

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

Application of SOUTHERN CALIFORNIA)	
EDISON COMPANY, <u>ET AL.</u> for a Class 103)	Docket No. 50-361
License to Acquire, Possess, and Use)	
a Utilization Facility as Part of)	Amendment Application
Unit No. 2 of the San Onofre Nuclear)	No. 106
Generating Station)	

SOUTHERN CALIFORNIA EDISON COMPANY, ET AL. pursuant to 10 CFR 50.90, hereby submit Amendment Application No. 106.

This amendment application consists of Proposed Technical Specification Change No. NPF-10-339 to Facility Operating License No. NPF-10. Proposed Technical Specification Change No. NPF-10-339 is a request to revise San Onofre Unit 2 Technical Specification 3/4.7.1.2 to identify that the Auxiliary Feedwater System (AFW) performs a dual function in an event which requires steam generator isolation and secondary heat removal. A new section is being added to address the operation of the AFW system when the steam generators are being used for decay heat removal. Additionally, a clarification to Surveillance Requirements 4.7.1.2.1.b.1 and 4.7.1.2.1.b.2 is provided to more accurately depict the functional testing performed every refueling outage to confirm that the AFW pumps will start upon receipt of an EFAS.

Currently, Technical Specification 3/4.7.1.2 only contains operability requirements to ensure emergency feedwater flow. No operability requirements exist for the isolation function of the Auxiliary Feedwater system valves. Therefore, entry into Technical Specification 3.0.3 is required whenever the ability to isolate the auxiliary feedwater system from a steam generator is compromised.

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Subscribed on this 17th day of JUNE, 1991.

Respectfully submitted,

SOUTHERN CALIFORNIA EDISON COMPANY

By: *Harold B. Ray*
Harold B. Ray
Senior Vice President

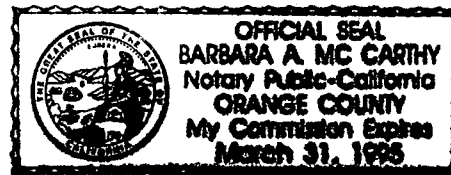
State of California

County of ORANGE

On JUNE 17, 1991 before me, BARBARA A. MCCARTHY / NOTARY PUBLIC,
personally appeared HAROLD B. RAY, personally known
to me to be the person whose name is subscribed to the within instrument and
acknowledged to me that he executed the same in his authorized capacity, and
that by his signature on the instrument the person, or the entity upon behalf
of which the person acted, executed the instrument.

WITNESS my hand and official seal.

Signature *Barbara A. McCarthy*



James A. Beoletto
Attorney for Southern
California Edison Company

By: *James A. Beoletto*
James A. Beoletto

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Application of SOUTHERN CALIFORNIA)	
EDISON COMPANY, <u>ET AL.</u> for a Class 103)	Docket No. 50-362
License to Acquire, Possess, and Use)	
a Utilization Facility as Part of)	Amendment Application
Unit No. 3 of the San Onofre Nuclear)	No. 91
Generating Station)	

SOUTHERN CALIFORNIA EDISON COMPANY, ET AL. pursuant to 10 CFR 50.90, hereby submit Amendment Application No. 91.

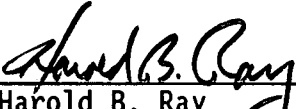
This amendment application consists of Proposed Technical Specification Change No. NPF-15-339 to Facility Operating License No. NPF-15. Proposed Technical Specification Change No. NPF-15-339 is a request to revise San Onofre Unit 3 Technical Specification 3/4.7.1.2 to identify that the Auxiliary Feedwater System (AFW) performs a dual function in an event which requires steam generator isolation and secondary heat removal. A new section is being added to address the operation of the AFW system when the steam generators are being used for decay heat removal. Additionally, a clarification to Surveillance Requirements 4.7.1.2.1.b.1 and 4.7.1.2.1.b.2 is provided to more accurately depict the functional testing performed every refueling outage to confirm that the AFW pumps will start upon receipt of an EFAS.

Currently, Technical Specification 3/4.7.1.2 only contains operability requirements to ensure emergency feedwater flow. No operability requirements exist for the isolation function of the Auxiliary Feedwater system valves. Therefore, entry into Technical Specification 3.0.3 is required whenever the ability to isolate the auxiliary feedwater system from a steam generator is compromised.

Subscribed on this 17th day of JUNE, 1991.

Respectfully submitted,

SOUTHERN CALIFORNIA EDISON COMPANY

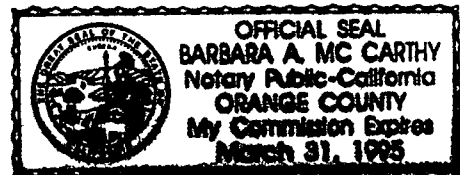
By: 
Harold B. Ray
Senior Vice President

State of California
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acknowledged to me that he executed the same in his authorized capacity, and
that by his signature on the instrument the person, or the entity upon behalf
of which the person acted, executed the instrument.

WITNESS my hand and official seal.

Signature 



James A. Beoletto
Attorney for Southern
California Edison Company

By: 
James A. Beoletto

DESCRIPTION AND SAFETY ANALYSIS
OF PROPOSED CHANGE NPF-10/15-339

This is a request to revise Technical Specification 3/4.7.1.2, "Auxiliary Feedwater System."

Existing Specifications and Bases

Attachment A - Unit 2
Attachment B - Unit 3

Proposed Specifications and Bases

Attachment C - Unit 2
Attachment D - Unit 3

Description

Technical Specification (TS) 3/4.7.1.2, "Auxiliary Feedwater System," provides the limiting condition for operation, actions, and surveillance requirements for the Auxiliary Feedwater (AFW) system. Southern California Edison (SCE) proposes to revise the specification to address the function of the auxiliary feedwater isolation and control valves. Several Licensee Event Reports (LERs) have resulted from the lack of Technical Specification operability requirements for these valves to isolate the affected steam generator upon receiving a Main Steam Isolation Signal (MSIS).

AFW valves open as a result of a Steam Generator (SG) level control signal generated within the Emergency Feedwater Actuation System (EFAS) input parameter logic. In addition, these valves close as a result of an MSIS. Since the EFAS signal overrides the MSIS, during certain planned maintenance activities or upon EFAS subsystem de-energization, the valves are not available to close on an MSIS and thus are unable to meet the MSIS response time required by TS 3.3.2. Neither TS 3.3.2, nor any other TSs provide an Action Statement for the condition of an EFAS override of an MSIS. Thus, TS 3.0.3 is invoked, which constitutes a TS violation and results in a LER.

Technical Specification 3/4.7.1.2 only contains operability requirements to ensure emergency feedwater flow. No operability requirements exist for the isolation function of the Auxiliary Feedwater system valves. Therefore, entry into Technical Specification 3.0.3 is required whenever the ability to isolate the auxiliary feedwater system from a steam generator is compromised. The revision explicitly defines the flow path requirements and recognizes the dual function of some auxiliary feedwater system valves of either isolating or providing a flow path to a steam generator. The proposed change includes specific actions to be performed when these components are inoperable. The actions allow exceptions in situations where the dual nature of the valves would constitute entry into action statements during ESFAS functional testing. An operational feature allowing the crosstie valves between the flow paths of the motor-driven AFW valves to be open in Mode 3 is also addressed.

Additionally, this change provides clarification of the existing operability requirements of the AFW system when the steam generators are being used for decay heat removal. As a result, the existing AFW TS section is renumbered to be 3/4.7.1.2.1 and the new section is 3/4.7.1.2.2. The new section addresses the operation of the AFW system in mode 4.

The proposed change also modifies Surveillance Requirement 4.7.1.2.1.b.2 to clarify that upon receipt of an EFAS test signal only the motor driven AFW pumps actually start and the steam inlet valves for the turbine-driven AFW pump are observed to open.

Discussion

The Plant Protection System (PPS) processes plant parameter signals to the Reactor Protection System (RPS) and Engineered Safety Feature Actuation System (ESFAS). These systems are configured to prevent a RPS or full ESFAS actuation when any single power supply or channel is removed from service. Components powered by the power supplies are designed to actuate to their safety related state when the power supplies are de-energized.

The Emergency Feedwater Actuation System (EFAS) is an ESFAS designed to automatically initiate Auxiliary Feedwater (AFW) system flow to the Steam Generator (SG) when the SG level is low resulting from a loss of main feedwater. The Main Steam Isolation System (MSIS) is an ESFAS designed to isolate steam and feedwater lines to mitigate the consequences of a Main Steam Line Break (MSLB) or Main Feedwater Line Break (MFLB) accident by isolating the affected SG.

AFW flow to the SGs is controlled by two trains of valves (5 on each train) on discharge piping from three AFW pumps. These AFW valves have three safety functions associated with this design: 1) they close on an MSIS, 2) they open on an EFAS; and 3) they cycle open/closed to control level of the intact SG(s) after an EFAS has initiated. An EFAS signal or a level control signal will override an MSIS signal to the set of valves providing flow to the intact SG.

The removal from service or the loss of one or more power supplies associated with the same PPS channel will not cause an RPS or ESFAS actuation. De-energization of one or more power supplies which power one channel of an EFAS logic matrix, however, will result in the initiation of SG level control signals for various AFW valves to cycle open. As described above, this cycling signal overrides an MSIS signal, and therefore, the valves involved are unable to close on an MSIS.

Technical Specification 3/4.7.1.2 defines operability requirements for the auxiliary feedwater system to ensure that emergency feedwater will be delivered to the steam generators for events requiring the initiation of emergency feedwater for continued secondary heat removal. Two motor driven and one steam driven auxiliary feedwater pumps and the associated flow paths are required to be operable. TS 3/4.7.1.2 currently does not address an alternate function of certain auxiliary feedwater isolation and control valves to close on an MSIS to prevent feeding the affected steam generator during a postulated steam generator rupture, to limit containment peak pressure and RCS cooldown.

Response times for AFW valves are included as part of overall engineered safety features actuation system response times in Table 3.3-5, "Engineered Safety Features (ESF) Response Times," of Technical Specification 3/4.3.2, "Engineered Safety Feature Actuation System." However, the TS 3/4.3.2 actions address only instrumentation inoperability and provide no specific actions when actuated components are inoperable. In most cases other technical specifications limiting conditions for operation (LCOs) address actuated components and provide appropriate action statements. This is currently not the case for the AFW valves. In light of recent NRC guidance, this condition is considered to be an entry into TS 3.0.3. In contrast, although the EFAS function overrides an MSIS; TS 3.7.1.2, "Auxiliary Feedwater System," provides a 72-hour action statement which applies when an AFW control valve is unable to open.

The proposed change would add LCOs, surveillance requirements to verify operability, and appropriate actions to be taken which are currently not included in technical specifications for these additional valves.

Specifically, the proposed change would incorporate operability requirements for the auxiliary feedwater isolation valves (HV-4714, 4715, 4730, 4731), auxiliary feedwater control valves (HV-4705, 4706, 4712, 4713), and the auxiliary feedwater bypass control valves (HV-4762, 4763). The proposed change would require that all manual valves in the auxiliary feedwater system be in the correct position and all automatic valves be capable of opening or closing upon actuation of EFAS or MSIS, respectively, except the following:

1. The motor-driven auxiliary feedwater pump discharge bypass control valves (HV-4762 and HV-4763) only safety related function is to close on an MSIS signal. Although these valves also close upon receipt of an EFAS to preclude excessive Reactor Coolant System (RCS) cooling, the EFAS actuation is not a credited safety-related function.
2. The steam turbine-driven auxiliary feedwater pump steam supply isolation valves (HV-8200 and HV-8201) and turbine stop valve (HV-4716) are required to open upon receipt of an EFAS to ensure the availability of the steam driven AFW pump. HV-8200 and HV-8201 also close on an MSIS but fail open upon loss of nonsafety-grade compressed air. Consequently, the downstream check valves are credited for isolating the intact steam supply from the failed steam supply under MSLB or MFLB conditions.
3. The manual crosstie valves, 1305MU634 and 1305MU635, may be open in Mode 3 provided that at least 2 hours has elapsed since reactor shutdown. This is current plant operating practice and allows for reduced AFW pump run times and introduces opportunities for pump maintenance. SCE has determined that operator action can be taken within 30 minutes to restore the integrity of the system if a pipe break were to occur. This operational feature has existed since 1985 after the implementation of an approved design change. The exception resulting in the LCO is required to preserve the flexibility of this feature under the constraints of the modified TS.

The proposed change would ensure the capability to isolate the auxiliary feedwater system on an MSIS signal to prevent feeding of the affected steam

generator during the postulated secondary system rupture events and will continue to ensure the capability to provide emergency feedwater to the appropriate steam generator(s) for secondary heat removal during postulated events where a loss of main feedwater is assumed.

The proposed change revises the TS 3/4.7.1.2 action statements to clarify that the action statement explicitly applies to flow paths as well as auxiliary feedwater pumps. The actions also allow exceptions in situations where the dual nature of the valves would constitute entry into action statements during ESFAS functional testing.

A new TS section is added which addresses the operation of the AFW system when the steam generators are being used for decay heat removal. The existing AFW TS section is renumbered to be 3/4.7.1.2.1 and the new section is 3/4.7.1.2.2. The addition of the new section documents the current practice of maintaining the operability of the AFW system components required to support steam generator heat removal capability in mode 4 as implicitly required by Technical specifications 3.4.1.2.

The proposed change also modifies Surveillance Requirement 4.7.1.2.1.b.2 to clarify that only the motor driven AFW pumps start automatically upon receipt of an EFAS test signal. The steam driven AFW pump is not started at this time because the EFAS actuation test is performed during cold shutdown and no steam is available to drive the pump. The steam driven turbine pump is started monthly in accordance with Surveillance Requirement 4.7.1.2.1.a.1. The inlet valve to this pump is verified to open upon receipt of an EFAS test signal per Surveillance Requirement 4.7.1.2.1.b.1 once per refueling interval.

A new Surveillance Requirement 4.7.1.2.1.b(3) will be added to demonstrate operability by verifying that each automatic valve in the flow path must be in its isolation position on an MSIS test signal except HV-8200 and HV-8201. These valves receive an MSIS to close but do not serve an active safety-related function. The auxiliary feedwater pump turbine steam isolation check valves (rather than HV-8200 and HV-8201) are credited for isolating the intact steam generator from the ruptured steam generator under MSLB or MFLB conditions. These check valves are included in the Inservice Inspection Program. In addition, operability of all of these valves will be required to be demonstrated at least once per refueling interval.

Safety Analysis

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

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

Response: No

The proposed change defines the required LCOs and action statements for the auxiliary feedwater isolation and control valves in Technical

Specification 3/4.7.1.2. These changes more clearly define plant operation to be consistent with the assumptions of the accident analyses, thereby avoiding any potentially unacceptable consequences for design basis steam or feedwater line breaks. The Auxiliary Feedwater System (AFW) is credited to respond to two Engineered Safety Feature Actuation System (ESFAS) signals. The Emergency Feedwater Actuation System (EFAS) is designed to automatically initiate AFW system flow to the Steam Generator (SG) when the SG level is low resulting from a loss of main feedwater. The Main Steam Isolation System (MSIS) is designed to isolate steam and feedwater lines to mitigate the consequences of a Main Steam Line Break (MSLB) or Main Feedwater Line Break (MFLB) accident by isolating the affected SG. The auxiliary feedwater isolation and control valves, consisting of AFWIVs, AFWCVs and AFWBCVs are credited in the accident analyses in the mitigation of postulated secondary system ruptures. Although response times are defined for all these valves by Technical Specification 3/4.3.2, "Engineered Safety Features Actuation System," the TS 3/4.3.2 operability, action, and surveillance requirements are defined only in terms of instrumentation and do not address actuated components.

The proposed change adds new technical specification requirements explicitly addressing operability, action, and surveillance requirements for these valves which do not currently exist within technical specifications. These new requirements constitute additional limitations or restrictions not presently included in technical specifications. New Technical Specification 3/4.7.1.2.2 merely documents AFW system operating requirements currently adhered to when the steam generators are being used for decay heat removal in mode 4. The clarification to Surveillance Requirements 4.7.1.2.1.b.1 and 4.7.1.2.1.b.2 is strictly editorial. Therefore, operation of the facility in accordance with this proposed change does not involve a significant increase in the probability or consequences of an accident previously evaluated.

2. Will operation of the facility in accordance with this 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 alter the configuration of the plant or its operation. Therefore, the proposed change does not create the possibility of a new or different kind of accident from any accident previously evaluated.

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

The proposed change does not reduce the effectiveness of the auxiliary feedwater system. Therefore, the proposed change will not involve a significant reduction in a margin of safety.

Safety and Significant Hazards Determination

Based on the above discussion, the proposed change does not involve a significant hazards consideration in that it does not: (1) involve a significant increase in the probability or consequences of an accident previously evaluated; or (2) create the possibility of a new or different kind of accident from any accident previously evaluated; or (3) involve a significant reduction in margin of safety. In addition, it is considered that: (1) there is reasonable assurance that the health and safety of the public will not be endangered by the proposed change; and (2) 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.