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October 19, 1995
LIC-95-0182

U. S. Nuclear Regulatory Commission
Attn: Document Control Desk
Mail Station: P1-137
Washington, D.C. 20555

- References:
1. Docket No. 50-285
 2. NRC IE Bulletin No. 79-14, Supplement 2, "Seismic Analysis for As-Built Safety-Related Piping Systems," dated September 7, 1979
 3. Letter from OPPD (W. C. Jones) to NRC (W. C. Seidle) dated July 29, 1982 (LIC-82-239)

SUBJECT: Request for Relief from Modifying Pipe Supports SIS-63/65, SIH-3 and RCH-13 at the Fort Calhoun Station (FCS)

Information Bulletin (IEB) 79-14 provided guidance for the inspection and modification of supports in difficult areas. Reference 2 states that "areas considered impractical for inspection even with the reactor shutdown, should be addressed on a case-by-case basis. Information concerning the burden of performing the inspection and the safety consequences of not performing the inspection should be documented by the licensee and forwarded for staff review and approval." The Omaha Public Power District (OPPD) also applies this requirement to modification of supports.

During the IEB 79-14 Pipe Support Upgrade Project at FCS, OPPD invoked this criteria for high radiation areas, as documented in the FCS Final Report regarding IEB 79-14 transmitted in Reference 3. It is requested that this criteria also be applied to pipe supports SIH-3, SIS-63/65, and RCH-13 at FCS.

Pipe supports SIS-63/65 (snubber), SIH-3 and RCH-13 (pipe hangers) were evaluated for thermal modes and found to have increased loads. Although the new loads caused the supports to exceed the standard design basis allowables, the supports do meet Fort Calhoun operability criteria.

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The factor of safety is the ratio of the allowable load to ultimate load capacity. The stress margin is the design allowable stress to yield stress. The factor of safety and stress margins ensure that the systems are available during a seismic event and ensure that the affected systems will function to prevent and mitigate the consequences of an accident.

Supports SIH-3 and SIS-63/65 are on the Shutdown Cooling (SDC) cross-connect piping discharge of heat exchangers AC-4A and AC-4B. The SDC system heat exchangers are designed to reduce the temperatures of the reactor coolant at a controlled rate from 300°F to refueling temperature and to maintain the proper reactor coolant temperature during shutdowns. The SDC system also provides cooling of containment spray after a recirculation actuation signal (RAS), and is made available to supply cooled containment sump water to the High Pressure Safety Injection (HPSI) system for long term core cooling.

For hanger SIH-3, the anchor bolts are the limiting components (i.e., they do not meet the design allowables). The anchor bolts for SIH-3 have a factor of safety of 3.1. The design basis factor of safety is 4.0 for Hilti anchor bolts per IEB 79-14 criteria. The minimum FCS operability factor of safety is 2.0. SIH-3 was examined as part of the FCS Inservice Inspection (ISI) Program on January 27, 1992 with no indications found.

The limiting component of snubber SIS-63/65 is the weld of the trunnion to the 12-inch safety injection (SI) pipe elbow. The weld stress of the pipe support is 22,814 psi for the operating basis earthquake (OBE). This is less than the B31.7 Code yield of 30,000 psi and the American Society of Mechanical Engineers (ASME) Section III faulted allowable of 31,500 psi. The OBE design allowable stress is 16,000 psi per Code.

The limiting component of RCH-13 is the angle iron whose bending stress is 23,335 psi. The bending stress is less than the ASME SA-36 Code yield of 36,000 psi and the ASME Section III faulted load allowable of 43,200 psi. The design allowable for bending is 17,280 psi. RCH-13 was examined as part of the FCS ISI Program on November 14, 1988 with no indications identified.

Based on the above values, there is no increase in risk to the public or to plant equipment or structures. The factor of safety and stress margins for these three supports are above the faulted allowables and are adequate to ensure that the systems will perform their safety functions.

Supports SIH-3 and SIS-63/65 are located in Room 15A of the Auxiliary Building, which is a locked high radiation room. To upgrade the supports in Room 15A to meet the design basis allowables, it would take an estimated 100 person-hours and would pose concerns with maintaining exposures as low as reasonably achievable (ALARA). The general area dose in Room 15A is 700 mREM with several hot spots in close proximity ranging from 1 REM to 20 REM in this small room.

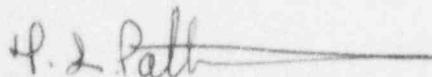
Room 15A is approximately 9 feet by 24 feet with several large valves and 12-inch piping. Therefore, with two to three personnel in the small access area of the room, exposure to the hot spots is inevitable and it is impractical to be able to provide enough lead shielding for ALARA dose to be realized. The total projected dose for SIH-3 and SIS-63/65 would be 20 person-REM not including dose from the hot spots.

Support RCH-13 is on the pressurizer spray line approximately 12 inches off the reactor coolant system (RCS) Loop 1B at elevation 1008 feet, 7 inches in Containment. The area around the RCS loop has essentially a constant line exposure of 1 REM with a general area dose rate of 80 mREM/hr. The estimated duration to perform work on RCH-13 in this area during the outage would be 62 person-hours for a total projected dose of 5 REM, not including exposure from localized hot spots.

In conclusion, based on the factor of safety and stress margins, ALARA principles and the criteria of IEB 79-14, OPPD recommends that the supports SIH-3, SIS-63/65 and RCH-13 be accepted with the current factor of safety and stress margins and requests relief from modifying these supports. Any necessary modifications to these supports would need to be added to the 1996 refueling outage scope, therefore, OPPD requests NRC approval by April 1996.

If you should have any questions, please contact me.

Sincerely,



T. L. Patterson
Division Manager
Nuclear Operations

TLP/d11

c: Winston & Strawn
L. J. Callan, NRC Regional Administrator, Region IV
L. R. Wharton, NRC Project Manager
W. C. Walker, NRC Senior Resident Inspector