



Nebraska Public Power District

COOPER NUCLEAR STATION
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February 13, 1981

To ADM/DMB:

PDR
LPDR
NSIC
ADM/TIDD
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Mr. Karl V. Seyfrit, Director
U.S. Nuclear Regulatory Commission
Office of Inspection and Enforcement
Region IV
611 Ryan Plaza Drive
Suite 1000
Arlington, Texas 76011



Subject: IE Bulletin No. 80-25; Operating Problems With Target Rock
Safety-Relief Valves at BWR's

Dear Mr. Seyfrit:

The following are Nebraska Public Power District's responses to action
items described in the subject bulletin.

Item 1

If your facility has not yet installed or changed or is presently in the
process of changing to the two-stage S/R valves, initiate appropriate
quality control procedures to assure inspection of the solenoid actu-
ators for excess Loctite prior to operation. If the solenoid actuator
manufactured by Target Rock Corporation is already installed in your
facility, confirm its operability either by its operational performance
(i.e., it has functioned as designed following an aging period of about
3 months in the higher temperature environment of power operating con-
ditions) or by functional testing at full pressure during the next
refueling shutdown of the facility. Include in your report the results
of all attempts to operate the two-stage S/R valve(s).

Response

Two-stage Target Rock safety/relief (S/R) valves were installed at
Cooper Nuclear Station (CNS) during our Spring 1980 refueling outage.
All the valves were tested (pneumatically cycled at approximately 150
psig system pressure) during the subsequent plant startup (June 1980).
In August 1980, two of the eight valves were manually actuated during a
scram transient. No abnormalities were noted during these valve actu-
ations (the only ones occurring to date).

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Inspection and functional tests of the valve actuating solenoids will be performed during the next refueling outage (Spring 1981). A visual inspection of the solenoid internals will be performed to detect excess Loc-tite or evidence of plunger binding. The functional test will consist of repeated bench actuations of the solenoids with plunger stroke verified. A full pressure actuation of each S/R valve will not be performed since this test will not verify long term operability of the solenoid valve. Results of the inspections and tests will be reported under separate cover.

Item 2

In the event a S/R valve, regardless of make or model (e.g., both two or three stage), fails to function as designed, excepting for pressure setpoint requirements, and the cause of the malfunction is not clearly determined, understood, and therefore corrected, standard operating procedures shall require that the entire valve be removed from service, disassembled, inspected, adjusted, and pressure setpoint tested with steam for proper operation prior to returning the valve to service. These overhaul requirements shall be at least equivalent to those applicable to periodic surveillance rehabilitation requirements. Appropriate revisions to your operating procedures shall be made to include these requirements.

Response

CNS operating procedures which test the performance of the S/R valves have been updated to include the above listed actions in the event of a valve malfunction.

Item 3

A review of your S/R valve pneumatic supply system shall be performed to determine the potential for and magnitude of an overpressure condition. The determined overpressure potential of the pneumatic supply shall be compared with the maximum operating pressure capabilities of the solenoid actuator valves serving the S/R valves, so as to determine whether supply pressure could result in valve malfunction. Protective devices (such as relief valves) shall be installed in the proximity of the S/R valves and set to protect against supply pressure in excess of the operating pressure capabilities of the solenoid actuator device. In addition, consideration should be given to modification or replacement to reduce the sensitivity of the solenoid actuator to pneumatic supply overpressure. Further, the failure, either high or low, of the pneumatic supply system shall be annunciated to the control room operator.

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The annunciated supply pressure should be measured at a location as close as practical to the S/R valves and downstream of any check valve connecting two or more pneumatic sources. Appropriate operating procedures shall be provided to guide operator response to such an occurrence of high or low supply pressure.

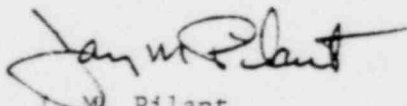
Response

In November 1980, the setting for the relief valve on the S/R valve nitrogen supply line was reduced to 120 psig. Also, the S/R valve nitrogen pressure regulator setting was reduced to 110-115 psig. These preliminary steps were taken in response to G.E. SIL-196, Supplement 8. The alternate pneumatic supply (instrument air) is protected from overpressure by relief valves set at 150 psig. These relief valves are scheduled to be reset at 130 psig during the April 1981 refueling outage.

Subsequently, the design of the S/R valve pneumatic system has been reviewed and a design change is being prepared. The design change will include an additional relief valve upstream of the nitrogen/instrument air tie providing redundant relief valve protection in the event of a nitrogen regulator failure. The relief valve will be sized to maintain the pneumatic supply header pressure below 130 psig. An annunciator to alarm on high or low SRV pneumatic supply pressure will not be installed since we already have alarms on low service air pressure, low pressure at the ADS accumulators and low pressure in the instrument air supply to the scram valves. An additional alarm would be deleterious from a human factors engineering standpoint. The time schedule for installation of the design change shall be in accordance with Item 4 of the subject bulletin.

Approximately twenty (20) manhours were expended in the review of this bulletin and in the preparation of this report. If you have any questions regarding the enclosed information, please contact me.

Sincerely,



J. W. Pilant
Director of Licensing
and Quality Assurance

JMP:WEC:cg