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VICE PRESIDENT
NUCLEAR GROUP

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U.S. Nuclear Regulatory Commission
Document Control Desk
Washington, D. C. 20555

Perry Nuclear Power Plant
Docket # 50-440, 50-441
Tech. Spec. Change Request
Concerning Main Steam Line
Leakage Limits

Gentlemen:

This letter provides additional information and a commitment with respect to our Technical Specification Change Request (T.S. 3.6.1.2.c) to revise the current leakage limit of 25 SCFH per Main Steam Line (MSL). Previous letters on this subject were dated September 18, 1987 (PY-CEI/NRR-0712L) and April 18, 1988 (PY-CEI/NRR-0829L). The current leakage Specification results in a total leakage limit of 100 SCFH (25 SCFH/MSL multiplied by 4 MSLs). The intent of this Specification is to limit the leakage through the Main Steam Lines so that it is consistent with or conservative to the assumptions of the PNPP LOCA analysis. The proposed change would continue to limit total leakage to no more than 100 SCFH, through any combination of Main Steam Lines, thereby remaining consistent with the PNPP licensing basis for MSIV leakage as documented in USAR Section 15.6.5.5.1.2.d, and NRC SER Sections 6.7 and Table 15.2.

As long as the total combined leakage through all four main steam lines remains or is brought to within 100 SCFH, performance of unnecessary maintenance activities on certain valves could be eliminated. This can result in significant safety and plant operational benefits. Although disassembly and refurbishment of MSIVs which are moderately exceeding their current leakage limits may initially return these valves to within the limits, the work is not only very costly but can also contribute to future degradation of the valves. Examples of these maintenance induced defects noted in the past at several different BWRs include machining-induced seat cracking, machining of guide ribs, excessive pilot valve seat machining, and mechanical defects induced by assembly and disassembly. By not having to disassemble the valves and refurbish them for minor leakage, introduction of one of these root causes of recurring leakage may be avoided. Industrial experience suggests that, by attempting to correct non-existing or minimal defects in the valves, it is likely that some actual defects may be introduced that lead to later leak test failures.

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Rework of the valves also leads to additional radiation dose exposures to maintenance personnel performing the job. Reported industry experience has shown that rework on valves can take thousand of man-hours, with associated dose exposure to maintenance personnel. Industry reviews of data have indicated that th re is no correlation between MSIV leakage rates and repair times, therefor these high man-hours and resulting doses can occur for valves that have leak rates only moderately greater than the limit and no evident defects. This unnecessary exposure to maintenance personnel is inconsistent with ALARA principles.

Eliminating unnecessary maintenance and retesting would also result in direct and indirect cost savings due to the reduced man-hours, and due to avoiding the extension of an outage which could result in replacement energy costs while the plant is unavailable. Excess machine lapping of MSIV seating surfaces also increases maintenance costs and exposure in future years since it reduces the seat thickness and eventually results in the need to weld additional stellite material onto the seat.

The BWR Owners Group has been actively gathering and reviewing data on MSIV leakage rates since 1982, which has resulted in the conclusion that an increase of the MSIV leakage limit up to 200 SCFH will not inhibit the valves performance of its isolation function. However, implementation of leakage rates of 200 SCFH would require reanalysis and revision of the PNPP licensing basis. CEI may, in the future, implement the Owners Gr p program in order to further reduce unnecessary MSIV maintenance.

In the interest of obtaining prompt issuance of this requested Technical Specification change CEI is willing to keep the current limit of 100 SCFH for all four main steam lines. In addition, CEI will commit to an administrative limit on leakage for an individual Main Steam Line. As noted above, there is no technical basis, related to valve performance, for any limit below 200 SCFH, however, CEI commits to perform maintenance/refurbishment on an individual valve(s) in Main Steam Lines that demonstrate greater than 50 SCFH leakage, in order to reduce that main steam line's leakage to below 50 SCFH. This commitment will be added to the Updated Safety Analysis Report Table 6.2-40 and to the applicable plant procedure/instructions controlling testing and rework on these valves, upon receipt of NRC approval of this Technical Specification change. The requested change to Technical Specification 3.6.1.2.c remains the same as presented in our September 18, 1987 letter to NRC and subsequently noticed for public comment in the December 11, 1987 Federal Register.

If you have any further questions, please feel free to call.

Very truly yours,

Al Kaplan
Vice President
Nuclear Group

AK/sc
cc: T. Colburn
NRC Resident Inspectors Office
USNRC Region III