CENTERIOR ENERGY

6670 Beta Drive
Mayfield Village, OH 44143

Mail Address:
P.O. Box 5000
Cleveland, OH 44101-2000

216-604-9897
FAX: 216-604-9992

John P. Stetz
Senior Vice President - Nuclear
Power Generation

June 12, 1997
PY-CEI/NRR-2176L

United States Nuclear Regulatory Commission
Document Control Desk
Washington, D.C. 20555

Perry Nuclear Power Plant
Docket No. 50-440
End of Interval Pressure Testing Request for Relief - Inservice Inspection Program, Perry Nuclear Power Plant, Unit No. 1

Ladies and Gentlemen:

The Perry Nuclear Power Plant (PNPP) has identified the need for relief from section IWD-5223(f) of the ASME Code, Section XI, 1983 Edition, to satisfy the end of interval pressure testing requirements. Pursuant to 10 CFR 50.55a (a)(3), relief request PT-007 (Attachment) is being submitted to support the determination that relief from the Code is warranted as compliance with the specified requirements of section IWD-5223(f) would result in hardship or unusual difficulty without a compensating increase in the level of quality and safety [10 CFR 50.55a(a)(3)(ii)].

PNPP's sixth refueling outage (RFO6) is the last refueling outage within the first 10-year inspection interval that the subject pressure testing could be performed. RFO6 is scheduled to start September 12, 1997. Therefore, Nuclear Regulatory Commission staff review and approval of this relief request is requested by August 30, 1997, so that pressure testing may proceed in RFO6 with this consideration.

If you have any questions or require additional information, please contact Mr. Henry L. Hegrat, Manager - Regulatory Affairs, at (216) 280-5606.

Very truly yours,

GGR:

Attachment

cc: NRC Resident Inspector
NRC Project Manager
NRC Region III
Authorized Nuclear Inservice Inspector
Ohio Department of Industrial Relations

Perry Nuclear Power Plant Unit 1
RELIEF REQUEST No. PT-007

I. Identification of Components

Class 3 safety or relief valve piping which discharges into the containment pressure suppression pool.

II. ASME Boiler & Pressure Vessel Code Section XI Requirements

Hydrostatic pressure tests per the 1983 Edition through Summer 1983 Addenda of Section XI, section IWD-5223(f).

III. Relief Requested

Pursuant to 10 CFR 50.55a(a)(3)(ii), relief is requested from performing the Code required hydrostatic tests. An alternative pressure test is proposed.

IV. Basis for Relief

ASME Code, Section XI, Table IWD-2500-1, requires hydrostatic testing of Class 3 pressure retaining components. For safety or relief valve piping which discharges into the containment pressure suppression pool, section IWD-5223(f) states that a pneumatic test (at a pressure of 90% of the pipe submergence head of water) that demonstrates leakage integrity shall be performed in lieu of system hydrostatic tests at the end of each 10-year inservice inspection (ISI) interval.

The reactor coolant system has a total of 19 safety/relief valve discharge lines. These lines are used to direct steam from the main steam lines to the suppression pool allowing removal of the latent heat through condensing of the steam within the suppression pool. The valve discharge piping and associated valves (i.e., vacuum breakers) are designated ISI Safety Class 3 from the safety/relief valve discharge ports to the end of the submerged quenchers. Each line's multiple vacuum breakers (i.e., simple check valves) eliminate the pressure differential created between the drywell atmosphere and piping following a safety/relief valve actuation. Therefore, the discharge piping pressure retaining boundary is not leaktight.

The safety/relief valves are routinely (i.e., each refueling outage) used during valve testing and expected to see service during unplanned plant transient conditions (i.e., reactor scrams). The proper operation of the relief system ensures the integrity of the piping to perform its design function.

The Cleveland Electric Illuminating Company (CEI) has determined that performing hydrostatic testing results in a hardship without a compensating increase in the level of quality and safety. The following hardships would be encountered with the performance

of hydrostatic testing in accordance with the Code. First, the hydrostatic test pressure conditions are unique to these discharge lines, and therefore, special test equipment will need manufacturing (e.g., blank flanges with test ports). Additionally, the VT-2 examination during the pressurization of the pneumatic test pressure boundary would include the application of leak checking solution (i.e., snoop) to over 35 welds and mechanical connections for each of the 19 discharge lines. To perform the snooping approximately 35 feet of scaffolding would be needed for each of the 19 discharge pipes within the drywell structure. Portions of the drywell scaffolding would have to be erected in high radiation fields. The total effect on radiation exposure can not be easily estimated due to the massive task being undertaken. However, dose calculations have been estimated as an additional 5.0 manrem, for the staging (i.e., scaffolding) work, for the examinations and test equipment, for the performance of the VT-2 exams, and for restoration. Therefore, preparation and performance of the 10-year system hydrostatic tests at 90% of submergence pressure (i.e., approximately 5.4 psig) involves considerable time, expense, manpower and radiation dose without a compensating increase in the level of quality or safety.

Since the 1983 Edition, the ASME Subcommittee XI concluded that the requirements of section IWD-5223(f) served no useful purpose and the pressure test has been exempted. Section XI, section IWD-5223(f), 1992 Addenda, states that open ended Class 3 safety or relief valve discharge lines including safety and relief valve piping which discharges into the containment pressure suppression pool, are exempt from hydrostatic test.

Industry experience has demonstrated that inservice leaks are not discovered as a result of hydrostatic pressures propagating an existing flaw through-wall. Also, since the purpose of these discharge lines is to direct steam flow, and not provide a leaktight barrier, determining the location of flaws would not provide a compensating increase in the level of quality and safety.

The safety/relief valve discharge lines are basically open ended piping, that function to direct the steam flow to the quencher, and are not a leaktight pressure retaining boundary. Therefore, rather than performing the 90% submergence pressure test of Section XI, section IWD-5223(f), 1983 Edition, performing the requirements for open ended portions of discharge lines stated in section IWD-5223(d) of the same Code Edition would be appropriate. Section IWD-5223(d) requires confirmation of adequate flow during system operation in lieu of performing system hydrostatic testing.

V. Alternate Examination

As an alternative to the hydrostatic/pressure test requirement of section IWD-5223(f), CEI proposes to perform the hydrostatic/pressure test requirements of section IWD-5223(d). Confirmation of adequate flow in accordance with section IWD-5223(d) will satisfy the inspection requirements of: extent of examination (pressure retaining material), examination method (visual, VT-2), and frequency of examination (each inspection interval).