



**UNITED STATES
NUCLEAR REGULATORY COMMISSION**

REGION I
2100 RENAISSANCE BLVD., SUITE 100
KING OF PRUSSIA, PA 19406-2713

SPECIAL INSPECTION TEAM CHARTER

May 19, 2015

MEMORANDUM TO: Arthur L. Burritt, Manager
Special Inspection Team

Thomas C. Setzer, Team Leader
Special Inspection Team

FROM: Ho K. Nieh, Director */RA Michael L. Scott for/*
Division of Reactor Projects

Raymond K. Lorson, Director */RA James M. Trapp for/*
Division of Reactor Safety

SUBJECT: SPECIAL INSPECTION TEAM CHARTER –
INDIAN POINT NUCLEAR GENERATING UNIT 3 – WATER
ACCUMULATION IN SAFETY-RELATED SWITCHGEAR ROOM
FOLLOWING DELUGE OF MAIN TRANSFORMER FIRE

In accordance with Inspection Manual Chapter (IMC) 0309, "Reactive Inspection Decision Basis for Reactors," a Special Inspection Team (SIT) is being chartered to evaluate water accumulation in the Unit 3 switchgear room following deluge of a #31 main transformer fire which occurred on May 9, 2015. The decision to conduct this special inspection was based on meeting one deterministic criteria, and the event representing a preliminary conditional core damage probability in the 4 E-6 to 2 E-5 range for Unit 3.

The SIT will expand on the inspection activities started by the resident inspectors immediately after the event. The team will review Entergy's organizational and operator response to the event, equipment performance and design, and the licensee casual analyses, as applicable. The team will collect data, as necessary, to refine the preliminary risk analysis. The team will also assess whether the SIT should be upgraded to an Augmented Inspection Team.

The inspection will be conducted in accordance with the guidance contained in NRC Inspection Procedure 93812, "Special Inspection," and the inspection report will be issued within 45 days following the exit meeting for the inspection.

The special inspection will commence on May 19, 2015. The following personnel have been assigned to this effort:

Manager: Arthur L. Burritt, Chief
Reactor Projects Branch 2
Division of Reactor Projects

Team Leader: Thomas C. Setzer, Senior Project Engineer
Reactor Projects Branch 2
Division of Reactor Projects

Full Time Members: Sarah C. Rich, Senior Resident Inspector (Acting), Vermont Yankee
Reactor Projects Branch 5
Division of Reactor Projects

Full Time Member: Roy L. Fuhrmeister, Senior Reactor Inspector
Engineering Branch 3
Division of Reactor Safety

Enclosure:
Special Inspection Team Charter

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Enclosure:
Special Inspection Team Charter

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NAME	TSetzer/ALB for	ABurritt/ALB	HNieh/HKN	RLorson/JMT for	
DATE	5/ 18 /15	5/ 18 /15	5/ 19 /15	5/ 19 /15	

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Special Inspection Team Charter
Indian Point Nuclear Generating Unit No. 3
Water Accumulation in Safety-Related Switchgear Room Following Deluge of a #31 Main Transformer Fire
May 9, 2015

Background:

On May 9, 2015, at 5:50 p.m., Indian Point Unit 3 experienced an automatic reactor trip as a result of a failure of the #31 main transformer. A Notification of Unusual Event (UE) was declared at 6:01 p.m. for an explosion or fire within the station's Protected Area. The fire was initially extinguished by the station's deluge system. The fire then reignited and was extinguished by both the site fire brigade and two offsite fire departments who responded to the event. The UE was exited at 9:03 p.m.

The reactor trip was uncomplicated. All control rods inserted into the reactor core, and all safety systems responded as designed. The NRC Resident Inspectors responded to the site and independently confirmed that the plant was in a stable, safe condition.

After the reactor trip, Unit 3 was placed in Mode 4, Hot Shutdown, with normal offsite electrical power available and decay heat being removed by the residual heat removal system. Unit 2 continues to operate at 100 percent power.

During the event, approximately 1" to 2" of water accumulated in the safety-related switchgear room. The switchgear room is risk significant as it contains all trains of safety-related 480 volt power. If the switchgear is lost, other alternate sources of power can be used to safely maintain the plant shutdown.

Basis for the Formation of the SIT:

Brief Description of the Basis for the Assessment:

The Inspection Manual Chapter (IMC) 0309 review concluded that one of the deterministic criteria in Enclosure 1 of IMC 0309 was met. The criterion met was for the significant, unexpected system interaction between the fire protection deluge system and the safety-related switchgear room.

Using the Indian Point Standardized Plant Analysis Risk (SPAR) models, a Region I Senior Reactor Analyst conducted a preliminary risk analysis. The estimated conditional core damage probability (CCDP) for Unit 3 was in the 4 E-6 to 2 E-5 range.

Based upon satisfying the deterministic criterion and the estimated CCDP values for Unit 3 being in the 4 E-6 to 2 E-5 range per the SPAR models, the reactive inspection response is within the "No Additional Inspection to Special Inspection" overlap to the "Special Inspection to Augmented Inspection Team" overlap range for Unit 3. A SIT is being initiated to gather information available from the event and to verify that immediate corrective actions were appropriate.

Objectives of the Special Inspection:

The SIT will expand on the inspection activities started by the resident inspectors immediately after the event. The team will review Entergy's organizational and operator response to the event, equipment performance and design, and the licensee casual analyses, as applicable. The team will collect data, as necessary, to refine the preliminary risk analysis. The team will also assess whether the SIT should be upgraded to an Augmented Inspection Team.

To accomplish these objectives, the team will:

1. Develop a complete sequence of events including follow-up actions taken by Entergy;
2. Review and assess the equipment response to the fire resulting in water accumulation in the switchgear room. This assessment should evaluate the system response against the plant's design and regulatory requirements to assess the adequacy of the equipment design and maintenance;
3. Review and assess operator and fire brigade performance in identifying and isolating the sources of water into the switchgear room, including review of procedures, logs, and communications (internal and external);
4. Review and assess the effectiveness of Entergy's response to the water intrusion. This includes overall organizational response, failure modes and effect analysis developed for the equipment challenges, and interim and proposed longer term corrective actions;
5. Review Entergy's evaluations of pertinent industry fire-fighting operating experience and evaluation of potential precursors relating to the potential for water accumulation, including the effectiveness of any actions taken; and
6. Collect data necessary to refine the existing risk analysis and document the final risk analysis in the SIT report.

Guidance:

Inspection Procedure 93812, "Special Inspection," provides additional guidance to be used by the SIT. Team duties will be as described in Inspection Procedure 93812. The inspection should emphasize fact-finding in its review of the circumstances surrounding the event. Safety concerns identified that are not directly related to the event should be reported to the Region I office for action.

The Team will conduct an entrance meeting and begin the inspection on May 19, 2015. While on site, the Team Leader will provide daily briefings to Region I management, who will coordinate with the Office of Nuclear Reactor Regulation to ensure that all other parties are kept informed. A report documenting the results of the inspection will be issued within 45 days following the final exit meeting for the inspection.

This Charter may be modified should the team develop significant new information that warrants review.