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NRC-89-0273

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

Reference: Fermi 2
NRC Docket No. 50-341
NRC License No. NPF-43

Subject: Proposed Technical Specification Change (License Amendment) - Containment Isolation Valves

Pursuant to 10CFR50.90, Detroit Edison Company hereby proposes to amend Operating License NPF-43 by incorporating the enclosed changes into Fermi 2 Technical Specifications 3/4.4.7 "Main Steam Isolation Valve", 3/4.6.3 "Primary Containment Isolation Valves", 3/4.6.4.2 "Reactor Building to Suppression Chamber Vacuum Breakers" and Definition 1.29 "PRIMARY CONTAINMENT INTEGRITY". The proposed changes resolve identified inconsistencies between the above Specifications. Additionally, changes have been proposed to Specification 3/4.6.4.2 to add the Reactor Building to suppression chamber vacuum breaker isolation valves to this Technical Specification. These valves are in series with the vacuum breaker check valves. Failure of the isolation valves can adversely affect the vacuum breaker function of the Reactor Building to suppression chamber vacuum breaker system.

Detroit Edison has evaluated the proposed Technical Specifications against the criteria of 10CFR50.92 and determined that no significant hazards consideration is involved. The Fermi 2 Onsite Review Organization has approved and the Nuclear Safety Review Group has reviewed these proposed Technical Specification changes and concurs with the enclosed determinations. In accordance with 10CFR50.91, Detroit Edison has provided a copy of this letter to the State of Michigan.

A001 1/1 Cert No P96941658

If you have any questions, please contact Mr. Glen Ohlemacher at (313) 586-4275.

Sincerely,

B Ralph Sylvia

Enclosure

cc: A. B. Davis
R. W. DeFayette
W. G. Rogers
J. F. Stang
Supervisor, Advanced Planning and Review Section,
Michigan Public Service Commission

I, B. RALPH SYLVIA, do hereby affirm that the foregoing statements are based on facts and circumstances which are true and accurate to the best of my knowledge and belief.

B. Ralph Sylvia

B. RALPH SYLVIA
Senior Vice President

On this 26th day of January, 1990, before me personally appeared B. Ralph Sylvia, being first duly sworn and says that he executed the foregoing as his free act and deed.

Shirley L. Carlson

Notary Public
SHIRLEY L. CARLSON
Notary Public, Wayne County, MI
My Commission Expires Jan. 28, 1991

INTRODUCTION

The proposed amendment corrects three inconsistencies associated with containment isolation valves Technical Specifications (TS). The first inconsistency relates to the differences between ACTION statements 3.6.3.a "Primary Containment Isolation Valves" and TS 3.4.7.a "Main Steam Isolation Valves". Because the Main Steam Isolation Valves (MSIVs) are containment isolation valves, ACTION statements 3.6.3.a and 3.4.7.a apply to an inoperable MSIV (see attached TSs). However, these ACTION statements are inconsistent in the amount of time allowed to deactivate and close an MSIV when complying with the subject ACTION statements.

The second inconsistency addressed by this proposed amendment is related to the dual function of the Reactor Building to suppression chamber vacuum breaker check valves and associated isolation valves. This system is described in Section 6.2.1.2.1.10 of the Updated Final Safety Analysis Report. The Reactor Building to suppression chamber vacuum relief system consists of two redundant lines from the Reactor Building atmosphere to the suppression chamber atmosphere. Each line contains a vacuum breaker testable check valve in series with an air operated butterfly isolation valve. Both of these valves are normally closed. The vacuum breaker check valve is self-actuating, opening at a maximum differential pressure of 0.5 psid. The air operated isolation valve is actuated open by a maximum differential pressure signal of 0.5 psid. The isolation valve is designed to fail open upon loss of air pressure and/or electrical power. These valves are containment isolation valves and are appropriately listed in TS 3.6.3. However, these valves are also designed to perform a vacuum relief function during accident conditions. Condensing steam from a Loss of Coolant Accident (LOCA) could cause a drywell vacuum condition to occur beyond its design value without these vacuum breakers. With the drywell in a vacuum condition, the suppression chamber to drywell vacuum breakers open to vent non-condensables from the suppression chamber atmosphere to the drywell. This equalizes the pressure between the drywell and suppression chamber. With the suppression chamber in a vacuum condition, the Reactor Building to suppression chamber vacuum breakers are designed to open to equalize the pressure between the Reactor Building and suppression chamber.

Because of the dual function of these valves, TS 3.6.3 and TS 3.6.4.2 "Reactor Building to Suppression Chamber Vacuum Breakers" are applicable. However, ACTION statement 3.6.3.a.2 (see attached TSs) is inappropriate with respect to deactivating a Reactor Building to suppression chamber check valve or isolation valve, because the check valve is self-actuating on differential pressure and cannot be deactivated in a secured position and the isolation valve is designed to fail open if deactivated. ACTION statement 3.6.3.a.3 is inappropriate because there are no manual valves or flange connections

in the vacuum relief lines. Additionally, ACTION statement times and required functions are inconsistent between ACTION statements 3.6.3.a and 3.6.4.2.a and b (see attached TSs).

The third inconsistency addressed by this proposed amendment is related to TS 3/4.6.4.2. The current TS does not specifically address the isolation valves which are in series with the vacuum breaker check valves. A reference is made to the isolation valves in ACTION statement 3.6.4.2.b but it incorrectly implies that the isolation valve is normally open. The vacuum breaker check valve and isolation valve are normally closed because of their containment isolation function. A failure of the isolation valve to automatically open is as detrimental to the operability of the Reactor Building to suppression chamber vacuum relief system as the failure of the vacuum breaker check valve. Detroit Edison performs additional TS type surveillances on these isolation valves to routinely determine their operability even though these surveillances are not currently required by the TS.

EVALUATION

To correct the inconsistency between the times specified in ACTION statements 3.4.7.a and 3.6.3.a, the 8 hours currently specified in ACTION statement 3.4.7 has been changed to 4 hours. Using 4 hours is consistent with ACTION statement 3.6.3.a and thus, the majority of the containment isolation valves.

To correct the Reactor Building to suppression chamber vacuum breaker and isolation valve inconsistency, Detroit Edison proposes to exempt these valves from compliance with ACTION statement 3.6.3.a and allow TS 3.6.4.2 ACTION statements' to govern. This position is supported by the existing Definition for PRIMARY CONTAINMENT INTEGRITY, 1.29. Item g of this Definition states PRIMARY CONTAINMENT INTEGRITY shall exist when "the suppression chamber to reactor building vacuum breakers are in compliance with Specification 3.6.4.2".

To correct the TS 3/4.6.4.2 inconsistency of not specifically addressing the vacuum breaker isolation valve, the proposed changes include incorporation of these valves into Specification 3/4.6.4.2.

The specific proposed changes (see attached TSs) are:

- ACTION 3.4.7.a has been modified by reducing the amount of time allowed to deactivate and close a MSIV if it or the other MSIV in the same main steam line become inoperable. This time has been reduced from 8 hours to 4 hours to be consistent with TS 3.6.3.

- ACTION 3.6.3.a has been modified to allow the ACTION statements' of TS 3.6.4.2 to apply. The ** footnote has been proposed to ACTION 3.6.3.a which states:

  "The ACTION statement is not applicable for inoperable Reactor Building to suppression chamber vacuum breaker check valves (T23-F450A and B) and isolation valves (T23-F409 and T23-F410). Follow the applicable ACTION statement of Specification 3.6.4.2 if any of these valves become inoperable."

  This footnote is necessary because ACTION statements 3.6.3.a.2 and .3 cannot be complied with for an inoperable Reactor Building to suppression chamber check valve or isolation valve.

- The existing Limiting Condition for Operation (LCO) 3.6.4.2 has been rewritten to include the vacuum breaker isolation valve and to specify that both the vacuum breaker check valve and air operated isolation valve are considered a "vacuum breaker valve set." Associating these two valves with a term such as vacuum breaker valve set is consistent with the TS of another plant of similar design and enforces the current level of control to the air operated isolation valve as currently applies to the vacuum breaker check valve.

- TS 3.6.4.2 ACTION statements a), b) and d) (current ACTION statement c) and Definition 1.29 "PRIMARY CONTAINMENT INTEGRITY" have been modified to incorporate the terminology proposed for LCO 3.6.4.2 (e.g., vacuum breaker valve set). The proposed wording enforces the current level of control to the air operated isolation valve as currently applies to the vacuum breaker check valve.

- TS 3.6.4.2 ACTION statement c) has been added to specify the required actions to be taken when both valves in a Reactor Building to suppression chamber vacuum breaker set are open. This ACTION statement is based on the PRIMARY CONTAINMENT INTEGRITY TS ACTION statement, TS 3.6.1.1.

- Surveillance Requirement (SR) 4.6.4.2 has been modified by adding "check valve and air operated isolation valve." These proposed words will specify that TS surveillances apply to both valves (unless otherwise specified) not just the vacuum breaker check valve.

- SRs 4.6.4.2.b.1.a, 4.6.4.2.b.1.b., 4.6.4.2.b.2.b and 4.6.4.2.b.2.c have been modified by adding "each valve", "on each valve" or "of each valve" to clarify that these SR apply to both valves.

- SR 4.6.4.2.b.2.a has been modified by adding "check valve" to clarify that this SR is only applicable to the vacuum breaker check valve. This SR is only applicable to the vacuum breaker check valve because the vacuum breaker check valve is self actuating on differential pressure, unlike the air operated isolation valve, and any unexpected resistance could potentially affect the valve's operation.

- SR 4.6.4.2.b.2.d has been added to insure that the automatic control system for each air operated isolation valve is operational and calibrated. The 18 month periodicity is consistent with the periodicity established in the Standard Technical Specification for a CHANNEL CALIBRATION on similar equipment.

The proposed change to TS 3.4.7 is justified because it corrects an inconsistency between the ACTION statements of TS 3.4.7 and 3.6.3 and incorporates the more conservative requirements of the subject ACTION statements.

The proposed change to TS 3.6.3 is justified because it appropriately applies specific ACTION statements, with allowable out-of-service times which can be applied, to the Reactor Building to suppression chamber vacuum breaker check valves and isolation valves. Because these valves perform two functions, containment isolation and containment vacuum relief, their design does not allow use of the "generic" containment isolation valve out-of-service time in TS ACTION statement 3.6.3.a. ACTION statement 3.6.3.a requires isolation of a penetration that contains an inoperable containment isolation valve by deactivating an automatic valve in the isolated position, lock closing a manual valve or installation of a blank flange in order to continue plant operation. The Reactor Building to suppression chamber vacuum breaker check valves are self actuating and cannot be deactivated. The isolation valve is designed to open when deactivated to fulfill its vacuum relief function. The vacuum relief lines do not contain any manual isolation valves and do not have provisions for the installation of a blank flange. Additionally, even if the ACTION statement 3.6.3.a provisions could be used, the amount of time spent in this ACTION statement is not limited as long as the ACTION statement's isolation provisions are satisfied. Use of the ACTION statement 3.6.3.a provisions would also prevent the vacuum relief function of the affected line, which is required by ACTION statement 3.6.4.2.b. Thus, these valves cannot and should not be positioned as called for in ACTION statements 3.6.3.a.2.& a.3 when an inoperability condition exists.

The proposed ACTION statements of TS 3.6.4.2 provide the required balance between the dual function of the subject valves. These ACTION statements incorporate the isolation function of TS 3.6.3 with a

commonly accepted TS out of service time (e.g., a limit of 72 hours) associated with redundant safety related systems.

Furthermore, the Definition of PRIMARY CONTAINMENT INTEGRITY 1.29 states that PRIMARY CONTAINMENT INTEGRITY shall exist when the suppression chamber to reactor building vacuum breakers are in compliance with Specification 3.6.4.2. Therefore, the proposed change to TS 3.6.3 is consistent with the design of the subject vacuum relief system and is supported by our current TS Definition of PRIMARY CONTAINMENT INTEGRITY.

The proposed changes to TS 3.6.4.2 are justified because they add the air operated isolation valve to TS 3/4.6.4.2. Failure of these valves to automatically open is as detrimental to the operability of the Reactor Building to suppression chamber vacuum relief system as the failure of the vacuum breaker check valve. These changes will provide additional controls not currently specified to insure that the Reactor Building to suppression chamber vacuum relief system can perform its intended function.

The proposed addition of ACTION statement 3.6.4.2.c is consistent with the existing ACTION statement for TS 3.6.1.1, Primary Containment Integrity.

SIGNIFICANT HAZARDS CONSIDERATION

In accordance with 10CFR50.92, Detroit Edison has made a determination that the proposed amendment involves no significant hazards considerations. To make this determination, Detroit Edison must establish that operation in accordance with the proposed amendment would not: 1) involve a significant increase in the probability or consequences of an accident previously evaluated, or 2) create the possibility of a new or different kind of accident from any accident previously evaluated, or 3) involve a significant reduction in a margin of safety.

1. The proposed changes do not involve a significant increase in the probability or consequences of an accident previously evaluated because the proposed changes do not change any accident or transient analysis, does not physically modify the plant and does not introduce a new mode of plant operation.

   The proposed change to TS 3.4.7 corrects an inconsistency between the ACTION statements of TS 3.4.7 and 3.6.3. Because the MSIVs are containment isolation valves, ACTION statement 3.6.3.a and 3.4.7.a apply to an inoperable MSIV. However, these ACTION statements are inconsistent in the amount of time allowed to deactivate and close an MSIV when complying with the subject ACTION statements. The proposed change incorporated the more

conservative time from the subject TS to resolve this inconsistency.

The proposed change to TS 3.6.3 will appropriately apply specific ACTION statements, with allowable out-of-service times which can be applied, to the Reactor Building to suppression chamber vacuum breaker check valves and isolation valves. Because these valves perform two functions, containment isolation and containment vacuum relief, their design does not allow use of the "generic" containment isolation valve out-of-service time in TS ACTION statement 3.6.3.a. ACTION 3.6.3.a requires isolation of a penetration that contains an inoperable isolation valve by deactivating an automatic valve in the isolated position, lock closing a manual valve or installation of a blank flange in order to continue plant operation. The Reactor Building to suppression chamber vacuum breaker check valves are self actuating and cannot be deactivated. The isolation vaive is designed to open when deactivated to fulfill its vacuum relief function. The vacuum relief isolation valves do not contain any manual isolation valves and do not have provisions for installation of a blank flange. Additionally, even if ACTION statement 3.6.3.a provisions could be used, the amount of time spent in this ACTION statement is not limited as long as the ACTION statement's isolation provisions are satisfied. Compliance with ACTION statement 3.6.3.a would also prevent the vacuum relief function of the affected line, which is required by ACTION statement 3.6.4.2.b. Thus, these valves cannot and should not be positioned as called for in ACTION statements 3.6.3.a.2 and a.3 when an inoperable condition exists.

The proposed ACTION statements of TS 3.6.4.2 provide the required balance between the dual function of the subject valves. These ACTION statements incorporate the isolation function of TS 3.6.3 with a commonly accepted TS out of service time (e.g., a limit of 72 hours) associated with redundant safety related systems.

Furthermore, the Definition of PRIMARY CONTAINMENT INTEGRITY states that "PRIMARY CONTAINMENT INTEGRITY shall exist when the suppression chamber to reactor building vacuum breakers are in compliance with Specification 3.6.4.2." Therefore, the proposed change to TS 3.6.3 is consistent with the design of the subject vacuum relief system and is supported by the current TS DEFINITION of PRIMARY CONTAINMENT INTEGRITY.

The proposed changes to TS 3.6.4.2 add the air operated isolation valve to TS 3/4.6.4.2. Failure of these valves to automatically open is as detrimental to the operability of the Reactor Building to suppression chamber vacuum relief system as the failure of the vacuum breaker check valve. These changes provide additional controls not currently specified to insure that the Reactor

Building to suppression chamber vacuum relief system can perform its intended function.

The proposed addition of ACTION statement 3.6.4.2.c is consistent with the existing ACTION statement for TS 3.6.1.1, PRIMARY CONTAINMENT INTEGRITY.

2. The proposed changes do not create the possibility of a new or different kind of accident from any accident previously evaluated because the proposed changes introduce no new mode of plant operation or involve a physical modification to the plant.

3 The proposed changes do not involve a significant reduction in the margin of safety because, as previously mentioned in item 1, the changes do not physically modify the plant and does not introduce a new mode of plant operation. These proposed changes will increase the margin of safety because additional controls not currently specified in the TSs will become TS requirements. These new TS controls will provide additional assurance that the Reactor Building to suppression chamber vacuum relief system can perform its intended function.

Based on the above, Detroit Edison has determined that the proposed amendment does not involve a significant hazards consideration.

ENVIRONMENTAL IMPACT

Detroit Edison has reviewed the proposed Technical Specification changes against the criteria of 10CFR51.22 for environmental considerations. The proposed changes do not involve a significant hazards consideration, nor significantly change the types or significantly increase the amounts of effluents that may be released offsite, nor significantly increase individual or cumulative occupational radiation exposures. Based on the foregoing, Detroit Edison concludes that the proposed Technical Specifications do meet the criteria given in 10CFR51.22(c)(9) for a categorical exclusion from the requirements for an Environmental Impact Statement.

CONCLUSION

Based on the evaluation above: 1) there is reasonable assurance that the health and safety of the public will not be endangered by operation in the proposed manner, and 2) such activities will be conducted in compliance with the Commission's regulations and proposed amendments will not be inimical to the common defense and security or to the health and safety of the public.