

GENERAL  ELECTRIC

NUCLEAR ENERGY BUSINESS OPERATIONS
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January 29, 1988
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GBSLTR004-88

MFN# 088-88

U. S. Nuclear Regulatory Commission
Office of Nuclear Reactor Regulation
Washington, D.C. 20555

Attention: Mr. C.H.Berlinger

Gentlemen:

SUBJECT: TELECON GERMANE-TO-SAFETY - HPCI SUCTION PIPE
OVERPRESSURE TRANSIENT

Please find the attached memo of telecon to you of January 29, 1988.
the telecon provided information on an overpressure transient in the
HPCI suction pipe of a BWR.

Very truly yours,


G.B. Strambach
Safety Evaluation Programs Manager

Attachment

cc: L.S. Gifford, GE-Bethesda

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MEMO OF TELECON

Date: January 29, 1988
Time: 10:45AM
Person calling: G.B. Stramback, D.L. Foreman
Person called: C.H. Berlinger (NRC-NRR, 301-492-8414)
Subject: HPCI Suction Pipe Overpressure Transient

Carl Berlinger was called in order to inform the NRC of a condition determined to be not reportable but considered to be Germane-to-Safety. This conclusion is based upon GE completing its evaluation as to reportability under 10CFR Part 21.

During startup testing at a BWR-4, the plant experienced an overpressure transient downstream from the HPCI pump suction side check valve. The resulting impact on the suction side piping caused damage to installed gauges and the last transient (approx. 800 psig) caused damage to a pipe hanger approximately 60-75 feet upstream from the suction check valve.

These overpressure transients (500-800 psig) occurred when the HPCI turbine tripped on overspeed while injecting to the reactor pressure vessel via the feedwater line with the reactor below 50% power.

A lift/plug check valve installed as the HPCI pump discharge check valve is deemed to have caused the overpressure transient. This valve must close before reverse flow through HPCI, emanating from the RPV, can start and before the suction swing check valve closes, or a water hammer condition is set up causing the overpressurization on the low pressure suction side of the pump.

This potential water hammer condition has been corrected by replacing the discharge lift/plug check valve with a faster acting swing check valve.

Since no reports of similar difficulties have been received previously from other BWR plants relative to startup transients, and since operating and requisition plant configurations of which we are aware now employ the faster action swing-type check valve in the pump discharge line, this situation does not represent a substantial safety hazard at any other BWR.

GE is in the process of informing its customers of this conclusion of non-reportability and has sent out information concerning the potential for overpressurization transients in systems employing check valves upstream and downstream of a pump. For systems employing such a configuration it was recommended that the check valve downstream of the pump be of the faster acting swing-check variety to avoid these potential transients.