UNITED STATES
NUCLEAR REGULATORY COMMISSION
OFFICE OF NUCLEAR REACTOR REGULATION
WASHINGTON, D.C. 20555

October 9, 1987

NRC INFORMATION NOTICE NO. 87-48: INFORMATION CONCERNING THE USE OF ANAEROBIC ADHESIVE/SEALANTS

Addressees:

All nuclear power reactor facilities holding an operating license or a construction permit.

Purpose:

This information notice is provided to alert recipients to a potentially significant safety problem pertaining to the use of anaerobic adhesives and sealants. It is expected that recipients will review the information for applicability to their facilities and consider actions, if appropriate, to preclude a similar problem. However, suggestions contained in this notice do not constitute NRC requirements; therefore, no specific action or written response is required.

Description of Circumstances:

On July 1, 1987, Carolina Power and Light Company reported that following a reactor trip/turbine trip at the Brunswick Steam Electric Plant, Unit 1 (Brunswick), one safety relief valve (SRV) failed to open when manually actuated for pressure control. The SRV is part of the automatic depressurization system (ADS) at that plant. Subsequent testing of other ADS valves on July 3 resulted in a second valve failing to open on manual actuation. During post-failure examination it was determined that Loctite RC 620 was used as a secondary lock between the stem and the plunger in the solenoid assembly when the valves were rebuilt by Target Rock Corporation at Wyle Laboratory. This material then migrated to the clearance around the plunger before setting.

Discussion:

This event is similar to the one described in Information Notice 84-53, "Information Concerning the Use of Loctite 242 and Other Anaerobic Adhesive/Sealants." In that event, Loctite 242 threadlocking adhesive/sealant was used in the assembly of scram pilot solenoid valves. An investigation into the failure of several scram solenoid valves revealed that maintenance technicians failed to wipe excess Loctite from the assembly, which resulted in the bonding of the solenoid core plunger to the core tube.

The Brunswick SRVs also failed because the contractor technician did not clean the excess Loctite RC 620 from the plunger assembly. Because this substance is anaerobic (cures in the absence of air, e.g., the inerted containment atmosphere), the plunger did not become seized until after the valves with excess Loctite were placed in the inerted atmosphere that exists in the reactor containment when the reactor is brought to power conditions.

No specific action or written response is required by this information notice. If you have any questions about this matter, please contact the Regional Administrator of the appropriate regional office or this office.

Charles E. Rossi

Charles E. Rossi, Director
Division of Operational Events Assessment
Office of Nuclear Reactor Regulation

Technical Contact: Ray Scholl, NRR
(301) 492-8213

Attachment: List of Recently Issued NRC Information Notices

Attachment
IN 87-48
October 9, 1987

LIST OF RECENTLY ISSUED
INFORMATION NOTICES 1987

Information Notice No.	Subject	Date of Issuance	Issued to
87-47	Transportation of Radiography Devices	10/5/87	All NRC licensees authorized to manufacture, distribute and/or operate radiographic exposure devices and/or source changers.
87-46	Undetected Loss of Reactor Coolant	9/30/87	All PWR facilities holding on OL or CP.
87-45	Recent Safety-Related Violations of NRC Requirements by Industrial Radiography Licensees	9/25/87	All NRC licensees authorized to possess and use sealed sources for industrial radiography.
87-44	Thimble Tube Thinning in Westinghouse Reactors	9/16/87	All PWR facilities employing a W nuclear steam supply system holding an OL or CP.
87-43	Gaps in Neutron-Absorbing Material in High-Density Spent Fuel Storage Racks	9/8/87	All nuclear power reactor facilities holding an OL or CP.
87-42	Diesel Generator Fuse Contacts	9/4/87	All nuclear power reactor facilities holding an OL or CP.
87-41	Failures of Certain Brown Boveri Electric Circuit Breakers	8/31/87	All nuclear power reactor facilities holding an OL or CP.
87-40	Backseating Valves Routinely to Prevent Packing Leakage	8/31/87	All nuclear power reactor facilities holding an OL or CP.
87-39	Control of Hot Particle Contamination at Nuclear Power Plants	8/21/87	All nuclear power reactor facilities and spent fuel storage facilities holding an NRC license or CP.

OL = Operating License
CP = Construction Permit

The Brunswick SRVs also failed because the contractor technician did not clean the excess Loctite RC 620 from the plunger assembly. Because this substance is anaerobic (cures in the absence of air, e.g., the inerted containment atmosphere), the plunger did not become seized until after the valves with excess Loctite were placed in the inerted atmosphere that exists in the reactor containment when the reactor is brought to power conditions.

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*SEE PREVIOUS CONCURRENCES

*OEAB:DOEA:NRR	*OGCB:DOEA:NRR	*PPMB:ARM	*C/OGCB:DOEA:NRR	D/DOEA:NRR
RScholl	RJKiessel	TechEd	CHBerlinger	CERossi
09/14/87	09/14/87	09/18/87	10/1/87	10/5/87

The Brunswick SRVs also failed because the contractor technician did not clean the excess Loctite RC 620 from the plunger assembly. Because this substance is anaerobic (cures in the absence of air e.g., the inerted containment atmosphere), the plunger did not become seized until after the valves with excess Loctite were placed in the inerted atmosphere that exists in the reactor containment when the reactor is brought to power conditions.

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09/14/87	09/14/87	09/18/87	09/ /87	09/ /87

The Brunswick SRVs also failed because excess Loctite was not cleaned by the contractor technician from the plunger assembly. In this latter case, Loctite RC 620 was used. This substance is anaerobic (cures in the absence of air). Thus, the plunger did not become seized until after the valves with excess Loctite were placed in the inerted atmosphere which exists in the reactor containment when the reactor is brought to power conditions.

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