Mark J. Ajluni, P.E.
Nuclear Licensing Director

Southern Nuclear
Operating Company, Inc.
40 Inverness Center Parkway
Post Office Box 1295
Birmingham, Alabama 35201

Tel 205.992.7673
Fax 205.992.7885

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U. S. Nuclear Regulatory Commission
ATTN: Document Control Desk
Washington, D. C. 20555-0001

Joseph M. Farley Nuclear Plant Unit 1 & 2
Exigent Technical Specification Revision Request for TS 3.5.4
Refueling Water Storage Tank (RWST)

Ladies and Gentlemen:

Pursuant to 10 CFR 50.90 and 10 CFR 50.91(a)(6), SNC hereby requests an exigent amendment to FNP Unit 1 & 2 Technical Specifications (TS), Appendix A to Operating License Nos. NPF-2 and NPF-8. The proposed TS change contained herein would revise 3.5.4, "Refueling Water Storage Tank" such that the non-seismically qualified piping of the Spent Fuel Pool (SFP) purification system may be connected to the RWST's seismic piping by manual operation of a RWST seismically qualified boundary valve under administrative controls. The purpose of this request is to permit the recirculation, purification, and sampling of the RWST water during plant modes and conditions which require the RWST to be operable and to address the guidance found in NRC Information Notice (IN) 2012-01, "Seismic Considerations – Principally Issues Involving Tanks."

A description of the proposed changes and bases for the changes are provided in Enclosure 1 to this letter. The proposed TS and TS Bases changes are noted on annotated copies of the subject pages provided in Enclosures 2 and 3.

SNC has determined that the proposed changes meet the requirements of 10 CFR 50.92(c) and do not involve a significant hazards consideration.

This request should be processed as an exigent change to minimize the amount of time the Containment Spray is inoperable because of realignment to recirculate RWST water to ensure a representative sample is obtain and to allow use of the Boric Acid Recovery System (BARS) prior to the Farley Unit 1 outage scheduled to begin April 1, 2012. SNC requests this TS change submittal be approved by March 19, 2012.

Mr. M. J. Ajluni states he is the Nuclear Licensing Director of Southern Nuclear Operating Company, is authorized to execute this oath on behalf of Southern Nuclear Operating Company, and to the best of his knowledge and belief, the facts set forth in this letter are true.

This letter contains no NRC commitments. If you have any questions, please contact Doug McKinney at (205) 992-5982.

Respectfully submitted,

Mark J Ajluni

M. J. Ajluni
Nuclear Licensing Director

Sworn to and subscribed before me this 20th *day of* February, *2012.*

Laura Crigler
Notary Public

My commission expires: 11-2-2013

MJA/EMW

Enclosure 1: Description and Evaluation of the Proposed Change
Enclosure 2: Marked-Up Technical Specifications and Bases Pages
Enclosure 3: Clean Technical Specifications and Bases Pages

cc: Southern Nuclear Operating Company
Mr. S. E. Kuczynski, Chairman, President & CEO
Mr. D. G. Bost, Executive Vice President & Chief Nuclear Officer
Mr. T. A. Lynch, Vice President – Farley
Mr. B. L. Ivey, Vice President – Regulatory Affairs
Mr. B. J. Adams, Vice President – Fleet Operations
RTYPE: CFA04.054

U. S. Nuclear Regulatory Commission
Mr. V. M. McCree, Regional Administrator
Mr. R. E. Martin, NRR Project Manager – Farley
Mr. E. L. Crowe, Senior Resident Inspector – Farley

Joseph M. Farley Nuclear Plant Unit 1 & 2
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Enclosure 1

Description and Evaluation of the Proposed Change

Enclosure 1

Description and Evaluation of the Proposed Change

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1.0 Summary Description

This license amendment request is to amend Operating License Nos. NPF-2 and NPF-8 for Farley Nuclear Plant (FNP) Unit 1 & 2, respectively.

The proposed change involves:

> The following Note is being added to Technical Specification (TS) 3.5.4 "Refueling Water Storage Tank"
>
> "RWST piping may be unisolated from non-safety related piping intermittently under administrative controls."
>
> In addition, the Technical Specification Bases will be revised to clarify administrative controls.

2.0 Detailed Description

Historically, until February 15, 2012, FNP was periodically using the Spent Fuel Pool (SFP) Purification Loop to filter the Refueling Water Storage Tank (RWST) water while in plant conditions and modes for which the RWST was required to be operable. This alignment was utilized for RWST water mixing prior to weekly surveillance sampling of the boron concentration as required by TS surveillance requirements (SR) 3.5.4.3 and typically for removal of silica from the RWST water prior to refueling outages. It was known that this system alignment could render the RWST inoperable during a seismic event since the SFP Purification Loop consisted of non-seismically qualified piping. To maintain operability, procedure changes were made to direct manual operator action to isolate the RWST from the SFP Purification Loop in the event of a Reactor Trip or at the direction of the Shift Supervisor. After reviewing Information Notice (IN) 2012-01, "Seismic Considerations- Principally Issues Involving Tanks," Southern Nuclear Operating Company (SNC) concluded that manual actions should not be credited for this purpose without prior NRC approval and subsequently discontinued this practice. However, the original FNP design of the RWST system affords no other way to re-circulate the RWST through seismically qualified piping without making an Engineering Safety Features (ESF) train inoperable to meet TS sampling requirements.

It is operationally desirable to take suction from the RWST through an existing tank drain line to facilitate RWST recirculation through the SFP Purification Loop and a non-seismically qualified reverse osmosis system for the purposes of boron sampling and refueling water filtration. To accommodate this recirculation of the RWST water while the RWST is required to be operable, this License Amendment Request (LAR) proposes to allow the crediting of operator action to close a seismically qualified manual ASME code boundary valve connected to the subject RWST piping should a reactor trip occur or the Shift Supervisor directs the valve to be closed, thereby isolating the RWST from non-seismically qualified piping and maintaining its seismic qualification and operability.

A non-seismically qualified safety-related reverse osmosis system, identified as the Boric Acid Recovery System (BARS), is used to remove silica from the RWST water. Removal of silica is necessary to maintain Reactor Coolant System (RCS) chemistry within fuel requirements and to improve water clarity during refueling to prevent delays in fuel movement and facilitates safe handling of fuel. At FNP, the most practical method of ensuring RWST inventory is maintained, should a seismic event occur while removing silica from the RWST water is to credit operator action for manually isolating the BARS piping from the RWST piping. Because the RWST water will also be required to be re-circulated through the SFP Purification Loop every seven days to perform required surveillance sampling of its boron concentration, the proposed change will also credit similar operator action during this system alignment as well.

During plant operations in Modes 1 through 4, the RWST is required to be operable to maintain a borated water supply for accident mitigation purposes. The RWST is aligned to the suction of the residual heat removal pumps and the containment spray pumps during normal operation (Modes 1 through 4). The suction of the charging pumps is automatically aligned to the RWST on a safety injection signal. During refueling operation (Modes 5 and 6), the RWST is required to be operable as a borated water supply should the boric acid storage system not be operable. The contents of the RWST are also used to flood the refueling cavity during refueling operation. The water in the RWST is borated to a concentration sufficient to ensure that shutdown margin is maintained when the reactor is at cold shutdown conditions should RWST water be added to the reactor.

The SFP Purification Loop is a subsystem of the spent fuel pool cooling system that is connected to portions of the RWST piping. The SFP Purification Loop piping is non-safety grade and not seismically qualified. During an evaluation of a seismic event, the failure of the non-seismic SFP Purification Loop piping must be considered. Such a failure could potentially result in a loss of RWST inventory should the ASME code boundary valve between the RWST and the SFP Purification Loop be open with the SFP Purification Loop aligned to the RWST. The primary function of the SFP Purification Loop is to maintain the optical clarity of the spent fuel pool water avoiding delays and providing for safer handling of the fuel. This system is also used to purify the refueling water in the refueling canal and the RWST. Prior to refueling outages, the SFP Purification Loop is used to filter the RWST prior to filling the refueling cavity. Further, the SFP Purification Loop is also used to re-circulate the RWST water to ensure a representative sample for the required boron concentration surveillance.

The surveillance testing of the RWST boron concentration requires the sampling of the tank contents every seven days. In order to have proper mixing of the tank for accurate sample results, the tank must be re-circulated for approximately one hour. The alignment for recirculation requires unisolating the RWST piping from the SFP Purification Loop which is non-safety related and not seismically qualified. In order to perform this alignment, it is operationally desirable to credit operator action to close the RWST piping's seismically qualified manual code

boundary valve in the event of a seismic event, thereby maintaining the RWST's seismic qualification.

The non-seismically qualified skid-mounted BARS system is to be used to reduce RWST silica concentration levels during power operation (a plant mode for which the RWST is required to be operable). Circulation of the RWST contents through the SFP Purification Loop is required when placing BARS in service. The BARS system is expected to be used for approximately one month during each Unit's cycle to reduce RWST silica concentration.

Prior to February 15, 2012, interconnection of the SFP Purification Loop and the RWST piping was allowed under administrative controls while the RWST was required to be operable for the filtration and demineralization of the RWST inventory. To justify this configuration, operator action to close the seismically qualified manual code boundary valve was credited should a Loss of Coolant Accident (LOCA), Main Steam Line Break (MSLB), or seismic event occur. This operator action was intended to prevent a loss of RWST inventory below the Technical Specification (TS) limits if the postulated seismic event caused a system pressure boundary failure of the SFP Purification Loop piping while the code boundary valve was open. This closure of the subject boundary valve can be taken in sufficient time to ensure that the TS required volume of water is maintained in the RWST and the injection of sufficient coolant can be performed following a Reactor trip or at the direction of the Shift Supervisor.

Refueling Water Purification System

The TS required RWST volume of water must be maintained to mitigate the consequences of a LOCA or MSLB event concurrent with a seismic event when the plant is in Modes 1 through 4. This requirement applies regardless of the RWST's possible alignment to the SFP Purification Loop.

As part of the surveillance requirements to verify RWST operability, weekly boron samples are required to be taken and analyzed. In order to obtain representative samples, the tank contents must be sufficiently re-circulated to have thorough mixing. The SFP Purification Loop has been used in the past at FNP to perform this mixing. To allow this historic use of the SFP Purification Loop while the RWST was required to be operable; credit was taken for operator action to close the code boundary valve between the RWST and the SFP Purification Loop following a LOCA or MSLB coincident with a seismic event.

If the existing SFP Purification Loop is not used, then in order to take a sample representative of the tank, the Containment Spray (CS) or Residual Heat Removal (RHR) systems must be used. Using these systems for this purpose can result in alignment issues that make them inoperable while they re-circulate RWST water.

For future plant operations under the proposed revision to the TS, by similarly crediting this operator action, FNP may continue to use the SFP Purification Loop in plant Modes 1 through 4 to facilitate the proper mixing necessary for accuracy

in the required boron concentration surveillance. This determination of boron concentration is in turn necessary to provide the assurance that the RWST water is capable of fulfilling its function of accident mitigation.

Temporary Reverse Osmosis Skid Used To Support RWST Cleanup

The RWST silica concentrations have been increasing due to silica migration from the spent fuel pool to the reactor cavity during refueling outage fuel transfer operations. Increasing silica levels in the RWST mix with reactor coolant each refueling outage in the reactor cavity, thus increasing silica concentrations in the reactor coolant system (RCS). The RCS silica concentration limit is less than or equal to 1 ppm based on current Westinghouse fuel warranty limits. Previously, FNP removed silica by use of the BARS system. Silica can also be reduced using dilution however this creates large quantities of liquid radioactive waste that must be processed. Also, the removal of silica from the RWST is preferred to removing silica from the spent fuel pool. Industry experience has shown that removal of silica from the spent fuel pool leads to further deterioration of the Boroflex material in the storage racks and possibly a return to even higher silica concentrations in the spent fuel pool.

Further, pre-refueling outage treatment of the RWST contents ensures that refueling water clarity requirements are maintained for fuel transfer and inspection purposes. The water clarity is both a personnel and equipment safety consideration.

For future plant operations under the proposed revision to the TS, by similarly crediting the operator action to close the manual code boundary valve should a Reactor Trip occur or the Shift Supervisor direct the closure, FNP may continue to use the SFP Purification Loop in plant Modes 1 through 4 to filter the RWST contents through the in-series spent fuel pool demineralizer and SFP filter. This processing of the RWST contents through the SFP Purification Loop will continue to enhance water quality and enable the removal of radiological impurities to facilitate maintenance activities and promote radiation exposure rates which are within 10 CFR 20 limits and As Low As Reasonably Achievable (ALARA).

3.0 Technical Evaluation

Extracted from Updated Final Safety Analysis Report (FSAR) 6.2.2.2.1 Containment Spray System

> Refueling Water Storage Tank
>
> The RWST serves as a source of emergency borated cooling water for injection. It is normally used to fill the refueling canal for refueling operations. However, during all other plant operating periods, it is aligned to the suction of the residual heat removal pumps and the containment spray pumps. The charging pumps are aligned to the suction of the RWST upon receipt of the Safety Injection Signal. The capacity of the tank is 66,850 ft3. The tank is fabricated from stainless steel and is designed and

constructed in accordance with Code ASME III, Class 2. Water in the tank is borated to a concentration which assures reactor shutdown by at least 10% Δk/k, when all RCC assemblies are inserted and the core cooled down for refueling.

Spent Fuel Pool Cooling and Purification System

The Spent Fuel Pool Cooling and Purification System (SFPCPS) is designed to remove the decay heat generated by stored fuel assemblies from the spent fuel pool water. This cooling is accomplished by taking high temperature water from the pool, pumping it through a heat exchanger, and returning cooled water to the pool. A secondary function of the SFPCPS is to clarify and purify the spent fuel pool, transfer canal, and refueling water. A portion of the hot water discharged by the pump can be diverted through a water cleanup system and returned to the pool. The purification function of the SFPCPS does not meet Seismic Category 1 requirements.

This qualitative assessment addresses the proposed change to TS 3.5.4, "Refueling Water Storage Tank." Currently, under the interpretation of seismic qualification of systems provided by IN 2012-01, TS 3.5.4, "Refueling Water Storage Tank" has no allowance for re-circulating the contents of the RWST for the purposes of facilitating sampling or the removal of silica during Modes 1 through 4 when the RWST is required to be operable. The following justification is presented for the acceptability of the proposed change to the TS which provides for operator action to close the seismically qualified manual code boundary valve should a LOCA, MSLB, or seismic event occur to assure RWST operability when re-circulating the tank through non-safety related piping.

Surveillance Requirement (SR) 3.5.4.2 requires sampling of the RWST water every seven days to verify boron concentrations. In order to receive an accurate sample, the tank contents must be re-circulated to ensure proper mixing of the tank contents. However, the RWST was not designed to be re-circulated through seismically qualified piping for this purpose of sampling.

The RWST can be aligned through the containment spray system to accomplish this re-circulation. However, this alignment renders the containment spray train inoperable, requiring voluntary entry into a 72 hour Required Action Statement. Routinely aligning in this manner is non-conservative since it requires a train of ESF equipment be made inoperable for a period of approximately three hours and thereby unavailable to mitigate the consequences of an accident. Thus, this option for re-circulation presents an undesirable potential challenge to the design of the ESF as described in the UFSAR.

As an alternative to rendering an ESF train inoperable, the RWST can be re-circulated by using the SFP Purification Loop. However, this system alignment circulates the RWST water through non-safety related piping. In order to maintain operability of the RWST, timely operator action would be utilized to close a single seismically qualified code manual boundary valve. SNC prefers this

method due to the ability to maintain all ESF equipment operable and available during the alignment.

SNC has confidence in the successful completion of manual actions due to the extensive training program completed for all system operators. Detailed procedures have been developed to further ensure successful performance of this task. The procedures require the individual designated to perform the manual action to be briefed. This brief covers the method of communication the operator will have with the control room, the limitations on movement of the assigned operator (remain within the Auxiliary Building), the location of the valve to be manipulated, ingress and egress path, and the initiating conditions which required securing the valve. In addition, the control room will monitor the RWST level during operation of the BARS system and during RWST re-circulation.

A combination of design and administrative controls ensure that both the SFP Purification Loop and BARS systems maintain RWST boron concentration and water volume requirements whenever the contents of the RWST are processed through these systems. Prior to initiating BARS system operation, the RWST volume margin will be verified to be adequate to compensate for postulated BARS system line losses and process losses which may occur through the BARS system reject waste stream. Further, the waste stream losses will be monitored throughout BARS system operation. The BARS system is designed to maintain a high boron recovery rate. Potential boron dilution during use of the BARS system is prevented through verifying RWST boron margin prior to BARS system operation, calculating the estimated dilution, and monitoring the BARS system boron recovery rate by grab samples taken from the system inlet and outlet points approximately one hour after placing it in service and at least every 48 hours thereafter. Following each operation of the BARS system, RWST sampling will be performed to verify the RWST boron concentration, and boron additions will be made to the RWST, accordingly.

Documentation Of Engineering Judgment (DOEJ) DOEJ-FRC092028601-M001, which was developed as part of the Request for Engineering Review (RER) C092028601, "Refueling Water Purification Interface with RWST Review," determined that if the SFP Purification Loop line breaks during normal operations, the RWST volume will not drop below the TS minimum for approximately 35 minutes. However, the proposed manual operator action would have the operator stationed inside the seismically qualified Auxiliary Building and within ten minutes of the boundary valve allowing it to be isolated well within the 35 minutes, thus assuring the minimum RWST water inventory will be maintained. The DOEJ further evaluated the case of a purification line break concurrent with a large break LOCA. In this case, the volume loss due to the SFP Purification Loop line break would not affect the ability of the RWST to perform its safety function since the bulk of its volume would reach the containment sump and be available for the low pressure recirculation mode of core cooling. Regardless of this acceptable conclusion, the proposed operator action would still be performed to maximize the available inventory to mitigate the accident. The final scenario evaluated by the DOEJ was a small break LOCA concurrent with a SFP Purification Loop line break. In this more slowly evolving

scenario, if the manual operator action is performed as proposed the loss of RWST inventory due to the purification line break again would not affect the ability of the RWST to perform its safety function.

The failure of the boundary valve to close would be considered a credible single failure. Per 10CFR50 Appendix A, a single failure is defined as an occurrence which results in the loss of capability of a component to perform its intended safety function. Fluid and electric systems are considered to be designed against an assumed single failure if neither (1) a single failure of any active component nor (2) a single failure of a passive component results in a loss of capability of the system to perform its safety function. The active failure in a fluid system means (1) the failure of a component which relies on mechanical movement for its operation to complete its intended function on demands, or (2) an unintended movement of the component.

If the valve was first tested before placing in service by opening and then closing the valve and monitoring RWST level or other reliable indication, it could be determined that the common failure mechanisms are not present. Therefore, it would be highly unlikely that another unforeseen failure of the valve to close would occur. Consequently, the valve should be counted on to reliably perform its function when needed. Guidance to perform a pre-operational test would be included in the procedure to perform every time the RWST is unisolated from the SFP purification system. To address any unintended movement, plant procedures require the valve to be sealed closed when not in use.

4.0 Regulatory Evaluation

4.1 Significant Hazards Consideration

The proposed change adds a Note to the FNP Unit 1 & 2 Technical Specifications 3.5.4, "Refueling Water Storage Tank," to allow administrative control of the seismic RWST/non-seismic SFP Purification Loop interface.

SNC has evaluated whether or not a significant hazards consideration is involved with the proposed amendment(s) by evaluation of the three standards set forth in 10 CFR 50.92, "Issuance of Amendment," as discussed below:

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

Response: No. The use of the BARS system and the SFP Purification Loop to re-circulate the RWST does not involve any changes or create any new interfaces with the reactor coolant system or main steam system piping. Therefore, the connection of the SFP Purification Loop to the RWST and use of the BARS system would not affect the probability of these accidents occurring.

Neither the SFP Purification Loop nor the BARS system are credited for safe shutdown of the plant or accident mitigation. A combination of design and administrative controls ensure that both the SFP Purification Loop and BARS systems maintain RWST boron concentration and water volume requirements whenever the contents of the RWST are processed through these systems. RWST volume margin will be verified to be adequate to compensate for postulated BARS system line losses and process losses which may occur through the BARS system reject waste stream. The BARS system is designed to maintain a high boron recovery rate. Potential boron dilution during use of the BARS system is prevented through verifying RWST boron margin prior to BARS system operation and monitoring the BARS system boron recovery rate by grab samples taken from the system inlet and outlet points approximately one hour after placing it in service and at least every 48 hours thereafter. Following each operation of the BARS system, RWST sampling will be performed to verify the RWST boron concentration, and boron additions will be made to the RWST, accordingly.

Since the RWST will continue to perform its safety function and meet all surveillance requirements, overall system performance is not affected, assumptions previously made in evaluating the consequences of the accident are not altered, and the consequences of the accident are not increased.

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

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

Response: No. Contingent upon manual operator action as described above, a SFP Purification Loop line break will not result in a loss of the RWST safety function. Similarly, an active or passive failure in the BARS system will not result in loss of the RWST safety function. Adequate RWST volume and boron margin will be verified prior to BARS system operation. The BARS system boron recovery rate will be monitored by grab samples taken of the system inlet and outlet one hour after placing the system in service and at least every 48 hours thereafter. In addition, the DOEJ evaluation supports that the operator action can be taken within sufficient time to isolate the BARS system from the RWST during postulated accidents.

Calculations were reviewed for potential internal flooding from this non-seismic pipe break, and it was concluded that the break would have no affect on safe shutdown equipment in the affected areas.

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 amendment involve a significant reduction in a margin of safety?

Response: No. Neither the SFP Purification Loop nor the BARS systems are credited for safe shutdown of the plant or accident mitigation. Adequate RWST volume and boron margin will be verified prior to BARS system operation and timely operator action can be taken to isolate the BARS system from the RWST. The BARS system waste stream losses will also be monitored throughout BARS system operation.

The potential boron dilution of the RWST inventory during tank processing through the SFP Purification Loop is minimized by administratively maintaining closed all manual boundary valves within the SFP Purification Loop while the SFP Purification Loop is connected to the RWST. The BARS system is designed to maintain a high boron recovery rate, which will be verified through testing prior to initial start up of the system. Potential boron dilution during every operation of the BARS system is prevented through verification of the RWST boron margin prior to BARS system operation, calculating the expected rate of dilution, and monitoring the BARS system boron recovery rate by grab samples taken from the system inlet and outlet at least every 48 hours. Following operation of the BARS system, RWST sampling will be performed to verify the RWST boron concentration, and boron additions to the RWST will be made accordingly. These measures will ensure the TS minimum RWST boron concentration is available to mitigate the short term consequences of a small break LOCA, large break LOCA, or MSLB accident.

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

Based on the above, SNC concludes that the proposed amendment does not involve a 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.

4.2 Applicable Regulatory Requirements/Criteria

The changes proposed by this license amendment request have been evaluated based on the following criteria:

- Information Notice (IN) 2012-01, "Seismic Considerations – Principally Issues Involving Tanks."

• Generic Design Criterion 2 requires that structures, systems, and components important to safety be designed to withstand the effects of natural phenomena such as earthquakes, tornadoes, hurricanes, floods, tsunami, and seiches without the loss of the capability to perform their safety functions.

• Generic Design Criterion 35—Emergency core cooling. A system to provide abundant emergency core cooling shall be provided. The system safety function shall be to transfer heat from the reactor core following any loss of reactor coolant at a rate such that (1) fuel and clad damage that could interfere with continued effective core cooling is prevented and (2) clad metal-water reaction is limited to negligible amounts.

Suitable redundancy in components and features, and suitable interconnections, leak detection, isolation, and containment capabilities shall be provided to assure that for onsite electric power system operation (assuming offsite power is not available) and for offsite electric power system operation (assuming onsite power is not available) the system safety function can be accomplished, assuming a single failure.

4.3 Conclusions

In conclusion, based on the considerations discussed above, (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 amendment will not be inimical to the common defense and security or to the health and safety of the public.

5.0 Environmental Consideration

SNC has evaluated the proposed amendment change and determined the changes do not involve (i) a significant hazards consideration, (ii) a significant change in the types or a significant increase in the amounts of any effluents 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 References

1. Farley FSAR, Rev. 24, January 2012, Sections: 3.1, 6.3.2.17, 6.3.3.12, 9.1.3
2. Farley Unit 1 & 2 Technical Specifications, Rev. 186/181, Section 3.5.4, "Refueling Water Storage Tank"
3. Farley Unit 1 and 2 Environmental Protection Plans, Rev. 90/83, Including Appendix "B".
4. DOEJ-FRC0902028601-M001, Version 2.0, "Effect of a Refueling Water Purification Line Break on RWST Level, ECCS Pumps NPSH and ECCS Screen Vortexing"
5. RER C092028601, Sequence 2.0, "Refueling Water Purification Interface with RWST Review"
6. BM-99-1932-001, "Internal Flooding Assessment."

Joseph M. Farley Nuclear Plant Unit 1&2
Exigent Technical Specification Revision Request for TS 3.5.4
Refueling Water Storage Tank (RWST)

Enclosure 2

Marked-Up Technical Specifications and Bases Pages

3.5 EMERGENCY CORE COOLING SYSTEMS (ECCS)

3.5.4 Refueling Water Storage Tank (RWST)

LCO 3.5.4 The RWST shall be OPERABLE.

----------NOTE----------
RWST piping may be unisolated from non-safety related piping intermittently under administrative controls.

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

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. RWST boron concentration not within limits. OR RWST borated water temperature not within limits.	A.1 Restore RWST to OPERABLE status.	8 hours
B. RWST inoperable for reasons other than Condition A.	B.1 Restore RWST to OPERABLE status.	1 hour
C. Required Action and associated Completion Time not met.	C.1 Be in MODE 3. AND C.2 Be in MODE 5.	6 hours 36 hours

APPLICABLE SAFETY ANALYSES (continued)

injected water for the small break LOCA and higher containment pressures due to reduced containment spray cooling capacity. For the containment response following an MSLB, the lower limit on boron concentration and the upper assumption on RWST water temperature are used to maximize the total energy release to containment.

The RWST satisfies Criterion 3 of 10 CFR 50.36(c)(2)(ii).

LCO

The RWST ensures that an adequate supply of borated water is available to cool and depressurize the containment in the event of a Design Basis Accident (DBA), to cool and cover the core in the event of a LOCA, to maintain the reactor subcritical following a DBA, and to ensure adequate level in the containment sump to support ECCS and Containment Spray System pump operation in the recirculation mode.

To be considered OPERABLE, the RWST must meet the water volume, boron concentration, and temperature limits established in the SRs.

APPLICABILITY

In MODES 1, 2, 3, and 4, RWST OPERABILITY requirements are dictated by ECCS and Containment Spray System OPERABILITY requirements. Since both the ECCS and the Containment Spray System must be OPERABLE in MODES 1, 2, 3, and 4, the RWST must also be OPERABLE to support their operation. Core cooling requirements in MODE 5 are addressed by LCO 3.4.7, "RCS Loops — MODE 5, Loops Filled," and LCO 3.4.8, "RCS Loops — MODE 5, Loops Not Filled." MODE 6 core cooling requirements are addressed by LCO 3.9.4, "Residual Heat Removal (RHR) and Coolant Circulation — High Water Level," and LCO 3.9.5, "Residual Heat Removal (RHR) and Coolant Circulation — Low Water Level.

ACTIONS

Insert 1

A.1

With RWST boron concentration or borated water temperature not within limits, they must be returned to within limits within 8 hours. Under these conditions neither the ECCS nor the Containment Spray

(continued)

Insert 1:

The ACTIONS are modified by a Note that allows RWST piping flow paths to be unisolated from non-safety related piping intermittently under administrative controls. These administrative controls consist of (1) Stroking valve Q1(2)G31V010 open and then closed prior to placing the Spent Fuel Pool Purification System in service (2) establishing a designated operator to control the valve and (3) establishing a preplanned communication method between the operator and Shift Supervisor. In this way, the flow path can be rapidly isolated in the event of a Reactor Trip or at the direction of the Shift Supervisor. This Note is to allow recirculation and sampling of the RWST through the Spent Fuel Pool Purification System for filtering as well as operation of the reverse osmosis system to remove silica.

Joseph M. Farley Nuclear Plant Unit 1&2
Exigent Technical Specification Revision Request for TS 3.5.4
Refueling Water Storage Tank (RWST)

Enclosure 3

Clean Technical Specifications and Bases Pages

3.5 EMERGENCY CORE COOLING SYSTEMS (ECCS)

3.5.4 Refueling Water Storage Tank (RWST)

LCO 3.5.4 The RWST shall be OPERABLE.

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

ACTIONS

---NOTE---
RWST piping may be unisolated from non-safety related piping intermittently under administrative controls.

CONDITION	REQUIRED ACTION		COMPLETION TIME
A. RWST boron concentration not within limits. OR RWST borated water temperature not within limits.	A.1	Restore RWST to OPERABLE status.	8 hours
B. RWST inoperable for reasons other than Condition A.	B.1	Restore RWST to OPERABLE status.	1 hour
C. Required Action and associated Completion Time not met.	C.1 AND	Be in MODE 3.	6 hours
	C.2	Be in MODE 5.	36 hours

APPLICABLE SAFETY ANALYSES (continued)

injected water for the small break LOCA and higher containment pressures due to reduced containment spray cooling capacity. For the containment response following an MSLB, the lower limit on boron concentration and the upper assumption on RWST water temperature are used to maximize the total energy release to containment.

The RWST satisfies Criterion 3 of 10 CFR 50.36(c)(2)(ii).

LCO

The RWST ensures that an adequate supply of borated water is available to cool and depressurize the containment in the event of a Design Basis Accident (DBA), to cool and cover the core in the event of a LOCA, to maintain the reactor subcritical following a DBA, and to ensure adequate level in the containment sump to support ECCS and Containment Spray System pump operation in the recirculation mode.

To be considered OPERABLE, the RWST must meet the water volume, boron concentration, and temperature limits established in the SRs.

APPLICABILITY

In MODES 1, 2, 3, and 4, RWST OPERABILITY requirements are dictated by ECCS and Containment Spray System OPERABILITY requirements. Since both the ECCS and the Containment Spray System must be OPERABLE in MODES 1, 2, 3, and 4, the RWST must also be OPERABLE to support their operation. Core cooling requirements in MODE 5 are addressed by LCO 3.4.7, "RCS Loops — MODE 5, Loops Filled," and LCO 3.4.8, "RCS Loops — MODE 5, Loops Not Filled." MODE 6 core cooling requirements are addressed by LCO 3.9.4, "Residual Heat Removal (RHR) and Coolant Circulation — High Water Level," and LCO 3.9.5, "Residual Heat Removal (RHR) and Coolant Circulation — Low Water Level.

ACTIONS

The ACTIONS are modified by a Note that allows RWST piping flow paths to be unisolated from non-safety related piping intermittently under administrative controls. These administrative controls consist of (1) Stroking valve Q1(2)G31V010 open and then closed prior to placing the Spent Fuel Pool Purification System in service (2) establishing a designated operator to control the valve and (3) establishing a preplanned communication method between the operator and Shift Supervisor. In this way, the flow path can be rapidly isolated in the event of a Reactor Trip or at the direction of the Shift Supervisor. This Note is to allow recirculation and sampling of the RWST through the Spent Fuel Pool Purification System for filtering as well as operation of the reverse osmosis system to remove silica.

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