
TEMPORARY INSTRUCTION 2515/186

**INSPECTION OF PROCEDURES AND PROCESSES
FOR RESPONDING TO POTENTIAL AIRCRAFT THREATS**

CORNERSTONE: SECURITY

APPLICABILITY: This Temporary Instruction (TI) applies to all holders of operating licenses for nuclear power reactors, except nuclear power reactors that have permanently ceased operations and have certified that fuel has been permanently removed from the reactor vessel.

2515/186-01 OBJECTIVE

The objective of this TI is to support the review of licensees' implementation procedures and processes required by Title 10 of the *Code of Federal Regulations* (CFR), Part 50.54(hh)(1), which provides requirements for responding to a potential aircraft threat (Ref 1). The review will verify that the necessary procedures and processes are in place and provide a reasonable confirmation that the requirements specified are being addressed. This review will use, in part, guidance provided to the industry in Regulatory Guide 1.214, "Response Strategies for Potential Aircraft Threats," (Ref 2).

2515/186-02 BACKGROUND

The Final Rule for 10 CFR 50.54(hh)(1), was published March 27, 2009 (Federal Register/Vo. 74, No. 58) and went into effect March 31, 2010.

The NRC issued Regulatory Guide 1.214 in July 2009 which describes approaches acceptable to the NRC staff for conforming with nuclear power reactor requirements associated with airborne threats as stated in 10 CFR 50.54(hh)(1).

This TI provides inspection requirements and guidance for the review of licensee processes and procedures for implementing the requirements of 10 CFR 50.54(hh)(1) by verifying the licensee has developed, implemented and maintained procedures that describe how they will address the following areas if notified of a potential aircraft threat:

- a) verification of the authenticity of threat notifications;
- b) maintenance of continuous communication with threat notification sources;
- c) contacting all onsite personnel and applicable offsite response organizations;
- d) onsite actions necessary to enhance the capability of the facility to mitigate the consequences of an aircraft impact;
- e) measures to reduce visual discrimination of the site relative to its surroundings or individual buildings within the protected area;

- f) dispersal of equipment and personnel, as well as rapid entry into the site protected area for essential onsite personnel and offsite responders who are necessary to mitigate the event; and
- g) recall of site personnel.

The inspection should assess whether the licensee has procedures and processes in place to reasonably assure proper implementation of 10 CFR 50.54(hh)(1) and that the licensee has demonstrated the ability to successfully implement these procedures.

2515/186-03 INSPECTION REQUIREMENTS

03.01 General Provisions.

Prior to completing Section 03.02 or 03.03 in this TI, verify policies and procedures are in place which address the following requirements specified in 10 CFR 50.54(hh)(1):

- a. **Verification of the authenticity of threat notifications** – The licensee should validate all potential aircraft threat notifications with the NRC Headquarters (HQ) Operations Center, regardless of who originally notified the licensee. An authentication code is the preferred method for verifying information between the NRC HQ Operations Center and the licensee. However, the licensee may use other methods, such as maintaining an open line and using another phone line to call the NRC HQ Operations Center. If authentication codes are used, confirm the licensee has an effective process for maintaining the codes in a readily accessible location within the control room(s) to prevent delays in transferring information, while simultaneously ensuring only site personnel with an official need to know have access to the codes.
- b. **Maintenance of continuous communication with threat notification sources¹** – Verify the licensee's procedures:
 - 1. require continuous communication with original threat notification sources (e.g., Federal Aviation Administration, North American Aerospace Defense Command, law enforcement agencies, NRC),
 - 2. direct the licensee to establish continuous communication with the NRC HQ Operations Center at the earliest practical time if the original threat notification source is not NRC,
 - 3. address circumstances during which the licensee may be maintaining continuous communication with multiple threat notification sources,

¹ The continuous communication requirement is more stringent than a requirement to maintain an open line, and it applies to licensees only with respect to aircraft threat notification sources. The purpose of requiring the licensee to establish and maintain an active, continuous communication capability for potential aircraft threats is to enable the licensee to receive information on a rapidly evolving threat from notification sources and to use that information to make timely decisions regarding whether to cease, continue or accelerate mitigative actions.

4. identify whether and how (if applicable) the licensee will discontinue continuous communication with the NRC HQ Operations Center, and
 5. contain direction to reestablish communication with the NRC HQ Operations Center as soon as practical after an onsite aircraft impact or within 5 minutes after the anticipated impact time if no impact occurs.
- c. **Contacting all onsite personnel and applicable offsite response organizations** – Verify the licensee procedures have pre-established public address announcements that are specific to aircraft threats and consistent with the licensee's decision making tool (see Ref 2, Sections 7.2 and 7.3). The public address announcements need to inform onsite personnel of 1) the nature of the threat, 2) the threat's estimated time of arrival to the site, 3) necessary personnel protective measures (e.g., shelter in place, evacuate), and 4) instructions to specific site teams or departments (e.g., fire brigade assembly, critical personnel dispersal, health physics relocation). Confirm the licensee has identified applicable offsite response organizations and incorporated their names and primary and alternate emergency contact information in the applicable licensee procedures. Ensure the procedures direct periodic updates on the status of the threat to onsite personnel and offsite response organizations.
- d. **Onsite actions necessary to enhance the capability of the facility to mitigate the consequences of an aircraft impact** – Verify the licensee has identified and proceduralized appropriate operations-related mitigative actions for each aircraft threat type (see Ref 2, Glossary). Determine the extent to which, if any, the licensee has incorporated actions related to aircraft threat mitigation into its daily facility operations. (See Ref 2, Section 5 and Appendix A.)
- e. **Measures to reduce visual discrimination of the site relative to its surroundings or individual buildings within the protected area** – Confirm the licensee has completed an analysis, identified the site-specific lighting that needs to be extinguished (if any), and incorporated the results into the appropriate procedures. Verify the licensee utilizes centralized lighting controls, when possible, to extinguish lighting in accordance with the site-specific analysis. If the licensee does not have centralized lighting controls, ensure it has identified prioritized routes and responsible personnel that are appropriate for each aircraft threat type. Examine any satellite imagery or aerial photographs the licensee used for its lighting analysis or to evaluate the effectiveness of its actions to extinguish the appropriate lighting.
- f. **Dispersal of equipment and personnel, as well as rapid entry into the site protected area for essential onsite personnel and offsite responders who are necessary to mitigate the event** – Validate the licensee's procedures include a list of equipment and personnel that are critical for accomplishing post-impact mitigation and identify a suitable location(s) outside the power block, vital islands or protected area to which that equipment and personnel can be repositioned to increase their survivability. Ensure the licensee's procedures include a decision making tool or another method to justify personnel protective actions for each aircraft threat type, as well as specific measures to

facilitate rapid protected access for critical onsite personnel or offsite responders who are essential for mitigating an aircraft impact (see Ref 2, Section 7.4).

- g. **Recall of site personnel** – Ensure the licensee’s procedures contain a process to recall off-shift personnel who possess skills critical to mitigating an onsite aircraft impact and to direct those personnel to designated assembly areas that are outside the power block, vital islands or protected area.

03.02 Exercise.

Verify the effectiveness of the licensee procedures by observing a tabletop or control room simulator exercise and plant walk-through, and asking follow-up questions.

Completion of Section 03.02 is preferred, however not required, in order to complete this TI, although it would provide valuable insight into the licensee’s capability to implement these actions in a timely and effective manner.

If the licensee elects to conduct an exercise, this TI inspection should be performed by an inspection team that has expertise in Reactor Operations, EP, and Security. In addition, the team should facilitate the licensee’s coordination of the exercise with the Headquarters Operations Officers (HOOs) to simulate realistic aircraft threat information injections.

- a. Assess whether the licensee understood the aircraft threat type and entered its procedures using the appropriate entry condition.
- b. Evaluate the effectiveness of the licensee’s processes for verifying the authenticity of potential aircraft threat notifications.
- c. Verify the licensee has sufficient control room staff or equipment to maintain continuous communication with threat notification sources and that it sends and receives information in a timely manner. Confirm whether and how the licensee contacts the NRC HQ Operations Center as soon as practical if the NRC is not the original threat notification source². Assess the licensee’s actions and determine if they are appropriate for, and responsive to, the threat. Evaluate whether the licensee provides the required confirmations to the NRC HQ Operations Center before ceasing continuous communication.
- d. Evaluate the effectiveness of the licensee’s processes and equipment for communicating with onsite personnel to maximize personnel safety and plant survivability.
- e. Evaluate the effectiveness of the licensee’s processes and equipment for providing the initial notification to, and periodic status updates with, offsite response organizations.

² The licensee can cease continuous communication with non-NRC threat notification sources if the licensee first establishes continuous communication with the NRC HQ Operations Center and determines the Operations Center is providing the same threat information.

- f. Determine whether the licensee included offsite response organizations in the planning, development, training and testing for its aircraft threat procedure(s) to give those organizations the opportunity to establish mutual aid assistance agreements, plan the near-site mustering of offsite firefighting and medical assistance, or create and implement personnel mobilizations for volunteer organizations or hospital staffs, when appropriate.
- g. Evaluate the effectiveness of the licensee's processes and equipment for recalling appropriate off-shift personnel. Determine whether the licensee coordinated with offsite response organizations to establish assembly area locations, align response plans, and ensure off-shift licensee personnel are able to reach the site.
- h. Conduct a plant walk-through of licensee procedures related to reducing visual discrimination of the site and evaluate the effectiveness of the procedures, availability of resources, priority of actions, and capabilities for implementation within the constraints of the expected pre-event notification period. Ensure the responsible licensee staff is aware of its site-specific lighting actions, is proficient in performing those actions within the available time indicated in the procedures, and is not assigned duties during the event that would prevent them from accomplishing those actions.
- i. Evaluate the effectiveness of the licensee's procedures and resources for actions during the pre-event notification period that enhance the capability of the facility to mitigate the consequences of an aircraft impact (See Ref 2, Section 5.3 and Appendix A).
- j. Conduct a plant walk-through of licensee procedures designed to ensure protection of vital resources and key personnel that are critical for accomplishing post-impact mitigating actions. Evaluate how the licensee calculated the estimated protected area evacuation time(s) used in its onsite protective actions decision making tool.

03.03 Alternate Performance Evaluation.

If the licensee decides not to demonstrate its performance during a tabletop or control room simulator exercise, verify the effectiveness of licensee procedures by interviewing a sample of at least site management and staff in the areas of operations, security and emergency preparedness who would be expected to implement the licensee's procedure(s) for potential aircraft threats and conducting a plant walk-through for elements described for items a. thru i. in Section 03.02. If the inspector(s) concludes, based on these interviews and the plant walk-through, the licensee has successfully implemented the requirements of 10 CFR 50.54(hh)(1), it is not necessary to conduct further interviews. Conversely, if concerns are identified, the inspector(s) should expand the sample size or scope of the inspection as necessary to come to a conclusion as to the adequacy of the licensee's procedures and processes.

03.04 Procedure Controls.

Verify the licensee has a review process in place to maintain procedures required by 10 CFR 50.54(hh)(1):

- a. Confirm that the licensee has a process in place to conduct an effectiveness review of its processes and procedures associated with response strategies for potential aircraft threats in accordance with site administrative controls.

- b. Confirm that the licensee has a process to track corrective actions associated with problems identified with its response strategies for potential aircraft threats.

03.05 Training.

Verify the licensee's training programs have objectives that cover the implementation of site procedures associated with the response to potential aircraft threats:

- a. Confirm the licensee's licensed operator requalification and initial license training programs contain objectives that ensure licensed operators have the necessary training for responding to the initial threat notification and coordinating the licensee's response to the threat.
- b. Confirm the licensee's training programs, to the extent practical, include training for personnel who may be called on to respond to a potential aircraft threat (e.g., fire brigade, health physics, security and maintenance departments). Determine whether the licensee includes appropriate offsite response organization representatives in its preparations for potential aircraft threats.
- c. Determine whether the licensee requires recurring proficiency drills or exercises using its control room simulators. If so, determine if such drills or exercises include scenarios based on real world events and involve personnel who may be called on to respond to a potential aircraft threat.

2515/186-04 REPORTING REQUIREMENTS

The results of this Temporary Instruction should be included in a stand-alone report marked OUC-SRI and should be forwarded to NSIR/DPR/DDIR/OB, Attention: Bill Huffman, NSIR/DPR/DDIR/CB, Attention: Jason Kozal, and NRR/DPR/PGCB, Attention: Eric Bowman.

Inspectors should briefly describe the areas reviewed (i.e., provide a summary documenting that the inspection was completed) and any findings in the report.

Any findings identified during this inspection will be processed and documented in accordance with NRC Inspection Manual Chapter (IMC) 0612, "Power Reactor Inspection Reports." Significance of inspection findings should be evaluated in accordance with applicable appendices of IMC 0609, "Significance Determination Process." Any noncompliance resulting from this inspection will be evaluated and documented in accordance with the NRC Enforcement Policy (NUREG-1600) and the NRC Enforcement Manual.

Issues of concern may be documented in the inspection report at the discretion of the appropriate Branch Chief. The intent of documenting these issues is so that the program office can evaluate if improved guidance, generic communications, or rulemaking is needed.

2515/186-05 COMPLETION SCHEDULE

This TI should be completed by June 30, 2014.

2515/186-06 EXPIRATION

This TI will expire on June 30, 2015.

2515/186-07 CONTACT

For questions regarding the performance of this TI and emergent issues, contact: Aron Lewin at 301-415-2259 or Aron.Lewin@nrc.gov.

2515/186-08 STATISTICAL DATA REPORTING

All direct inspection effort expended on this TI is to be charged to 2515/186 with an IPE code of TI. Indirect inspection effort for preparation and documentation are to be charged to the inspection report number where the results of the inspection are documented, with an IPE code of TIP and TID respectively.

2515/186-09 RESOURCE ESTIMATE

The estimated direct inspection effort to perform this TI is 40 hours per site plus an additional 5 hours for the report preparation.

2515/186-10 TRAINING

No formal training, however, the inspectors will be given a familiarization briefing for the actions that the on-shift HOO would take in an aircraft threat situation. The inspectors should be familiar with the information provided in Section 11, References.

2515/186-11 REFERENCES

1. 10 CFR 50.54(hh)(1); and associated Federal Register Statements of Consideration from 73 FR 19443 dated 4/10/2008 and 74 FR 13926 dated 3/07/2009
2. Regulatory Guide 1.214, "Response Strategies for Potential Aircraft Threats," (ADAMS ML091740646)

END

Attachment 1
Revision History Page

Commitment Tracking Number	Accession Number Issue Date Change Notice	Description of Change	Description of Training Required and Completion Date	Comment and Feedback Resolution Accession Number
N/A	ML12170B026 08/30/12 CN 12-019	This TI was created to provide inspection guidance related to inspection of licensees' implementation processes and procedures for 10 CFR 50.54(hh)(1).	No formal training, however, the inspectors will be given a familiarization briefing.	ML12170B026