



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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION
RELATED TO AMENDMENT NO. 138 TO FACILITY OPERATING LICENSE NO. NPF-11
AND AMENDMENT NO. 122 TO FACILITY OPERATING LICENSE NO. NPF-18

COMMONWEALTH EDISON COMPANY

LASALLE COUNTY STATION, UNITS 1 AND 2

DOCKET NOS. 50-373 AND 50-374

1.0 INTRODUCTION

By letter dated August 6, 1999, as supplemented on November 15, 1999, Commonwealth Edison Company (ComEd, the licensee) requested changes to the Technical Specifications (TS) for LaSalle County Station, Units 1 and 2. The proposed changes would revise TS 3/4.4.6, "Vacuum Relief" to remove specific operability requirements related to position indication for the suppression chamber-drywell vacuum breakers. The amendments would also reformat the action statement for inoperable vacuum breakers, increase the surveillance interval for verifying that the vacuum breakers are closed, and delete the requirement to verify that the manual isolation valves are closed for an inoperable and open vacuum breaker. The November 15, 1999, submittal provided additional clarifying information that did not change the staff's initial proposed no significant hazards consideration determination.

2.0 BACKGROUND

The Containment Vacuum Relief System at LaSalle, Units 1 and 2, consists of four vacuum breakers between the drywell and suppression chamber. The purpose of the vacuum breakers is to alleviate reverse differential pressure transients and to keep the maximum negative differential pressure below the design values. The vacuum breakers form an extension of the primary containment boundary. Two local manual butterfly valves are provided, one on each side of the vacuum breaker as system isolation valves should failure of a vacuum breaker occur. The vacuum breakers are normally closed and are self-actuating to open momentarily for pressure relief during normal and off-normal plant operation and can be opened for testing purposes. The vacuum breakers must not be inoperable in the open position since an open vacuum breaker allows communication between the drywell and suppression chamber airspace, resulting in the potential for suppression chamber overpressurization due to bypass leakage if a loss-of-coolant accident (LOCA) were to occur. Therefore, to be considered operable, the vacuum breakers must be closed, except during testing or when performing their design function of pressure relief, and must be capable of opening from the closed position with a force of less than or equal to 0.5 psid.

The current TS 3/4.6.4 requires that all suppression chamber - drywell vacuum breakers be operable and closed. The surveillance requirements (SR) include: verification that the vacuum

breakers are closed every 7 days, performing a channel functional test on both position indicators every 31 days, performing a channel calibration on both position indicators every 18 months, cycling each vacuum breaker every 31 days, and verifying the force required to open the vacuum breaker, from the closed position, to be less than or equal to 0.5 psid every 18 months.

The current action statements require that if one vacuum breaker is found inoperable and/or open, the manual isolation valves on both sides of the vacuum breaker be closed within 4 hours and the vacuum breaker be restored to operable and closed status within 72 hours. If the vacuum breaker can not be restored to operable status within 72 hours, the plant must be in hot shutdown in 12 hours and cold shutdown within the following 24 hours. In addition, if one position indication of any operable vacuum breaker is found inoperable, it must be restored to operable status within 14 days or a visual verification demonstrating that the vacuum breaker is closed must be performed every 24 hours. Therefore, under the current TS, if both position indicators of a vacuum breaker become inoperable, the vacuum breaker must be declared inoperable, isolated by closing the manual isolation valves, and restored to operable status within 72 hours or the unit must be shut down.

3.0 EVALUATION

3.1 Vacuum Breaker Position Indicators

The licensee proposes to remove the requirement that vacuum breaker operability be contingent on the operability of the position indicators. Specifically, the licensee proposes to relocate the following actions and surveillances from TS to a licensee-controlled document:

1. TS 3.6.4, Action b, which provides the required actions for one inoperable position indicator;
2. SR 4.6.4.1.b.2 which requires a channel functional test of the vacuum breaker position indicators every 31 days, and;
3. SR 4.6.4.1.b.3.b which requires a channel calibration of the position indicators every 18 months.

The licensee has determined that these instruments have only an indication function and do not impact the operability of the vacuum relief system. There are no automatic or interlock functions associated with these instruments. In addition, the position of the vacuum breakers is required to be known to meet the operability requirements defined by the remaining SRs. If vacuum breaker position can not be determined, the SRs can not be satisfied and appropriate actions must be taken for inoperable vacuum breakers. The surveillances of these instruments and necessary compensatory actions, if they are not available, are addressed by plant procedures.

The staff has reviewed the action statement and related SRs proposed to be removed from TS against the criteria of 10 CFR 50.36(c)(2)(ii) and determined that none of the criteria applies to the TS that are being removed as discussed below:

Criterion 1: Installed instrumentation that is used to detect, and indicate in the control room, a significant abnormal degradation of the reactor coolant pressure boundary.

Evaluation: The suppression chamber to drywell vacuum breaker position indicators do not detect and indicate a significant degradation of the reactor coolant pressure boundary. The vacuum breakers are normally closed and opened to equalize pressure between the drywell and suppression pool to avoid exceeding the drywell floor differential pressure design limit. Indication that a vacuum breaker is opening to achieve its designed purpose, does not indicate degradation of the reactor coolant pressure boundary.

Criterion 2: A process variable, design feature, or operating restriction that is an initial condition of a design basis accident (DBA) or transient analysis that either assumes the failure of or presents a challenge to the integrity of a fission product barrier.

Evaluation: The accident analyses assume that the vacuum breakers are closed initially and are fully open at a differential pressure of 0.5 psid. However, the instruments themselves, which provide remote indication of the vacuum breakers' position, are not assumed to be operable in the accident analyses and may be relocated from the TS. The TS will continue to require that the vacuum breakers be verified closed.

Criterion 3: A structure, system, or component that is part of the primary success path and which functions or actuates to mitigate a DBA or transient that either assumes the failure of or presents a challenge to the integrity of a fission product barrier.

Evaluation: The vacuum breaker position indicators serve no active function in an accident or transient.

Criterion 4: A structure, system, or component which operating experience or probabilistic safety assessment has shown to be significant to public health and safety.

Evaluation: These instruments have not been shown to be significant to public health and safety.

Existing TS requirements which fall within or satisfy any of the above criteria must be retained in the TS, while those TS requirements which do not fall within or satisfy these criteria may be relocated to other, licensee-controlled documents.

Because the suppression chamber - drywell vacuum breaker position indicators do not meet the criteria of 10 CFR 50.36(c)(2)(ii) as being required to be included in TS, the staff has concluded that the instrumentation, along with the supporting actions and surveillances, may be moved to licensee-controlled documents. These requirements will be relocated to the Administrative Technical Requirements and the UFSAR by reference and all changes will be controlled pursuant to 10 CFR 50.59.

3.2 Limiting Condition for Operation

The licensee proposes to revise current TS 3.6.4 to require that the vacuum breakers be operable, but delete the condition that the vacuum breakers be closed. The licensee has stated that the inclusion of this condition in the Limiting Condition for Operation (LCO) is redundant to the definition of operable as defined by the SRs. SR 4.6.4.1.a requires verification that each suppression chamber - drywell vacuum breaker be closed. In addition, the licensee has modified the TS Bases Section 3/4.6.4 to clarify that a vacuum breaker that is not closed (with the exception of opening for pressure relief or testing) is considered inoperable. The staff has determined that the requirement that suppression chamber - drywell vacuum breakers be closed is included in the definition of operability for the vacuum breakers and, therefore, the removal of that condition from the TS is acceptable.

3.3 Action Statement

The licensee proposes to revise the current TS ACTION "a." by separating the actions for inoperable and closed vacuum breakers and inoperable and open vacuum breakers. The current TS requires that with one suppression chamber - drywell vacuum breaker inoperable and/or open, the manual isolation valves on either side of the vacuum breaker must be closed within 4 hours and the vacuum breaker returned to operable and closed status within 72 hours.

The proposed TS ACTION "a." will address the situation in which a vacuum breaker is inoperable for opening. In this case, the vacuum breaker is either stuck closed or may not be within its opening setpoint limit. Isolation with the manual isolation valves is not necessary as a TS requirement under these circumstances since the vacuum breaker is already closed. This change is acceptable to the staff. In addition, the proposed ACTION statement is consistent with NUREG-1433, Revision 1, "Standard Technical Specifications, General Electric Plants, BWR/4." The proposed ACTION "a." will maintain the current TS requirement that the inoperable vacuum breaker be restored to operable status within 72 hours or be in at least hot shutdown within 12 hours and in cold shutdown within the following 24 hours.

Proposed ACTION "b." will address the situation in which a vacuum breaker is inoperable in the open position. The revised TS will maintain the current TS requirement that the manual isolation valves on either side of the inoperable vacuum breaker be closed within 4 hours and the vacuum breaker be restored to operable status within 72 hours or be in at least hot shutdown within 12 hours and in cold shutdown within the following 24 hours. This is consistent with the current TS and is acceptable.

3.4 Surveillance Requirement to Verify Vacuum Breakers are Closed

The licensee proposes to extend the frequency of the SR to verify that the vacuum breakers are closed (SR 4.6.4.1.a) from 7 days to 14 days. The licensee has stated that these valves can not be permanently repositioned and are routinely found in the correct position and, therefore, an extension of the surveillance frequency is justified.

The licensee proposes to add a note to this SR which states that the SR is not required to be met for vacuum breakers that are open during surveillances or for suppression chamber-drywell

vacuum breakers that are functioning for pressure relief during normal and off-normal operations. This note is provided to clearly define permissible conditions when the vacuum breakers may be open. This is consistent with the definition of operability of the vacuum breakers and is provided for clarification only. Therefore, this change is acceptable.

3.5 Surveillance Requirement to Verify Manual Isolation Valves are Closed

The licensee proposes to delete SR 4.6.4.2 which requires that the manual isolation valves on both sides of an inoperable and/or open vacuum breaker be verified closed at least once per 7 days. The actions for an inoperable vacuum breaker require that the vacuum breaker be restored to operable status within 72 hours or the unit be in hot shutdown in 12 hours and in cold shutdown within the following 24 hours, placing the plant in a mode outside of the applicability for this SR. Therefore, this SR would never be required to be performed and its deletion is acceptable.

4.0 STATE CONSULTATION

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

5.0 ENVIRONMENTAL CONSIDERATION

The amendments change 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 and change surveillance requirements. The NRC staff has determined that the amendments involve 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 the amendments involve no significant hazards consideration, and there has been no public comment on such finding (64 FR 46428). Accordingly, the amendments meet 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 connection with the issuance of the amendments.

6.0 CONCLUSION

The Commission 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 the amendments will not be inimical to the common defense and security or to the health and safety of the public.

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Date: December 21, 1999