

UNITED STATES  
NUCLEAR REGULATORY COMMISSION  
OFFICE OF NUCLEAR REACTOR REGULATION  
OFFICE OF NEW REACTORS  
WASHINGTON, DC 20555-0001

March 12, 2019

NRC INFORMATION NOTICE 2019-01: INADEQUATE EVALUATION OF TEMPORARY  
ALTERATIONS

**ADDRESSEES**

All holders of an operating license or construction permit for a nuclear power reactor under Title 10 of the *Code of Federal Regulations* (10 CFR) Part 50, "Domestic Licensing of Production and Utilization Facilities," except those that have permanently ceased operations and have certified that fuel has been permanently removed from the reactor vessel.

All holders of and applicants for a combined license under 10 CFR Part 52, "Licenses, Certifications, and Approvals for Nuclear Power Plants."

**PURPOSE**

The U.S. Nuclear Regulatory Commission (NRC) is issuing this information notice (IN) to alert licensees about recent operating experience at nuclear power facilities where temporary alterations were installed that either negatively impacted the operability of affected Systems, Structures, and Components or without performing required 10 CFR 50.59 reviews.

The NRC expects that recipients will review the information contained in this IN for applicability to their facilities and consider actions, as appropriate, to avoid similar issues. INs may not impose new requirements, and nothing in this IN should be interpreted to require specific action.

**DESCRIPTION OF CIRCUMSTANCES**

Sequoyah, Units 1 and 2

On November 24, 2018, the licensee for Sequoyah, Units 1 and 2, discovered that a door was blocked open to allow a hose to be routed from an outside vacuum truck to an ice bin inside the Unit 2 Additional Equipment Building without meeting the compensatory measures required by the related breach permit. This condition created a breach of the auxiliary building secondary containment enclosure (ABSCE) boundary that exceeded the allowed ABSCE breach margin of three minutes. As a result, Unit 1 entered Technical Specification (TS) Limiting Condition of Operation 3.7.12, Condition B for two trains of Auxiliary Building Gas Treatment System (ABGTS) inoperable due to an inoperable ABSCE boundary in MODE 1, 2, 3, or 4, and both Units entered Condition E for one required ABGTS train inoperable with fuel stored in the spent fuel pool. The event was caused by a failure to cover in the pre-job brief the ABSCE breach permit, required compensatory measures and internal and external operating experience. Corrective actions included closing the door and revising the associated work order to add a hold point to ensure the ABSCE permit is reviewed, understood, and adhered to prior to and during the breach. See Licensee Event Report 2018-002-00, "Exceeded Breach Margin Renders Both Trains of the Auxiliary Building Gas Treatment System Inoperable" dated January

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22, 2019, (Agencywide Documents Access and Management System (ADAMS) No. [ML19022A040](#)) for more details.

### Sequoyah, Units 1 and 2

On March 3, 2017, Door A212 was improperly breached at the Sequoyah nuclear power plant to facilitate a continuous fire watch. Although a fire protection impairment permit was generated, the permit did not evaluate the impact of the breach on the ABSCE boundary. On March 7, 2017, a senior reactor operator discovered the breach during a walk down of the Auxiliary Building. The breach resulted in the inoperability of two trains of the ABGTS due to an inoperable ABSCE boundary. An evaluation determined the cause to be a less than adequate single barrier breaching standard. A contributing cause was an inconsistent approach to entry into the barrier breaching process. In addition to restoring operability by closing the door, corrective actions included revising the breaching procedure to address all possible breaches and to include a matrix for doors and their associated impacts. See Licensee Event Report 2017-001-00 "Breached Door Renders Both Trains of the Auxiliary Building Gas Treatment System Inoperable" dated April 26, 2017, (ADAMS No. [ML17117A495](#)) for more details.

### Salem, Unit 2

On August 26, 2015 and again on or about September 10, 2015, NRC inspectors conducting walkdowns at the Salem, Unit 2 while in Mode 1, noted that the boric acid evaporator room's interior wall had been removed while two watertight doors were fully open. Given Salem TS 3.7.7 requires that auxiliary building differential pressure be slightly negative in Mode 1, the inspectors made the control room aware of concerns regarding operability of the auxiliary building differential pressure as well as the impairment of the barrier. The licensee closed the outer watertight doors and subsequently, confirmed the doors classification as high energy line break (HELB) and flooding doors. The impairment required a plant barrier impairment (PBI) which had not been previously completed. In addition, the licensee determined that removing the interior wall made the evaporator room part of the auxiliary building contiguous zone envelope. The licensee's investigation and causal evaluation determined that technicians had breached the metal panel that formed the interior wall of the evaporator room on or around November 11, 2014, and that the outer doors had been opened on numerous occasions from that time through September 2015. The licensee determined that one apparent cause was inadequate procedural guidance that resulted in work planners not requesting a PBI, personnel not meeting the intent of the attendant requirement, and departments not requiring proof that the Technical Specifications would be met prior to opening the doors. Corrective actions included properly implementing barrier controls that included compensatory actions for the flooding and occupational radiation barrier aspects of the program.

As a result, the NRC inspectors issued a non-cited violation for the improper implementation of barrier controls while performing maintenance that could affect the performance of the auxiliary building envelope. NRC Inspection Report 05000272/2015004 and 05000311/2015004, dated February 10, 2016 (ADAMS No. [ML16043A169](#)), provides more details about this finding.

### Salem, Units 1 and 2

On October 3, 2013, an NRC Resident Inspector observed that the Turbine Driven Auxiliary Feedwater (TDAFW) pump room enclosure HELB barrier door was being held open for an extended period by an assigned door attendant. The Motor Driven Auxiliary Feedwater (MDAFW) pumps are located adjacent to the enclosure such that if a secondary steam HELB event were to occur in the TDAFW pump room while its door was open or disabled, the steam

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plume from the room could render both MDAFW pumps inoperable. The cause of this event is attributed to an organizational failure to ensure that guidance provided in plant HELB program procedures contained sufficient justification for compensatory actions used for barrier impairments. Corrective actions taken by the licensee included: a plant-wide communication was made describing the HELB event and its impact on operability of plant equipment; a revision to the Operability Assessment and Equipment Control Program procedure was made to ensure it conforms to the guidance of NRC Regulatory Issue Summary 2001-09, "Control of Hazard Barriers"; and permanent signs were installed on all HELB barrier doors prohibiting them from being blocked open without authorization from Salem Operations. See Licensee Event Report 2014-001-00, "High Energy Line Break Door Blocked Open During Maintenance Activity" dated March 10, 2014 (ADAMS No. [ML14069A245](#)), for more details.

### Watts Bar, Unit 1

On July 9, 2012, inspectors from the NRC identified a finding related to a failure to correctly translate the design basis related to onsite flooding into the instructions for a plant design change temporary alteration. Specifically, a procedure provided a means to erect a temporary, water-tight flood barrier around both trains of the Thermal Barrier Booster Pumps (TBBP). This barrier was designed to be sealed with a sealant that would not prevent water intrusion as required. Additional design issues were identified by the inspectors on July 14, 2012, that included: (1) the lack of adequate preparation/cleaning of surfaces as recommended by the sealant manufacturer prior to applying the sealant; (2) failure to perform load calculations for panel deformation; and (3) failure to include provisions in the design and installation to support the temporary panels to resist deflection from hydrostatic pressure/force and potential uplift forces, since the panels were not anchored to the floor. As a result, the TBBP flood barrier would have failed during a probable maximum flood event, thereby submerging the TBBPs and rendering the equipment inoperable. Corrective actions included the removal of the installed panel assembly and its replacement. The replacement activity included the preparation/cleaning of surfaces to be sealed and the use of an approved sealant primer, as recommended by the sealant manufacturer, prior to applying the sealant. A vertical brace was also installed to resist potential uplift forces. NRC Inspection Report 05000390/2012009, dated March 12, 2013 (ADAMS No. [ML13071A289](#)), provides more details about this finding.

### Peach Bottom, Unit 3

Between January 21, 2009 and September 9, 2009, the licensee for Peach Bottom, Unit 3 declared the 'E' Wide Range Neutron Monitor (WRNM) inoperable and installed a jumper that bypassed its trip feature instead of using the WRNM bypass switch as is described in their plant's Final Safety Analysis Report. Since only 3 of 4 WRNMs were required by Technical Specifications, no action statement was entered and installing the jumper was thought to be acceptable. However, installing the jumper was done without performing a 10 CFR 50.59 review. This installation involved a facility change that likely would have required a license amendment before its implementation. Corrective actions included entering the issue into the licensee's Corrective Action Program and the removal of the jumper restoring the system to its configuration. For more details, see NRC Inspection Report 05000277/2009004 and 05000278/2009004, "Peach Bottom Atomic Power Station - NRC Integrated Inspection Report" dated November 12, 2009 (ADAMS No. [ML093160608](#)).

## **DISCUSSION**

The above events highlight the need to adequately establish and implement procedural controls for temporary alterations to insure their compliance with the requirements of all NRC regulations

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such as 10 CFR 50.59, “Changes, tests and experiments” and 10 CFR 50.65, “Requirements for monitoring the effectiveness of maintenance at nuclear power plants.” The first five events resulted in equipment inoperability while the sixth event resulted in a violation of 10 CFR 50.59 requirements.

NRC Regulatory Guide 1.187, “Guidance for Implementation of 10 CFR 50.59, Changes, Tests, and Experiments,” endorses the Nuclear Energy Institute (NEI) document NEI 96-07, “Guidelines for 10 CFR 50.59 Evaluations,” Revision 1 ADAMS No. [ML003771157](#)). Temporary alterations include jumpering terminals, lifting leads, placing temporary lead shielding on pipes and equipment, removal of barriers, and use of temporary blocks, bypasses, scaffolding and supports. Although the requirements of 10 CFR 50.59 do not generally apply to temporary alterations, there are some exceptions that are listed in NEI 96-07. Exceptions include compensatory actions to address degraded or nonconforming conditions, and temporary alterations expected to be in effect during at-power operations for more than 90 days. In addition, regardless of whether the requirements of 10 CFR 50.59 apply, Section 4.1.2, “Maintenance Activities” of NEI 96-07, requires licensees to ensure equipment operability in accordance with the technical specifications is maintained as a result of maintenance activities and to assess and manage their risk impact per 10 CFR 50.65(a)(4). Note that maintenance activities include temporary alterations.

#### Related NRC Generic Communications

The NRC has previously issued the following two related generic communications:

[Information Notice 2007-29](#), “Temporary Scaffolding Affects Operability of Safety-Related Equipment,” dated September 17, 2007, describes similar issues to the ones discussed in this IN as they relate to scaffolding. Events discussed include scaffolding that: interferes with the operation of equipment, blocks access to fire protection equipment, is improperly braced to prevent sliding during use or during a seismic event, or is attached to instrument racks or piping supports without adequate justification.

[Regulatory Issue Summary 2001-09](#), “Control of Hazard Barriers”, dated April 2, 2001, clarifies the NRC position on the temporary removal of hazard barriers.

#### **CONTACTS**

Please direct any questions about this matter to the technical contact listed below.

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Note: NRC generic communications may be found on the NRC public Web site, <http://www.nrc.gov>, under NRC Library.

**INFORMATION NOTICE 2019-01, "INADEQUATE EVALUATION OF TEMPORARY ALTERATIONS," DATE: March 12, 2019**

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