



Natural Phenomena Hazards Update: Advisory Committee Reactor Safeguards (ACRS)

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Background

- Fukushima earthquake in 2011
- Information Notice (IN) 2011-008
- Temporary Instruction (TI) 2600/15 to confirm compliance with 10 CFR Part 70 Subpart H in 2012
- Inspections identified potential generic issue
- Un-Resolved Items (URIs) were issued
- Generic Letter (GL) 2015-01 issued on June 22, 2015 (ADAMS ML14328A029)
- Interim Staff Guidance (ISG) FCSE-ISG-15 issued on July 7, 2015 (ML15121A044)

Potential Safety Concerns

- Age of facilities – 60 yrs
- Built to old building codes
- Lack of NPH requirements
- Lack of documented basis for conclusions in Integrated Safety Analysis (ISA)
- Code requirements and hazards have changed

Purpose of GL

- Request information to verify compliance with 10 CFR Part 70 Subpart H regarding NPH
- Verify that ISAs address the impacts of natural phenomena hazard events

Regulatory Basis

- Regulations in 10 CFR 70.62 (c)(1) require:
 - Licensee shall conduct and maintain an ISA
 - ISA identifies potential accident sequences including the effects from natural phenomena events

Types of NPH Events

- Seismic
- Flooding
- High winds/tornadoes/missiles
- Excessive precipitation
- Lightning strikes/fires
- Meteorites
- Volcanoes
- Tsunamis
- Rapid erosion/sinkholes

Current Status

- Responses received from all licensees
- Site visits in-progress
- Technical evaluations in-progress
- TI inspections in-progress

Site Visits

- Westinghouse – December 2015
- NFS – February 2016
- BWXT – April 2016
- GNFA – TBD
- No site visits planned for Honeywell, MOX, Urenco, or Areva

TI Inspections

- First TI Inspection completed (Westinghouse) on July 14, 2016
- AREVA scheduled for week of August 29, 2016
- All other sites TBD

A large, stylized graphic of an atomic symbol, consisting of a central sphere and three intersecting elliptical orbits, is positioned on the left side of the slide. The top portion of the slide has a solid blue background, while the bottom portion is white. A horizontal tan-colored bar spans the width of the slide, containing the word "Questions" in bold black text.

Questions

Reference Slides

Information Requested

- Definitions of “unlikely,” “highly unlikely,” and “credible” for NPH events
- Current risk evaluation of NPH events
- List of IROFS for NPH events
- Results of ISA review
- Results of walkdowns or assessments

Interim Staff Guidance (ISG)

- ISG-15 issued on July 7, 2015
- General guidance on ISA content & definitions
- Use of graded approach
- Evaluation of existing structures, including internal components and IROFS
- Seismic design and evaluation guidance
- Emergency response

Closure Process

- GL closure strategy described in ML15195A474.
- Closure strategy consists of 3 parts:
 - Evaluation of licensee responses
 - Perform TI inspections
 - Issue closure letter to licensee
- Goal of completing GL closure activities (review of responses, site visits, and inspections) by end of 2016.

HQ Technical Evaluation

- Similar to a Safety Evaluation Report (SER)
- Includes issuance of RAIs
- Verify **reasonable assurance** that the licensees' approved ISA methodology adequately addresses NPH events such that the performance requirements are met.
- Staff will prepare a written evaluation of their findings and formally issue it to the licensee by letter.

TI 2600/016

- Temporary Instruction (TI) 2600-016 was issued on December 17, 2015 (ML111030453).
- The TI was developed to independently verify the licensee's implementation of the GL responses.
- All licensees of operating facilities will be inspected using the TI and an inspection report will be issued.
- For licensees with URIs, the TI will provide the mechanism for closure.

Structure of TI

- Assessment of NPH ISA accident sequences
- Prevention/Mitigation strategies
- Focuses on implementation instead of methodology
- Validation of ISA assumptions

Potential Inspection Topics

- Review of NPH ISA accident sequences
 - Criticality
 - Chemical
 - Fire
- Independent walkdowns to validate ISA assumptions
- Facility modifications
- Emergency preparedness procedures
- Structural

Inspection Team

- DFFI Team Lead (PPM)
- DFFI inspector (NCS/ISA)
- DFFI inspector (CHEM/FIRE/ISA) – as needed
- DFFI inspector (EP)
- HQ Specialized Structural Expertise

Support Staff

- HQ Project Mgr. – licensing questions
- HQ Tech. Reviewers – ISA methodology questions
- Other Technical Experts

TI 2600/016 Schedule

- Westinghouse – July 11, 2016
- Areva Richland – August 29, 2016
- All others - TBD

GL 2015-01 Progress Checklist

1. Westinghouse

- ✓ GL Response (8/26/15)
- ✓ RSI (2/26/16)
- ✓ Site Visit (12/8/15)
- RSI Response (4/1/16)
- **Technical Review**
 - Staff Evaluation Report
 - TI Inspection (7/11/16)
 - Closure Letter

2. NFS

- ✓ GL Response (9/14/15)
- ✓ RSI (2/8/16)
- ✓ Site Visit (2/23/16)
- RSI Response (3/9/16,
extension: 6/7/16)
- **Technical Review**
 - Staff Evaluation Report
 - TI Inspection
 - Closure Letter

GL 2015-01 Progress Checklist (Cont.)

3. BWXT

✓ **GL Response (9/18/15)**

✓ **Site Visit (4/18/16)**

RSI

RSI Response

• **Technical Review**

Staff Evaluation Report

TI Inspection

Closure Letter

4. GNF-A

✓ **GL Response (7/22/15)**

RSI

Site Visit (mid June)

RSI Response

• **Technical Review**

Staff Evaluation Report

TI Inspection

Closure Letter

GL 2015-01 Progress Checklist (Cont.)

5. AREVA

- ✓ GL Response (9/18/15)**
- ✓ RSI (12/4/15)**
- ✓ Site Visit (4/18/16)**
- ✓ RSI Response (2/25/16)**
- Technical Review**
 - Staff Evaluation Report
 - TI Inspection
 - Closure Letter