
**OFFICE OF
THE INSPECTOR GENERAL**

**U.S. NUCLEAR
REGULATORY COMMISSION**

Audit of NRC's Incident
Response Program

OIG-04-A-20 September 16, 2004

AUDIT REPORT



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September 16, 2004

MEMORANDUM TO: Luis A. Reyes
Executive Director for Operations

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

SUBJECT: AUDIT OF NRC'S INCIDENT RESPONSE
PROGRAM (OIG-04-A-20)

Attached is the Office of the Inspector General's audit report titled, *Audit of NRC's Incident Response Program*.

The report reflects the results of our audit to determine whether NRC's Incident Response Program (1) is performed in a timely and effective manner, (2) provides adequate support to licensees, and (3) maintains readiness and qualifications of staff. The audit found that, while NRC has improved its program since the accident at Three Mile Island on March 29, 1979, more needs to be done. Specifically, NRC's Incident Response Program is performed inconsistently, is not fully understood by licensees, and does not maintain a well defined process for demonstrating staff are qualified and ready to respond.

This report makes 17 recommendations to address the issues identified and to enhance management controls.

During an exit conference on August 16, 2004, NRC officials provided comments concerning the draft audit report and subsequently met with OIG staff to clarify specific issues and to provide editorial suggestions. NRC officials reviewed the modifications and opted not to submit formal written comments to this final version of the report.

If you have any questions or wish to discuss this report, please call me at 415-5915 or Russ Irish at 415-5972.

Attachment: As stated

cc: W. Dean, OEDO

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EXECUTIVE SUMMARY

BACKGROUND

On March 28, 1979, a severe accident occurred at the Three Mile Island (TMI) Unit 2 commercial nuclear power plant near Harrisburg, Pennsylvania resulting in damage to the nuclear fuel core. The NRC's 1979 response to the TMI accident has been described as ". . . flawed by poor communication, lack of defined leadership, and unclear emergency plans."¹ NRC's careful analysis of the events during those days led to permanent and sweeping changes in how NRC regulates its licensees.

Federal Government-wide guidance² provides for the delivery of Federal assistance and resources to assist State and local governments overwhelmed by a major disaster or emergency, an organized and integrated capability for response by Federal agencies to peacetime radiological emergencies, and designates the Lead Federal Agencies for coordinating the Federal response to radiological emergencies. NRC is designated as the Lead Federal Agency for emergencies involving NRC-licensed facilities and materials. As such, NRC is responsible for overseeing activities onsite, independently assessing protective action³ recommendations made by the licensee to State and local emergency management organizations or recommending additional offsite protective actions, and coordinating Federal assistance to conduct radiological monitoring and assessment.

PURPOSE

This audit was conducted to determine whether NRC's incident response program:

- is performed in a timely and effective manner,
- provides adequate support to licensees, and
- maintains readiness and qualifications of staff.

RESULTS IN BRIEF

Licensees are responsible for safe operation of their facility and protection of nuclear materials, and, State and local entities are responsible for implementing measures to protect the public in the event of an emergency. However, effective performance of NRC's incident response program is critical to ensuring that proper actions are taken to protect or minimize harm to the public health and safety and the environment should an incident involving NRC-licensed facilities and materials occur. While NRC has improved its incident response program since the TMI accident, more needs to be done. Specifically, NRC's incident response program—

¹ How Three Mile Island Changed NRC, NUREG/BR-0066, NR&C (News Reviews Comment), dated March 2004.

² Federal Government-wide guidance includes the Robert T. Stafford Disaster Relief and Emergency Assistance Act, the Federal Response Plan, the Federal Radiological Emergency Response Plan, and the Initial National Response Plan.

³ Protective action means an activity conducted in response to an incident or potential incident to avoid or reduce radiation dose to members of the population.

- A. is performed inconsistently across regions and from exercise to exercise (see page 4),
- B. is not fully understood by licensees (see page 15), and
- C. does not maintain a well-defined process for demonstrating staff is qualified and ready to respond (see page 19).

These issues exist because NRC's incident response staff has been engaged in supporting revisions and improvements to Government-wide incident response plans, and because NRC lacks —

- incident response performance standards,
- an objective mechanism for evaluating performance during exercises, and
- a well-defined agency-wide incident response training program.

In light of the current threat environment, additional management focus is warranted to improve the effectiveness of NRC's incident response program. Although the current incident response program provides a framework for managing the agency's response to incidents involving NRC-licensed facilities or materials, the program should be strengthened to better inform licensees about NRC's incident response roles and responsibilities, and better define training and qualifications programs. This will improve the overall effectiveness and efficiency of the incident response program and provide assurance that all aspects of the program are coordinated.

RECOMMENDATIONS

A Consolidated List of Recommendations appears on page 27 of this report.

OIG ANALYSIS OF AGENCY COMMENTS

At an exit conference with agency senior executives held on August 15, 2004, NRC officials generally agreed with the report findings and recommendations but requested an additional meeting with Office of the Inspector General (OIG) staff for clarification on specific issues. Subsequent to that meeting, OIG met with agency managers and staff to address editorial suggestions, discuss specific points of concern, and provide clarification on other points. Following that meeting, OIG revised the report, as appropriate. After reviewing the revised draft report, agency officials met again with OIG on August 31, 2004 and expressed agreement with the findings and recommendations and chose not to provide a formal written response for inclusion in the report.

ABBREVIATIONS AND ACRONYMS

DHS	U.S. Department of Homeland Security
FRERP	Federal Radiological Emergency Response Plan
FRMAC	Federal Radiological Monitoring and Assessment Center
FRP	Federal Response Plan
MD	Management Directive
NRC	U.S. Nuclear Regulatory Commission
NSIR	Office of Nuclear Security and Incident Response
OIG	Office of the Inspector General
TMI	Three Mile Island
U.S.	United States

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TABLE OF CONTENTS

EXECUTIVE SUMMARY i

ABBREVIATIONS AND ACRONYMS iii

I. BACKGROUND 1

II. PURPOSE 3

III. FINDINGS 4

 A. INCIDENT RESPONSE PROGRAM IS PERFORMED INCONSISTENTLY 4

 B. LICENSEES LACK AN UNDERSTANDING OF NRC'S INCIDENT RESPONSE PROGRAM 15

 C. NRC'S PROCESSES TO QUALIFY STAFF AND ENSURE READINESS TO RESPOND ARE NOT WELL DEFINED 19

IV. CONSOLIDATED LIST OF RECOMMENDATIONS 27

V. AGENCY COMMENTS 29

APPENDICES

A. Scope and Methodology 31

B. Changes in NRC's Regulation of Nuclear Power Plants Following the Three Mile Island Accident 33

C. NRC'S Incident Response Program 35

D. Incident Response Functional Areas 39

E. OIG Analysis of NRC's Incident Response Performance 43

F. Summary of Notable Inconsistent Incident Response Performance Observed During Incident Response Exercise 56

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I. BACKGROUND

THREE MILE ISLAND ACCIDENT



Three Mile Island Nuclear Power Plant
Source: NRC Website

On March 28, 1979, a severe accident occurred at the Three Mile Island (TMI) Unit 2 commercial nuclear power plant near Harrisburg, Pennsylvania resulting in damage to the nuclear fuel core. According to the U.S. Nuclear Regulatory Commission (NRC) Chairman, at that time, few experts thought that such a severe accident was ever likely to happen. NRC had put into place its commercial reactor regulatory program, based on the concept of defense-in-depth⁴. Moreover, the commercial nuclear power industry was perceived as having an outstanding safety record.

The NRC's 1979 response to the TMI accident has been described as "... flawed by poor communication, lack of defined leadership, and unclear emergency plans."⁵ NRC's careful analysis of the events during those days led to permanent and sweeping changes in how NRC regulates its licensees. (For a description of changes that occurred at NRC see Appendix B).

As a result, NRC now maintains an incident response program to ensure that —

- the agency maintains its readiness to respond to an incident involving NRC-regulated activities that has the potential to threaten the public or the environment,
- the response is compatible with licensee responsibilities,
- the response supports State and local governments' emergency response functions, and
- the response is coordinated with the responses of other Federal agencies.

INCIDENT RESPONSE LEGISLATION AND GUIDANCE

Congress established statutory authority for the Federal Government to respond to disasters that exceed State and local capabilities.⁶ The *Robert T. Stafford Disaster Relief and Emergency Assistance Act* (the Stafford Act), as amended, established a means for the Federal Government to provide assistance to State

⁴ Defense-in-depth is a design and operational philosophy with regard to nuclear facilities that calls for multiple layers of protection to prevent and mitigate accidents. It includes the use of controls, multiple physical barriers to prevent release of radiation, redundant and diverse key safety functions, and emergency response measures.

⁵ How Three Mile Island Changed NRC, NUREG/BR-0066, NR&C (News Reviews Comment), dated March 2004.

⁶ Since the September 11, 2001 attacks on the World Trade Center and the Pentagon, much has been done to improve prevention, preparedness, response, recovery, and mitigation capabilities and coordination processes across the country. Consequently, much of the Federal incident response guidance was under revision during the course of this audit.

and local governments during disasters that exceed their capabilities. The *Federal Response Plan* (FRP) supports implementation of the Stafford Act and provides the mechanism for coordinating delivery of Federal assistance and resources to assist State and local governments overwhelmed by a major disaster or emergency. In October 2003, the *Initial National Response Plan*⁷ was approved as an interim plan designed to help develop a unified approach to domestic incident management across the Nation.

The *Federal Radiological Emergency Response Plan* (FRERP) maintained by the Federal Emergency Management Agency, provides for an organized and integrated capability for response by Federal agencies to peacetime radiological emergencies. It also designates the Lead Federal Agencies for coordinating the Federal Response to radiological emergencies. Under the FRERP, NRC is designated as the Lead Federal Agency for emergencies involving NRC-licensed facilities and materials. As such, NRC is responsible for overseeing activities onsite, independently assessing protective action⁸ recommendations made by the licensee to State and local emergency management organizations or recommending additional offsite protective actions, and coordinating Federal assistance to conduct radiological monitoring and assessment.

NRC issued Management Directive (MD) 8.2, *NRC Incident Response Program* to—

- carry out its Lead Federal Agency responsibilities under the FRERP
- maintain its readiness to respond to an incident involving NRC-regulated activities that has the potential to threaten the public or the environment,
- establish and implement NUREG-0728, *NRC Incident Response Plan*,
- identify organizational responsibilities for providing assistance, and
- commit staff.

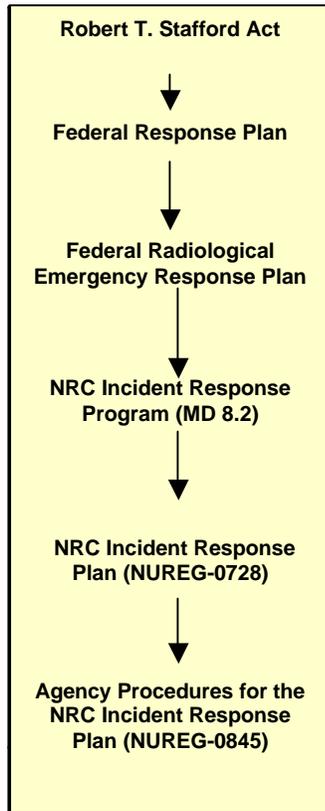
The *NRC Incident Response Plan* describes the functions of the NRC during an incident and the actions that comprise its incident response.

NRC published NUREG-0845, *Agency Procedures for the NRC Incident Response Plan* in February 1983 to delineate, among other things, the manner in which each planned response function is performed. As NRC gained experience in incident response and captured lessons learned, the agency developed team- and position-specific procedures within the framework of NUREG-0845. Because team- and position-specific procedures have evolved over time, the agency has determined that NUREG-0845 is not needed and has begun removing reference to it in the agency's incident response guidance (e.g., the *NRC Incident Response Plan*). The NRC incident response program approach is

⁷ The Initial National Response Plan strengthens America's emergency response process by harmonizing existing Federal response plan activities with incident management leadership responsibilities assigned by President Bush to Secretary Ridge through Homeland Security Presidential Directive 5.

⁸ Protective action means an activity conducted in response to an incident or potential incident to avoid or reduce the radiation dose to members of the population.

Figure 1 - Incident Response Guidance



further described in NUREG/BR-0230, RCM-96, *Response Coordination Manual*, Section Q, Concept of Operations with Organization Charts – NRC Incident Response. Figure 1 illustrates the hierarchy of Government-wide incident response guidance and NRC incident response guidance.

NRC's Office of Nuclear Security and Incident Response (NSIR) develops and directs the NRC program for response to incidents. NSIR is the agency incident response interface with the U.S. Department of Homeland Security (DHS) and other Federal agencies. Within NSIR, the Incident Response Directorate (1) develops and directs implementation of the policies and programs for the agency's response to incidents involving licensed facilities and materials and (2) coordinates NRC's incident response program with Federal, State, and local governments and licensees. For a more detailed description of NRC's Incident Response Program, see Appendix C.

Title 10, *Code of Federal Regulations*, requires NRC and Agreement State⁹ licensees to notify the NRC of emergency events involving commercial nuclear facilities or licensed materials. During an incident involving NRC-regulated facilities or materials, the licensee or certificate¹⁰ holder is at all times

responsible for controlling the material, protecting against its release, and mitigating the consequences of the incident. Licensees of regulated facilities are also responsible for providing appropriate protective action recommendations to State, local, and tribal officials.

II. PURPOSE

This audit was conducted to determine whether NRC's incident response program:

- is performed in a timely and effective manner,
- provides adequate support to licensees, and
- maintains readiness and qualifications of staff.

⁹ An Agreement State is any State that has signed an agreement with NRC allowing the State to regulate the use of radioactive materials (except at Federal agencies, commercial nuclear power plants, and those authorized to possess a critical mass of Special Nuclear Material) within that State. Since NRC regulations on reporting incidents apply directly to Agreement State licensees, references to "licensees" in this paper refer to NRC and Agreement State licensees.

¹⁰ A certificate means a certificate of compliance issued pursuant to Title 10, Code of Federal Regulations, Part 76—*Certification of Gaseous Diffusion Plants*.

Appendix A provides a more detailed description of the audit's scope and methodology.

III. FINDINGS

Licensees are responsible for safe operation of their facility and protection of nuclear materials, and, State and local entities are responsible for implementing measures to protect the public in the event of an emergency. However, effective performance of NRC's incident response program is critical to ensuring that proper actions are taken to protect or minimize harm to the public health and safety and the environment should an incident involving NRC-licensed facilities and materials occur. While NRC has improved its incident response program since the TMI accident, more needs to be done. Specifically, NRC's incident response program—

- A. is performed inconsistently across regions and from exercise to exercise,
- B. is not fully understood by licensees, and
- C. does not maintain a well defined process for demonstrating staff is qualified and ready to respond.

These issues exist because NRC's incident response staff has been engaged in supporting revisions and improvements to Government-wide incident response plans, and because NRC lacks —

- incident response performance standards,
- an objective mechanism for evaluating performance during exercises, and
- a well defined agency-wide incident response training program.

In light of the current threat environment, additional management focus is warranted to improve the effectiveness of NRC's incident response program. Although the current incident response program provides a framework for managing the agency's response to incidents involving NRC-licensed facilities or materials, the program should be strengthened to better inform licensees about NRC's incident response roles and responsibilities, and better define training and qualifications programs. This will improve the overall effectiveness and efficiency of the incident response program and provide assurance that all aspects of the program are coordinated.

A. INCIDENT RESPONSE PROGRAM IS PERFORMED INCONSISTENTLY

In the post-9/11 environment, ensuring timely and effective incident response is a critical element of NRC's mission to protect the public health and safety. However, NRC's incident response program is (1) performed inconsistently across regions and from exercise to exercise, and (2) some areas need improvement. These conditions exist because NRC lacks—

- standards for performance,
- an objective methodology for evaluating incident response performance, and
- does not conduct periodic reviews of region based incident response programs.

Additional management focus is warranted to assure that essential incident response functions are completed effectively and efficiently. In light of the recently issued 9-11 Commission¹¹ statement¹² that the 9/11 al Qaeda plot had targeted nuclear plants, it is imperative that NRC's incident response be consistent, regardless of the type, location, cause, size, or complexity of an incident.

Background

NRC has established policies, plans and procedures to ensure that incident response programs are coordinated and standardized and that headquarters and regional personnel are sufficiently trained to respond effectively as members of headquarters response, region based, and site teams. NUREG-0845, *Agency Procedures for the NRC Incident Response Plan* delineates—

- the manner in which each planned response function is performed,
- the criteria for making response decisions, and
- the information and other resources needed during a response.

NUREG-0845 describes 20 functional areas that detail response functions and specific tasks for the appropriate team and/or position. These procedures (1) assist responders in performing response functions and making necessary decisions; (2) provide a foundation for the training of response personnel; and (3) are a ready reference or reminder checklist for technical team members and managers during a response. For a complete list of the functional areas, see Appendix D. The NRC incident response program approach is further described in NUREG/BR-0230, RCM-96, *Response Coordination Manual*, Section Q, Concept of Operations with Organization Charts-NRC Incident Response.

1. Inconsistencies in Incident Response Performance Exist

NRC conducts incident response exercises to practice, learn, and assess the response procedures and to confirm and maintain the capabilities of NRC's response personnel. Office of the Inspector General (OIG) auditors observed NRC's incident response performance during one incident response exercise in

¹¹ The National Commission on Terrorist Attacks Upon the United States (also known as the 9-11 Commission) is an independent, bipartisan commission created by congressional legislation to prepare a full and complete account of the circumstances surrounding the September 11, 2001 terrorist attacks, including preparedness for, and the immediate response to, the attacks.

¹² *Outline of 9/11 Plot, Staff Statement No. 16*, published on the 9-11 Commission website (http://www.9-11commission.gov/hearings/hearing12/staff_statement_16.pdf), June 16, 2004

each of the agency's four regions. Incident response performance for each exercise was compared against NUREG-0845 incident response functions. Within each function, NUREG-0845 defines specific tasks for the appropriate team and/or position. For instance, under Function 6, *Enter Initial Activation Mode*, tasks include, but are not limited to, the following:

- personnel assume emergency organization titles,
- pre-organized headquarters and regional response teams combine capabilities of specialists from various organizational units, and
- regional personnel arriving at the site establish liaison with counterparts.

Overall, OIG observed NRC's incident response performance in 384 areas. Based on these observations, OIG noted that NRC met performance expectations in 315 areas, but did not meet performance expectations in 69 instances as summarized in the following table. (Shaded boxes reflect those instances where performance expectations were not met. For additional results by exercise, see Appendix E.)

TABLE I

Summary of OIG's Observations of NRC's Incident Response Performance

	Instances of Performance Expectations Not Met			
	Exercise A	Exercise B	Exercise C	Exercise D
Function 1: Maintain Response Capability	Discussed under Finding C			
Function 2: Man Emergency Communications Systems	0	2	0	0
Function 3: Evaluate and Categorize Initial Information	0	1	0	0
Function 4: Decide to Escalate The NRC Response	0	1	0	3
Function 5: Enter Standby Mode	0	1	0	2
Function 6: Enter Initial Activation Mode	5	4	0	3
Function 7: Enter Expanded Activation Mode	0	3	0	0
Function 8: Enter Deactivating Mode	0	3	0	1
Function 9: Evaluate Incident and Plant Status	1	2	0	2
Function 10: Evaluate Licensee Actions	1	1	0	2
Function 11: Project Incident Consequences and Plant Status	1	1	0	1
Function 12: Advise, Assist, or Direct Licensee	1	0	0	3
Function 13: Request Other-Agency Support	0	0	0	0
Function 14: Maintain Liaison with Congress, the White House, and Other Federal, State, and Local Agencies	0	0	0	0
Function 15: Inform Public and Monitor Public Information	0	3	0	4
Function 16: Recommend Protective Actions for Public	4	4	1	0
Function 17: Provide Administrative and Logistical Support	2	0	0	5
Function 18: Decide to Deescalate	0	1	0	0
Function 19: Review, Investigate, and Document Response Actions	0	0	0	0
Function 20: Recover	0	0	0	0
Total	15	27	1	26

NRC uses an informal approach for evaluating and improving the incident response program, resulting in inconsistencies in performance in many areas. The most notable inconsistencies occurred when (a) making the transition from one activation mode to another (i.e., Functions 5, 6, 7 and 8), (b) evaluating licensee actions (i.e., Function 10), projecting incident consequences and plant status (i.e., Function 11) and endorsing licensee-issued protective actions and/or recommending protective actions for the public (i.e., Function 16), and (c) informing the public and monitoring public information (i.e., Function 15).

a. Making Transitions from One Activation Mode to Another (See Appendix F, page 56)

NRC experienced problems in this area in 22 instances. When making the transition from one incident response mode to another, NRC experienced problems with (1) evaluating initial information, (2) identifying problems and trends, (3) beginning specific analyses, and (4) transferring authority from headquarters to the site team. For instance, when entering initial activation during one exercise, NRC headquarters' responders asked the licensee to consider declaring a general emergency when members of the protective measures team¹³ determined it was not warranted. Asking the licensee to consider declaring a general emergency before consulting with the protective measures team undermined the intended interrelationships of the incident response organization.

b. Evaluating Licensee Actions and Projecting Incident Consequences and Plant Status (See Appendix F, page 56)

Performance expectations were not met in 16 instances. NRC's performance was inconsistent in (1) communicating with the licensee to obtain information needed to assess plant status and evaluate licensee actions, (2) independently assessing the licensee's measures and (3) validating licensee's protective action recommendations. For instance, during one exercise, the NRC protective measures team coordinator at the site stated that NRC concurred with the licensee's protective action recommendations based on a review of the licensee's process. However, NRC's protective measures team at the site was unable to produce any valid off-site dose projections throughout the exercise to form a basis for an independent validation of the licensee's recommendations.

c. Informing the Public and Monitoring Public Information (See Appendix F, page 57)

In seven instances, NRC did not perform consistently in the area of informing the public and monitoring public information. In one instance, NRC did not satisfy the minimum staffing level to enter initial activation mode that requires a public affairs officer to be positioned with the site team. NRC chose to stage the public affairs officer in the region, rather than at the site. The regional staff attempted to

¹³NRC's protective measures team ensures that public protective actions are adequate, assists the State(s) in the interpretation of radiological data, provides consultation to the states on protective action recommendations, keeps the NRC executives informed of radiological conditions and projections, requests other Federal agencies' resources and support, supports the response team in the region's incident response center; and establishes and maintains the communication links with counterparts.

use the telephone to stay in contact with their counterparts in the emergency offsite facility and to receive and reply to questions from the press. However, this system did not succeed. Because the public affairs officer was in the region instead of the emergency offsite facility and the use of the telephone did not succeed, NRC did not participate in press conferences and was unable to respond to inquiries from the press.

Additional details on NRC's inconsistent incident response performance can be found in Appendices E and F.

NRC Lacks An Objective Mechanism for Evaluating Incident Response Performance

Inconsistencies in performance exist because NRC's incident response program lacks (1) standards and (2) an objective evaluation mechanism with acceptance criteria for satisfactory performance resulting in inconsistency in approaches from region to region.

NRC lacks an objective mechanism for evaluating its incident response performance during an exercise because MD 8.2 does not include a requirement to evaluate NRC's performance during exercises. Consequently, exercise objectives rarely reflect NRC's incident response operation performance criteria and are not effectively used to evaluate performance. NRC staff said objectives are used to determine the success of an exercise, are published before an incident response exercise begins, and are published in a report identifying whether the agency met the objectives. However, NRC informally evaluates whether objectives are met during meetings that follow the exercises or through e-mails sent to responders soliciting feedback. In most cases, discussions about incident response performance are not structured by objectives and do not follow a prescribed evaluation approach. Furthermore, performance is not evaluated against performance standards or predefined criteria for successful achievement of objectives. In fact, following one exercise, the executive team director began the meeting by stating that the objectives had been met even though team members did not discuss objectives. In contrast, one region used specific objectives that were assigned to individual responders who evaluated performance against pre-defined acceptance criteria.

During this audit, OIG used NUREG 0845 as the basis for determining whether NRC met performance expectations for each function. While NUREG 0845 could be used by the agency as the basis for developing performance standards, that guidance is outdated. The agency has determined it is not needed and has begun removing reference to it in incident response guidance.

Separate incident response programs maintained in each region also contribute to inconsistent incident response performance. While MD 8.2 Handbook requires NRC's response to be standardized, it assigns responsibility to headquarters and each regional office for maintaining their own procedures and training their own responders. To confirm that the regional offices maintain an effective incident response capability, MD 8.2 requires the Director of the Incident Response Directorate¹⁴ to establish criteria and perform reviews. However, NRC does not

¹⁴ Formerly, the Division of Incident Response Operations

routinely conduct these reviews. By assigning responsibility to each region separately and not conducting periodic reviews of the regions' response capability, NRC cannot be sure its incident response is standardized across the regions.

NRC also lacks a standardized, well-defined mechanism for evaluating individual responders' performance during incident response exercises. At headquarters, incident response team directors or coordinators informally evaluate individual responders' performance. Except for responders in the Incident Response Directorate, headquarters responders' incident response expectations are not included in their elements and standards. Additionally, performance is not documented and is not reported to their supervisors. However, in some regions, incident response expectations are documented in each responder's elements and standards and responders are evaluated against them. A standardized, well-defined mechanism for evaluating responder's performance during exercises is needed to ensure a comprehensive, coordinated and effective agency-wide incident response program.

RECOMMENDATIONS

OIG recommends that the Executive Director for Operations:

1. Establish a defined agency-wide incident response plan that includes standards for performance, delineation of the conduct of exercises and drills, and a well-defined objective mechanism for evaluating incident response during exercises.
2. Revise MD 8.2, *NRC Incident Response Program Handbook* to require an evaluation of incident response performance following each exercise.
3. Update NUREG 0845, *Agency Procedures for the NRC Incident Response Plan*, or incorporate relevant portions into other agency procedures.
4. Periodically review regional incident response programs to ensure NRC's Incident Response Program is carried out consistently across the agency.
5. Establish a well-defined process for giving performance feedback to responders.

2. Improvement is Needed in Specific Areas

Much has been done to improve NRC's incident response program since the Three Mile Island accident. However, in light of the 9/11 terrorist attacks, more improvement is needed in the following areas:

- a. exercising deployment of incident response personnel,
- b. handling events involving multiple sites,
- c. handling protracted events, and

- d. defining the response to events at fuel cycle facilities or events involving nuclear materials in the *NRC Incident Response Plan*.

These improvements are needed to ensure that, regardless of the type, location, cause, size or complexity of the incident, NRC works effectively and efficiently to meet its incident response expectations.

a. Deployment of Incident Response Personnel Not Regularly Exercised

NRC often pre-stages¹⁵ responders for exercises rather than practice their deployment. This practice does not effectively test the efficacy of the agency's deployment phase of an exercise. NRC has chosen to pre-stage partly because experience in responding to 9/11 and other real emergencies has given management confidence that staff will deploy effectively. Therefore, the benefits gained from exercising that phase of a response, in management's opinion, do not justify the effort.

During the four exercises observed, OIG noted that in one instance, headquarters incident response staff assembled in the operations center prior to the start of the exercise. Responders staged their procedures and equipment, activated radiological, chemical and meteorological computer programs and established communication with counterparts.

The regions also pre-staged responders prior to the start of each exercise. Specifically, all regions simulated dispatch of a site team for exercises observed. For instance, one region gathered at the commercial power reactor site and simulated a gathering to put a site team together and later simulated arrival at the site. Responders in another region gathered in a hotel and reviewed procedures until they received notification to report to the site.

In contrast, while not done during exercises observed by OIG, one region leases an aircraft to periodically exercise deployment. The region's management said that the effectiveness of exercising with the aircraft is only as good as the staff's understanding of the logistics (e.g., which airport will be used, where should responders go when they arrive at the airport, what materials and equipment are transported on the plane, etc.). According to another regional manager, using the jet to exercise deployment ensures the aircraft strategy will work.

While deployment has been exercised in some regions, during the course of this audit, the agency pre-staged responders for all exercises observed. OIG recognizes that pre-staging is beneficial in many ways. However, by pre-staging responders for all exercises observed, NRC did not test the procedures for deploying response teams. Without periodically exercising deployment, NRC does not have assurance that incident response teams could mobilize in a timely and efficient manner.

¹⁵ Pre-staging, as used in this report, means that personnel are dispatched and in place ready to respond before emergency exercises begin.

RECOMMENDATION

OIG recommends that the Executive Director for Operations:

6. Exercise the deployment of headquarters and regional response staff as part of the agency's Incident Response Program.

- b. **NRC's Plan to Respond to Serious Events Involving Multiple Sites Needs Improvement**

NRC's incident response strategies and procedures for handling serious events¹⁶ that may occur simultaneously at multiple sites¹⁷ (multiple events) needs improvement because the incident response organization is not designed to handle multiple events. Furthermore, during OIG's observations of the agency's response to the blackout and other exercises, some response facilities and equipment were not designed to handle multiple events. While improvements to facilities and equipment were implemented during the course of this audit, the effectiveness of these improvements to support multiple events had not been tested during an exercise or a real incident.

NRC's incident response center is equipped with an Emergency Response Data System that electronically receives plant data transmitted from NRC-licensed nuclear plants to NRC's headquarters, the regions, and the licensees' emergency offsite facilities. The Emergency Response Data System transmits essential information needed by the incident response organizations to diagnose the plant emergency conditions and to execute their responsibilities under emergency conditions. NRC's headquarters incident response center can only receive plant data from four plants at the same time through this system. However, while each regional office has the capability to receive data transmitted through Emergency Response Data System, NRC has not developed strategies and procedures to parse out responsibility to regional offices to handle multiple events.

On August 14, 2003, an electrical outage (the blackout) occurred across a large portion of the northeast United States. During the blackout, nine U.S. nuclear power plants were affected. Eight of these plants, along with one plant that was already shut down, lost offsite power. Although the onsite emergency diesel generators functioned to maintain safe shut down conditions, this event was significant in terms of the number of plants affected and the duration of the power outage.

¹⁶ For the purpose of this report, the term "serious events" refers to events involving NRC-licensed facilities and materials that are classified as site area emergencies or general emergencies (see Appendix C for classification of events).

¹⁷ For the purpose of this report, the term "multiple sites" means events that occur simultaneously at more than four sites.

As events unfolded, each plant had a different set of circumstances. To track the plant status at each plant, NRC's reactor safety team¹⁸ developed a paper-based matrix because the white boards that existed during this event could not display plant status for nine plants. While none of the incidents at the nine plants escalated beyond the unusual event level (see Appendix C for description of event classifications, page 35), the situation exposed a vulnerability of NRC's incident response program. Had the blackout resulted in more than four plants declaring an alert (due to failure of their on-site power sources), NRC would not have been able to receive data through the Emergency Response Data System for all affected plants and would have been challenged to monitor each plant's status. The remaining plants' data would either be sent to the regions or transmitted through telephone, facsimile, or e-mail transmissions.

Additionally, both the headquarters' reactor safety team and the protective measures team would have difficulty responding to multiple serious events. During the blackout, the reactor safety team area at NRC headquarters was not designed to display or post plant status summaries for multiple events. Since the August 2003 blackout, NRC has implemented physical improvements to the operations center display capabilities, including those in the reactor safety team area and the protective measures team area. Furthermore, the protective measures team organization only calls for one dose assessment analyst (operator). While some protective measures positions could handle multiple events, others require more support. Consequently, should multiple events occur, an incident response team coordinator said that he would not feel comfortable giving an operator of the Radiological Assessment System for Consequence Analysis two dose assessments at once.

Because NRC's incident response facilities, equipment, and organization were not designed to handle multiple events, NRC experienced challenges in gaining an extent of condition at the start of the response to the blackout. One regional manager said that the agency can handle multiple events, but it would not be easy. According to this manager, headquarters would have to parse out responsibility for responding to the incidents to the regions. This manager said that NRC should develop a plan for how to share the response to multiple events between headquarters and the regions. Improvements to strategies and procedures for handling events at multiple sites are needed to assure that NRC's incident response for all events will be effectively coordinated and all actions to minimize harmful effects of each incident will be efficiently performed.

RECOMMENDATIONS

OIG recommends that the Executive Director for Operations

7. Develop team- and position-specific strategies and procedures for handling events at multiple sites.

¹⁸ NRC's reactor safety team monitors the status of a reactor involved in an incident to (1) assess and predict reactor core and containment conditions, assess licensee's understanding of the incident, and confirm the classification; (2) provide those performing assessments of protective measures with the information needed to make independent assessments of off site consequences and protective action recommendations; (3) keeps the NRC response management informed of plant conditions and future trends, and (4) provides technical and logistical support to the licensee as requested.

8. Periodically conduct incident response exercises involving multiple sites.

c. NRC Procedures for Handling Protracted Events Need Enhancement

Enhancements to procedures and supporting technology are needed to assure that NRC can adequately staff the incident response organization should an event extend for longer than one shift (protracted events). Specifically, the response coordination team procedures are not prescriptive for setting up work shifts and the automated response computer system does not include a function for scheduling staff for protracted events. While not prescribed by procedure, soon after arriving at the incident response center in response to the blackout, OIG observed team coordinators quickly begin to plan for watch bills (i.e., list of staff to be called should additional shifts be needed) to ensure coverage. However, this was an ad hoc solution that relies on the attentiveness of the team coordinators. Adequate staff coverage for responding to an incident, regardless of its duration, is essential to ensuring that incident response functions are carried out effectively. Following the terrorist events of 9/11, NRC placed incident response staff on shift work to staff its incident response operations center. The operations center remained staffed above the normal two person level for 24 hours a day for more than 14 weeks following 9/11.

RECOMMENDATIONS

OIG recommends that the Executive Director for Operations:

9. Incorporate procedures for handling protracted events into incident response procedures.
10. Develop a more systematic approach to scheduling staff to cover a response to a protracted event.

d. NRC Needs to Improve Its Capability to Respond to Events at Fuel Cycle Facilities or Involving Nuclear Materials

NRC reported in a March 1999, *Incident Response Function Self-Assessment Report* that, ". . . NRC's incident response process and practices for material events are less formal and less structured than those for power reactor facilities." Even though the report included a recommendation to revise NUREG-0728, *NRC Incident Response Plan*, to specifically address nuclear material incidents and emergencies, NRC's recently revised the *NRC Incident Response Plan* includes only minimal changes addressing nuclear material incidents.

NRC responders are not familiar with how NRC's response to an event at a fuel cycle facility¹⁹ should function because the agency's incident response plans for these events are informal, unstructured, and exercised infrequently. Some NRC staff said that reactors are the real hazard and believe that emergencies involving materials or fuel cycle facilities are not as risky. Until the exercise at one of only two gaseous diffusion plants on July 15, 2003, that plant had only participated in one exercise with NRC sometime around 1997, but no one could

¹⁹ A fuel cycle facility is involved in processing and fabrication of uranium ore into reactor fuel.

be certain as to when that occurred. The agency also said a regional office participated in an exercise with that plant in 1999 as part of a Y2K exercise. During the July 2003 exercise, confusion existed concerning the initial bounding analysis²⁰ resulting in large differences between the dose radiological and chemical dispersion bounding analysis prescribed by the agency's Response Technical Manual Supplements²¹ and results produced by the Radiological Assessment System for Consequence Analysis based on actual uranium hexafluoride²² field data. This confusion occurred because responders did not have adequate training on how to use the Response Technical Manual Supplement.

Furthermore, resource materials for responding to fuel cycle facilities are outdated. NRC uses Response Technical Manual Supplements for responding to emergencies at the two gaseous diffusion plants. The Response Technical Manual Supplements contain analyses for a number of incident scenarios from a worst-case perspective to facilitate event assessment, to guide in determining potential health impacts to site workers and the public, to assist in mitigation, and to communicate the status of the incident to the executive team. As of July 1, 2003, the Response Technical Manual Supplements for one of the gaseous diffusion plants was out of date (i.e., reflected the plant as operational even though the plant was not). Using Response Technical Manual Supplements that are out of date causes confusion among responders and could produce inaccurate results.

While emergencies involving materials or fuel cycle facilities may not be as risky as potential emergencies at commercial power reactors, they do pose risks to the surrounding public. In 1986 an incident occurred at a uranium conversion facility when an over-loaded cylinder was reheated and ruptured. The cylinder released a dense cloud of uranium hexafluoride and resulted in the death of one individual.²³

On December 22, 2003, uranium hexafluoride leaked from a valve at a fuel cycle facility. Because the facility monitors indicated a possible material release offsite, local authorities evacuated approximately 25 people near the plant and approximately 75 people remained sheltered in their homes. Therefore, given potential risks to public safety and the quick evolution of emergencies at fuel cycle facilities, establishing a more defined program that includes exercising with these facilities on a more frequent basis is warranted.

²⁰ Bounding analysis is an analysis encompassing the spectrum of accident scenarios or conditions and produces the most conservative results.

²¹ The Response Technical Manual is a compilation of simple methods for estimating the possible consequences of different kinds of radiological accidents. Supplements to the Response Technical Manual were prepared specifically for gaseous diffusion plants.

²² Uranium hexafluoride is a hazardous chemical with low level radioactivity associated with the uranium component of the chemical.

²³ Potential Health Effects from Cylinder Accidents, Environmental Assessment Division of Argonne National Laboratory, DUF₆ Guide (<http://web.ead.anl.gov/uranium/guide/health/accident/>)

RECOMMENDATIONS

OIG recommends that the Executive Director for Operations:

11. Revise the *NRC Incident Response Plan* to better define the incident response to emergencies involving regulated fuel cycle facilities and nuclear materials.
12. Conduct routine exercises with each NRC-regulated fuel cycle facility.
13. Update Response Technical Manual Supplements for gaseous diffusion plants.

Summary

NRC guidance requires the agency to ensure that headquarters and regional incident response programs are coordinated and standardized and that actions are taken to ensure a comprehensive, effective, and coordinated response. However, while much has been done to improve oversight of nuclear power plants since the TMI accident, inconsistencies exist and additional improvement in incident response is needed. These conditions exist because NRC lacks standards for incident response performance and a well-defined objective mechanism for evaluating incident response performance. In the post-9/11 environment, where greater attention is given to the possible threat of terrorist attacks on nuclear plants, it is critical that NRC ensure a timely and effective incident response program to protect the public health and safety and the environment. NRC's incident response program should be one cohesive program designed to respond to events regardless of the type, location, size, cause or complexity of the incident. Improvements to the NRC incident response program are needed to ensure the agency's consistency and effectiveness in performing essential incident response functions. These should include —

- improving strategies and procedures,
- establishing an objective mechanism for evaluating incident response, and
- periodically reviewing regional incident response programs.

B. LICENSEES LACK AN UNDERSTANDING OF NRC'S INCIDENT RESPONSE PROGRAM

While inconsistencies in NRC's performance to support licensees occurred, NRC generally provided adequate support to licensees during the incident response exercises that OIG observed. However, many licensees OIG interviewed are not familiar with NRC's incident response program because the NRC's outreach efforts have not been sufficient and the frequency of agency participation in exercises is inadequate. Therefore, without a cohesive program, some activities between NRC and the licensee during a real incident may not be coordinated as required by the *NRC Incident Response Plan*.

Background

Since the 9/11 attacks on the World Trade Center and the Pentagon, much has been done to improve prevention, preparedness, response, recovery, and mitigation capabilities and coordination processes across the country. NRC recognizes that a successful incident response management operation requires effective and efficient coordination across the broad spectrum of organizations and activities.

According to the *NRC Incident Response Plan*, the NRC must be ready to support and assist the licensee by (1) monitoring the incident to be ready to advise the licensee based on NRC's assessment of the situation, (2) locating and obtaining needed expertise and equipment, (3) communicating and coordinating with applicable Federal, State, local, and tribal agencies, conducting an independent assessment of potential offsite consequences, and (4) providing assistance and recommendations concerning any protective measures. Both the NRC and the licensee must be prepared to cooperate in all their activities with State, local, tribal, and Federal agencies that have related responsibilities.

NRC's Incident Response Directorate is responsible for coordinating incident response exercises and supporting an outreach program to ensure that State organizations and licensees are aware of the resources of the NRC and other Federal agencies that are available to support them during an actual event. Additionally, this Directorate is responsible for maintaining plans and procedures to ensure that the overall Federal response is coordinated. Furthermore, regional offices are also expected to have an outreach program to provide information on incident response issues to State and regional Federal organizations and to licensees.

NRC's Support for Licensees During Incident Response Exercises Is Generally Effective

Generally, NRC provided adequate support to licensees during four exercises observed by OIG. However, inconsistencies in evaluating licensee actions and projecting incident consequences and plant status occurred as described earlier in this report. For instance, during one exercise, NRC concurred with the licensee's protective action recommendations, but had not yet produced any dose projections to form an independent validation of the licensees' recommendations. Nonetheless, licensee representatives said their experience in working with NRC in response to an alert was positive, communication was good, and the NRC responders were very knowledgeable and focused on problem solving.

Licensees Lack Familiarity With NRC's Incident Response Program

Licensees at many plants that OIG contacted lack an understanding of NRC's incident response program because agency outreach efforts have not been sufficient and licensees have had few opportunities to exercise with NRC headquarters and the regions.

Based on interviews with licensee representatives, many of those licensees do not have an understanding of NRC's activation modes or how NRC operates during an event. For instance, many of those licensees are not familiar with how NRC's incident response program is organized into teams and the role of each team.

Additionally, many licensee representatives OIG interviewed said that they did not know what to expect when NRC arrives on site to respond to an incident. They could not describe the number or kinds of NRC personnel that may be deployed with the site team²⁴ in response to a general emergency and had never experienced NRC sending a site team. Additionally, those licensee representatives were not familiar with NRC's responsibilities to validate dose assessments during an incident response. Licensee representatives at one plant said they would not know where NRC staff would fit in the licensee's emergency offsite facility. Licensee representatives are not sure what questions NRC would ask, what type of support or guidance NRC could provide, or how much time plant staff would be expected to spend with NRC responders.

While some licensee representatives knew who their NRC contacts or counterparts would be in the region and in headquarters, other licensee representatives did not know the position and role of their NRC incident response contacts. In some cases, licensees' representatives said they did not know to whom they were talking during incident response exercises. During one licensee representative's experience in responding to a real event, the licensee did not realize that NRC headquarters had changed shifts and that its "cast of characters" had changed.

Outreach Efforts Insufficient

Some licensees lack familiarization with NRC's incident response program partly because outreach efforts have been insufficient and because turnover in licensee response staff results in the need for additional outreach meetings for new staff. Few licensees interviewed by OIG had ever received an overview of or been briefed on NRC's incident response program. When OIG provided a brief overview of NRC's incident response program during a visit to one plant, it was the first time licensee representatives in attendance had received this information. Absent opportunities to participate in an exercise with NRC headquarters and/or regional participation, licensees said that it would be helpful if NRC provided (1) briefings on its incident response program, (2) the ability to observe exercises at other plants, (3) tours of NRC's incident response centers, and/or (4) videotape or web-based programs that provide an overview of NRC's incident response program.

NRC management recognizes that because of limited resources and external demands to participate in the development and revision of Government-wide and agency-specific incident response guidance, the agency did not achieve the level of outreach desired. In a May 4, 2004, memorandum from the Executive Director for Operations to the Commission, the Executive Director for Operations commits

²⁴ Under expanded activation the appropriate regional office sends a site team to the site of the accident to evaluate the incident, plant status and licensee response actions, to assess licensee performance, and if needed, request additional support and provide support to other response organizations (State and local governments).

the Office of Nuclear Security and Incident Response, the Office of Nuclear Reactor Regulation, the Office of State and Tribal Programs, and the regions to "work to enhance stakeholder understanding of NRC's Emergency Planning and incident response roles and interactions through communiqués and increased participation in various outreach venues." The enhancements are to be incorporated in future outreach/training activities as opportunities permit.

Frequency of NRC Headquarters and Regional Participation in Incident Response Exercises Not Adequate

Another reason licensees lack understanding of NRC's incident response program is because they have not had enough opportunities to exercise with headquarters and regional offices. Opportunities for plants to participate in exercises that included headquarters and regional participation varied by region. One region participates in four exercises each year. In that region, three exercises are conducted at commercial power reactors and the fourth exercise is held at a fuel cycle facility. Since that region has eighteen commercial power reactors and the region participates in three commercial power reactor exercises each year, commercial power reactors in that region have an opportunity to exercise with at least regional participation once every six years. In two regions, licensee representatives interviewed by OIG said they could not recall the last time NRC headquarters or the region had participated in one of the plants' exercises. Dates given for the last exercise with headquarters for the remaining plants visited by OIG varied from 1-½ years ago to as high as 11 years ago. NRC management said that the agency established its intent to exercise at least once every five years with each commercial power reactor in a memorandum prepared many years ago. Management acknowledged that not all regions have met this intent. Licensee representatives OIG interviewed expressed that NRC should participate in more drills/exercises. They think that doing so would improve communication of NRC's role and expectations, as well as improve their understanding of NRC's response operations.

NRC's and Licensees' Incident Response May Not Be Effectively Coordinated

Lack of outreach to familiarize licensees with NRC's incident response program could result in ineffective and inefficient coordination between NRC and licensees during the response to an actual incident. For incidents involving NRC-licensed facilities and materials, successful incident response requires effective and efficient coordination across the broad spectrum of organizations (Federal, State, local and private organizations) and activities, as well as between NRC and the licensees. Without increased outreach efforts to assure effective coordination between NRC and the licensee, NRC may not be sure that the licensees are taking the proper actions to protect the public from or minimize harm from a radiological incident involving NRC-licensed facilities and materials.

Summary

Many licensees interviewed by OIG were not familiar with NRC's incident response program. Licensees lack familiarity with NRC's incident response program because outreach efforts are not sufficient and the frequency of NRC

participation in exercises is inadequate. Therefore, NRC and licensee activities during a real incident may not be effectively coordinated as required by the *NRC Incident Response Plan*.

RECOMMENDATIONS

OIG recommends that the Executive Director for Operations:

- 14. Improve and expand outreach for licensees to enhance licensees' understanding of NRC's Incident Response Program.
- 15. Establish and implement an agency-wide policy for the minimum frequency of exercising with each NRC-licensed power reactor.

C. NRC'S PROCESSES TO QUALIFY STAFF AND ENSURE READINESS TO RESPOND ARE NOT WELL DEFINED

NRC's incident response program does not maintain a well defined process for demonstrating staff are qualified and ready to respond to an incident because NRC management —

- 1. has not developed a well defined, agency-wide training program to meet its commitment; and
- 2. has an unreliable, decentralized system to track incident response training.

Even though NRC believes it has responded effectively to actual events, some responders may not have received sufficient incident response training as evidenced during four exercises OIG observed. An adequate incident response training program and reliable system for tracking its completion are important to ensure NRC staff are qualified and ready to effectively respond to an incident.

Background

It is NRC's policy to communicate to its employees the basic policies, requirements, and procedures necessary for the agency to comply with Executive orders, pertinent laws, regulations, and the circulars and directives of other Federal agencies. NRC prepares, issues, and revises directives and handbooks to meet the requirement that all Federal agencies have an internal management directive system.

NRC MD 8.2 requires that NRC (1) provide headquarters and regional personnel with the level of training necessary to perform assigned incident response functions and maintain response readiness, and (2) coordinate agency participation in periodic exercises and drills at power reactor sites, fuel cycle facilities, and materials licensee locations. Exercises are conducted to practice, learn, and assess agency response procedures and to confirm and maintain the capabilities of NRC's response personnel.

Furthermore, NUREG-0845 Function 1, *Maintain Response Capability*, requires NRC to maintain readiness through training personnel and maintaining communication systems.

1. NRC's Incident Response Training Program is Not Well Defined and Not Standardized

NRC follows training requirements for incident response that are not well defined and have not been promulgated as agency policy because management has given training inadequate attention. Moreover, management has not clearly defined incident response curriculum and the specific methods for assessing proficiency, refresher training, and qualifications for incident responders. Consequently, incident response personnel do not clearly understand training requirements and the training program varies in approach, content, and method of instruction. A well-defined training program that is consistently implemented across the agency is needed to ensure NRC's incident response performance is effective.

Training Requirements Not Well Defined

In October 1995, NRC issued a *Final Revised Training Program* to regional managers. The program identifies the minimum required courses for training. The program includes a matrix that lists each team and each position within each team, the required minimum training, and the frequency of the training. With the exception of requiring resident inspectors to participate in drills (discussed later in this report), individuals must complete general response training, team position training and participate in a drill to be considered qualified to hold an incident response position. The matrix requires that these training activities be completed every two years. Additionally, the matrix recommends that certain responders take Response Technical Manual Overview training, Radiological Assessment System for Consequence Analysis training, and Federal Radiological Monitoring and Assessment Center (FRMAC)²⁵ training.

In July 2002, NRC headquarters management distributed a draft of *Minimum Requirements for Incident Response Team Qualification* (draft Minimum Requirements) to regional administrators and certain headquarters directors. The goal in developing the minimum requirements was to provide program office expectations for minimum training and qualifications for both headquarters and regional response personnel. When finalized, the agency intended for this guidance to supersede all previous guidance on this subject and form the basis for upcoming revisions to the incident response training section of NUREG-0728, *NRC Incident Response Plan*. However, NRC never finalized its draft Minimum Requirements and did not incorporate them into the revised NUREG-0728, *NRC Incident Response Plan*.

Incident response personnel across the agency are confused about the minimum training requirements. For instance, regional references for establishing regional incident response training requirements varied. One *Regional Procedure 1310B-01R* references the matrix included with the 1995 *Final Revised Training*

²⁵ FRMAC provides an operational framework for coordinating all Federal off-site radiological monitoring and assessment activities during a response to a radiological emergency to support the Lead Federal Agency and state(s).

Program. Staff in another region said that their minimum training requirements were designed to exceed the 1995 training matrix. And, yet another region's *Regional Instruction 0430.1, Revision 1, Region I Incident Response Training Program*, states that requirements are aligned with the 2002 Incident Response Operations Operating Plan.

Additionally, a long-time incident response staff member said that the 1995 training matrix was never used because of concerns about the amount of time required for staff to maintain qualifications. Conversely, another incident response member stated that while the matrix met with resistance from the regions, it was eventually implemented. Finally, the Incident Response Directorate management said NRC currently follows the 2002 draft Minimum Requirements. However, neither the 1995 *Final Revised Training Program* nor the 2002 draft Minimum Requirements have been incorporated into MD 8.2 or the *NRC Incident Response Plan*.

NRC's Incident Response Training Program Needs Additional Management Attention

NRC lacks a well-defined agency-wide training program because, until the 9/11 terrorist events, incident response training was not a priority for the agency and it had received inadequate attention. According to staff, training for incident response is not taken seriously and is low priority. Specifically, training is considered a "softer need" that gets pushed off and may go unattended for a long time. Additionally, training has not received the attention it needs because the Incident Response Directorate has experienced high turnover at the section chief level.

The absence of a well defined agency-wide training program has resulted in—

- unclear expectations and limited opportunities for refresher training,
- incident response training programs that vary across the agency,
- an informal qualification process, and
- inconsistencies in performance across the regions and from exercise to exercise (reported in Finding A).

Unclear Expectations and Limited Opportunities for Refresher Training

NRC's refresher training requirements do not ensure incident responders maintain skills for all positions for which they are qualified to perform. Refresher training requirements for resident inspectors are vague and offered inconsistently across the regions. While the 1995 *Final Revised Training Program* excluded senior resident inspectors and resident inspectors from the requirement to participate in a drill, the 2002 draft does not specify the same exclusion. Initial incident response training is included with the resident inspector qualification program, as well as an occasional expectation to participate in exercises. However, most resident inspectors OIG interviewed believed that no incident

response refresher training requirements exist or did not know what refresher training was required. One inspector recalled a matrix that listed training requirements, but said that the region could not support the number of hours required. The inspector said training is an unfunded mandate that creates a problem for the regions. Many resident inspectors said they receive refresher training informally through periodic biannual counterpart meetings or participation in drills. Other residents recalled reading procedures and signing a form attesting that they read and understood the procedures.

Additionally, the resident inspectors interviewed said that they need more opportunities to participate in exercises. Participation in exercises and drills is used to practice, learn, and assess response procedures, and to confirm and maintain the capabilities of NRC's response personnel both at headquarters and in the regional offices. This was not the case for many of the resident inspectors interviewed who said they had few or no opportunities to participate in or observe exercises that included regional and headquarters participation. Resident inspectors said that participating in exercises—

- helps them to understand what else is going on during an incident and see how they fit into the bigger response,
- allows a hands on opportunity to go through the mechanics of the response, and
- provides a valuable opportunity for NRC and the licensee to share information.

Also, resident inspectors suggested that it would be valuable to tour the regional incident response centers and/or headquarters operations center and to observe exercises involving headquarters participation at other plants.

The understanding of refresher training requirements and refresher training opportunities also varies among responders at headquarters and in the regions. At headquarters, one response team coordinator said that refresher training is only provided if a major overhaul of team procedures occurs. Another team coordinator said that members maintain their qualifications through participation in exercises and no clearly defined continuing training requirements for incident response exist. Staff in one region said that position-specific training (1) has been deferred due to of lack of staff or (2) has been achieved through reading procedures and participating in exercises. However, before each exercise, the regions provide general response and position-specific training to those participating in the exercise.

Incident Response Training Programs Vary Across the Agency

NRC maintains multiple training programs that differ considerably and lack a formal assessment of whether personnel have achieved proficiency in desired areas. Each of NRC's regional offices maintains their own training program that differs considerably in approach, content, and method of instruction resulting in –

- inefficiencies due to the cost to maintain and implement region-based training programs,

- differing levels of training and qualification of response team members between the regions,
- uncertainties in levels of incident response proficiencies, and
- no assurance that individuals trained in the same position in one region can transfer those skills to another region or headquarters.

Neither the 1995 *Final Revised Training Program* requirements nor the 2002 draft *Minimum Requirements for Incident Response Team Qualifications* prescribe the content of the training program. Although headquarters has developed incident response training modules, it does not require headquarters or regional response coordinators to use or follow them when providing training. Additionally, while the 2002 draft Minimum Requirements stated that the agency is working with the regions and the Office of Human Resources to develop a web-based, "standardized" general response training module to serve as an introduction to the agency's incident response program, that effort has not been completed. The agency plans to complete that effort during FY 2004.

In a 1999 self-assessment report, NRC staff made management aware of many of these problems. Recommendations made in this report address several quality and cost issues associated with responder response training and the conduct of exercises. Among other things, the self assessment team recommended that NRC –

- conduct an analysis to provide a firm basis for establishing NRC response requirements for NRC response functions and activities;
- establish and implement a well defined NRC responder training program on the basis of the analyzed training needs; and
- upgrade the response training program by --
 - establishing an NRC-wide attendance policy requiring responders attendance at annual training,
 - scheduling training courses in advance for all NRC responders,
 - conducting the fewest number of scheduled classes, and
 - conducting training to address immediate office needs.

As of May 5, 2004, a manager in the Incident Response Directorate said these recommendations have not been implemented.

Also, NRC has not (1) developed standard competencies needed to demonstrate satisfactory understanding of NRC's general response or to qualify for each position, (2) evaluated the effectiveness of the various instruction methods to determine effectiveness, and (3) developed and implemented assessment strategies to determine whether personnel are proficient in the desired areas.

Informal Qualification Process for Incident Response Personnel

While NRC management believes the agency's response to actual events indicates that staff members possess adequate technical skills, no formal process exists to certify that individuals have met minimum training requirements before being added to rosters. Additionally, NRC does not require individuals who have qualified for multiple response positions to demonstrate proficiency in each position after initial qualification. The lack of a formal process to qualify incident response personnel exists because the training program is not well defined and varies across the agency. Therefore, team coordinators, team directors, a regional administrator, or incident response coordinators determine responders' qualification. Moreover, they are not required to provide certification or evidence that individuals meet minimum qualifications for positions before their names are added to a call list. Consequently, NRC cannot be assured that all individuals appearing on call lists possess the minimum knowledge, skills and experience needed to perform incident response duties effectively.

Conclusion

NRC's incident response program should maintain a system to ensure that personnel from the regions and various levels within the agency and across functional disciplines possess a minimum common level of training, currency, experience, and capability for the incident response positions they fill. NRC should develop and implement an agency-wide training program that would help NRC ensure staff are qualified and ready to respond and that the response is consistent and effective. The program should include:

- competencies and course curricula associated with NRC's incident response program,
- criteria and methodologies for assessing incident response competencies,
- criteria and methodologies for assessing performance during exercises,
- the most effective and efficient delivery of incident response training, and
- a formalized process for qualifying incident response personnel for each position, and a centralized system for tracking successful completion of training activities by individual and position.

RECOMMENDATIONS

OIG recommends that the Executive Director for Operations:

16. Develop and implement a well-defined, agency-wide training program to meet incident response commitments.

2. Multiple Systems Exist for Tracking Incident Response Training

Because responsibility for incident response training is assigned to headquarters and the regions, NRC does not have an integrated system for tracking training. Consequently, multiple systems exist and some are not reliable for determining whether responders are qualified.

Headquarters and each region are responsible for maintaining their own training records. Each system is maintained using different software applications and contains different data. For instance, headquarters maintains training records in a word processing application. One region maintains records using a database application. Another region uses a program that was custom designed for tracking incident response training requirements. The systems are not integrated and cannot share information. Additionally, the current tracking system at headquarters does not have the capability to effectively track position-specific training or exercise participation by position.

The agency cannot rely on current tracking system to verify that individuals have met the minimum position-specific training requirements to qualify for a specific position. The existence of multiple, non-integrated tracking systems results in inefficiencies and an ineffective program to ensure incident responders have received the training needed to qualify or maintain qualifications to be ready to respond to an incident.

RECOMMENDATION

OIG recommends that the Executive Director for Operations:

17. Establish a centralized system for tracking successful completion of training activities by individual and position.

Summary

Even though NRC management is confident that responders have adequate technical skills, some responders may not be qualified and ready to respond to an incident because NRC's incident response training program is not well defined and systems for tracking incident response training are not reliable for identifying qualified incident response personnel. Furthermore, by assigning responsibility to headquarters and each region for maintaining incident response training records, multiple systems for tracking have been created. As a result, some responders may not have received sufficient incident response training to prepare them to carry out their incident response functions as evidenced during four exercises observed during this audit. NRC needs a well-defined, agency-wide incident response training program and a centralized system for tracking incident response training to ensure consistent and effective incident response performance from incident to incident and from region to region.

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IV. CONSOLIDATED LIST OF RECOMMENDATIONS

OIG recommends that the Executive Director for Operations:

1. Establish a defined agency-wide incident response plan that includes standards for performance, delineation of the conduct of exercises and drills, and a well-defined objective mechanism for evaluating incident response during exercises.
2. Revise MD 8.2, *NRC Incident Response Program Handbook* to require an evaluation of incident response performance following each exercise.
3. Update NUREG 0845, *Agency Procedures for the NRC Incident Response Plan*, or incorporate relevant portions into other agency procedures.
4. Periodically review regional incident response programs to ensure NRC's Incident Response Program is carried out consistently across the agency.
5. Establish a well-defined process for giving performance feedback to responders.
6. Exercise the deployment of headquarters and regional response staff as part of the agency's Incident Response Program.
7. Develop team- and position-specific strategies and procedures for handling events at multiple sites.
8. Periodically conduct incident response exercises involving multiple sites.
9. Incorporate procedures for handling protracted events into incident response procedures.
10. Develop a more systematic approach to scheduling staff to cover a response to a protracted event.
11. Revise the *NRC Incident Response Plan* to better define the incident response to emergencies involving regulated fuel cycle facilities and nuclear materials.
12. Conduct routine exercises with each NRC-regulated fuel cycle facility.
13. Update Response Technical Manual Supplements for gaseous diffusion plants.
14. Improve and expand outreach for licensees to enhance licensees' understanding of NRC's Incident Response Program.
15. Establish and implement an agency-wide policy for the minimum frequency of exercising with each NRC-licensed power reactor.

16. Develop and implement a well-defined, agency-wide training program to meet incident response commitments.
17. Establish a centralized system for tracking successful completion of training activities by individual and position.

V. AGENCY COMMENTS

At an exit conference with agency senior executives held on August 16, 2004, senior executives requested an additional meeting with OIG staff for clarification on specific issues. Subsequent to that meeting, the agency provided OIG with a list of editorial suggestions, specific points of concern or points needing clarification. OIG met with agency managers and staff on August 25, 2004, to address the editorial suggestions, discuss specific points of concern, and provide clarification on the other points. Following that meeting, OIG revised the report, as appropriate, and shared a revised draft report with the agency. After reviewing the revised draft report, agency officials met again with OIG on August 31, 2004 and expressed agreement with the findings and recommendations and chose not to provide a formal written response for inclusion in the report.

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SCOPE AND METHODOLOGY

The objectives of this audit were to determine whether NRC's incident response program (1) is performed in a timely and effective manner, (2) provides adequate support to licensees and (3) maintains readiness and qualifications of staff. To accomplish this, OIG reviewed Federal regulations, Federal incident response guidance, NRC management directives and other relevant agency program documentation and correspondence. Auditors interviewed NRC headquarters and regional officials, including staff in the Office of Nuclear Security and Incident Response, the Incident Response Directorate, each of NRC's four regions and resident inspectors at eight commercial nuclear power reactor sites. Auditors also interviewed licensee representatives at the same eight reactor sites and an official from the Federal Emergency Management Agency. Additionally, auditors visited incident response centers at each of NRC's four regional offices. Internal control weaknesses have been noted and considered for reporting and/or additional work.

OIG staged auditors to observe an incident response exercise at one power reactor in each of NRC's four regions and one exercise at a gaseous diffusion plant. Auditors observed exercises from NRC's headquarters and regional incident response centers and the licensees' control room, technical support center and emergency offsite facilities. Not all aspects of NRC's incident response were observed. Auditors compared NRC's incident response performance during the power reactor exercises against agency procedures and observed agency critiques of its incident response performance during these exercises.

This audit was conducted in accordance with generally accepted Government auditing standards and included a review of management controls related to the objectives of this audit. This audit was conducted from June 2003 to April 2004.

Major contributors to this report were Russell Irish, Team Leader, Nuclear Safety Audits; Bill Kemper, Technical Advisor; Shyrl Coker, Audit Manager; Debra Lipkey, Senior Management Analyst; Yvette Russell, Senior Auditor; and David Ditto, Management Analyst.

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CHANGES IN NRC'S REGULATION OF NUCLEAR POWER PLANTS FOLLOWING THE THREE MILE ISLAND ACCIDENT

NRC's regulation and oversight of commercial nuclear power reactors significantly changed following the severe accident at the Three Mile Island commercial nuclear power plant on March 28, 1979. Those changes included, but were not limited to, the following:

- A change in the function of the NRC Chairman and the organization of the agency (e.g., transfer of authority to the Chairman to declare, respond, issue orders, determine specific policies, advise civil authorities and the public, and direct and coordinate actions related to responding to an incident concerning NRC-licensed facilities or materials)
- Expansion of NRC's resident inspector program that placed at least two inspectors living nearby and working exclusively at each plant in the U.S.
- Establishment of the Systematic Assessment of Licensee Performance program to integrate NRC observations, findings, and conclusions about licensee performance and management effectiveness (this has since been replaced by NRC's Reactor Oversight Process).
- Regular analysis of plant performance by senior NRC managers.
- Expansion of performance-oriented and safety-oriented inspections.
- Use of risk assessment to identify vulnerabilities of any plant to severe accidents.
- Strengthening and reorganization of enforcement within NRC.
- Upgrading and strengthening of plant design and equipment requirements.
- Identifying human performance as a critical part of plant safety.
- Enhancement of emergency preparedness to include immediate NRC notification requirements for plant events and an NRC operations center which is now staffed 24 hours a day. Drills and response plans are now tested by licensees several times a year and state and local agencies participate in drills with the Federal Emergency Management Agency and NRC.
- Expansion of NRC's international activities to share enhanced knowledge of nuclear safety with other countries in a number of important technical areas.

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NRC'S INCIDENT RESPONSE PROGRAM

In response to certain events¹ involving NRC-licensed facilities or materials, NRC activates its incident response program. Once the NRC incident response program is activated, teams of specialists are assembled at the headquarters operations center, the regional incident response center and/or the site of the incident to obtain and evaluate event information and to assess the potential impact of the event on public health and safety and the environment. NRC's highest priority is to provide expert consultation, support, and assistance to State and local public safety officials responding to the event.

NRC's Incident Response Activation Levels

The NRC's response to an event may range from routine follow-up activities to a complete activation of the regional incident response center, headquarters operations center and deployment of a site team. The NRC formally characterizes its incident response modes as follows:

- **Normal** - Applies to the routine state of NRC operations and activities and includes all activities designed to maintain incident response readiness.
- **Monitoring** – The NRC goes to a heightened state of readiness for information acquisition and assessment. The regional office has the lead throughout the Monitoring Mode.
- **Standby** – The Standby Mode is initiated by a decision of the regional administrator in consultation with a headquarters executive team member. The purpose of Standby is to determine if there is likely to be a need to activate the full NRC response and to prepare for rapid activation should it be necessary. The criterion for Standby is that an event is sufficiently complex or
- uncertain that it requires more intensive monitoring and, if it involves a regulated facility, preparations to send a NRC team to the site and/or for potential terrorist activities. The region prepares, but does not yet dispatch, a team of specialists who could rapidly travel to the site if needed.
- **Initial Activation** – The Initial Activation Mode is initiated by a decision of an executive team member in consultation with the regional administrator. The criteria for Initial Activation may include the following:

¹ Incidents that threaten the public health, safety or the environment.

- licensee declaration of a site area emergency or general emergency,
- judgment by an executive team member that the potential for increasing risk requires an NRC onsite response team as soon as possible,
- the threat level is escalated to Red², or
- judgment by the executive team member that a full executive team, led by the Chairman, is necessary to manage NRC response to an incident.

NRC dispatches its site team for face-to-face coordination with licensee, State and local response officials, and other Federal response teams.

➤ **Expanded Activation** – The Expanded Activation Mode is initiated by a decision of the executive team director following arrival of the NRC site team at the licensee's site. The decision is made after receipt of a report from the regional administrator that the site team is prepared to perform NRC response activities. The regional administrator at the incident site is designated as the NRC director of site operations. The NRC site team has the lead throughout the Expanded Activation mode.

➤ **Deactivation** – The Deactivation Mode is initiated by the decision of the executive team director in consultation with the director of site operations. The purpose of Deactivation Mode is to ensure that appropriate follow-up actions are assigned and scheduled. The criterion for Deactivation is that the risk or potential risk to the public no longer requires a significant onsite presence by the NRC. Response operations during the early part of this Mode are similar to those during Standby mode, except that the NRC site team may remain active.

These modes are dependent upon the licensee event classification and an independent NRC assessment of relative severity or uncertainty of incident conditions. The NRC may sometimes enter a response mode for a non-emergency event or in response to a non-reportable event.

NRC Response Teams and Participants

NRC organizes its incident response program at headquarters and the regions by teams. The NRC Chairman, or his/her designee, directs NRC's overall response to any incident. During a response, the Chairman is identified as the director of the headquarters executive team. A regional administrator, or his/her designee,

² The Office of Homeland Security has developed a Homeland Security Advisory System to provide a comprehensive and effective system to disseminate information regarding the risk of terrorist attacks to Federal, State, and local authorities and the public. This system includes five color-coded threat conditions with a description of corresponding actions at each level. The condition of "Red" indicates "Severe Condition," or severe risk of terrorist attack.

directs NRC's response at the regional level. Under Expanded Activation, a site team is established and the director of site operations³ takes over as the lead for NRC's response under specific authorities delegated by the Chairman and response activities are directed from the site rather than from headquarters.

The following is a partial list of the response teams and participants.

HEADQUARTERS

Headquarters Executive Team
Headquarters Support Teams
Headquarters Operations Officers
Emergency Response Officers
Emergency Officers
Protective Measures Team
Reactor Safety Team
Fuel Cycle Safety Team
Safeguards Team
Status Officer Team
Response Coordination Team
Operations Support Team
News Center Team
Liaison Team

REGIONAL AND SITE PARTICIPANTS

Director of Site Operations
Site Team
Resident Inspectors
Base Team
Regional Duty Officer
Recovery Team

Responsibilities for each team vary according to the level of activation. For instance, during Normal Mode, the headquarters executive team is responsible for deciding to escalate to activation, initiating appropriate notifications and evaluating initial information. During Standby Mode, the Executive Team reports to the operations center and is responsible for deciding to escalate to Activation Mode and evaluating initial information. During Initial Activation Mode, the Executive Team reports to the operations center, advises the Executive Team director on appointment of a director of site operations, maintains awareness of policy questions, advises the director on any imminent advice, recommendations or direction to be given to licensee, reviews recommendations for protective actions, assures consistency in liaison interactions and recommends de-escalation to appropriate response mode.

Classification of Emergencies

The vast majority of events reported to the NRC are routine and do not require activation of the incident response program. Licensed facilities have various classes of emergencies. Both power and non-power reactor licensees utilize the following four emergency event classes, in order of increasing severity:

- **Notification of Unusual Event:** Under this category, events are in process or have occurred which indicate potential degradation in the level of safety of the plant. No release of radioactive material requiring offsite response or monitoring is expected unless further degradation occurs.

³ The Regional Administrator is designated as the NRC Director of Site Operations at the site.

- **Alert:** If an alert is declared, events are in process or have occurred which involve an actual or potential substantial degradation in the level of safety of the plant. Any releases of radioactive material from the plant are expected to be limited to a small fraction of Environmental Protection Agency protective action guidelines.

- **Site Area Emergency:** A site area emergency involves events in process or which have occurred which result in actual or likely major failures of plant functions needed for protection of the public. Any releases of radioactive material are not expected to exceed the Environmental Protection Agency's protective action guidelines except near the site boundary.

- **General Emergency:** A general emergency involves actual or imminent substantial core damage or melting of reactor fuel with the potential for loss of containment integrity. Radioactive releases during a general emergency can reasonably be expected to exceed the Environmental Protection Agency's protective action guidelines for more than the immediate site area.

INCIDENT RESPONSE FUNCTIONAL AREAS

The 20 functional areas of NRC's incident response program, as described in NUREG-0845, *Agency Procedures for the NRC Incident Response Plan*, are listed below:

Function 1: Maintain Response Capability

This function includes those tasks required to maintain readiness, such as training personnel and maintaining communications systems.

Function 2: Man Emergency Communications Systems

This function includes those tasks that assure proper receipt and handling of all communications during any response mode.

Function 3: Evaluate and Categorize Initial Information

This function includes those tasks that culminate in decisions regarding the severity of an event and the extent of the initial NRC response.

Function 4: Decide to Escalate the NRC Response

This function includes those tasks that address responsibilities both for recommending and for deciding on a need for greater NRC participation at any time after the initial response decision.

Function 5: Enter Standby Mode

This function includes those tasks that must be completed as soon as possible upon transition to Standby Mode.

Function 6: Enter Initial Activation Mode

This function includes those tasks that must be completed as soon as possible upon transition to Initial Activation Mode.

Function 7: Enter Expanded Activation Mode

This function includes those tasks that must be completed as soon as possible upon transition to Expanded Activation Mode.

Function 8: Enter Deactivating Mode

This function includes those tasks that must be completed as soon as possible upon transition to the Deactivating Mode.

Function 9: Evaluate Incident and Plant Status

This function includes those tasks needed to assure that NRC response personnel are taking such actions to have a complete and accurate overview of the evolution and status of the event at any time. This function requires a focus on the incident without regard to licensee or NRC response actions.

Function 10: Evaluate Licensee Actions

This function includes those tasks that provide an overview of the licensee's actions with respect to mitigating the actual or potential consequences of an incident with respect to the adequacy of licensee recommendations to offsite authorities for protective actions for the public.

This function requires a focus on whether preplanned actions and guidelines are being followed as long as they are appropriate and that they are modified quickly when not. The overall health and safety of the public or response personnel is the basis on which appropriateness should be judged.

Function 11: Project Incident Consequences and Plant Status

This function includes those tasks needed to develop timely projections of the likely future course of an incident. This function requires a focus on projections to help assure that the need for any actions to protect the public or response personnel are foreseen in time to be effective.

Function 12: Advise, Assist, or Direct Licensee

This function includes those tasks needed to assure that advice or orders, if required, are defined clearly, developed from the best facts and projections, and transmitted accurately.

Function 13: Request Other-Agency Support

This function includes those task that clarify responsibilities among participating agencies for identifying needs, requesting support, and resolving conflicts in priorities or actions.

Function 14: Maintain Liaison with Congress, the White House, and other Federal, State, and Local Agencies

This function includes those tasks that identify primary liaison responsibilities for helping to assure that information exchange is adequate, accurate, timely, and consistent.

Function 15: Inform Public and Monitor Public Information

This function includes those tasks needed to assure first, that NRC information releases are complete, accurate, consistent, available to all response personnel, coordinated with other response organizations, and accurately relayed to the public; and second, that public reactions are brought to the attention of NRC managers.

Function 16: Recommend Protective Actions for Public

This function includes those tasks that culminate in NRC decisions to endorse licensee recommendations for protective actions or to recommend additional offsite actions to protect the public health and safety, based on technical criteria and NRC projections of plant status.

Function 17: Provide Administrative and Logistical Support

This function includes those tasks needed to assure the availability of adequate transportation, housing, information resources, and any other support needs of NRC personnel that may be identified during an incident.

Function 18: Decide to Deescalate

This function includes those tasks that provide for an orderly reduction of the NRC response.

Function 19: Review, Investigate, and Document Response Actions

This function includes those tasks that formalize the responsibilities for assuring complete and timely documentary follow-up to an incident.

Function 20: Recover

This function includes those tasks that formalize the responsibilities for assuring appropriate technical follow-up to an incident.

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OIG ANALYSIS OF NRC'S INCIDENT RESPONSE PERFORMANCE DURING FOUR INCIDENT RESPONSE EXERCISES AT POWER REACTORS AS COMPARED TO AGENCY PROCEDURES FOR THE NRC INCIDENT RESPONSE PLAN

Methodology

OIG staged auditors to observe NRC's incident response performance during an exercise at a power reactor in each of NRC's four regions. Auditors were staged at the following five locations for all exercises, except exercise C.

1. Plant Control Room
2. Plant Technical Support Center
3. Plant Emergency Off-site Facility
4. Base Team at the Region Incident Response Center
5. NRC Headquarters' Incident Response Center (HQ)

For exercise C, OIG auditors were staged at the plant's control room, technical support center and emergency offsite facilities.

Observations were recorded and compared against 19 of 20 incident response functions as defined in NUREG-0845, *Agency Implementing Procedures for the NRC Incident Response Plan*. In the tables that follow, NO indicates areas not observed, NM indicates areas observed that did not meet the performance expectations and M indicates areas observed that met performance expectations. The number under each column represents the number of instances where a task was not observed or determined to meet or not meet performance expectations. For instance, for the same task performed at headquarters, the base team and the emergency offsite facility may not have been observed in one location, may have been observed to be met in another location and/or not met at a third location.

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EXERCISE EVALUATION SUMMARY

		EXERCISE A			EXERCISE B			EXERCISE C			EXERCISE D			ALL REGIONS		
		NO	M	NM	NO	M	NM									
Function 2: Man emergency communications systems - includes tasks that assure proper receipt and handling of all communications during any response mode.	1. The HQ Operations Officer (HOO) receives notification of problems at any time.	4	1	0	4	1	0	3	0	0	4	1	0	15	3	0
	2. The HOO is then responsible for contacting staff that can solve the problem and is knowledgeable about the specific plant or situation promptly; therefore, licensee notifications should be passed on the Region.	4	1	0	1	3	1	3	0	0	5	0	0	13	4	1
	3. HQ personnel are also notified under some conditions for mobilization of the entire NRC IRO, if necessary. While the HOO continues to answer calls, technical specialists at HQ, the primary Regional Office (RO), and the site are assigned as communicators.	4	1	0	3	1	1	3	0	0	1	4	0	11	6	1
	4. The Emergency Notification System (ENS) is used to obtain plant operations data and the Health Physics Network (HPN) for radiological and meteorological data.	3	2	0	1	4	0	2	1	0	3	2	0	9	9	0
	5. NRC personnel on site (e.g., the Resident Inspector) will relieve the licensee of communications duties with the agency.	4	1	0	5	0	0	1	2	0	3	2	0	13	5	0
	Subtotal	19	6	0	14	9	2	12	3	0	16	9	0	61	27	2
Function 3: Evaluate and categorize initial information - includes tasks that culminate in decisions regarding the severity of an event and the extent of the initial NRC response.	1. The HOO makes the initial decisions about whether to and who to call. After that his primary function is to place calls according to established procedures or as directed.	5	0	0	4	1	0	3	0	0	4	1	0	16	2	0
	2. Regional personnel are called first because they are most knowledgeable of a particular plant or problem.	3	2	0	3	2	0	2	1	0	3	2	0	11	7	0
	3. HQ and RO must have an on-call person at all times to assess the situation and categorize the event.	5	0	0	4	0	1	3	0	0	3	2	0	15	2	1
	4. HQ contact plays a key role in mobilizing the entire NRC response organization quickly.	4	1	0	3	2	0	3	0	0	3	2	0	13	5	0
	Subtotal	17	3	0	14	5	1	11	1	0	13	7	0	55	16	1

EXERCISE EVALUATION SUMMARY

		EXERCISE A			EXERCISE B			EXERCISE C			EXERCISE D			ALL REGIONS		
		NO	M	NM	NO	M	NM									
Function 4: Decide to escalate the NRC response - includes tasks which address responsibilities for recommending and deciding on a need for greater NRC participation after the initial response decision.	1. Transition from one response mode to another (1) must be deliberate and clear to all participants; (2) may be made between any of the response modes at any time and is not dependent on prior completion of other mode procedures; (3) should be based on criteria as much as possible.						1						2			3
	2. Pre-designated HQ and Regional personnel have decision responsibilities to assure uniformity throughout all regions and to involve more senior officials. In all situations it is important that HQ and Regional personnel continue communications particularly regarding recommendations for agency action.	3	2	0	2	2	0	1	2	0	0	3	1	8	7	1
	Subtotal	6	4	0	6	3	1	4	2	0	2	5	3	18	14	4
Function 5: Enter Standby mode (SBM)- tasks that must be completed as soon as possible upon transition to this mode.	1. Some staff members are directed to the NRC Operation Center (OC) at HQ and the affected RO.	4	1	0	4	1	0	3	0	0	3	2	0	14	4	0
	2. Some personnel and equipment may be dispatched to the site from the primary RO if a situation is complex or good site communications is not readily available.	5	0	0	1	4	0	3	0	0	3	2	0	12	6	0
	3. HQ and the RO monitor the situation and selected personnel and specialists report to the OC.	4	1	0	4	1	0	3	0	0	2	3	0	13	5	0
	4. A Standby Team Leader (usually the Regional Administrator (RA) or an ET member) and other needed specialists are named upon transition to SBM. Some specialists may be called to the OC solely to support the RO activities for following a long-term event.	5	0	0	5	0	0	3	0	0	4	1	0	17	1	0
	5. The decision to enter Standby is made by the RA and an Executive Team (ET) member in consultation with the emergency officer. The RO is the lead unless the RA or ET decides otherwise.	5	0	0	4	1	0	3	0	0	2	3	0	14	4	0

EXERCISE EVALUATION SUMMARY

		EXERCISE A			EXERCISE B			EXERCISE C			EXERCISE D			ALL REGIONS		
		NO	M	NM	NO	M	NM	NO	M	NM	NO	M	NM	NO	M	NM
	6. The RO will generally be the lead in decision making. HQ and the region work closely together to determine if and when the situation warrants greater NRC involvement.	4	1	0	5	0	0	3	0	0	4	1	0	16	2	0
	7. The key element is whether incident conditions are worsening and the licensee's ability to control the situation is adequate.	4	1	0	1	3	1	3	0	0	2	1	2	10	5	3
	8. Any press releases are issued by the RO, unless agreed upon jointly by the RA and ET member.	5	0	0	5	0	0	3	0	0	5	0	0	18	0	0
	Subtotal	36	4	0	29	10	1	24	0	0	25	13	2	114	27	3
Function 6: Enter Initial Activation mode (IAM)- tasks that must be completed as soon as possible upon transition to this mode.	1. Full NRC response is quickly activated.	2	1	3	0	5	0	0	3	0	4	1	0	6	10	3
	2. The Chairman (or designee) is Director of NRC response at all times [during IAM] until he delegates authority to a Director of Site Operations (DSO).	2	3	0	3	1	1	2	1	0	4	0	1	11	5	2
	3. Integrated full agency-wide response includes Personnel assume emergency organization titles. Pre-organized HQ and regional response teams combine capabilities of specialists from various organizational units. Response procedures that are common throughout the agency are used to promote effective support of the primary RO.	10	3	2	8	7	0	5	4	0	7	8	0	30	22	2
	4. HQ carries out most of the response functions until a Site Team is established, which can be as many as 3 to 10 hours (longer under adverse weather conditions).	4	1	0	2	3	0	3	0	0	2	3	0	11	7	0
	5. HQ leads activities using preplanned tasks to permit maximum attention to unique aspects of an incident. The RO will support but most regional response personnel will be en route to the site.	4	1	0	3	2	0	2	1	0	5	0	0	14	4	0
	6. Initial tasks should identify the problem, trends, and begin specific analyses.	2	3	0	1	3	1	0	3	0	2	2	1	5	11	2

EXERCISE EVALUATION SUMMARY

		EXERCISE A			EXERCISE B			EXERCISE C			EXERCISE D			ALL REGIONS		
		NO	M	NM	NO	M	NM									
	7. Data is relayed by telephone to provide for coordination of data requirements.	2	3	0	1	3	1	3	0	0	3	2	0	9	8	1
	8. Regional personnel arriving at the site establish the initial Site Team and establishes liaison with counterparts at HQ and the RO.	3	2	0	2	2	1	1	2	0	3	1	1	9	7	2
	9. The Director (Chairman) is the primary NRC spokesman.	3	2	0	2	3	0	2	1	0	4	1	0	11	7	0
	Subtotal	32	19	5	22	29	4	18	15	0	34	18	3	106	81	12
Function 7: Enter Expanded Activation mode - tasks completed as soon as possible upon transition to this mode.	1. In a smooth transition the [NRC] activities are similar to Initial Activation but are directed from the site.	3	2	0	3	2	0	2	1	0	3	2	0	11	7	0
	2. The DSO can utilize any NRC element for support as he must be able to take charge of all Federal activities onsite that affect the public health and safety and coordinate all Federal technical activities offsite.	4	1	0	4	0	1	2	1	0	2	3	0	12	5	1
	3. The FBI is the lead for incidents involving safeguards but NRC continues to monitor actions that may affect the public health and safety.	5	0	0	5	0	0	3	0	0	5	0	0	18	0	0
	4. [IRO] procedures provide for incremental delegation of authority to the DSO to avoid overwhelming site personnel.	5	0	0	4	1	0	3	0	0	5	0	0	17	1	0
	5. The DSO becomes the primary spokesman for the NRC upon appointment to the position, the Director continues to exercise authority not delegated, and the HQ team supports both.	3	2	0	2	3	0	2	1	0	4	1	0	11	7	0
	6. As more authority is delegated [to the ST], the Executive Team may be partially disbanded by the Director.	4	1	0	3	1	1	3	0	0	5	0	0	15	2	1
	7. Notifications are best done by staff responsible for regular contacts at other organizations.	4	1	0	4	1	0	3	0	0	5	0	0	16	2	0
	8. Procedures emphasize continuity of NRC response, so HQ specialists initially continue tasks in support of the DSO.	5	0	0	5	0	0	3	0	0	5	0	0	18	0	0
	9. The DSO has more specific knowledge of site conditions and will reorient and supplement technical analyses as needed.	3	2	0	4	1	0	2	1	0	3	2	0	12	6	0

EXERCISE EVALUATION SUMMARY

		EXERCISE A			EXERCISE B			EXERCISE C			EXERCISE D			ALL REGIONS		
		NO	M	NM	NO	M	NM	NO	M	NM	NO	M	NM	NO	M	NM
	10. HQ provides technical support requested by the DSO and continues to assist the Director with functions not transferred to the DSO.	3	2	0	2	1	1	2	1	0	2	3	0	9	7	1
	11. The DSO is now the primary spokesman for the agency.	3	2	0	2	3	0	2	1	0	3	2	0	10	8	0
	Subtotal	42	13	0	38	13	3	27	6	0	42	13	0	149	45	3
Function 8: Enter Deactivating mode - tasks completed as soon as possible upon transition to this mode.	1. Deactivating from any of the above three modes results in the transfer of responsibility to the RA under normal authorities and responsibilities.	5	0	0	5	0	0	3	0	0	5	0	0	18	0	0
	2. Enough capability must be left in place in the event reactivation is necessary.	5	0	0	2	1	2	3	0	0	5	0	0	15	1	2
	3. Few tasks of the HQ and RO Technical Teams can be preplanned during this mode, but are assigned at deactivation.	5	0	0	5	0	0	3	0	0	5	0	0	18	0	0
	4. Documentation will be accumulated and lessons-learned analyzed.	5	0	0	5	0	0	3	0	0	4	0	1	17	0	1
	5. Residual functions of the HQ technical teams are expected to return to normal in a fairly short time.	5	0	0	5	0	0	3	0	0	5	0	0	18	0	0
	6. If necessary, site team functions will be taken over by a Recovery Team that may continue for some time.	5	0	0	5	0	0	3	0	0	5	0	0	18	0	0
	7. The procedures must provide for information flow similar to that during Standby, except a sizable contingent may remain on-site.	5	0	0	5	0	0	3	0	0	5	0	0	18	0	0
	8. The agency's deactivating activities may return to normal gradually, but always by specific decision so that the extent of NRC participation is always clear.	5	0	0	3	1	1	3	0	0	5	0	0	16	1	1
	9. Activities in this mode must be closely coordinated with the site team (and recovery team, if applicable).	5	0	0	5	0	0	3	0	0	5	0	0	18	0	0
	10. The decision to deactivate or reactivate is made by the DSO and Director in consultation.	5	0	0	5	0	0	3	0	0	5	0	0	18	0	0
	Subtotal	50	0	0	45	2	3	30	0	0	49	0	1	174	2	4

EXERCISE EVALUATION SUMMARY

		EXERCISE A			EXERCISE B			EXERCISE C			EXERCISE D			ALL REGIONS		
		NO	M	NM	NO	M	NM									
Function 9: Evaluate incident and plant status-requires a focus on the incident without regard to licensee or NRC response actions. [See specific tasks within the individual Team Procedures (NUREG-0845, Section III) associated with this function.]	Includes those tasks needed to assure that NRC response personnel are taking actions to have a complete and accurate overview of the evolution and status of an event at any time.	0	4	1	0	3	2	0	3	0	1	2	2	1	12	5
Function 10: Evaluate licensee actions-this requires a focus on whether preplanned actions and guidelines are being followed, if appropriate, and modified quickly when not. Appropriateness should be judged on overall health and safety of the public and response personnel. [See specific tasks within the individual Team Procedures (NUREG-0845, Section III) associated with this function.]	Includes tasks that provide an overview of licensee actions in mitigating the actual or potential consequence of the incident and the adequacy of licensee recommendations to offsite authorities for protective actions for the public.	0	4	1	0	4	1	1	2	0	1	1	2	2	11	4
Function 11: Project incident consequences and plant status-this requires a focus on projections to help assure actions to protect public health and safety or response personnel are foreseen in time to be effective.[See specific tasks within the individual Team Procedures (NUREG-0845, Section III) associated with this function.]	Includes tasks needed to develop timely projections of the likely future course of an incident.	2	2	1	1	3	1	2	1	0	3	1	1	8	7	3
Function 12: Advise, assist, or direct licensee - Includes tasks needed to assure that advice or orders are defined clearly, developed from the best facts	¹ While the NRC monitors an incident, the licensee may request or the NRC may volunteer advice concerning diagnoses of critical problems, remedial courses of actions, and additional precautionary measures.	4	1	0	4	1	0	2	1	0	2	2	1	12	5	1

EXERCISE EVALUATION SUMMARY

		EXERCISE A			EXERCISE B			EXERCISE C			EXERCISE D			ALL REGIONS		
		NO	M	NM	NO	M	NM	NO	M	NM	NO	M	NM	NO	M	NM
developed from the best facts and projections and are transmitted accurately.	2. NRC integrates onsite and offsite activities and information as coordinator of the entire federal technical response and may offer advice based on this broader perspective.	4	1	0	4	1	0	2	1	0	4	1	0	14	4	0
	3. NRC must also be prepared to direct, however infrequently, that certain specific action(s) be taken if, after thorough discussions with the licensee management, the NRC decides the action is necessary.	3	1	1	5	0	0	3	0	0	4	0	1	15	1	2
	4. Discussions may be initiated by either the licensee or the NRC, but three important concepts govern: The licensee is ultimately responsible for taking appropriate action to mitigate the consequences of an incident; The NRC must have a single voice when advising or directing the licensee; and Licensee management must be in a position to decide whether to accept or challenge the advice.	5	4	0	12	3	0	1	2	0	1	3	1	19	12	1
	5. Only the Director, or the DSO upon appointment, is empowered to advise or direct the licensee. At no time can both persons advise or direct the licensee, and the licensee will always be apprized of who has what authority.	5	0	0	3	2	0	3	0	0	3	2	0	14	4	0
	6. Other NRC personnel in contact with the licensee shall apprise their contacts that any discussions should not be construed as advice or direction, but only for the purpose of exchange of information and ideas.	5	0	0	5	0	0	2	1	0	2	3	0	14	4	0
	Subtotal	26	7	1	33	7	0	13	5	0	16	11	3	88	30	4
Function 13: Request other-agency support - These tasks clarify responsibilities among participation agencies for identifying needs, requesting support, and resolving conflicts in priorities or actions.	1. Memoranda of Understanding (MOUs) have been formalized between NRC and participating agencies who may be called to assist in the response, as well as less formal working agreements with other responding agencies.	5	0	0	5	0	0	3	0	0	5	0	0	18	0	0
	2. In the Standby Mode, active support is not expected but other agencies might be approached for particular expertise.	5	0	0	3	2	0	3	0	0	5	0	0	16	2	0

EXERCISE EVALUATION SUMMARY

		EXERCISE A			EXERCISE B			EXERCISE C			EXERCISE D			ALL REGIONS		
		NO	M	NM	NO	M	NM									
	3. During the Initial Activation Mode, requests are likely to be those that are largely preplanned, such as DOE support. Requests should be provided by the Director so that he is fully aware of all such requests when talking with agency heads.	3	2	0	4	2	0	3	0	0	5	0	0	15	4	0
	4. During the Expanded Activation Mode, the DSO may make specific requests of any kind to any agency	5	0	0	5	0	0	2	1	0	5	0	0	17	1	0
	5. The FEMA plan should be followed, if possible, to obtain logistical support.	5	0	0	5	0	0	3	0	0	5	0	0	18	0	0
	6. HQ may assist in acquiring support.	4	1	0	4	1	0	3	0	0	5	0	0	16	2	0
	Subtotal	27	3	0	26	5	0	17	1	0	30	0	0	100	9	0
Function 14: Maintain liaison with Congress, the White House, and other federal, state, and local agencies - Includes tasks that identify primary liaison responsibilities for assuring information exchange is adequate, accurate, timely, and consistent.	1. In general, HQ will maintain liaison with the HQ of other federal agencies, Congress, and the White House throughout all modes, who may aid site personnel with inquiries and other communications.	4	1	0	3	2	0	3	0	0	4	1	0	14	4	0
	2. RO and site personnel will maintain liaison with their counterparts at other organizations.	4	1	0	4	1	0	3	0	0	1	4	0	12	6	0
	3. Liaison with State and local agencies will be in accordance with the State Emergency Plan.	5	0	0	5	0	0	3	0	0	4	1	0	17	1	0
	Subtotal	13	2	0	12	3	0	9	0	0	9	6	0	43	11	0
Function 15: Inform public and monitor public information - Includes tasks that assure; 1) that NRC information releases are complete, accurate, consistent, available to all response personnel, coordinated with other response organizations, and accurately relayed to the public, and 2) that public reactions are brought to the attention of NRC managers.	1. All proposed press releases should have technical reviews by HQ, the regional office, and site personnel, but only one (1) approving authority can release the information. The approving authority for each mode is Standby -Regional Administrator, Initial Activation -Director at HQ, Expanded Activation -Director of Site Operations (DSO)	5	0	0	2	1	2	2	1	0	4	0	1	13	2	3
	2. The FBI should be consulted on press releases for safeguards events.	5	0	0	5	0	0	3	0	0	4	0	1	17	0	1
	3. NRC is the spokesman for all Federal technical activities and FEMA for all other Federal activities.	5	0	0	5	0	0	2	1	0	4	0	1	16	1	1

EXERCISE EVALUATION SUMMARY

		EXERCISE A			EXERCISE B			EXERCISE C			EXERCISE D			ALL REGIONS		
		NO	M	NM	NO	M	NM									
	4. NRC should share all draft press releases with licensee, state or local government, and FEMA prior to release of a statement, so that any issues that could be clarified are identified before release to avoid confusing or misleading the public.	5	0	0	4	0	1	2	1	0	4	0	1	15	1	2
	Subtotal	20	0	0	16	1	3	9	3	0	16	0	4	61	4	7
Function 16: Recommend protective actions for public - Includes tasks that culminate in NRC decisions to endorse licensee recommendations for protective action or to recommend additional off-site actions to public health and safety, based on technical criteria and NRC projections of plant status.	1. NRC should provide advice on appropriate protective measures for the public to offsite authorities.	4	0	1	2	2	1	3	0	0	3	2	0	12	4	2
	2. NRC shall monitor licensee measures and their impact, and independently assess their adequacy, thereby providing an independent basis for advising offsite officials.	4	0	1	3	1	1	2	0	1	3	2	0	12	3	3
	3. Information from multiple sources shall be collected, verified, analyzed, and evaluated by NRC to arrive at its own estimate of the situation and protective actions necessary.	4	0	1	4	0	1	2	1	0	5	0	0	15	1	2
	4. NRC's methods and analyses for reaching their conclusions may be diverse (which is desirable) from other sources of advice (for example the licensee and state radiological health personnel), and should provide for: >Receipt and integration of enough information to form a clear technical basis for assessing and recommending actions to protect the public and response personnel; >Exchange of information and assessment models with licensees, states, Federal agencies, and others to discuss or explain the reasons for differences in method or conclusion, and to evaluate the significance of the differences;	4	0	1	3	1	1	2	1	0	3	2	0	12	4	2

EXERCISE EVALUATION SUMMARY

		EXERCISE A			EXERCISE B			EXERCISE C			EXERCISE D			ALL REGIONS		
		NO	M	NM	NO	M	NM									
	>Review of proposed recommendations with FEMA (unless time does not permit) to discuss logistical implications and, when possible, to permit a joint NRC-FEMA presentation of the recommendations to offsite authorities.															
	Subtotal	16	0	4	12	4	4	9	2	1	14	6	0	51	12	9
Function 17: Provide administrative and logistical support - Includes tasks that assure the availability of adequate transportation, housing, information resources and any other personnel needs during an incident.	1. These requirements should be anticipated as much as possible and related information should be collected in site-specific files maintained in the RO.	3	1	1	4	1	0	2	1	0	4	0	1	13	3	2
	2. Standby mode: Site-specific file information should be verified and corrected if necessary.	4	0	1	5	0	0	3	0	0	4	0	1	16	0	2
	3. Initial and Expanded Activation modes: Requires one person on initial Site Team that can identify and authorize administrative and logistical support needs.	4	1	0	5	0	0	2	1	0	4	0	1	15	2	1
	4. After FEMA response personnel are in place, they should provide logistical support that is not preplanned or readily available. Backup plans must be ready if FEMA is not in a position to respond. HQ will assist the DSO in obtaining the support requested.	5	0	0	5	0	0	2	1	0	4	0	1	16	1	1
	5. Deactivating mode: HQ Technical Teams will support the Recovery Team, as requested.	5	0	0	5	0	0	3	0	0	4	0	1	17	0	1
	Subtotal	21	2	2	24	1	0	12	3	0	20	0	5	77	6	7
Function 18: Decide to de-escalate - Includes tasks that provide for an orderly reduction of NRC response.	1. NRC response is reduced by deliberate decisions by the most senior official directly involved in each mode.	5	0	0	4	0	1	3	0	0	5	0	0	17	0	1
	2. De-escalation from the Deactivating Mode would most likely be a series of decisions, rather than a single decision, as individual functions are no longer needed.	5	0	0	5	0	0	3	0	0	5	0	0	18	0	0
	Subtotal	10	0	0	9	0	1	6	0	0	10	0	0	35	0	1

EXERCISE EVALUATION SUMMARY

		EXERCISE A			EXERCISE B			EXERCISE C			EXERCISE D			ALL REGIONS		
		NO	M	NM	NO	M	NM	NO	M	NM	NO	M	NM	NO	M	NM
Function 19: Review, Investigate, and document response actions - Include task that formalize responsibilities for assuring complete and timely documentary follow-up to an incident.	1. Documentation can be written or taped, such as Preliminary Notification, Status Officer minutes and recorded conversations, and should be assigned as part of the decision to de-escalate.	5	0	0	5	0	0	3	0	0	4	1	0	17	1	0
	2. Scope of these tasks are not preplanned; it is left to the judgment of the Director and DSO to define and assign special investigative and reporting tasks.	5	0	0	5	0	0	3	0	0	5	0	0	18	0	0
	Subtotal	10	0	0	10	0	0	6	0	0	9	1	0	35	1	0
Function 20: Recover - Include tasks that formalize the responsibilities for assuring appropriate technical follow-up to an incident.	These technical tasks are likely to be required after an incident that warrants a formal Deactivation Mode, and cannot be preplanned because of their intimate dependence on details of the incident. These procedures provide for the Director to receive a plan and schedule from the DSO, the Deputy Director, and others who played key roles in the active response. The Director must assure that the plan is consistent with requirements imposed by other authorities.	5	0	0	5	0	0	3	0	0	5	0	0	18	0	0
TOTAL		352	73	15	316	102	27	213	47	1	315	93	26	1196	315	69

SUMMARY OF NOTABLE INCONSISTENT INCIDENT RESPONSE PERFORMANCE OBSERVED DURING INCIDENT RESPONSE EXERCISES

a. Transition from One Activation Mode to Another

	Instances of Performance Expectations Not Met			
	Exercise A	Exercise B	Exercise C	Exercise D
Function 5: Enter Standby mode	0	1	0	2
Function 6: Enter Initial Activation mode	5	4	0	3
Function 7: Enter Expanded Activation mode	0	3	0	0
Function 8: Enter Deactivating mode	0	3	0	1

When making the transition from one incident response mode to another, NRC experienced problems with (1) evaluating initial information, (2) identifying problems and trends and beginning specific analyses, and (3) transferring authority from headquarters to the site team. For instance, while NRC was entering standby mode during one exercise, the licensee was not communicating effectively and NRC did not take action to mitigate the problem. Consequently, NRC may not have collected all the information needed to fully assess the plant's status. During the same exercise, when entering initial activation, NRC headquarters' responders asked the licensee to consider declaring a general emergency when members of the protective measures team determined it was not warranted. Asking the licensee to consider declaring a general emergency before consulting with the protective measures team undermined the intended interrelationships of the incident response organization.

b. Evaluating Licensee Actions and Projecting Incident Consequences

	Instances of Performance Expectations Not Met			
	Exercise A	Exercise B	Exercise C	Exercise D
Function 10: Evaluate licensee actions	1	1	0	2
Function 11: Project incident consequences and plant status	1	1	0	1
Function 16: Recommend protective actions for public	4	4	1	0

During the four exercises observed, NRC's response experienced challenges in evaluating licensee actions, projecting incident consequences, or recommending protective actions for the public. For instance, NRC concurred with the licensee's protective action recommendations without independently assessing the licensee's measures during one exercise. Additionally, inadequate licensee communication, an equipment failure and insufficient reference materials obstructed the agency's ability to project incident consequences. During another exercise, the NRC protective measures team coordinator stated that NRC concurred with the licensee's protective action recommendations based on a review of the licensee's process. However, NRC's site team was unable to produce any valid off-site dose projections throughout the exercise to form a basis for an independent validation of the licensee's protective action recommendations. Therefore, NRC had no sound basis for stating that they concurred with the licensee's recommendations. At another exercise, NRC could

not be sure they had all information needed to make projections because of ineffective licensee communications with the region and a problem with communications equipment. These functions are essential to ensuring the licensee is taking the proper actions to protect or minimize harm to the public and the environment.

c. Informing the Public and Monitoring Public Information

	Instances of Performance Expectations Not Met			
	Exercise A	Exercise B	Exercise C	Exercise D
Function 15: Inform public and monitor public information	0	3	0	4

During two exercises, NRC faced challenges in its ability to inform the public and monitor public information. For instance, during one exercise when entering initial activation mode, NRC did not satisfy the minimum staffing level and did not integrate a full agency-wide response as required by NUREG-0845. The minimum staffing level to enter initial activation mode requires that a public affairs officer be positioned with the site team. For this exercise, regional management chose not to send a public affairs officer. Rather, the public affairs officer remained in the region and intended to communicate with the site team and the public telephonically using a remote speaker. However, this communication system did not function properly and was ineffective in providing this essential communication between NRC and the public. Consequently, the site team did not have a public affairs officer present at the emergency offsite facility to recommend and prepare press releases, participate in joint press conferences, and respond to press inquiries.