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

September 17, 2007

NRC INFORMATION NOTICE 2007-29: TEMPORARY SCAFFOLDING AFFECTS OPERABILITY OF SAFETY-RELATED EQUIPMENT

ADDRESSEES

All holders of operating licenses for nuclear power reactors, except those who have permanently ceased operations and have certified that fuel has been permanently removed from the reactor vessel.

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 scaffolding installed to support maintenance activity has affected the operability of safety-related equipment. The NRC expects that recipients will review the information for applicability to their facilities and consider actions, as appropriate, to avoid similar problems. Suggestions contained in this IN are not NRC requirements; therefore, no specific action or written response is required.

DESCRIPTION OF CIRCUMSTANCES

Several recent events have occurred at nuclear power facilities where temporary scaffolding that has affected the operability of safety-related equipment. Specific instances include the following:

Millstone Power Station Unit 2

Scaffolding was constructed adjacent to a main steam isolation valve (MSIV) to support replacing the operating cylinder during the upcoming refueling outage. Supplementary instructions were provided for building the scaffolding close to safety-related equipment, and a post-installation inspection was performed. Approximately forty days later during a MSIV stroke time test, the MSIV was determined to be inoperable due to scaffold decking interfering with the travel of the valve actuator preventing the MSIV from fully closing.

Also at Millstone Unit 2, temporary scaffolding was inadvertently placed on top of a blowout panel in the turbine-driven auxiliary feedwater pump room ceiling. The impact of this oversight could have resulted in all three auxiliary feedwater pumps becoming inoperable during

a high energy line break. (NRC Integrated Inspection Report 05000336/2006005 and 05000423/2006005, January 30, 2007, Agencywide Documents Access and Management System (ADAMS) Accession No. ML070300143)

Beaver Valley Power Station Unit 2

The licensee discovered that scaffolding constructed around the 'A' and 'B' MSIVs two days earlier had seismic bracing located in the path of MSIV travel. This condition could have potentially prevented the MSIVs from fully closing. (NRC Integrated Inspection Report 05000334/2006005 and 05000412/2006005, January 24, 2007, ADAMS Accession No. ML070260053)

Oyster Creek Generating Station

NRC inspectors identified a scaffold pole in contact with piping associated with the scram discharge volume. This condition was not consistent with the licensee's scaffold procedure which states that scaffold shall not be in contact with safety-related piping. During the subsequent disassembly of this scaffolding, a scaffold coupler ("knuckle") fell and damaged an oiler reservoir for the 'B' core spray booster pump, rendering the pump inoperable for approximately twelve hours to effect repair. (NRC Integrated Inspection Report 05000219/2006003, July 13, 2006, ADAMS Accession No. ML061950007)

Monticello Nuclear Generating Plant

NRC inspectors identified a scaffold that was in contact with safety-related piping for the residual heat removal system. This condition was not consistent with the licensee's scaffolding procedure that specifies maintaining a clearance of greater than 2 inches from safety-related equipment. During the extent of condition review, the licensee found two scaffolds erected in the intake structure that were less than 2 inches away from fire protection piping. The licensee determined that all three scaffolds were originally constructed with the required 2-inch separation, but the separation became less than 2 inches during use of the scaffolds. The Licensee revised their scaffold control procedure to provide additional guidance on the need for adequate bracing to prevent scaffolding from moving during use. (NRC Integrated Inspection Report 05000263/2006002, April 26, 2006, ADAMS Accession No. ML061160574)

Turkey Point Nuclear Plant

NRC inspectors identified two examples where scaffolding was not installed in accordance with scaffold control procedures. The licensee requires that installed scaffolding be a minimum of 2 inches from fragile items, including but not limited to valves and instrument lines. The first example involved scaffolding erected within 2 inches of the Unit 3 refueling water storage tank suction valves. The second example involved scaffolding that was in contact with an emergency diesel generator starting air system pipe hanger. The licensee's corrective actions included revising their scaffolding procedure to establish a minimum clearance requirement of 2 inches for all plant equipment and to emphasize the requirement to perform an engineering evaluation when the procedural requirements could not be met. (NRC Problem Identification and Resolution Inspection Report 050000250/2006007 and 05000251/2006007, March 17, 2006, ADAMS Accession No. ML060760175)

BACKGROUND

Systems and components that are required to be operable by technical specifications or by the fire protection program can be rendered inoperable by improperly installed scaffolding. Technical specification administrative requirements and Title 10 of the *Code of Federal Regulations* (10 CFR) Part 50, Appendix B, Criterion V, "Instructions, Procedures and Drawings," require procedural controls for certain activities that would include scaffolding controls.

In addition, 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. NEI 96-07 states that: temporary changes to the facility such as the installation of scaffolding that are not associated with maintenance are subject to 10 CFR 50.59 in the same manner as permanent changes, to determine if prior NRC approval is required; the risk impacts of temporary changes associated with maintenance activities (i.e., temporary alterations) should be assessed and managed in accordance with 10 CFR 50.65(a)(4), and associated guidance; and applying 10 CFR 50.59 to such activities is not required provided that temporary alterations are not in effect longer than 90 days at power, and affected structure, system or components are restored to their normal, as-designed condition at the conclusion of the maintenance activity.

DISCUSSION

The above events highlight the need to adequately establish and implement procedural controls so that scaffolding does not adversely affect safety-related equipment. It is important that scaffolding: does not interfere with the operation of equipment such as valves and ventilation dampers; is properly braced to prevent displacement or sliding during use or during a seismic event; is not directly attached to instrument racks or piping supports; does not block access to fire protection equipment such as hose reels, fire extinguishers, and fire doors; and materials that are non-fire retardant are accounted for as transient combustibles. At some facilities, structures such as floor grating and scaffolding are required to be maintained greater than some minimum distance from the containment wall to ensure that the integrity of the containment is maintained during a design basis or seismic event.

CONTACT

This information notice does not require any specific action or written response. Please direct any questions about this matter to the technical contacts listed below or to the appropriate Office of Nuclear Reactor Regulation (NRR) project manager.

/RA by TQuay for/

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Note: NRC generic communications may be found on the NRC public Web site, http://www.nrc.gov, under Electronic Reading Room/Document Collections.

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