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W3F1-2012-0084

October 8, 2012

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

SUBJECT: License Amendment Request
Technical Specification Change for Dry Cooling Tower Fans Out of Service for Ultimate Heat Sink
Waterford Steam Electric Station, Unit 3
Docket No. 50-382
License No. NPF-38

Dear Sir or Madam:

Pursuant to 10 CFR 50.90, Entergy Operations, Inc. (Entergy) hereby requests a license amendment to the Waterford Steam Electric Station, Unit 3 (Waterford 3) Technical Specifications (TS). The proposed amendment will modify TS 3/4.7.4, "Ultimate Heat Sink."

Entergy will be replacing the two Waterford 3 steam generators (SGs) and the reactor vessel closure head (RVCH) during the 18th refueling outage (RF18). In order to create a construction opening for replacement of the steam generators and RVCH, the construction of a temporary work platform (TWP) was necessary above Train B of the Waterford 3 dry cooling tower (DCT) of the ultimate heat sink (UHS). Due to a small increase in airflow restriction to the Train B DCT while the TWP is installed in Modes 1 thru 4, an administrative control was determined to be appropriate to limit the number of Train B DCT fans that can be out of service to no more than two fans. Waterford TS Table 3.7-3 allows having up to three DCT fans to be out of service in plant Modes 1 through 4 with dry bulb temperatures < 91°F. This amendment request proposes to modify the requirements for the number of DCT fans needed for Operability of the ultimate heat sink (UHS) contained in Table 3.7-3 of Waterford 3 TS 3/4.7.4.

Entergy has a pending license amendment request (TAC No. ME7342) under NRC review that also revises information contained in TS Table 3.7-3. Proposed changes in that amendment request are not reflected in this request.

This request is a one time TS change in support of RF18 which is scheduled to commence on October 17, 2012. This technical specification change will only be applicable for the period of time while the TWP is installed until Mode 5 is entered at the beginning of RF18.

A description of the TS proposed change is provided in Attachment 1. A markup of the affected TS page is contained in Attachment 2.

A001
NRR

The proposed change has been evaluated in accordance with 10 CFR 50.91(a)(1) using criteria in 10 CFR 50.92(c) and it has been determined that the changes involve no significant hazards consideration.

The proposed change involves no new commitments.

This amendment request is neither emergency nor exigent, but your prompt review is requested. Please contact Michael Mason at 504-739-6673 if there are any questions regarding this amendment request.

I declare under penalty of perjury that the foregoing is true and correct. Executed on October 8, 2012.

Sincerely,

DJ/sab

Attachments:
1. Analysis of Proposed Technical Specification Change
2. Proposed Technical Specification Changes (mark-up)

cc:

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Attachment 1 to

W3F1-2012-0084

Analysis of Proposed Technical Specification Change

Analysis of Proposed Waterford 3 Technical Specification Change for Restriction on Train B Dry Cooling Tower Fans Out of Service

1.0 DESCRIPTION

This letter is a request to amend Operating License NPF-38 for the Waterford Steam Electric Station, Unit 3 (Waterford 3). Entergy will be replacing the two Waterford 3 steam generators (SGs) and reactor vessel closure head (RVCH) during the 18th refueling outage (RF18) which is scheduled to commence on October 17, 2012. In order to create a construction opening for replacement of the SGs and RVCH, the construction of a temporary work platform (TWP) was necessary above the Waterford 3 Train B dry cooling towers (DCT) of the ultimate heat sink (UHS). Due to a small increase in airflow restriction to the Train B DCT while the TWP is installed in plant Modes 1 thru 4, an administrative control was determined to be appropriate to limit the number of DCT fans that can be out of service (OOS). As a result, a change to Technical Specification 3/4.7.4, "Ultimate Heat Sink," is being requested.

2.0 PROPOSED CHANGE

A one-time technical specification change is being requested to.

- Revise Waterford 3 TS Table 3.7-3 to add a note (2) to the Dry Cooling Tower Fan Requirements for the < 91°F dry bulb temperature. Note (2) states: "While the Temporary Work Platform is installed, 13 fans shall be OPERABLE for Train B of the DCT."

This technical specification change will only be applicable for the amount of time that is required for the plant to enter Mode 5 at the beginning of RF18.

Due to the limited time that this specification will be applicable, there are no TS Bases pages being proposed.

3.0 BACKGROUND

Waterford 3 is scheduled to commence RF18 on October 17, 2012 where the original SGs and RVCH will be replaced. The Waterford containment vessel contains a preexisting construction hatch barrel that will be removed for the replacement of the SGs and reactor vessel closure head. A Shield Building construction opening that coincides with the construction hatch barrel is required to access containment for the replacement activities. The construction opening is located above the Train B DCT of the UHS. The DCT To provide support for the construction equipment necessary for the removal and reinstallation of the Shield Building construction opening, a TWP is being erected above the air exhaust side of the two southernmost cells of Train B DCT. The TWP is being installed as a maintenance support structure under a 10CFR50.65(a)(4) risk assessment. The TWP is designed to either withstand Waterford 3 design basis environmental loads or to not result in damage to the Train B DCT.

The TWP decking results in a small airflow restriction to the Train B DCT discharge. This restriction had to be considered for its impact on the UHS and the Technical Specifications under Specification 3/4.7.4. A 10CFR50.59 Evaluation was prepared by Waterford 3 in 2010 which determined that the installation of the TWP over the Train B DCT continued to satisfy the design basis of the UHS and assured TS Operability with no impact on DCT fan operability. The conclusions reached in this review are applicable for the current licensing and design basis assumptions. However, subsequent to that review, a Condition Report (CR-WF3-2012-02332) was written that identified a condition associated with the Waterford 3 UHS where the potential exists for additional discharge air recirculation beyond that assumed in the Updated Final Safety Analysis Report (FSAR). The condition report assumes a dry bulb temperature penalty of 9.5°F for discharge air recirculation which is greater than that reported in the Waterford 3 Updated FSAR of 1.9°F. This increase in recirculation penalty impacts the heat dissipation capability of the DCTs. This has placed the UHS in an Operable, but Degraded or Nonconforming condition under 10CFR50, Appendix B, Criterion XVI. Under this condition, the placement of the TWP over the Train B DCT required additional analysis to show that there was no further reduction in performance margins while in this degraded/nonconforming condition.

Calculation 2012-07299 performed by Sargent & Lundy provided a comparative analysis of the Train B DCT performance with the presence of the TWP and designed airflow improvement features. The results of this analysis showed that Train B DCT performance was improved with the installation of the TWP and airflow enhancement features with all 15 DCT fans in service.

Waterford 3 TS Table 3.7-3 under TS 3/4.7.4 allows from 1 to 3 DCT fans to be OOS based on the dry bulb ambient temperature conditions. Each DCT consists of five cells having three fans in each cell. A separate evaluation was performed based upon the Sargent & Lundy calculation to determine if the comparative analysis bounds the additional fan operability allowances of TS Table 3.7-3. The results indicate that assumptions for Table 3.7-3 are bounding except when all three fans in the southernmost cell of DCT Train B would be out of service. This cell provides the greatest cooling efficiency since it was determined that there was no exhaust air recirculation for this cell with the TWP installed (including airflow enhancement features). Therefore, this DCT cell would require additional operational restriction if all three of its fans became OOS. Waterford is conservatively restricting any combination of any three Train B DCT fans that are OOS. In accordance with the guidance of NRC Inspection Manual Part 9900, Operability Determinations, a control room administrative control was established to declare Train B DCT inoperable if more than any two fans are out of service while the TWP is installed during plant Modes 1 through 4. The TWP was recently installed along with the airflow enhancement features.

Since the analyses performed for TWP installation was to address a degraded/ nonconforming condition under a maintenance rule configuration, Entergy believed that the administrative control to restrict having three Train B DCT fans being OOS did not result in an "improper or inadequate TS" in accordance with NRC Administrative Letter 98-10. The comparative analysis and supplemental evaluation were performed to show that further Train B DCT degradation would not occur while the UHS is in its current Operable, but Degraded/ Nonconforming condition with the TWP installed. These evaluations do not represent new or revised analyses to the analysis of record for the

UHS in the Updated FSAR or the TS Bases. Therefore, in lieu of a specific analysis for compliance with Waterford's licensing basis, it was concluded that the administrative controls provided a conservative action and not a direct relationship to the TS allowances under TS Table 3.7-3. In further discussion with the NRC, it was determined that the administrative control could be interpreted as a nonconservative TS.

4.0 TECHNICAL ANALYSIS

As discussed in Section 9.2.5 of the Waterford 3 Updated FSAR the UHS must provide sufficient capacity to dissipate heat from the component cooling water system (CCWS) and auxiliary component cooling water system (ACCWS) during normal operation and after a design basis accident. This assumes a single active failure coincident with a loss of offsite power and the historically worst combination meteorological condition of 102°F dry bulb temperature and associated 78°F wet bulb temperature.

The Limiting Condition for Operation (LCO) for Waterford 3 TS 3.7.4 establishes the requirements to have two independent trains of UHS cooling towers in Modes 1 through 4 to be Operable. Operability consists of a train of both DCTs and wet cooling towers (WCT). LCO 3.7.4.c establishes the number of fans required to be Operable by TS Table 3.7-3. There are 15 fans associated with each DCT train.

TS Table 3.7-3 allows a reduction in fans to be OOS based on ambient wet and/or dry bulb temperatures for the associated DCTs or WCTs to protect the design basis of the UHS. For the DCTs, the following fan requirements have been established:

Ambient Condition	**Dry Bulb ≥ 98°F**	**< 98°F Dry Bulb ≥ 91°F**	**< 91°F Dry Bulb**
Fan Requirements	15	14	12

With any of the above required UHS fan[s] inoperable comply with Action [3.7.4] d.

TS 3.7.4 Action "d" states that with any UHS fan inoperable determine the outside ambient temperature at least once every 2 hours and verify that the minimum fan requirements of Table 3.7-3 are satisfied. When the dry bulb temperature is < 91°F, the current TS fan requirements would allow up to three fans to be OOS. However, while the TWP is installed, Train B DCT will be restricted to have no more than two fans OOS. If not met, the train will be declared inoperable then the applicable shutdown LCO will be entered.

Operation with two Train B DCTs fans OOS will continue to meet its design heat load removal requirements with the installed TWP configuration. With the understanding that the comparative and supplemental analyses were performed to address the currently degraded or nonconforming condition, the control room administrative control is more conservative than those of Table 3.7-3 in TS 3.7.4. Entergy concludes that this action is appropriate to assure that Waterford 3 will not be operated outside these analyses for the duration that the TWP maintenance related configuration is installed under 10CFR50.65(a)(4) until Mode 5 is reached at the beginning of RF18.

5.0 REGULATORY ANALYSIS

5.1 Applicable Regulatory Requirements/Criteria

Entergy Operations, Inc. (Entergy) proposes to modify the requirements for the number of Train B dry cooling tower (DCT) fans needed for Operability of the ultimate heat sink (UHS) contained in Waterford Steam Electric Station, Unit 3 (Waterford 3) Technical Specification (TS) 3/4.7.4, "Ultimate Heat Sink." TS 3.7.4 requires that two UHS trains to be Operable which consists of a combination of dry and wet cooling towers. TS Table 3.7-3 provides a limitation on the number of fans that can be allowed to be out of service based upon ambient dry and wet bulb temperatures. In order to create a construction opening for replacement of the steam generators and reactor vessel closure head, the construction of a temporary work platform (TWP) is necessary above Train B of the Waterford 3 UHS DCTs. The TWP creates a small increase in airflow restriction for Train B DCT while the TWP is installed in plant Modes 1 through 4. The small airflow restriction by the TWP installation on the DCT is offset by the design airflow improvement features. However, an administrative control was determined to be appropriate to restrict no more than two Train B DCT fans out of service based upon a supplemental analysis. As a result, a change to TS Table 3.7-3 contained in TS 3/4.7.4 is requested during the time period that the TWP will be installed until entry into Mode 5 at the beginning of refueling outage 18.

In conclusion, Entergy has determined that the proposed changes do not require any exemptions or relief from regulatory requirements and does not adversely affect systems, structures, and components described in the Waterford 3 Updated Final Safety Analysis Report (FSAR).

5.2 No Significant Hazards Consideration

Entergy Operations, Inc. has evaluated whether or not a significant hazards consideration is involved with the proposed amendment 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 design basis of the UHS as discussed in Waterford 3 Updated FSAR is to assure that sufficient capacity exists in the wet and dry cooling towers to dissipate heat load from the component cooling water system (CCWS) and auxiliary component cooling water system (ACCWS) during normal operation and after a design basis accident. The action to limit the number of DCT fans to be OOS is a conservative measure that further assures the Operability of the UHS under normal and design basis accidents. The probability of an accident is not increased since the UHS will continue to be Operable under assumed design basis conditions. The consequences of an accident are still mitigated within design and accident basis assumptions since sufficient cooling will continue to be provided to remove the worst case assumed CCWS/ACCWS heat loads. Additionally, this change does not affect any accident initiators and thus does not increase the probability of an accident.

Therefore, this 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.

There are no changes to plant equipment or additional heat loads being applied to the CCWS/ACCWS and there is no change to the requirements to remove heat from the UHS. The manner in which the UHS functions is also not being changed by the proposed TS revision. The accidents assumed in the Updated FSAR are not changed and there are no new accidents created by restricting the number of fans allowed to be out of service for TS Table 3.7-3. There are also no new potential equipment malfunctions that are created from the proposed 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 margins of safety for the UHS are provided in Waterford 3 design basis calculations that support assuring that sufficient heat is removed from the CCW/ACCW systems by the UHS. The supplemental analysis performed which conservatively restricts having no more than two Train B DCT fans out of service is based upon a comparative analysis for addressing a current degraded/nonconforming condition under 10CFR50, Appendix B, Criterion XVI. The results of these analyses for restricting no more than two Train B DCT fans out of service while the TWP is installed continues to protect the margins of safety established by the UHS design basis.

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.

5.3 Environmental Considerations

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.

6.0 PRECEDENCE

Administrative actions to assure plant safety beyond that required by the technical specifications are addressed in NRC Administrative Letter 98-10. Even though this guidance results in license amendment applications that are either permanently or temporarily changed, Entergy is not citing any specific licensee application that is of a similar nature.

7.0 REFERENCES

1. Calculation 2012-07299, "Evaluation of Train B Dry Cooling Air Recirculation with Temporary Work Platform", Sargent & Lundy.

2. Waterford 3 Engineering Change Notice 38086 to Engineering Change 8427, "Containment Wall Opening for the SG/RVCH Replacement", Attachment 9, "Waterford 3 Dry Cooling Tower 'B' Train Fans Out of Service Examination"

3. NRC Inspection Manual Part 9900, "Operability Determinations & Functionality Assessments for Resolution of Degraded or Nonconforming Conditions Adverse to Quality."

4. NRC Administrative Letter 98-10, Dispositioning of Technical Specifications that are Insufficient to Assure Plant Safety, December 29, 1998.

Attachment 2 to

W3F1-2012-0084

Proposed Technical Specification Changes (mark-up)

TABLE 3.7-3

ULTIMATE HEAT SINK MINIMUM FAN REQUIREMENTS PER TRAIN

DRY COOLING TOWER

AMBIENT CONDITION	DRY BULB ≥ 98°F	< 98°F DRY BULB ≥ 91°F	< 91°F DRY BULB
Fan Requirements[1]	15	14*	12* [2]

WET COOLING TOWER

AMBIENT CONDITION	WET BULB ≥ 75°F	< 75°F WET BULB ≥ 70°F	WET BULB < 70°F
Fan Requirements[1]	8	7**	4**

(1) With any of the above required UHS fan inoperable comply with ACTION d.

* With a tornado watch in effect, all 9 DCT fans under the missile protected portion of the DCT shall be OPERABLE.

** With any WCT fan(s) out-of-service in any cell, covers must be in place on the out-of-service fan(s) or the entire cell (i.e. 4 fans) must be declared out-of-service. If four fans are out of service in the same cell, the covers do not have to be installed.

(2) While the Temporary Work Platform is installed, 13 fans shall be OPERABLE for Train B of the DCT