Assessment*



*Program*, to plan other infrequent IMC 2515 Appendix C inspections. Each regional office conducts an end-of-cycle (EOC) review of each plant using performance indicators, inspection results, and enforcement actions compiled over the assessment period to plan other IMC 2515 Appendix C inspection activities for the next 18 to 24 months following the end of the assessment period.

In preparation for the EOC assessment review meetings,<sup>3</sup> regional offices develop an EOC package, which in accordance with IMC 0305 consists of a meeting agenda to identify topic areas of discussion during the meeting, a plant issues matrix, plant performance summaries, and a proposed inspection plan for each plant. These documents are electronically submitted prior to the EOC meeting to facilitate meeting discussions. Regional division directors and/or branch chiefs present the results of the annual review to the Regional Administrator. This results in issuance of an annual assessment letter to the licensee within 9 weeks after the end of the EOC assessment period.

### **NRC's Inspection Oversight Roles and Responsibilities**

NRC's Office of Nuclear Reactor Regulation (NRR) is responsible for the overall management, support, and oversight of IMC 2515 Appendix C inspections, including the language used in IMC 2515 Appendix C inspection procedures. The Division of Inspection and Regional Support within NRR makes revisions to the reactor inspection program and oversees regional implementation. Inspectors are responsible for performing IMC 2515 Appendix C inspections, while Regional Managers oversee these and are responsible for ensuring IMC 2515 Appendix C inspections are completed.

### **Inspections Performed Under IMC 2515 Appendix C**

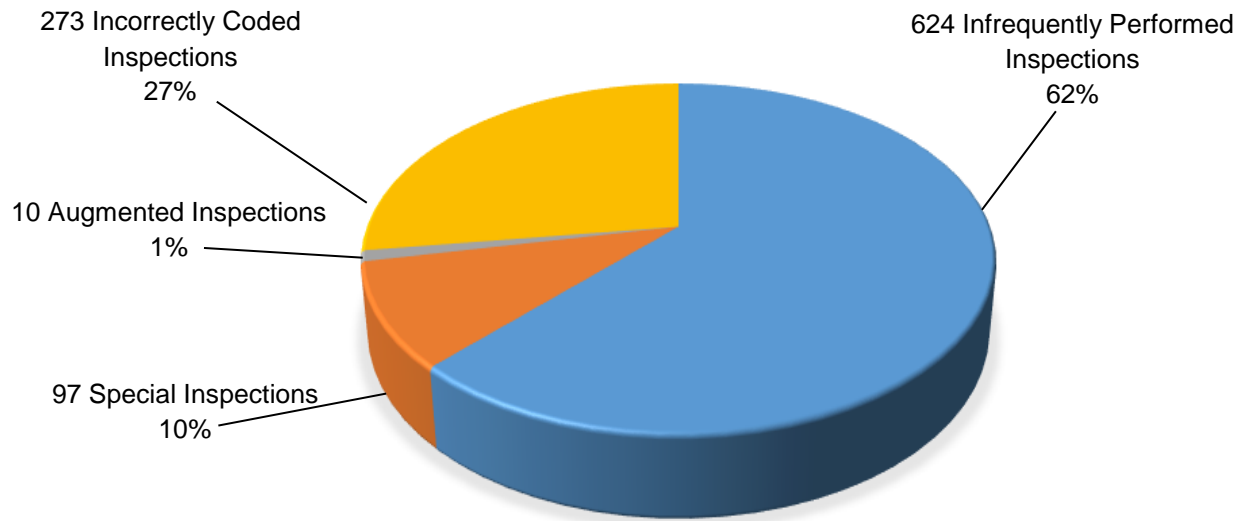
During the period from January 2008 through October 2017, the agency performed 1,004 inspections under IMC 2515 Appendix C.<sup>4</sup> See Figure 2 for a chart showing a summary of the types of inspections performed under IMC 2515 Appendix C.

---

<sup>3</sup> The EOC assessment review meeting is held annually in each region, and is chaired by the Regional Administrator.

<sup>4</sup> The 273 incorrectly coded inspections in the agency's Reactor Program System did not correlate to any of the 35 inspection procedures listed under IMC 2515 Appendix C. NRC used the Reactor Program System for planning, scheduling, reporting, and analyzing nuclear power plant inspections. NRC subsequently replaced this data system with the Replacement Reactor Program System – Inspections Module in October 2017.

**Figure 2: Inspections Performed Under IMC 2515 Appendix C 2008-2017**



Source: OIG analysis of IMC 2515 Appendix C inspection data from NRC's legacy Reactor Program System.

---

## II. OBJECTIVE

---

The audit objectives were to assess NRC's processes for (1) identifying conditions that warrant special and infrequently performed inspections at commercial power reactors under IMC 2515 Appendix C, and (2) conducting these inspections in accordance with agency guidance. See Appendix A for information on the audit scope and methodology.

---

## III. FINDINGS

---

NRC has adequate processes for determining when and where to conduct IMC 2515 Appendix C inspections at commercial power reactors and for conducting these inspections in accordance with agency guidance. However, NRC could benefit from periodic assessments of IMC 2515 Appendix C inspection procedures and testing of application controls in the Replacement Reactor Program System – Inspections Module.

### **A. NRC Staff Do Not Consistently Review All IMC 2515 Appendix C Inspection Procedures on a Periodic Basis**

NRC staff are required to review IMC 2515 Appendix C inspection procedures on a 4-year periodic basis. However, NRC staff do not consistently review all IMC 2515 Appendix C inspection procedures on a periodic basis as required because there is conflicting guidance and low staff awareness of procedural requirements for conducting these reviews. As a result, outdated IMC 2515 Appendix C inspection procedures could reduce the efficiency and effectiveness in the planning and performance of these inspections.

## What Is Required

### **NRC Should Review IMC 2515 Appendix C Inspection Procedures on a 4-year Periodic Basis**

NRC's *Inspection Manual Chapter 0307, Reactor Oversight Process Self-Assessment Program*, and NRR's office instruction, *NRR Procedures for Processing Inspection Manual Documents*, require periodic review of inspection procedures. Specifically, Inspection Manual Chapter 0307 states that each inspection procedure will be reviewed at least once every 4 years.

Additionally, the Government Accountability Office's *Standards for Internal Control in the Federal Government*<sup>5</sup> (Green Book) states management is responsible for providing procedures that support efficient operations, reliable reporting and communication, and reasonable assurance that agency requirements are met.

## What We Found

### **NRC Staff Do Not Consistently Review All IMC 2515 Appendix C Inspection Procedures as Required**

Contrary to agency guidance, NRC staff do not consistently review all IMC 2515 Appendix C inspection procedures on a 4-year periodic basis. Rather, staff rely on the *Inspection Program Feedback Process*<sup>6</sup> to review these inspection procedures and revise them as needed. To gain a better understanding of how often IMC 2515 Appendix C inspection procedures are reviewed, OIG analyzed the revision history of all 35 inspection procedures listed under IMC 2515 Appendix C. Based on this analysis, OIG found

<sup>5</sup> [GAO-14-704G, September 2014.](#)

<sup>6</sup> The feedback process is used by NRC staff to identify and resolve problems, concerns, or difficulties encountered in implementing NRC's inspection programs. The feedback form is the formal mechanism used for initiating a change to an inspection program document.

- 21 inspection procedures have not been reviewed within the required 4-year period.
- 13 inspection procedures have been reviewed within the required 4-year period.
- 1 inspection procedure (60715) was created in October 2015, and will require review by October 2019.

Additionally, 5 of these 35 inspection procedures date back to the Systematic Assessment of Licensee Performance, which was superseded by the Reactor Oversight Process in April 2000.

See Table 1 for a list of IMC 2515 Appendix C inspection procedures and periods since last review.

**Table 1: IMC 2515 Appendix C Inspection Procedures and Periods Since Last Review**

Inspection Procedure	Periods Since Last Review							
	0-4 Years	4-8 Years	8-12 Years	12-16 Years	16-20 Years	20-24 Years	24-28 Years	28-32 Years
36100		•						
37060		•						
40001						•		
40100	•							
41500						•		
43004	•							
50001	•							
50003	•							
52003			•					
60705						•		
60710						•		
60715*								
60845		•						
60854.1			•					
60855.1			•					
60856.1				•				
71003	•							
71004	•							
71007			•					
71013	•							
71150			•					
81311	•							
85420								•
92050					•			
92702			•					
92709	•							
92711	•							
92712	•							
92722		•						
92723		•						
93001	•							
93002		•						
93100	•							
93800			•					
93812		•						
Total	13	7	7	1	1	4	0	1

\* Inspection Procedure 60715 was added to IMC 2515 Appendix C on October 30, 2015.

Source: OIG analysis of IMC 2515 Appendix C inspection procedures revision history.

Additionally, see Appendix B of this report for a revision history of all 35 inspection procedures listed under IMC 2515 Appendix C.

## ***Why This Occurred***

### **Conflicting Guidance and Low NRC Staff Awareness Regarding the Requirement for Periodic Reviews**

NRC staff do not periodically review IMC 2515 Appendix C inspection procedures because NRC has conflicting guidance regarding the frequency of inspection procedure reviews, and there is low staff awareness of procedural requirements for these reviews.

#### Conflicting Guidance

NRC has conflicting guidance regarding how often IMC 2515 Appendix C inspection procedure reviews are to be done. For example, IMC 0307 states each inspection procedure will be reviewed at least once every 4 years. However, NRR's office instruction states reviews are to be done every 5 years.

#### Low Staff Awareness of Procedural Requirements

NRC staff and supervisors responsible for reviewing IMC 2515 Appendix C inspection procedures are generally not aware of the requirements in IMC 0307, and NRR's office instruction to periodically review IMC 2515 Appendix C inspection procedures.

OIG interviewed four NRC staff and two supervisors who are responsible for updating IMC 2515 Appendix C inspection procedures. These NRC staff and supervisors were generally not aware of the requirements in IMC 0307 and the NRR's office instruction. Rather, they referenced IMC 0040, *Preparing, Revising, and Issuing Documents for the NRC Inspection Manual*, as guidance to review IMC 2515 Appendix C inspection procedures. However, IMC 0040 does not directly address frequency of inspection procedure reviews. Instead, it focuses on developing clear, accurate, and effective IMC documents.



## ***Why This Is Important***

### **Outdated IMC 2515 Appendix C Inspection Procedures Could Reduce Efficiency and Effectiveness in the Planning and Performance of Infrequently Performed Inspections**

NRC inspectors conducting IMC 2515 Appendix C inspections rely on IMC 2515 Appendix C inspection procedures to plan and perform these inspections. Therefore, outdated inspection procedures could reduce efficiency and effectiveness in the planning and performance of IMC 2515 Appendix C inspections. For example, inspectors could spend unnecessary time looking for other guidance to supplement outdated IMC 2515 Appendix C inspection procedures. Additionally, if IMC 2515 Appendix C inspection procedures are not periodically updated with current and complete guidance, the relevance and thoroughness of inspection tasks could be affected.

### **Recommendations**

OIG recommends that the Executive Director for Operations

1. Update IMC 2515 Appendix C and applicable NRR guidance to reflect the requirement to ensure consistent and periodic reviews of IMC 2515 Appendix C inspection procedures.
2. Implement means for scheduling and tracking periodic reviews of IMC 2515 Appendix C inspection procedures.
3. Review the inspection procedures listed in IMC 2515 Appendix C to determine if they are still warranted.

## **B. Opportunities To Improve Replacement Reactor Program System Data Entry Controls**

NRC management is responsible for developing application controls to achieve validity, completeness, and accuracy of data processed in an information system. However, NRC staff incorrectly coded inspections under IMC 2515 Appendix C in the agency's legacy Reactor Program System. This occurred because application controls in the Reactor Program System, operational before October 2017, were not sufficient to ensure proper coding of inspections to IMC 2515 Appendix C. This is of concern as NRC management needs reliable inspection data for effective management and oversight.

### ***What Is Required***

#### **NRC Should Strengthen Application Controls to Ensure the Validity, Completeness, and Accuracy of Data Processed in the Agency's Replacement Reactor Program System**

The Government Accountability Office's *Standards for Internal Control in the Federal Government* (Green Book) stipulates that management is responsible for developing application controls to achieve validity, completeness, and accuracy of data processed in an information system.

Application controls are those controls that are incorporated directly into computer applications to achieve validity, completeness, accuracy, and confidentiality of transactions and data during application processing. Application controls include, among other things, controls over input, processing, output, and data management system controls.

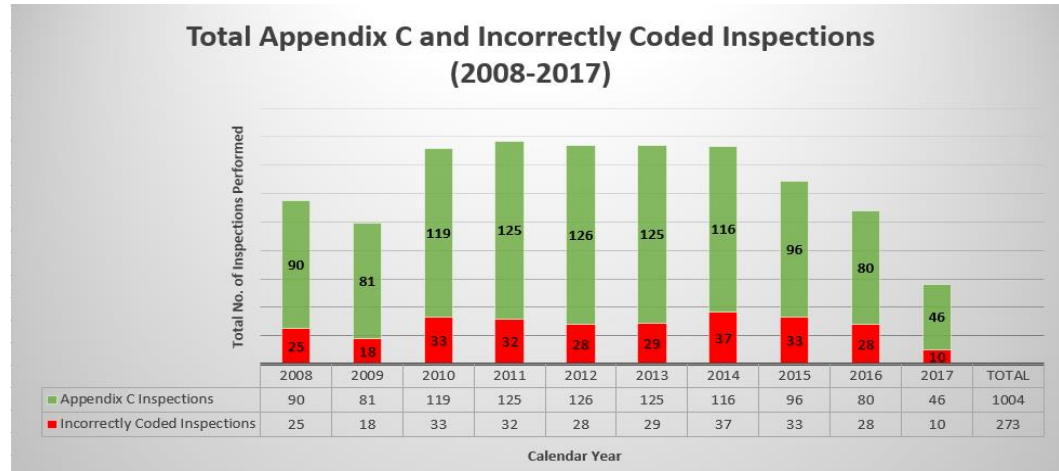
## What We Found

### NRC Staff Incorrectly Coded Inspections under IMC 2515 Appendix C

NRC staff incorrectly coded inspections under IMC 2515 Appendix C in the agency's legacy Reactor Program System. OIG reviewed 1,004 inspections performed under IMC 2515 Appendix C in the agency's legacy Reactor Program System from January 2008 through October 2017, and found 273 were incorrectly coded. The 273 incorrectly coded inspections did not correlate to any of the 35 inspection procedures listed under IMC 2515 Appendix C. These inspections should have been recorded in the legacy Reactor Program System using codes for inspection procedures that are not part of IMC 2515 Appendix C.

See Figure 3 for a graphical representation of the total number of IMC 2515 Appendix C and incorrectly coded inspections between January 2008 and October 2017.

**Figure 3: IMC 2515 Appendix C and Incorrectly Coded Inspections**



Source: OIG analysis of IMC 2515 Appendix C inspection data from NRC's legacy Reactor Program System.

## ***Why This Occurred***

### **Insufficient Application Controls in Reactor Program System to Ensure Proper Inspection Coding**

NRC staff incorrectly coded inspections under IMC 2515 Appendix C in the agency's legacy Reactor Program System because application controls in the Reactor Program System were not sufficient to ensure proper inspection coding.<sup>7</sup>

Although there were insufficient application controls in the agency's Reactor Program System to ensure proper inspection coding, the agency reportedly addressed this problem when it replaced the Reactor Program System with the Replacement Reactor Program System – Inspections Module in October 2017. However, the agency could not provide sufficient evidence during this audit that controls had been implemented to ensure proper IMC 2515 Appendix C inspection coding.

## ***Why This Is Important***

### **NRC Needs Reliable Inspection Data for Effective Management and Oversight**

NRC management needs quality information to monitor inspection activities and ensure that the agency is effectively carrying out its safety mission. A lack of effective application controls in the Replacement Reactor Program System could lead to data reliability problems that limit management and oversight of commercial nuclear power reactor inspections. Additionally, agency staff and managers need reliable inspection data so they can accurately report agency activities to key stakeholders such as the Commission, Congress, and State officials.

---

<sup>7</sup> Even though NRC staff incorrectly coded their work in the Reactor Program System as IMC 2515 Appendix C inspections, OIG did not identify fee billing issues because licensees are charged a standardized hourly labor rate for inspections in accordance with 10 CFR Part 170.20.

## **Recommendations**

OIG recommends that the Executive Director for Operations

4. Strengthen application controls in the Replacement Reactor Program System – Inspections Module to ensure NRC staff are correctly coding inspections under IMC 2515 Appendix C.
5. Periodically test application controls in the Replacement Reactor Program System – Inspections Module to ensure NRC staff are correctly coding inspections under IMC 2515 Appendix C.
6. Train NRC staff how to properly code IMC 2515 Appendix C inspections in the Replacement Reactor Program System – Inspections Module.

---

## **IV. CONSOLIDATED LIST OF RECOMMENDATIONS**

---

OIG recommends that the Executive Director for Operations

1. Update IMC 2515 Appendix C and applicable NRR guidance to reflect the requirement to ensure consistent and periodic reviews of IMC 2515 Appendix C inspection procedures.
2. Implement means for scheduling and tracking periodic reviews of IMC 2515 Appendix C inspection procedures.
3. Review the inspection procedures listed in IMC 2515 Appendix C to determine if they are still warranted.
4. Strengthen application controls in the Replacement Reactor Program System – Inspections Module to ensure NRC staff are correctly coding inspections under IMC 2515 Appendix C.
5. Periodically test application controls in the Replacement Reactor Program System – Inspections Module to ensure NRC staff are correctly coding inspections under IMC 2515 Appendix C.
6. Train NRC staff how to properly code IMC 2515 Appendix C inspections in the Replacement Reactor Program System – Inspections Module.



---

## **V. AGENCY COMMENTS**

---

An exit conference was held with the agency on May 9, 2018. Agency management provided comments prior to this meeting, after reviewing a discussion draft. Agency management stated their general agreement with the report findings and recommendations.

---

## OBJECTIVE, SCOPE, AND METHODOLOGY

---

### Objective

The audit objectives were to assess NRC's processes for (1) identifying conditions that warrant special and infrequently performed inspections at commercial power reactors under IMC 2515 Appendix C, and (2) conducting these inspections in accordance with agency guidance.

### Scope

The audit focused on identifying NRC's conditions that warrant special and infrequently performed inspections for commercial power reactors. We conducted this performance audit from September 2017 through January 2018 at NRC headquarters in Rockville, Maryland and identified inspections performed under IMC 2515 Appendix C from January 2008 to October 2017. 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:

- Government Accountability Office, *Standards for Internal Control in the Federal Government*
- NRC's Principles of Good Regulation

Additionally, OIG reviewed and analyzed the following guidance documents

- *Inspection Manual Chapter 0040, Preparing, Revising, and Issuing Documents for the NRC Inspection Manual*
- *Inspection Manual Chapter 0305, Operating Reactor Assessment Program*

- Inspection Manual Chapter 0307, *Reactor Oversight Process Self-Assessment Program*
- Inspection Manual Chapter 0309, *Reactive Inspection Decision Basis for Reactors*
- Inspection Manual Chapter 2515, Appendix C, *Special and Infrequently Performed Inspections*
- Office of Nuclear Reactor Regulation, Office Instruction 102 (OVRST-102), Revision 2
- Management Directive 8.3, *NRC Incident Investigation Program*

To understand how NRC staff and managers identify safety inspections to be performed at commercial nuclear power plants, OIG interviewed NRC staff and management from NRR and all regional offices. OIG also identified the number of special and infrequently performed inspections from calendar years January 2008 through October 2017. In analyzing these inspections, OIG discovered inadequate application controls in the agency's legacy Reactor Program System.

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

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.

The audit was conducted by Paul Rades, Team Leader; Avinash Jaigobind, Audit Manager; John Thorp, Senior Technical Advisor; Jimmy Wong, Senior Management Analyst; Deyanara Gonzalez Lainez, Auditor; and Chanel Stridiron, Auditor.

## Appendix B

## Revision History of IMC 2515 Appendix C Inspection Procedures

Inspection Procedure Number	Inspection Procedure Title	Date Last Updated
36100	10 CFR Part 21 Inspections at Nuclear Power Reactors	02/13/2012
37060	10 CFR 50.69 Risk-Informed Categorization and Treatment of Structures, Systems, and Components Inspection	09/14/2011
40001	Resolution of Employee Concerns	06/03/1997
*40100	Independent Safety Culture Assessment Follow-up	04/09/2015
41500	Training and Qualification Effectiveness	06/13/1995
*43004	Inspection of Commercial-Grade Dedication Programs	01/27/2017
*50001	Steam Generator Replacement Inspection	09/12/2017
*50003	Pressurizer Replacement Inspection	09/12/2017
52003	Digital Instrumentation & Control Modification Inspection	10/31/2008
60705	Preparation for Refueling	07/27/1995
60710	Refueling Activities	07/27/1995
**60715	Reserved for: Spent Fuel Safety at Operating Reactors	10/30/2015
60845	Operation of Intra-Unit Fuel Transfer Canister and Cask System	04/26/2012
60854.1	Preoperational Testing of ISFSIs at Operating Plants	09/05/2006
60855.1	Operation of an ISFSI at Operating Plants	09/05/2006
60856.1	Review of 10 CFR 72.212(b) Evaluations at Operating Plants	02/02/2004
*71003	Post-Approval Site Inspection For License Renewal (or 71013)	07/08/2016
*71004	Power Uprate	05/15/2017
71007	Reactor Vessel Head Replacement Inspection	06/04/2007
*71013	Site Inspections at Plants with Timely Renewal Applications	09/25/2013
71150	Discrepant or Unreported Performance Indicator Data	01/04/2007
*81311	Physical Security Requirements for Independent Spent Fuel Storage Installations	08/25/2017
85420	Inspection of IAEA Safeguards For Inspectors at Power Reactors	06/22/1988
92050	Review of Quality Assurance For Extended Construction Delay	04/04/2000
92702	Follow-up on Traditional Enforcement Actions Including Violations, Deviations, Confirmatory Action Letters, Confirmatory Orders, and Alternative Dispute Resolution Confirmatory Orders	01/10/2008
*92709	Licensee Strike Contingency Plans	03/14/2014
*92711	Continued Implementation of Strike Plans During an Extended Strike	03/14/2014
*92712	Resumption of Normal Operations After a Strike	03/14/2014
92722	Follow up Inspection for Any Severity Level I or II Traditional Enforcement Violation or for Two or More Severity Level III Traditional Enforcement Violations in a 12 Month Period	08/11/2009
92723	Follow up Inspection for Three or More Severity Level IV Traditional Enforcement Violations in the Same Area in a 12 Month Period	08/11/2009
*93001	OSHA Interface Activities	08/10/2016
93002	Managing Fatigue	11/09/2009
*93100	Safety Conscious Working Environment Issue Follow-up	04/09/2015
93800	Augmented Inspection Team	03/23/2009
93812	Special Inspection	11/15/2011

\* Inspection procedures were reviewed within in the past 4 years in response to the Inspection Program Feedback Process.

\*\* Inspection Procedure 60715 was added to IMC 2515 Appendix C on October 30, 2015.

---

## TO REPORT FRAUD, WASTE, OR ABUSE

---

### Please Contact:

Email: [Online Form](#)

Telephone: 1-800-233-3497

TTY/TDD: 7-1-1, or 1-800-201-7165

Address: U.S. Nuclear Regulatory Commission  
Office of the Inspector General  
Hotline Program  
Mail Stop O5-E13  
11555 Rockville Pike  
Rockville, MD 20852

---

## 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](#).