

INSPECTION OF ACTIVITIES ASSOCIATED WITH NRC GENERIC LETTER 2015-01

APPLICABILITY: This Temporary Instruction (TI) applies to all Part 70 licensees with an Integrated Safety Analysis (ISA) and all Part 40 licensees with a license-required ISA that provided a written response to NRC Generic Letter (GL) 2015-01: Treatment of Natural Phenomena Hazards in Fuel Cycle Facilities.

2600/016-01 OBJECTIVE

The objective of this TI is to support the U.S. Nuclear Regulatory Commission (NRC) review of licensees' activities in response to NRC Generic Letter 2015-01: "Treatment of Natural Phenomena Hazards in Fuel Cycle Facilities" (ADAMS Accession No. ML14328A029). Inspection activities implemented under this TI will allow the staff to independently verify that licensees are in compliance with regulatory requirements and applicable license conditions regarding the treatment of natural phenomena hazards (NPH) events in the facilities' ISA. The inspection results from the implementation of this TI will be used to independently evaluate the licensee's responses to the GL, follow up with previously identified Unresolved Items (URIs) regarding the treatment of NPH events, and to inform the closure process of NRC GL 2015-01.

2600/016-02 BACKGROUND

In light of the lessons learned from the accident at the Fukushima Dai-ichi Nuclear Power Plant, the NRC staff performed a systematic evaluation and inspection of selected fuel cycle facilities. The evaluation and inspection objectives were to confirm that licensees were in compliance with applicable regulatory requirements and license conditions, and to evaluate their readiness to address NPH events and other licensing bases events related to NPH.

From December 2011 through May 2012, the NRC staff conducted inspection activities in accordance with TI 2600/015, "Evaluation of Licensee Strategies for the Prevention and/or Mitigation of Emergencies at Fuel Facilities" (Agencywide Documents Access and Management System [ADAMS] Accession No. ML12286A284). As a result of the inspections, the staff opened URIs to further assess whether the evaluated licensees are in compliance with license conditions, the requirements of 10 CFR 70.61, and the requirements of 10 CFR 70.62(c), regarding NPH accident sequences. Due to the generic applicability of the URIs across the nuclear fuel facility industry, the staff issued NRC GL 2015-01 to request information to evaluate licensees' compliance with NRC rules and regulations or relevant license conditions.

GL 2015-01 requested all addressees to submit the definitions of "unlikely," "highly unlikely," and "credible" in evaluating NPH events such as earthquakes, tornadoes, and tornado missile

impacts, floods, hurricanes, and other wind storms in the ISA. In addition, it requested addressees to submit a description of the licensee's safety assessment for the licensing and design basis NPH events, including: (i) the likelihood and severity, (ii) accident sequences as a result of impacts to facility structures and internal components, (iii) assessment of the consequences for the accident sequences that result in intermediate and/or high consequence events; and (iv) items relied on for safety to prevent or mitigate the consequences from NPH events.

Furthermore, GL 2015-01, requested addressees to provide a description of the results of the ISA review used to comply with 10 CFR 70.62(c). This requested documentation should have identified the characteristics of the licensing and design basis NPH events applicable to the site. Additionally, the documentation should have evaluated possible changes in the methodology, likelihood, and severity of NPH events with those used in the original design, evaluation, and licensing of the facility. The GL also requested licensees to submit for staff review a summary of the results of any facility assessments or walk downs, if performed, to identify and address degraded, nonconforming, or unanalyzed conditions that can affect the performance of the facility under NPH and have available for NRC inspection the documentation of the qualifications of the team.

2600/016-03 INSPECTION REQUIREMENTS AND GUIDANCE

NRC inspection staff will confirm that licensee's response to the GL adequately evaluates NPH events in the facilities' ISA. The inspector(s) should coordinate the inspection effort with the licensee in accordance with the licensee's schedule, especially if contractor support is needed from the licensee.

03.01 Inspection Requirement. Verify that licensee is in compliance with license conditions, the requirements of 10 CFR 70.61, and the requirements of 10 CFR 70.62(c), regarding NPH accident sequences. Requirements for Part 70 licensees are contained in Subpart H and the specific licensee ISA. The Honeywell Metropolis Works Facility and International Isotopes Fluorine Products Inc. completed ISAs using methodologies, performance criteria, and staff guidance similar to 10 CFR Part 70 to evaluate relevant hazards and their associated accident sequences. The Honeywell and International Isotopes ISAs are captured in their licensing bases. In addition, for new facilities or new processes at existing facilities, 10 CFR 70.64(a), "Baseline design criteria" requires, in part, that the design must provide for adequate protection against natural phenomena with consideration of the most severe documented historical events for the site.

03.02 Inspection guidance. This inspection is based on regulatory requirements and credible initiating events for the facility as described in the GL responses or as applicable to the facility location. During preparation, inspectors should review the GL response for the facility, licensee's ISA Summary and other licensing documentation to identify the NPH events considered by the licensee.

- a. Assessment of the potential accident sequences and consequences as a result of impacts to facility structures and internal components from NPH: The inspectors will verify that the licensee's ISA adequately considered credible external events (accident

sequences) involving process deviations or other events internal to the facility (e.g., spills, consequential explosions, and fires). The inspectors should select or postulate a sample of accident sequences based on the risk significance of the processes and equipment involved in the facility. Inspectors should consider the licensee's ISA, engineering analyses and safety/licensing information, and other NRC guidance to inform the selection of accident sequences. Special emphasis should be provided to assumptions made by the licensee in the ISA as to the conditions that lead to the accident sequence.

Using the selected or postulated accident sequences, the inspectors may perform area walkdowns to verify that assumptions made in the accident sequence evaluation are appropriate. During the implementation of area walkdowns, the inspectors should verify that the licensee's evaluation adequately characterized the as-built configuration of the facility and/or process being analyzed. In addition, the inspectors can use area walkdowns to verify that the licensee's accident sequence evaluation considered the potential for adverse interactions of nearby systems structures and components (SSCs).

Inspectors should also verify that the licensee adequately evaluated the consequences of accident sequences that could potentially result in radiological/chemical consequences to workers, the public, or the environment. The area walkdowns can be used to verify that the licensee considered the impacts of multiple SSC's failures in the analysis of the consequences (e.g., radiological, chemical, fire, internal flooding).

Inspectors should verify that the licensee clearly documented the assumptions they used to develop their ISA Summary and other specific safety assessments (e.g., criticality safety, fire safety, chemical safety, etc.).

- b. Prevention and/or mitigation strategies. The inspectors will verify that procedures, personnel, and equipment credited in the licensee's mitigation strategy for each of the safety or licensing bases events analyzed are adequate. In addition, the inspector will verify, using a risk informed sample, that the licensee ensures that the prevention and/or mitigation strategy for the consequences from each selected safety and licensing bases event is appropriate.

The inspectors should verify that SSC's credited in the current licensing basis for NPH events are reliable, available, functional, and properly maintained (e.g., management measures). Inspectors should also verify that the design bases for the SSCs credited for prevention or mitigation of the consequences to the facility are adequately documented. If SSC's are being credited to prevent and/or mitigate the consequences of NPH events, the inspectors should verify that the licensee considered the impacts of multiple degraded or disabled resources during a NPH event. This could include long-term loss of functions, such as offsite power, onsite emergency power, offsite water supply, other offsite services, and transportation to access offsite resources.

In addition, for SSC's credited in the current licensing basis for NPH, the inspectors should verify how the licensee evaluated and addressed degraded, nonconforming, or unanalyzed conditions that can affect the performance of the facility under NPH.

If mitigation measures rely on operator actions, the inspector should verify the qualifications and training of operators to ensure adequate implementation of the procedures.

2600/016-04 REPORTING REQUIREMENTS

The results of this evaluation will be used to inform in the closure process of NRC GL 2015-01, to follow up with previously identified URIs regarding the treatment of NPH events, and to determine whether additional NRC regulatory actions are warranted. The inspection results should be documented in a public report. The inspection report should have the Chief of the Programmatic and Regional Support Branch, NMSS/PORSB on distribution.

2600/016-05 COMPLETION SCHEDULE

This TI is to be initiated upon issuance. Inspection activities are to be completed by June 30, 2017.

2600/016-06 EXPIRATION

The TI will expire on December 31, 2017.

2600/016-07 CONTACT

Any technical questions regarding this TI should be addressed to Chief of the Programmatic and Regional Support Branch, NMSS/PORSB.

2600/016-08 STATISTICAL DATA REPORTING

All direct inspection effort expended on this TI is to be charged to 2600/016 with an IPE code of TI. All indirect inspection effort expended on this TI for preparation and documentation should be attributed to activity code TPD.

2600/016-09 RESOURCE ESTIMATE

The estimated average time to complete the TI inspection requirements is 96 hours of direct inspection per site. Where applicable, inspectors should credit the baseline inspection program for samples reviewed during this TI evaluation.

2600/016-10 TRAINING

No additional training is required.

2600/016-10 REFERENCES

NUREG-1520, "Standard Review Plan for the Review of a License Application for a Fuel Cycle Facility."

INTERIM STAFF GUIDANCE FCSE-ISG-15, "Natural Phenomena Hazards in Fuel Cycle Facilities."

Generic Letter responses from licensees.

Attachment:
Inspection of Activities Associated
with NRC Generic Letter 2015-01

END

ATTACHMENT

Revision History for TI 2600/016

INSPECTION OF ACTIVITIES ASSOCIATED WITH NRC GENERIC LETTER 2015-01

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 (Pre-Decisional, Non-Public)
N/A	ML15317A506 12/17/15 CN 15-030	This is a new document issued for inspections related to NRC Generic Letter 2015-01.	N/A	N/A
N/A	ML16293A899 11/09/16 CN 16-029	The completion schedule was extended to the end of the second quarter of calendar year 2017 and the expiration date was extended to the end of calendar year 2017 to provide sufficient time to draft a summary report.	N/A	N/A