



PERRY NUCLEAR POWER PLANT

10 CENTER ROAD
PERRY, OHIO 44081
(216) 259-3737

Mail Address:
P.O. BOX 97
PERRY, OHIO 44081

Donald C. Shelton
SENIOR VICE PRESIDENT
NUCLEAR

April 28, 1995
PY-CEI/NRR-1934L

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

Perry Nuclear Power Plant
Docket No. 50-440
License Amendment Request: Extension of
the 3.0.4 Exception for Technical
Specification 3.6.1.4 During Cycle 6

Gentlemen:

Enclosed is an application for amendment of the Facility Operating License (NPF-58) Appendix A Technical Specifications for the Perry Nuclear Power Plant (PNPP). Issuance of this amendment is requested by November 1, 1995, to support planning efforts for the upcoming fifth refueling outage.

This License Amendment application proposes an extension for one operating cycle of the exception to Limiting Condition for Operation (LCO) 3.0.4 as it applies to the Technical Specification for the MSIV Leakage Control System. The existing 3.0.4 exception was issued by Amendment 63 to the Operating License, and will expire upon completion of the fifth cycle of plant operation. The extension is proposed for the duration of the sixth cycle of operation, to permit completion of activities necessary to implement the most appropriate permanent resolution for the issue of secondary containment bypass leakage through the Main Steam Line drains.

A Summary, Description of Proposed Change, Introduction, Safety Assessment, and an Environmental Consideration are provided in Attachment 1. Attachment 2 provides a copy of the marked up pages from the current Technical Specifications. Attachment 3 provides the Significant Hazards Consideration. Also provided for information are Attachments 4 and 5, which provide copies of marked up pages from the current Technical Specification Bases, and from the draft Improved Technical Specifications, respectively. It is requested that the changes proposed herein be made effective upon issuance of the amendment.

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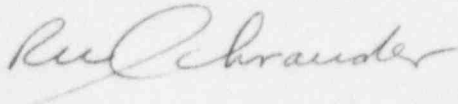
Operating Companies
Cleveland Electric Illuminating
Toledo Edison

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If you have questions or require additional information, please contact
Mr. James D. Kloosterman, Manager - Regulatory Affairs at (216) 280-5833.

Very truly yours,



for Donald C. Shelton

BSF:sc

Attachments

cc: NRC Project Manager
NRC Resident Inspector Office
NRC Region III
State of Ohio

I, Robert W. Schrauder, being duly sworn state that (1) I am Director, Perry Nuclear Services Department of the Cleveland Electric Illuminating Company, (2) I am duly authorized to execute and file this certification on behalf of The Cleveland Electric Illuminating Company and Toledo Edison Company, and as the duly authorized agent for Duquesne Light Company, Ohio Edison Company, and Pennsylvania Power Company, and (3) the statements set forth herein are true and correct to the best of my knowledge, information and belief.

Robert W. Schrauder
Robert W. Schrauder

Sworn to and subscribed before me, the 28th day of April,
1995.

Jane E. Mott
JANE E. MOTT
Notary Public, State of Ohio
My Commission Expires Feb. 20, 2000
(Recorded in Lake County)

SUMMARY

This License Amendment application proposes an extension for one operating cycle of the exception to Limiting Condition for Operation (LCO) 3.0.4 as it applies to the Technical Specification for the Main Steam Isolation Valve (MSIV) Leakage Control System. This extension is proposed for the duration of the sixth cycle of PNPP operation, to permit completion of activities necessary to implement the most appropriate permanent resolution for the issue of secondary containment bypass leakage through the Main Steam Line drains. Such resolution is planned to be achieved through the completion of seismic walkdowns of the turbine/condenser during the fifth refueling outage, and performance of dose assessments based on the concepts utilized by the Boiling Water Reactor Owners Group for closure of MSIV leakage issues. These assessments will serve as the basis for a separate request for license amendment, to be implemented during the sixth refueling outage, which would resolve the issues which led to the declaration of Inboard MSIV-LCS subsystem inoperability during plant operation below 50% rated thermal power. Completion of these actions would then eliminate the necessity for the 3.0.4 exception requested by this current license amendment submittal.

DESCRIPTION OF PROPOSED CHANGE

The proposed change (see Attachment 2) would revise the existing footnote to the APPLICABILITY for current Technical Specification (TS) 3.6.1.4 such that it would read:

OPERATIONAL CONDITIONS 1*, 2*, 3*

* The provisions of Specification 3.0.4 are not applicable from the effective date of this amendment until the completion of Operating Cycle 6.

This package also includes (for information) a markup of the current Technical Specification Bases (Attachment 4), and a markup of the draft Improved Technical Specification 3.6.1.9 and its Bases, to include a 3.0.4 exception to accomplish the same purpose as the above (Attachment 5).

INTRODUCTION

During the fourth refueling outage (RF04) at the Perry Nuclear Power Plant (PNPP), the outboard MSIV before-seat drain lines were sealed off to eliminate a previously unidentified and unanalyzed path for Secondary Containment Bypass Leakage.

The modification introduced a situation wherein the Inboard Main Steam Isolation Valve Leakage Control System (MSIV-LCS) is considered inoperable in Operational Conditions 1, 2 and 3 below 50% of Rated Thermal Power (RTP). The inoperability is due to accumulated water in the bottom of the steam line between the MSIVs from condensation at low steam flows. During power escalation above 50% RTP, Operability of the Inboard MSIV-LCS is restored because the condensate collected between the MSIVs is swept downstream by the steam velocity and drained out through downstream drains. Since an alternate design could not be installed before the scheduled outage completion on July 17, 1994, an emergency Technical Specification (TS) change to TS 3.6.1.4, "MSIV Leakage Control System" was requested on July 14, 1994 to provide an exception to TS 3.0.4 during Cycle 5.

Such exception allows entry into Operational Conditions 1, 2 and 3 under the provisions of the Action statement for one inoperable MSIV-LCS subsystem. The request was approved by Amendment 63 to the Operating License, dated July 15, 1994.

As noted in the NRC Safety Evaluation that accompanied Amendment 63, the modification to seal off the drain line to the condenser was the best solution available for the secondary bypass leakage concern without extensive analysis (including system walkdowns and modifications) to justify that the condenser can serve as a filter and to ensure that the extensive piping runs to the condenser are designed and supported to withstand a design basis earthquake. This analysis includes seismic walkdowns (scheduled during the fifth refueling outage - RF05), followed by engineering analysis of the walkdown results. Additionally, dose assessments will be performed based on the "isolated condenser" concepts presented in NEDC-31858P "BWROG Report for Increasing MSIV Leakage Rate Limits and Elimination of Leakage Control Systems". These actions are planned for completion during the fall of 1996. The assessments will serve as the basis for a separate request for license amendment, to be implemented during RF06, which would resolve the issues that led to the declaration of Inboard MSIV-LCS subsystem inoperability. Completion of these actions would then eliminate the necessity for the 3.0.4 exception requested by this current license amendment submittal.

Consideration has been given to an interim design change for RF05 that would allow for restoration of a drain path during the sixth Operating Cycle, until licensing of the isolated condenser concept is completed in RF06. However, there is a significant cost associated with any possible design change that would re-establish the drain function and avoid the bypass concern, while there is minimal adverse safety implication associated with continuing operations with the drain lines sealed. This license amendment application is considered justifiable due to the ongoing, near-term efforts to achieve permanent resolution of the associated issues through licensing of the isolated condenser concept. The alternative to issuance of the requested amendment would require expenditure of significant man-hours and funds on a design change which would provide minimal safety benefit and for which the need would be obviated after one fuel cycle.

SAFETY ASSESSMENT

The modification to seal off the outboard MSIV before-seat drain lines was completed during RF04 to eliminate a previously unidentified and unanalyzed source of Secondary Containment Bypass Leakage. However, this modification created a situation wherein the condensate from the steam generated during heatup and power ascension collects in the bottom of the steam line between the MSIVs and cannot be drained. This condition remains until the condensate can be carried over by increasing steam velocities to other downstream drains, at approximately 50% RTP. While the inlet to the Inboard MSIV-LCS line is flooded, the Inboard MSIV-LCS is unable to satisfy its instrumentation logic and depressurize the space between the MSIVs.

TS 3/4.6.1.4 requires both trains of the MSIV-LCS (i.e., inboard and outboard) to be Operable in Operational Conditions 1, 2 and 3. The TS 3/4.6.1.4 Action statements allow inoperability of a single train of MSIV-LCS for up to 30 days prior to entry into the shutdown statements, which is the longest Action period (for a TS which has a shutdown Action) in the TS. This long Action period reflects a low relative significance for the MSIV-LCS function as compared to

other accident mitigation systems. The only function of the MSIV-LCS is to mitigate the consequences of a Recirculation Line Break LOCA, and even then the system is only necessary if it is postulated that this event results in release of the extremely conservative source term assumptions of Regulatory Guide 1.3. Actual Emergency Core Cooling System (ECCS) analyses performed in accordance with 10 CFR 50, Appendix K have shown that no fuel damage would occur in such an accident; therefore, the high source term that the MSIV-LCS is designed to mitigate is conservative.

Should an accident occur during plant operation below 50% power, any leakage past the inboard MSIVs will be directed toward the outboard MSIVs, since the only tap-off between the MSIVs was the (now sealed) outboard MSIV before-seat drain lines. Any leakage past the outboard MSIVs will be routed by the Outboard MSIV-LCS to the Annulus for filtration by the Annulus Exhaust Gas Treatment System (AEGTS).

While the plant is operating in the 30 day Allowable Outage Time for the Inboard MSIV-LCS, it is not necessary to assume single failure of the Outboard MSIV-LCS. This is because the concept behind Action statements is that they address degraded modes of operation during which the facility may not be capable of responding to an initiating event plus a concurrent or subsequent single failure of an active component. Therefore, the Action statements restrict operation to a limited period of time while in such configurations. As noted in the NRC Generic Letter dated April 10, 1980, "the specified time to take action, usually called the equipment out-of-service time, is a temporary relaxation of the single failure criterion, which, consistent with overall system reliability considerations, provides a limited time to fix equipment or otherwise make it OPERABLE" (emphasis added). Consistent with this concept, while operating in the Action statement for the Inboard MSIV-LCS, leakage past the inboard MSIVs will be routed by the Outboard MSIV-LCS to the Annulus Exhaust Gas Treatment System for treatment, as assumed in the PNPP design-basis radiological calculations.

The inoperability of the Inboard MSIV-LCS is not likely to utilize the entire 30 day Allowable Outage Time provided by the Action statement, since the time required to startup and raise power to 50% RTP, or to shut down from 50% RTP, has typically been well within 30 days. The application of an exception to TS 3.0.4 will not allow violation of the Action statement, i.e., if the Inboard MSIV-LCS can not be restored within 30 days, the plant is required to be shut down. Also, the Action required if both subsystems of MSIV-LCS were to become inoperable also remains the same.

The existing plant configuration has been analyzed and determined to be acceptable for safe plant operation. The analysis remains valid for the additional cycle of operation proposed by this amendment request. Any condensate that is carried past the outboard MSIVs will be drained to the condenser by drain connections downstream of the outboard MSIVs. Therefore, no damage to the turbine or impairment of the Outboard MSIV-LCS will result from condensed water. MSIV performance will not be affected by the existence of accumulated water during power operation below 50% RTP. The extra weight of the water was analyzed with respect to piping supports and seismic considerations and determined to be acceptable. No design changes were determined to be necessary to the Inboard MSIV initiation logic, since evaluations show no concern with design parameters due to moisture carry-over to the LCS blowers or for water blowdown into the annulus.

Based on the above discussions and the conclusions of the "Significant Hazards Consideration" in Attachment 3, it is concluded that the issuance of the proposed license amendment would have an insignificant impact on plant safety.

ENVIRONMENTAL CONSIDERATION

The proposed Technical Specification change request has been reviewed against the criteria of 10 CFR 51.22 for environmental considerations. As shown above and in Attachment 3, the proposed change does not involve a significant hazards consideration, increase the types and amounts of effluents that may be released offsite, or significantly increase individual or cumulative occupational radiation exposures. Based on the foregoing, it has been concluded that the proposed Technical Specification change meets the criteria given in 10 CFR 51.22(c)(9) for a categorical exclusion from the requirement for an Environmental Impact Statement.