

February 23, 1994

Docket No. 50-440

Mr. Robert A. Stratman
Vice President Nuclear - Perry
Centerior Service Company
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Dear Mr. Stratman:

SUBJECT: AMENDMENT NO. 56 TO FACILITY OPERATING LICENSE NO. NPF-58
(TAC NO. M77736)

The Commission has issued the enclosed Amendment No. 56 to Facility Operating License No. NPF-58 for the Perry Nuclear Power Plant, Unit No. 1. This amendment revises the Technical Specifications (TS) in response to your application dated September 19, 1990, as supplemented on February 26, 1993. Changes to the TS Bases were also made by telecon of February 2, 1994.

This amendment revises TS 3.6.1.3 to add an ACTION statement that addresses the condition of an inoperable interlock mechanism in one or both primary containment air locks. In addition, a footnote is modified to allow use of the operable door in an air lock with an inoperable door for access to containment for a limited period of time under administrative controls. The corresponding bases are also revised to reflect this change.

A copy of the associated Safety Evaluation is also enclosed. Notice of issuance will be included in the Commission's next biweekly Federal Register notice.

Sincerely,
Original signed by Jon B. Hopkins
Jon B. Hopkins, Senior Project Manager
Project Directorate III-3
Division of Reactor Projects III/IV/V
Office of Nuclear Reactor Regulation

Enclosures:

- 1. Amendment No. 56 to License No. NPF-58
- 2. Safety Evaluation

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cc w/enclosure:

See next page *See previous concurrence

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DATE	10/25/93*	11/2/93*	11/2/93*	11/2/93*
OFFICE	C:SCSB	C:OTSB	OGC	PM:PD33
NAME	RBarrett	CGrimes	ETHELLEN	JHopkins ^{JBH}
DATE	2/3/94*	2/16/94 294-031	2/19/94	2/18/94

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UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555-0001

THE CLEVELAND ELECTRIC ILLUMINATING COMPANY, ET AL.

DOCKET NO. 50-440

PERRY NUCLEAR POWER PLANT, UNIT NO. 1

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 56
License No. NPF-58

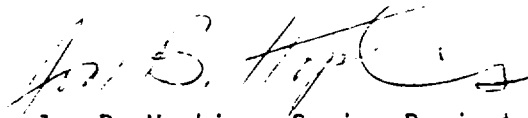
1. The Nuclear Regulatory Commission (the Commission) has found that:
 - A. The application for amendment by The Cleveland Electric Illuminating Company, Centerior Service Company, Duquesne Light Company, Ohio Edison Company, Pennsylvania Power Company, and Toledo Edison Company (the licensees) dated September 19, 1990, and supplemented on February 26, 1993, complies with the standards and requirements of the Atomic Energy Act of 1954, as amended (the Act), and the Commission's rules and regulations set forth in 10 CFR Chapter 1,
 - B. The facility will operate in conformity with the application, the provisions of the Act, and the rules and regulations of the Commission;
 - C. There is reasonable assurance (i) that the activities authorized by this amendment can be conducted without endangering the health and safety of the public, and (ii) that such activities will be conducted in compliance with the Commission's regulations;
 - D. The issuance of this amendment will not be inimical to the common defense and security or to the health and safety of the public; and
 - E. The issuance of this amendment is in accordance with 10 CFR Part 51 of the Commission's regulations and all applicable requirements have been satisfied.
2. Accordingly, the license is amended by changes to the Technical Specifications as indicated in the attachment to this license amendment, and paragraph 2.C.(2) of Facility Operating License No. NPF-58 is hereby amended to read as follows:

(2) Technical Specifications

The Technical Specifications contained in Appendix A and the Environmental Protection Plan contained in Appendix B, as revised through Amendment No. 56 are hereby incorporated into this license. The Cleveland Electric Illuminating Company shall operate the facility in accordance with the Technical Specifications and the Environmental Protection Plan.

3. This license amendment is effective as of its date of issuance and shall be implemented not later than 90 days after issuance.

FOR THE NUCLEAR REGULATORY COMMISSION



Jon B. Hopkins, Senior Project Manager
Project Directorate III-3
Division of Reactor Projects III/IV/V
Office of Nuclear Reactor Regulation

Attachment:
Changes to the Technical
Specifications

Date of issuance: February 23, 1994

3.4.6 CONTAINMENT SYSTEMS

BASES

3/4.6.1 CONTAINMENT

3/4.6.1.1 PRIMARY CONTAINMENT INTEGRITY

PRIMARY CONTAINMENT INTEGRITY ensures that the release of radioactive materials from the containment atmosphere will be restricted to those leakage paths and associated leak rates assumed in the accident analyses. This restriction, in conjunction with the leakage rate limitation, will limit the site boundary radiation doses to within the limits of 10 CFR Part 100 during accident conditions.

During shutdown when irradiated fuel is being handled in the primary containment, and during CORE ALTERATIONS and operations with a potential for draining the reactor vessel, the # footnote permits the opening of six vent and drain pathways for the purpose of performing containment isolation valve leak rate surveillance testing provided the reactor has been subcritical for at least seven days. Offsite doses were calculated assuming the postulated fuel handling accident inside primary containment after a seven day decay time, and assuming all the airborne activity existing inside containment after the accident is immediately discharged directly to the environment (i.e., no containment). Although this analysis would indicate that no restriction on the number of vent and drain pathways was required, the number of open pathways was restricted to six for conservatism.

3/4.6.1.2 CONTAINMENT LEAKAGE

The limitations on containment leakage rates ensure that the total containment leakage volume will not exceed the value assumed in the accident analyses at the peak accident pressure of 11.31 psig, P_a . As an added conservatism, the measured overall integrated leakage rate is further limited to less than or equal to 0.75 L_a during performance of the periodic tests to account for possible degradation of the containment leakage barriers between leakage tests.

Overall integrated leakage rate means the leakage rate which obtains from a summation of leakage through all potential leakage paths. Where a leakage path contains more than one valve, fitting, or component in series, the leakage for that path will be that leakage of the worst leaking valve, fitting, or component and not the summation of the leakage of all valves, fittings, or components in that leakage path.

Operating experience with the main steam line isolation valves has indicated that degradation has occasionally occurred in the leak tightness of the valves; therefore the special requirement for testing these valves.

CONTAINMENT SYSTEMS

BASES

3/4.6.1 CONTAINMENT (Continued)

3/4.6.1.2 CONTAINMENT LEAKAGE (Continued)

The surveillance testing for measuring leakage rates is consistent with the requirements of Appendix J to 10 CFR 50 with the exception of exemptions granted for testing the air locks after each opening.

3/4.6.1.3 CONTAINMENT AIR LOCKS

The limitations on closure and leak rate for the containment air locks are required to meet the restrictions on PRIMARY CONTAINMENT INTEGRITY and the containment leakage rate given in Specifications 3.6.1.1 and 3.6.1.2. The specification makes allowances for the fact that there may be long periods of time when the air locks will be in a closed and secured position during reactor operation. Only one closed door in each air lock is required to maintain the integrity of the containment.

An allowance has been provided within Action a.1 for access into or through the containment air locks when an interlock mechanism in one or both air locks is inoperable. Action a.1 requires that at least one of the two OPERABLE doors for each affected air lock be maintained closed, and if the interlock mechanism has not been restored to OPERABLE status within 24 hours, one door must be locked closed. The provisions of footnote * may be utilized for entries and exits. The administrative controls of footnote * allow the unlocking and use of the air lock provided that an individual is stationed at the air lock, dedicated to assuring that at least one OPERABLE air lock door remains closed at all times. This allowance is provided to address those situations when the use of an air lock with only an inoperable interlock mechanism may be preferred over the use of the other air lock, such as when the other air lock has an inoperable door.

An allowance has also been provided in Action a.2 for access into or through the containment air locks when one air lock door in one or both air locks is inoperable. The first sentence of footnote ** provides that entry and exit through the OPERABLE door on one or both air locks is permissible under administrative controls for the performance of repairs of the affected air lock components. The second sentence of footnote ** provides for entry into and exit from the containment for activities other than just the repairs of affected air lock components under administrative controls, but only permits these entries when both air locks have an inoperable door, and limits such use to a 7 day period. The administrative controls for the second sentence shall define limits on entry and exit, in order to minimize openings of the OPERABLE door.

CONTAINMENT SYSTEMS

BASES

3/4.6.1.3 CONTAINMENT AIR LOCKS (Continued)

The administrative controls for both sentences of footnote ** include provisions that after each entry and exit, the OPERABLE door must be promptly closed. The allowances of footnote ** are acceptable because of the low probability of an event that could pressurize the containment during the short time that the OPERABLE door will be open for entry into and exit from the containment.

The air supply to the containment air lock and seal system is the service and instrument air system. The system consists of two 100% capacity air compressors per unit and can be cross-connected. This system is redundant and extremely reliable and provides system pressure indication in the control room.

3/4.6.1.4 MSIV LEAKAGE CONTROL SYSTEM

Calculated doses resulting from the maximum leakage allowance for the main steam line isolation valves in the postulated LOCA situations would be a small fraction of the 10 CFR 100 guidelines, provided the main steam line system from the isolation valves up to and including the turbine condenser remains intact. Operating experience has indicated that degradation has occasionally occurred in the leak tightness of the MSIV's such that the specified leakage requirements have not always been maintained continuously. The requirement for the leakage control system will reduce the untreated leakage from the MSIV's when isolation of the primary system and containment is required.

3/4.6.1.5 CONTAINMENT STRUCTURAL INTEGRITY

This limitation ensures that the structural integrity of the containment will be maintained comparable to the original design standards for the life of the unit. Structural integrity is required to ensure that the containment will withstand the maximum pressure of 15 psig in the event of a LOCA. A visual inspection in conjunction with Type A leakage tests is sufficient to demonstrate this capability.

3/4.6.1.6 CONTAINMENT INTERNAL PRESSURE

The limitations on primary containment to secondary containment differential pressure ensure that the primary containment peak pressure of 11.31 psig does not exceed the design pressure of 15.0 psig during LOCA conditions or that the external pressure differential does not exceed the design maximum external pressure differential of +0.8 psid. The limit of -0.1 to +1.0 psid for initial positive primary containment to secondary containment pressure will limit the primary containment pressure to 11.31 psig which is less than the design pressure and is consistent with the safety analysis.

CONTAINMENT SYSTEMS

BASES

3/4.6.1.7 CONTAINMENT AVERAGE AIR TEMPERATURE

The limitation on containment average air temperature ensures that the containment peak air temperature does not exceed the design temperature of 185°F during LOCA conditions and is consistent with the safety analysis.

3/4.6.1.8 DRYWELL AND CONTAINMENT PURGE SYSTEM

The use of the drywell and containment purge lines is restricted to the 42-inch outboard and 18-inch purge supply and exhaust isolation valves. These valves will close during a LOCA or steam line break accident and therefore the site boundary dose guidelines of 10 CFR Part 100 would not be exceeded in the event of an accident during purging operations. The term sealed closed as used in this context means that the valve is secured in its closed position by deactivating the valve motor operator, and does not pertain to injecting seal water between the isolation valves by a seal water system.



UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D. C. 20555-0001

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

RELATED TO AMENDMENT NO. 56 TO FACILITY OPERATING LICENSE NO. NPF-58

THE CLEVELAND ELECTRIC ILLUMINATING COMPANY, ET AL.

PERRY NUCLEAR POWER PLANT, UNIT NO. 1

DOCKET NO. 50-440

1.0 INTRODUCTION

By letter dated September 19, 1990, the Cleveland Electric Illuminating Company, et al. (the licensee), requested changes to the Technical Specifications (TSs) for the Perry Nuclear Power Plant (PNPP), Unit 1. The proposed changes would revise TS 3.6.1.3, "Primary Containment Air Locks," by adding an ACTION statement to address the specific situation when an interlock mechanism is inoperable, and by revising a footnote to allow for personnel entry through an operable containment air lock door when the second door in that air lock is inoperable, for a total time not to exceed one hour per year. By letter dated February 26, 1993, the licensee submitted a revision to the proposed changes in response to discussions with the NRC staff. In addition to format changes, the revision clarified that if only one of the two containment air locks has an inoperable door, the operable door for the inoperable air lock will be locked closed except for activities required to repair the affected air lock components. If both air locks have an inoperable door, the licensee may, under administrative controls, use one of the inoperable air locks for up to seven days to enter and exit the containment for activities inside containment other than just the repair of the air lock. In addition, the licensee proposes to revise the applicable Bases section to reflect the proposed changes. Changes to the proposed Bases were made by telecon of February 2, 1994, involving the licensee (B. Ferrell) and the NRC staff (J. Hopkins). Those changes did not affect the NRC staff's no significant hazards evaluation that was noticed in the Federal Register.

The licensee is currently following the ACTION statement for an inoperable air lock when the interlock mechanism becomes inoperable. The current footnote allows entry through an operable air lock door, not to exceed one hour per year, only to repair an inoperable inner air lock door.

2.0 EVALUATION

The design for the PNPP includes two personnel air locks to allow access to the primary containment. Personnel access is necessary during all modes of plant operation to perform a variety of activities, including required surveillances, routine and corrective maintenance, system operations and chemistry sampling. The double-door design of each air lock allows personnel entry while maintaining primary containment integrity. These air locks form

part of the primary containment pressure boundary and, as such, they function to limit radiological releases to the environment in the event of a design basis accident. Each air lock has a mechanical interlock mechanism which prevents both doors in that air lock from being opened at the same time. Each air lock door has two inflatable seals that are maintained above a specified pressure to ensure that each door is single-failure proof, and therefore independent, in its capability to maintain an essentially leak-tight primary containment boundary.

TS 3.6.1.3 currently requires that when a primary containment air lock is inoperable while in OPERATIONAL CONDITIONS 1, 2, or 3, except as a result of an inoperable air lock door, the air lock must be restored to operable status within 24 hours, or the plant must be placed in hot shutdown within 12 hours and cold shutdown within the following 24 hours. In the absence of an ACTION statement to address the specific case of an inoperable interlock mechanism, the licensee has previously considered such a situation as an inoperable air lock and has invoked the associated ACTION statement. Although the licensee has been able to repair the interlock mechanisms within 24 hours, the current situation creates the potential for an unnecessary plant shutdown if repairs were to take longer. Such a shutdown could be contrary to plant safety, as an inoperable interlock mechanism does not affect the ability of either air lock door to perform its function in maintaining primary containment integrity. However, some additional control would be necessary to assure that both doors in an air lock would not be inadvertently opened at the same time, while an interlock mechanism is inoperable.

In addition, the ACTION statement in TS 3.6.1.3 for an inoperable air lock door currently requires the licensee to lock the OPERABLE door in the air lock closed within 24 hours. A footnote to the ACTION statement allows the licensee to open an OPERABLE outer door to repair an inoperable inner door for a cumulative time not to exceed one hour per year. The footnote does not allow use of an inoperable air lock to access containment if both air locks are inoperable. The licensee must enter the containment regularly to perform activities required for the safe operation of the plant. Therefore, if both airlocks are inoperable the present situation creates the potential for an unnecessary plant shutdown if neither air lock can be restored to an OPERABLE condition quickly. Such a shutdown could be contrary to plant safety, as one of the doors in each of the affected air locks is still capable of performing its function in maintaining primary containment integrity. However, some additional control would be necessary to assure that the operation of the OPERABLE door is properly controlled while personnel are in containment and to assure that the OPERABLE door is locked closed when no personnel are in containment.

The licensee proposes to modify the ACTION statement for an inoperable air lock door in TS 3.6.1.3 to address an inoperable primary containment air lock interlock mechanism and to revise the limitations on the operation of the OPERABLE door in an air lock that has an inoperable door. The proposed statement would read:

- a. With one or both air locks having:
 1. an inoperable interlock mechanism, for each affected air lock,

- a) Maintain at least one OPERABLE air lock door closed* and within 24 hours lock one OPERABLE air lock door closed.
 - b) Operation may then continue provided that at least once per 31 days, one OPERABLE air lock door is verified to be locked closed*.
2. one inoperable air lock door, or, both one inoperable door and an inoperable interlock mechanism, for each affected air lock,
 - a) Maintain at least the OPERABLE air lock door closed** and within 24 hours lock one OPERABLE air lock door closed.
 - b) Operation may then continue until performance of the next required overall air lock leakage test provided that at least once per 31 days the OPERABLE air lock door is verified to be locked closed**.
 3. Otherwise, in OPERATIONAL CONDITION 1, 2, or 3, be in at least HOT SHUTDOWN within the next 12 hours and in COLD SHUTDOWN within the following 24 hours.
 4. Otherwise, in OPERATIONAL CONDITION #, suspend handling of irradiated fuel in the primary containment, CORE ALTERATIONS, and operations with a potential for draining the reactor vessel.
 5. The provisions of Specification 3.0.4 are not applicable.

The proposed action for an inoperable interlock mechanism is consistent with the actions currently required for an inoperable air lock door, in that it does not require a plant shutdown if an OPERABLE air lock door is closed, locked closed within 24 hours, and periodically verified as such. The securing of a single OPERABLE air lock door is sufficient to ensure primary containment integrity. However, the proposed action allows additional flexibility by permitting the use of an air lock with an inoperable interlock mechanism under administrative controls. The administrative controls are described in greater detail in the revised Bases for TS 3.6.1.3. This provision would allow continued personnel access for the performance of normal activities during the repair of the interlock mechanism. Although personnel access could still be accommodated while alternately maintaining one of the two air lock doors locked closed, that could present a hazard to personnel safety in the event rapid ingress or egress is necessary. The staff finds that this proposed TS revision is acceptable, as it maintains an appropriate level of safety in assuring primary containment integrity while reducing the potential for an unnecessary plant shutdown and the associated challenges to safety systems.

* Entry into and exit from the air lock(s) or primary containment through the door that is maintained closed (including a "locked closed" door) is permitted under administrative controls.

** If one or both air locks have one inoperable door, entry into and exit from the air lock(s) through the OPERABLE door is permitted under administrative controls to perform repairs of the affected air lock components. Also, if both air locks have one inoperable door, entry into and exit from primary containment is permitted under administrative controls for 7 days.

The proposed revision to the footnote associated with the action for an inoperable door in one air lock utilizes administrative controls to limit the time that an OPERABLE air lock door could be open while the second door in that air lock is inoperable. Use of the OPERABLE door is only permitted to allow repair of the affected air lock components. Entry into and exit from the containment for other purposes would be through the other (OPERABLE) air lock.

If both air locks have an inoperable door, the revised footnote limits the time that an OPERABLE air lock door could be open while the second door in that air lock is inoperable through administrative controls and limits the use of this portion of the footnote to seven days. This change allows some flexibility in defining additional conditions under which the exception could be exercised, including permitting access from inside containment through the inner door for the repair of an inoperable outer door, as well as accounting for personnel safety considerations. The staff notes that the declaration of an inoperable air lock door does not necessarily mean that the door is incapable of performing its containment integrity function to some degree. The staff finds that the use of administrative controls and the seven day limitation will continue to ensure that the probability of an accident during the brief periods when one air lock door is open while the second door is inoperable is acceptably low, and that the additional reasons for allowing the use of the OPERABLE door are valid and acceptable.

Finally, the licensee proposes to revise the TS Bases, Section 3/4.6.1.3, to address the changes discussed above. The staff finds the revised Bases acceptable.

3.0 STATE CONSULTATION

In accordance with the Commission's regulations, the Ohio State official was notified of the proposed issuance of the amendment. The State official had no comments.

4.0 ENVIRONMENTAL CONSIDERATION

This amendment changes a requirement with respect to the installation or use of a facility component located within the restricted area as defined in 10 CFR Part 20 or changes a surveillance requirement. The staff has determined that the amendment involves no significant increase in the amounts, and no significant change in the types, of any effluents that may be released offsite and that there is no significant increase in individual or cumulative occupational radiation exposure. The Commission has previously issued a proposed finding that this amendment involves no significant hazards consideration and there has been no public comment on such finding (56 FR 22479 and 58 FR 19473). Accordingly, this amendment meets the eligibility criteria for categorical exclusion set forth in 10 CFR 51.22(c)(9). Pursuant to 10 CFR 51.22(b), no environmental impact statement or environmental assessment need be prepared in conjunction with the issuance of this amendment.

5.0 CONCLUSION

The staff has concluded, based on the considerations discussed above, that: (1) there is reasonable assurance that the health and safety of the public will not be endangered by operation in the proposed manner, (2) such activities will be conducted in compliance with the Commission's regulations, and (3) the issuance of this amendment will not be inimical to the common defense and security or to the health and safety of the public.

Principal Contributor: Andrew J. Kugler

Date: February 23, 1994