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

Subject: Waterford 3 SES
Docket No. 50-382
License No. NPF-38
Technical Specification Change Request NPF-38-221
Containment Spray System Allowed Outage Time Increase

Gentlemen:

In accordance with 10CFR50.90, Entergy is hereby proposing to amend Operating License NPF-38 for Waterford 3 by requesting the attached changes to the Technical Specifications (TS). The proposed change modifies TS 3.6.2.1 to extend the allowable outage time to seven days for one Containment Spray System (CSS) train inoperable. A new ACTION has been added to provide a shutdown requirement for the inoperability of two Containment Spray Systems. Additionally, the APPLICABILITY is being changed to provide an end state of MODE 4. This proposed change is a collaborative effort of participating Combustion Engineering Owners Group members based on an integrated review and assessment of plant operations, deterministic/ design basis factors and plant risk. Joint Application Report CE NPSD-1045, "Modifications To The Containment Spray System, and Low Pressure Safety Injection System Technical Specifications," referenced herein in support of this change, has been submitted to the Staff for review and approval under separate letter CEOG-95-344 dated July 10, 1995. A change to the TS Bases 3/4.6.2.1 has been included to support this change. Attachment C also contains the remainder of the Bases pages for Section 3/4.6 to include page renumbering and Bases revisions previously submitted by Letter W3F1-99-0093 dated May 20, 1999.

Additionally, this proposed change adds a Section 6.16 "Configuration Risk Management Program" to the Administrative Controls of the TS. The purpose of the

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Configuration Risk Management Program (CRMP) is to ensure that a proceduralized Probabilistic Risk Assessment-informed process is in place that assesses the overall impact of plant maintenance on plant risk. Implementation of the CRMP will enable appropriate actions to be taken or decisions to be made to minimize and control risk when performing on-line maintenance for Systems, Structures, and Components with a risk-informed Completion Time. TS 6.16 will be applicable to TS 3.6.2.1 for the CS system because the Completion Time for TS 3.6.2.1 is a "risk-informed Completion Time." The CRMP is consistent with the Amendment Application approved for San Onofre Nuclear Generating Station.

This proposed change has been evaluated in accordance with 10CFR50.91(a)(1), using the criteria in 10CFR50.92(c), and it has been determined that this request involves no significant hazards consideration. This TS and Bases change is modeled after the guidelines of NUREG 1432, "Standard Technical Specifications - Combustion Engineering Plants."

The circumstances surrounding this change do not meet the NRC's criteria for exigent or emergency review. However, Entergy is requesting NRC approval of the TS change prior to May 31, 1999 to allow on-line maintenance in support of Refuel 10, which is currently scheduled to begin September 15, 2000. Entergy Operations requests the effective date for this change be within 60 days of approval.

There are no commitments associated with this request. Should you have any questions or comments concerning this request, please contact Everett Perkins at (504) 739-6379 or Gene Wemett at (504) 739-6692.

Very truly yours,

C.M. Dugger
Vice President, Operations
Waterford 3

CMD/CWT/rtk
Attachments: Affidavit
NPF-38-221

cc: E.W. Merschoff, NRC Region IV
C.P. Patel, NRC-NRR
J. Smith
N.S. Reynolds
NRC Resident Inspectors Office
Administrator Radiation Protection Division
(State of Louisiana)
American Nuclear Insurers

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

In the matter of	)	
	)	
Entergy Operations, Incorporated	)	Docket No. 50-382
Waterford 3 Steam Electric Station	)	

AFFIDAVIT

Charles Marshall Dugger, being duly sworn, hereby deposes and says that he is Vice President Operations - Waterford 3 of Entergy Operations, Incorporated; that he is duly authorized to sign and file with the Nuclear Regulatory Commission the attached Technical Specification Change Request NPF-38-221; that he is familiar with the content thereof; and that the matters set forth therein are true and correct to the best of his knowledge, information and belief.

Charles Marshall Dugger
Vice President Operations - Waterford 3

STATE OF LOUISIANA)
) ss
PARISH OF ST. CHARLES)

Subscribed and sworn to before me, a Notary Public in and for the Parish and State above named this 29th day of July, 1999.

Notary Public

My Commission expires at death.

DESCRIPTION AND NO SIGNIFICANT HAZARDS CONSIDERATION
DETERMINATION OF PROPOSED CHANGE NPF-38-221

Summary of Proposed Changes

The proposed change requests a change to Technical Specification (TS) 3.6.2.1. The purpose of this Technical Specification Change Request is to extend the allowed outage time (AOT) to seven (7) days for the Containment Spray System for TS 3.6.2.1. A new ACTION has been added to provide a shutdown requirement for the inoperability of two Containment Spray Systems. Additionally, the APPLICABILITY is being changed to provide an end state of MODE 4. A change to the TS Bases 3/4.6.2.1 has been included to support this change. Furthermore, this proposed change adds a Section 6.16 "Configuration Risk Management Program" to the Administrative Controls of the TS and the index.

Existing Specification

See Attachment A

Proposed Marked-up Specification

See Attachment B

Proposed Specification

See Attachment C

Background

The function of the Containment Heat Removal Systems under accident conditions is to remove heat from the containment atmosphere, thus maintaining the containment pressure and temperature at acceptably low levels. The Containment Heat Removal Systems also serve to limit offsite radiation levels by reducing the pressure differential between the containment atmosphere and the external environment, thereby decreasing the driving force for fission product leakage across the containment. The two Containment Heat Removal Systems are the Containment Cooling System (CCS), and the Containment Spray System (CSS).

The CCS fan coolers are designed to operate during both normal plant operations and under Loss of Coolant Accident (LOCA) or Main Steam Line Break (MSLB) conditions. The CSS is designed to operate during accident conditions only.

The heat removal capacity of the CCS and CSS is sufficient to keep the containment temperature and pressure below design conditions for any size break up to and including double ended break of the largest reactor coolant pipe. The system is also designed to mitigate the consequences of any size break, up to and including a double ended break of a main steam line. The systems continue to reduce containment pressure and temperature and maintain them at acceptable levels post accident.

The CCS and CSS each consists of two redundant loops, and are designed such that a single failure does not degrade the systems' ability to provide the required heat removal capability. Two of four containment fan coolers and one CSS loop are powered from an independent safety-related bus. The other two containment fan coolers and CSS loop are powered from another independent safety related bus. The loss of one bus does not affect the ability of the Containment Heat Removal Systems to maintain containment temperatures and pressures below the design values.

The CSS consists of two independent and redundant loops each containing a spray pump, shutdown heat exchanger, piping, valves, spray headers and spray nozzles. The system has two modes of operation, which are:

a) The injection mode, during which the system sprays borated water from the refueling water storage pool (RWSP) into the containment, and

b) The recirculation mode, which is automatically initiated by the Recirculation Actuation Signal (RAS) after low level is reached in the RWSP. During this mode of operation, suction for the spray pumps is from the safety injection system sump.

Containment spray is automatically initiated by the containment spray actuation signal (CSAS) which is a coincidence of safety injection actuation signal (SIAS) and the high containment pressure signal. If required, the operator can manually actuate the system from the main control room.

Each CSS pump together with a CCS loop provides the flow necessary to remove the heat generated inside the containment following a LOCA or MSLB. Upon system activation the pumps are started and the borated water flows into the containment spray headers.

When low level is reached in the RWSP, sufficient water has been transferred to the containment to allow for the recirculation mode of operation. Spray pump suction is

automatically realigned to the Safety Injection System (SIS) sump upon Recirculation Actuation Signal (RAS).

During the recirculation mode, the spray water is cooled by the shutdown heat exchangers prior to discharge into the containment. The shutdown heat exchangers are cooled by the Component Cooling Water System (CCWS).

Post-LOCA pH control is provided by trisodium phosphate dodecahydrate (TSP), which is stored in stainless steel baskets located in the containment near the SIS sump intake.

Description and Safety Considerations

The current Waterford 3 TS address the Containment Spray Systems (CSS) as a portion of the Depressurization and Cooling Systems. TS 3.6.2.1 requires that two independent CSSs be OPERABLE. With one CSS inoperable, based on any component inoperability, the system must be returned to OPERABLE status within 72 hours or the plant placed in HOT STANDBY within the following 6 hours. The proposed change will allow up to seven (7) days to restore operability to a CSS. A shutdown requirement is being added if both CSSs are inoperable consistent with NUREG 1432, "Standard Technical Specifications - Combustion Engineering Plants" as modified by the Combustion Engineering Owners Group (CEOG) report. The time requirements of 1 hour and 6 hours are consistent with the requirements of the Waterford 3 TS 3.0.3.

Allowed Outage Time Extension

The CEOG report CE NPSD-1045, "Modifications To The Containment Spray System, and Low Pressure Safety Injection System Technical Specifications," explores the proposed 7 day allowed outage time utilizing current probabilistic safety assessment (PSA) methodologies to address the changes in risk when compared to current TS time limitations.

This study of the risk factors that are impacted by extending the AOT for a single CSS train from 72 hours to seven (7) days demonstrates a negligible increase in risk. In order to perform a more complete assessment of the overall change in risk, an accounting for avoided risks associated with reducing power and going to HOT SHUTDOWN must be considered. This "transition risk" is important in understanding the trade-off between shutting down the plant compared with restoring the CSS train to operability while at power.

The results of this study concluded that the change in core damage frequency due to increasing the CSS AOT from 72 hours to seven (7) days is insignificant. In addition, when transition risks are considered, it can be shown that there is insignificant change in plant risk by adding four (4) days to the CSS AOT. Thus, it is the conclusion of the study that the overall plant impact is that of a negligible increase in risk.

Change in Applicability and End State

Risk associated with plant operation in low pressure HOT STANDBY and HOT SHUTDOWN is less than at power since LOCA risks are decreased by an order of magnitude. Furthermore, at the lower power levels equipment recovery actions and use of backup equipment to provide inventory control (e.g., low pressure safety injection pump) is more likely.

If the qualified MODE 4 end state is used rather than using MODE 5 as the end state, several risk-related factors will be avoided. In particular, if operation of the shutdown cooling system can be avoided such that placing low temperature overpressure protection (LTOP) systems in operation is not required, the risk of a loss of inventory event via LTOP interfaces is avoided. Additionally, the use of this end state rather than MODE 5 avoids the potential that other systems that do not have MODE 5 requirements will be deliberately or inadvertently placed in a degraded condition while repairs are being performed on the inoperable CSS. These other systems include the steam generators. Thus, MODE 4 provides the most resource rich plant state with heat removal available via the steam generators and shutdown cooling system (with use of the steam generators preferred). The annotation of "With Reactor Coolant System pressure > 400 psia" is being removed because with the elimination of MODE 4 from TS "applicability:", this would no longer be applicable. This is also addressed in CEOG report CE NPSD-1045.

This TS and Bases change is consistent with the guidelines of NUREG 1432, "Standard Technical Specifications - Combustion Engineering Plants."

Configuration Risk Management Program

This proposed change adds a new Section 6.16, "Configuration Risk Management Program" (CRMP) to the TS. The purpose of the CRMP is to ensure that a proceduralized Probabilistic Risk Assessment-informed process is in place that assesses the overall impact of plant maintenance (planned and unplanned) on plant risk. Implementation of the CRMP will enable appropriate actions to be taken or decisions to be made to minimize and control risk when performing on-line maintenance for Systems, Structures, and Components with a risk-informed Completion Time. TS

Completion Time. TS 6.16 will be applicable to TS 3.6.2.1 for the CSS because the Completion Time for TS 3.6.2.1 is a "risk-informed Completion Time."

To ensure plant safety is maintained and monitored, Entergy will implement a Configuration Risk Management Program at Waterford 3, which is to be applicable to TS 3.6.2.1 for the CSS.

1. Purpose of CRMP

The purpose of the Configuration Risk Management Program is to ensure that a proceduralized Probabilistic Risk Assessment (PRA)-informed process is in place that assesses the overall impact of plant maintenance (planned and unplanned) on plant risk. Implementation of the CRMP will enable appropriate actions to be taken or decisions to be made to minimize and control risk when performing on-line maintenance for Systems, Structures, and Components (SSCs) with a risk-informed Completion Time.

2. Scope of CRMP

The scope of the SSCs included in the CRMP are all SSCs modeled in the plant PRA, in addition to all SSCs considered to be of High Safety Significance per the Maintenance Rule Regulatory Guide (Regulatory Guide 1.160, Rev. 2).

The CRMP includes the following components and key elements:

Components

a. Risk Assessment Tool
b. Tier 2 restrictions
c. Level 2 and External Events
d. Decision Making Process
e. Associated Procedures

Key Element 1. Implementation of CRMP

The intent of the CRMP is to implement a(3) of the Maintenance Rule (10CFR50.65) with respect to on-line maintenance for risk-informed technical specifications, with the following additions/clarifications:

a. The scope of SSCs to be included in the CRMP will be all SSCs modeled in the plant PRA, in addition to all SSCs considered to be of High Safety Significance per Regulatory Guide 1.160, Rev. 2.

b. The CRMP assessment tool is PRA informed, and may be in the form of either a risk matrix, a risk monitor, an on-line assessment, or a direct PRA assessment.

c. CRMP will be invoked as follows for:

Risk-Informed Inoperability: A risk assessment will be performed prior to entering the LCO Condition for preplanned activities. For unplanned entry into the LCO Condition, a risk assessment will be performed in an appropriate timeframe.

Additional SSC Inoperability and/or Loss of Functionality: When in the risk-informed Completion Time, if an additional high safety significant SSC becomes inoperable/non-functional, a risk assessment shall be performed in an appropriate timeframe.

d. Any applicable Tier 2 commitments apply for planned maintenance only, but will be evaluated as part of the Tier 3 assessment for unplanned occurrences.

Key Element 2. Control & Use of the CRMP Assessment Tool

a. Plant modifications and procedure changes will be monitored, assessed, and dispositioned.

- Evaluation of changes in plant configuration or PRA model features can be dispositioned by implementing PRA model changes or by the qualitative assessment of the impact of the changes on the CRMP assessment tool. This qualitative assessment recognizes that changes to the PRA take time to implement and that changes can be effectively compensated for without compromising the ability to make sound engineering judgments.

- Limitations of the CRMP assessment tool are identified and understood for each specific Completion Time extension.

b. Procedures exist for the control and application of CRMP assessment tools, including description of the process when outside the scope of the CRMP assessment tool.

Key Element 3. Level 1 Risk-Informed Assessment

The CRMP assessment tool is based on a Level 1, at power, internal events PRA model. The CRMP assessment may use any combination of quantitative and qualitative input. Quantitative assessments can include reference to a risk matrix, pre-existing calculations, or new PRA analyses.

a. Quantitative assessments should be performed whenever necessary for sound decision making.

b. When quantitative assessments are not necessary for sound decision making, qualitative assessments will be performed. Qualitative assessments will consider applicable, existing insights from quantitative assessments previously performed.

Key Element 4. Level 2 Issues/External Events

External events and Level 2 issues are treated qualitatively and/or quantitatively.

Guidance for implementing the CRMP is provided by plant procedures.

No Significant Hazards Consideration Determination

The proposed change described above shall be deemed to involve a significant hazards consideration if there is a positive finding in any of the following areas:

1. Will operation of the facility in accordance with this proposed change involve a significant increase in the probability or consequences of an accident previously evaluated?

   Response:

   The Containment Spray System (CSS) is part of the Containment Depressurization and Cooling System. Inoperable CSS components are not accident initiators in any accident previously evaluated. Therefore, this change does not involve an increase in the probability of any accident previously evaluated.

   The CSS system is primarily designed to mitigate the consequences of a Loss of Coolant Accident (LOCA) or Main Steam Line Break (MSLB). These proposed changes do not affect any of the assumptions used in the deterministic LOCA or

MSLB analyses. Hence the consequences of accidents previously evaluated do not change.

In order to fully evaluate the CSS AOT extension, probabilistic safety assessment (PSA) methods were utilized. The results of these analyses show no significant increase in the core damage frequency. These analyses are detailed in report CE NPSD-1045, "Modifications To The Containment Spray System, and Low Pressure Safety Injection System Technical Specifications".

The Configuration Risk Management Program is an Administrative Program that assesses risk based on plant status. Adding the requirement to implement this program for Technical Specification 3.6.2.1 does not affect the probability or the consequences of an accident.

Analyzed events are assumed to be initiated by the failure of plant structures, systems or components. Allowing an extended AOT or changing the APPLICABILITY does not increase the probability that a failure leading to an analyzed event will occur. The CSS components are passive until an actuation signal is generated. This change does not increase the failure probability of the CSS components. As such, the probability of occurrence for a previously analyzed accident are not significantly increased.

Therefore, the proposed change will not involve a significant increase in the probability or consequences of any accident previously evaluated.

2. Will operation of the facility in accordance with this proposed change create the possibility of a new or different type of accident from any accident previously evaluated?

Response:

The proposed change does not change the design or configuration of the plant. No new equipment is being introduced, and installed equipment is not being operated in a new or different manner. There is no change being made to the parameters within which the plant is operated, and the setpoints at which protective or mitigative actions are initiated are unaffected by this change. No alteration in the procedures which ensure the plant remains within analyzed limits is being proposed, and no change is being made to the procedures relied upon to respond to an off-normal event. As such, no new failure modes are being introduced. The proposed change will only provide the plant some flexibility in the AOT and changing the APPLICABILITY. The change does not alter assumptions made in the safety analysis and licensing basis. Therefore,

the change does not create the possibility of a new or different kind of accident from any accident previously evaluated.

Therefore, the proposed change will not create the possibility of a new or different kind of accident from any accident previously evaluated.

3. Will operation of the facility in accordance with this proposed change involve a significant reduction in a margin of safety?

Response:

The proposed changes do not affect the limiting conditions for operation or their bases used in the deterministic analysis to establish the margin of safety. PSA evaluations were used to evaluate these changes. These evaluations demonstrate that the changes involve no significant increase in risk. These evaluations are detailed in report CE NPSD-1045. The margin of safety is established through equipment design, operating parameters, and the setpoints at which automatic actions are initiated. None of these are adversely impacted by the proposed change. Sufficient equipment remains available to actuate upon demand for the purpose of mitigating a transient event. The proposed change, which allows operation to continue for up to 7 days with components inoperable in one CSS train, is acceptable based on the remaining CSS components providing 100% of the required CSS flow. The reduced potential for a self-induced plant transient resulting from unit shutdown required for a second inoperable CSS train is minimized. Therefore, the change does not involve a significant reduction in the margin of safety, and is offset by minimizing the potential for a self induced plant transient.

Therefore, the proposed change will not involve a significant reduction in a margin of safety.

Safety and No Significant Hazards Consideration Determination

Based on the above No Significant Hazards Consideration Determination, it is concluded that: (1) the proposed change does not constitute a significant hazards consideration as defined by 10CFR50.92; and (2) there is a reasonable assurance that the health and safety of the public will not be endangered by the proposed change; and (3) this action will not result in a condition which significantly alters the impact of the station on the environment as described in the NRC final environmental statement.