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Waterford 3

W3F1-2008-0001

January 2, 2008

U.S. Nuclear Regulatory Commission
Attn: Document Control Desk
Washington, DC 20555-0001

Subject: License Amendment Request NPF-38-275
Containment Isolation Valves
Waterford Steam Electric Station, Unit 3 (Waterford 3)
Docket No. 50-382
License No. NPF-38

Dear Sir or Madam:

Pursuant to 10 CFR 50.91, Entergy Operations hereby requests a license amendment to the above license in the form of changes to the Technical Specification 3/4.6.3. The proposed amendment revises the action requirements for inoperable containment isolation valves in Technical Specification 3/4.6.3, "Containment Isolation Valves," to increase the allowed outage time from 4 hours to 72 hours for containment isolation valves associated with closed systems.

The Waterford 3 Onsite Safety Review Committee and the Entergy Nuclear Safety Review Committee have reviewed the changes. The changes do not involve a significant hazard consideration as defined in 10 CFR 50.92 based on the attached safety analysis and no significant hazard evaluation.

Entergy believes that considering the condition of the Plant Protection System power supply it is prudent to replace the power supply expeditiously as discussed in the attachment. Therefore, Entergy requests exigent approval of the proposed amendment within 72 hours or as soon as possible. Once approved, the amendment shall be immediately implemented.

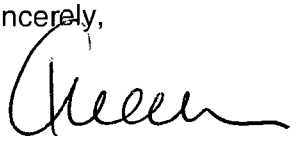
No new regulatory commitments are contained in this submittal.

A001
NRR

If there are any questions concerning this matter, please contact Mr. Robert J. Murillo, Manager, Licensing at 504-739-6715.

I declare under penalty of perjury that the foregoing is true and correct. Executed on January 2, 2008.

Sincerely,



KTW/RJM/ssf

Attachments:
1. Analysis of Proposed Technical Specification Change
2. Technical Specification Revised Pages
3. Technical Specification Bases Revised Pages

cc: Mr. Elmo E. Collins, Jr.
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Attachment 1 to

W3F1-2008-0001

Analysis of Proposed Technical Specification Change

1.0 DESCRIPTION

This is a request to amend Operating License for Waterford 3.

The proposed changes will revise the allowed outage time for inoperable containment isolation valves in Technical Specification 3/4.6.3, "Containment Isolation Valves," to increase the allowed outage time from 4 hours to 72 hours for containment isolation valves associated with closed systems.

2.0 Reason for Expedited Technical Specification Change Request

The reason for the Technical Specification change is to allow replacement of a power supply for the Plant Protection System. The power supply needs to be replaced to provide assurance there is no recurrence of a momentary loss of the power supply that occurred on December 31, 2007. Upon visual inspection, the power supply had physical evidence of an over heated circuit card observed through the power supply vent hole, and the power supply had a strong acrid smell. Replacement of the power supply results in half actuation of Emergency Safety Features Actuation System (ESFAS) (including Recirculation Actuation Signal (RAS)) and Emergency Feedwater (EFW) isolation valves failing open. The EFW containment isolation valves failing open prevents the implementation of Technical Specification 3.6.3 action statement 'b' since it conflicts with Technical Specification 3.7.1.2 that requires two flow paths of EFW to be OPERABLE. Technical Specification 3.6.3 action statement 'b' requires deactivating the automatic valves and securing these valves in the isolation position. With the EFW containment isolation valves deactivated and secured in the closed position the safety function of primary heat removal of the EFW would not be met since both cooling flow paths would be blocked.

The current allowed outage time for Technical Specification 3/4.6.3 is 4 hours, and the expected time to replace the power supply, including field verification and retest is about 2 hours. However, additional time may be needed should the new tested power supply fail to calibrate or function when re-energized. Therefore, should an unforeseen field condition occur, the replacement of the power supply would result in the plant entering a Technical Specification action requiring a shutdown and with the resultant unnecessary transient. Although shutting down the plant with an half actuation of ESFAS is acceptable, it would add additional challenges to the plant operating staff which are undesirable.

Considering the nature of the equipment issue, this Technical Specification change will minimize the potential for safety consequences and operational risk due to a shutdown while allowing the expeditious repair of the power supply.

3.0 PROPOSED CHANGES

The proposed Technical Specification changes, which are submitted for NRC review and approval, are provided in Attachment 2. A markup of the Technical Specification Bases are included in Attachment 3 for information only.

Technical Specification 3.6.3 Action is revised as follows:

With the isolation valve inoperable for penetration(s) with closed system(s) either:

a. Restore the inoperable valve to OPERABLE status within 72 hours, or

b. Isolate each affected penetration within 72 hours by use of at least one deactivated automatic valve secured in the isolation position, or

c. Isolate each affected penetration within 72 hours by use of at least one closed manual valve or blind flange, or

d. Be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.

For all other penetrations, with one or more of the isolation valve(s) inoperable, maintain at least one isolation valve OPERABLE in each affected penetration that is open and either :

e. Restore the inoperable valve(s) to OPERABLE status within 4 hours, or

f. Isolate each affected penetration within 4 hours by use of at least one deactivated automatic valve secured in the isolation position, or

g. Isolate each affected penetration within 4 hours by use of at least one closed manual valve or blind flange, or

h. Be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.

The new ACTION is applicable only to closed systems and requires the affected penetration flow path be isolated within 72 hours by use of at least one closed and deactivated automatic valve, closed manual valve or blind flange. Otherwise be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.

The surveillance requirement given in Technical Specification 3.6.1.1 ensures that the penetration remains closed. The proposed allowed outage time of 72 hours for isolating a penetration associated with a closed system and the 31 day requirement for verifying the penetration is isolated is consistent with the NUREG 1432, Revision 3.1 Improved Standard Technical Specifications (ISTS) and Technical Specification Task Force Traveler TSTF-30 (Reference 2).

4.0 BACKGROUND

The containment isolation valves associated with closed systems form part of the containment pressure boundary and provide a redundant method for isolating fluid systems that pass through the containment in order to confine any radioactivity that may be released following a LOCA or main steam line break (MSLB) inside containment. In order to meet the acceptance criteria of the Standard Review Plan, the system must be safety class 2 inside containment.

A closed system inside containment is a piping system which penetrates containment but does not communicate with the reactor coolant pressure boundary or the containment atmosphere

during normal operation or during a postulated LOCA. A closed system outside containment is one which does not communicate with the outside atmosphere (ANSI N271-1976, Para. 2.).

GDC 57 requires each line that penetrates primary reactor containment and is neither part of the reactor coolant pressure boundary nor connected directly to the containment atmosphere shall have at least one containment isolation valve which shall be either automatic, or locked closed, or capable of remote manual operation. This valve shall be outside containment and located as close to the containment as practical. A simple check valve may not be used as the automatic isolation valve. Waterford 3 closed systems penetrating containment meet GDC 57, (FSAR 3.1.50).

The operability requirements of the containment isolation valves associated with closed systems is a redundant measure to ensure that the containment atmosphere will be isolated from the outside environment in the event of a release of radioactive material to the containment atmosphere or pressurization of the containment. Containment isolation within specified time limits ensures that the release of radioactive material to the environment will be consistent with the assumptions used in the analysis for a loss-of-coolant accident (LOCA).

5.0 TECHNICAL ANALYSIS

The proposed new ACTION addresses required actions with one or more penetration flow paths with one inoperable containment isolation valve that is connected to a closed system inside containment. GDC 57 requires that each line that penetrates primary reactor containment and is neither part of the reactor coolant pressure boundary nor connected directly to the containment atmosphere shall have at least one containment isolation valve which shall be either automatic, or locked closed, or capable of remote manual operation. This valve shall be outside containment and located as close to the containment as practical. A simple check valve may not be used as the automatic isolation valve. Currently, LCO 3.6.3 does not allow the use of a closed system to isolate a failed containment isolation valve. Therefore, a new action is added to require isolation of the affected penetration flow path within 72 hours. This proposed change is a less restrictive change from the current Technical Specification requirement which requires the affected penetration be isolated within four hours for any inoperable isolation valve. The proposed change is consistent with Technical Specification Task Force Traveler TSTF-30 which has been incorporated into the ISTS. TSTF-30 revised the completion time to 72 hours for a closed system flow path with an inoperable containment isolation valve.

The 72 hour allowed outage time provides the necessary time to perform repairs on a failed containment isolation valve while relying on an intact closed system for containment isolation. This allowed outage time is acceptable considering the reliability of closed systems to act as a penetration boundary. Furthermore, 72 hours is typically provided for the loss of one train of redundancy (similar to inoperability of a containment isolation valve in a closed system penetration) throughout the Waterford 3 Technical Specifications.

The Waterford 3 closed system penetrations that would be applicable to this action requirement are Steam Generator Blowdown (Containment Penetrations 5 & 6), the Component Cooling Water for Containment Fan Coolers (Containment Penetrations 15 – 22), Emergency Feedwater, Main Feedwater (Containment Penetrations 3 & 4), Main Steam

(Containment Penetrations 1 & 2), and Secondary Sampling (Containment Penetrations 52 & 68), (FSAR Section 6.2.4.1.2 and FSAR Table 6.2-32). The closed systems associated with these penetrations are subject to a containment Type A leak rate test and are designed as safety class 2, seismic category 1, and missile protected inside containment. The containment isolation provisions of the Waterford 3 closed systems meet the acceptance criteria listed in NUREG-800, Standard Review Plan, Section 6.2.4.

6.0 REGULATORY SAFETY ANALYSIS

This License Amendment Request proposes revising the Waterford 3 Technical Specifications for Containment Isolation Valves, 3.6.3. GDC 57 requires each line that penetrates primary reactor containment and is neither part of the reactor coolant pressure boundary nor connected directly to the containment atmosphere shall have at least one containment isolation valve which shall be either automatic, or locked closed, or capable of remote manual operation. GDC 57 allows the use of a closed system in combination with a containment isolation valve to provide two containment barriers against the release of radioactive material following an accident. Waterford 3 closed systems penetrating containment meet GDC 57. Following the proposed change GDC 57 will continue to be met.

6.1 No Significant Hazards Consideration

Entergy Operations has evaluated whether or not a significant hazards consideration is involved with the proposed amendments by focusing on the three standards set forth in 10 CFR 50.92, "Issuance of amendment," as discussed below:

1. Does the proposed change involve a significant increase in the probability or consequences of an accident previously evaluated?

   Response: No.

   The proposed change modifies existing action requirements for inoperable containment isolation valves. The condition evaluated, the Action requirements and the associated allowed outage times do not impact initiating conditions for any accident previously evaluated. Containment integrity will continue to be maintained by the closed system when the proposed actions are implemented. The new action requirement provides appropriate remedial actions to be taken in response to an inoperable containment isolation valve in a closed system while minimizing the risk associated with continued operation. Therefore, the proposed change does not involve a significant increase in the probability or consequences of an accident previously evaluated.

2. Does the proposed change create the possibility of a new or different kind of accident from any accident previously evaluated?

   Response: No.

   The proposed change does not involve any changes to plant equipment or system design functions. The specification for containment isolation valves provides controls for maintaining the containment pressure boundary. The new action

requirement and surveillance requirement are sufficient to ensure that the containment isolation function is maintained. No new accident initiators are introduced by this change. Therefore, the proposed change does not create the possibility of a new or different kind of accident from any previously evaluated.

3. Does the proposed change involve a significant reduction in a margin of safety?

Response: No.

The new action requirement does not involve a significant reduction in the margin of safety. The proposed action for an inoperable containment isolation valve in a closed system minimizes the risk of continued operation under the specified conditions, considering the reliability of the closed system (i.e., passive barrier), a reasonable time for repairs or replacement of the isolation feature, and that 72 hours is typically provided for losing one train of redundancy throughout the NUREGs, and the low probability of a design basis accident occurring during the allowed outage time period (reference TSTF-30). Should the penetration required to be isolated, Technical Specification 3.6.1.1 provides the surveillance requirement to verify at least once every 31 days that the affected penetration flow path is isolated if the penetration is not capable of being closed by operable containment isolation valves. Therefore, the proposed change does not involve a significant reduction in a margin of safety.

Based on the above, Entergy concludes that the proposed amendment presents no significant hazards consideration under the standards set forth in 10 CFR 50.92(c), and accordingly, a finding of "no significant hazards consideration" is justified.

7.0 ENVIRONMENTAL CONSIDERATION

A review has determined that the proposed amendment would change a requirement with respect to installation or use of a facility component located within the restricted area, as defined in 10 CFR 20, or would change an inspection or surveillance requirement. However, the proposed amendment does not involve (i) a significant hazards consideration, (ii) a significant change in the types or significant increase in the amounts of any effluent that may be released offsite, or (iii) a significant increase in individual or cumulative occupational radiation exposure. Accordingly, the proposed amendment meets the eligibility criterion for categorical exclusion set forth in 10 CFR 51.22(c)(9). Therefore, pursuant to 10 CFR 51 .22(b), no environmental impact statement or environmental assessment need be prepared in connection with the proposed amendment.

8.0 REFERENCES

1. 10 CFR 50, Appendix A, "General Design Criteria for Nuclear Power Plants."

2. Industry/TSTF Standard Technical Specification Change Traveler TSTF-30, "Extend the Completion Time for inoperable isolation valve to a closed system to 72 hours," Revision 3, August 1999.

Attachment 2 to

W3F1-2008-0001

Technical Specification Revised Pages

CONTAINMENT SYSTEMS

3/4.6.3 CONTAINMENT ISOLATION VALVES

LIMITING CONDITION FOR OPERATION

3.6.3 Each containment isolation valve shall be OPERABLE.*

Replace with [Insert No. 1]

APPLICABILITY: MODES 1, 2, 3, and 4.

ACTION:

With one or more of the isolation valve(s) inoperable, maintain at least one isolation valve OPERABLE in each affected penetration that is open and either:

a. Restore the inoperable valve(s) to OPERABLE status within 4 hours, or

b. Isolate each affected penetration within 4 hours by use of at least one deactivated automatic valve secured in the isolation position, or

c. Isolate each affected penetration within 4 hours by use of at least one closed manual valve or blind flange; or

d. Be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.

The provisions of Specification 3.0.4 do not apply.

* Locked or sealed closed valves may be opened on an intermittent basis under administrative control.

SURVEILLANCE REQUIREMENTS

4.6.3.1 Each containment isolation valve shall be demonstrated OPERABLE prior to returning the valve to service after maintenance, repair or replacement work is performed on the valve or its associated actuator, control or power circuit by performance of a cycling test and verification of isolation time.

[Insert No. 1]

With the isolation valve inoperable for penetration(s) with closed system(s) either:

a. Restore the inoperable valve to OPERABLE status within 72 hours, or

b. Isolate each affected penetration within 72 hours by use of at least one deactivated automatic valve secured in the isolation position, or

c. Isolate each affected penetration within 72 hours by use of at least one closed manual valve or blind flange, or

d. Be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours

For all other penetrations, with one or more of the isolation valve(s) inoperable, maintain at least one isolation valve OPERABLE in each affected penetration that is open and either :

e. Restore the inoperable valve(s) to OPERABLE status within 4 hours, or

f. Isolate each affected penetration within 4 hours by use of at least one deactivated automatic valve secured in the isolation position, or

g. Isolate each affected penetration within 4 hours by use of at least one closed manual valve or blind flange, or

h. Be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.

Attachment 3 to

W3F1-2008-0001

Technical Specification Bases Revised Pages

3/4.6.2.1 and 3/4.6.2.2 CONTAINMENT SPRAY SYSTEM and CONTAINMENT COOLING SYSTEM (Continued)

selecting the 18 month frequency were the known reliability of the Cooling Water System, the two train redundancy, and the low probability of a significant degradation of flow occurring between surveillances. The flow measurement for the 18 month test shall be done in a configuration equivalent to the accident lineup to ensure that in an accident situation adequate flow will be provided to the containment fan coolers for them to perform their safety function

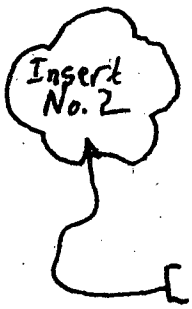
Verifying that each valve actuates to the full open position provides further assurance that the valves will travel to their full open position on a Safety Injection Actuation Signal.

3/4.6.3 CONTAINMENT ISOLATION VALVES

The OPERABILITY of the containment isolation valves ensures that the containment atmosphere will be isolated from the outside environment in the event of a release of radioactive material to the containment atmosphere or pressurization of the containment and is consistent with the requirements of GDC 54 through GDC 57 of Appendix A to 10 CFR Part 50. Containment isolation within the time limits specified for those isolation valves designed to close automatically ensures that the release of radioactive material to the environment will be consistent with the assumptions used in the analyses for a LOCA.
→(DRN 03-666, Ch. 25)

The asterisk "*" footnote associated with the LCO statement allows the opening of closed containment isolation valves on an intermittent basis under administrative controls. The valves within the scope of this footnote include locked or sealed closed containment isolation valves and deactivated automatic containment isolation valves secured in the isolation position. Acceptable administrative controls must include the following considerations: (1) stationing an operator, who is in constant communication with control room, at the valve controls, (2) instructing this operator to close these valves in an accident situation, and (3) assuring that environmental conditions will not preclude access to close the valves and that this action will prevent the release of radioactivity outside the containment.
←(DRN 03-666, Ch. 25)

"Containment Isolation Valves", previously Table 3.6-2, have been incorporated into the Technical Requirements Manual (TRM).



For penetrations with multiple flow paths, only the affected flow path(s) is required to be isolated when a containment isolation valve in that flow path is inoperable. The flow path may be isolated with the inoperable valve in accordance with the Action requirements, provided the leakage rate acceptance criteria, as applicable, is met and controls are in place to ensure the valve is closed. Also, the penetration is required to meed the requirements of GDC-54, and GDC-55 through GDC 57, as applicable, for all the unisolated flow paths.

→(DRN 03-1541, Ch. 29)

For the Shutdown Cooling System suction line relief valves (SI-406A and SI-406B), TS 3/4.6.3 is only applicable in the close direction. The capability of these valves to lift at the specified setpoint is addressed by TS 3.4.8.3.
←(DRN 03-1541, Ch. 29)

[Insert No. 2]

The allowed outage time of 72 hours for isolating a penetration associated with a closed system is consistent with Technical Specification Task Force Traveler TSTF-30. Two barriers in series are provided for each penetration so that no single credible failure or malfunction of an active component can result in a loss of isolation or leakage that exceeds limits assumed in the safety analyses. One of these barriers may be a closed system, which is a line that penetrates primary reactor containment and is neither part of the reactor coolant pressure boundary nor connected directly to the containment atomosphere.

The 72 hour allowed outage time provides the necessary time to perform repairs on a failed containment isolation valve while relying on an intact closed system. This allowed outage time is acceptable considering the reliability of closed systems to act as a penetration boundary. Furthermore, 72 hours is typically provided for the loss of one train of redundancy (similar to inoperability of a containment isolation valve in a closed system penetration) throughout the Technical Specifications.

The Waterford 3 closed system penetrations that would be applicable to this action requirement are Blowdown (Containment Penetrations 5 & 6),the Component Cooling Water for Containment Fan Coolers (Containment Penetrations 15 – 22) and , Emergency Feedwater, Main Feedwater (Containment Penetrations 3 & 4), and Main Steam (Containment Penetrations 1 & 2), and Secondary Sampling (Containment Penetrations 52 & 68). The closed systems associated with these penetrations are subject to a containment Type A leak rate test and are designed as safety class 2 and seismic category 1.