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 KNIGHTON, G.W. Licensing Branch 3

SUBJECT: Application to amend Licenses NPF-10 & NPf-15, changing Tech Spec Section 3.3.3.6 to incorporate heated junction thermocouple sys in accident monitoring instrumentation, per Generic Ltr 83-37. Fee paid.

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 TITLE: OR Submittal: Inadequate Core Cooling (Item II.F.2) GL 82-28

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April 19, 1985

Director, Office of Nuclear Reactor Regulation
Attention: Mr. George W. Knighton, Branch Chief
Licensing Branch No. 3
U. S. Nuclear Regulatory Commission
Washington, D.C. 20555

Gentlemen:

Subject: Docket Nos. 50-361 and 50-362
San Onofre Nuclear Generating Station
Units 2 and 3

Enclosed for your review and approval is a proposed change to the San Onofre Nuclear Generating Station (SONGS) Units 2 and 3 Technical Specifications. The proposed change (PCN NPF-10/15-183) incorporates the Heated Junction Thermocouple system in Technical Specification 3.3.3.6, Accident Monitoring Instrumentation. This change is provided in response to Generic Letter 83-37 dated November 1, 1983 and satisfies SCE's commitment to provide an HJTC Technical Specification to the NRC within 90 days following resolution of CE Owners Group concerns with the NRC.

The Southern California Edison Company requests prompt review and approval of the proposed change. In accordance with 10 CFR 170.12, enclosed is the required application fee of \$150.00. A formal request for this change will be included in our next formal amendment application.

If you have any questions regarding the enclosed information, please call me.

Very truly yours,

M. O. Medford

Enclosure

cc: Joseph O. Ward, California Department of Health Services
Harry Rood, NRC (to be opened by addressee only)
F. R. Huey (USNRC Senior Resident Inspector, Units 1, 2 and 3)

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DESCRIPTION OF PROPOSED CHANGE NPF-10/15-183
AND SAFETY ANALYSIS

This is a request to revise Technical Specification Table 3.3-10, Accident Monitoring Instrumentation, Technical Specification Table 4.3-7, Accident Monitoring Instrumentation Surveillance Requirements, and associated Bases of the Technical Specifications for San Onofre Nuclear Generating Station, Unit 2.

Existing Technical Specifications

See Attachment A.

Proposed Technical Specifications

See Attachment B.

Description

The proposed change revises Technical Specification 3.3.3.6, Accident Monitoring Instrumentation, to add the Heated Junction Thermocouple System - Reactor Vessel Level Monitoring System (RVLMS) to Tables 3.3-10 and 4.3-7, and its Bases. This implements Item II.F.2, "Instrumentation for Detection of Inadequate Core Cooling," as requested by NRC Generic Letter No. 83-37, NUREG-0737 Technical Specifications, dated November 1, 1983.

Following the May 1979 accident at Three Mile Island Unit 2, many features were added to nuclear power plants to enhance the ability of the operator to manage accidents and transients. The RVLMS is one of these enhancements and serves the following purposes: 1) to provide corroborative information that the reactor core remains covered with coolant during anticipated operating occurrences and accidents; 2) to provide corroborative means of detecting the existence of a steam bubble in the upper reactor vessel head region during plant transients which result in reactor coolant system (RCS) depressurization; 3) to provide trending information to the plant operators relative to RCS inventory; and 4) to provide a corroborative indication of the approach to, and recovery from an inadequate core cooling (ICC) condition.

The proposed change adds the RVLMS to the technical specifications, to reflect its incorporation into the plant.

Safety Analysis

The proposed change discussed above shall be deemed to constitute 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: No

The reactor vessel level monitoring system (RVLMS) is neither credited nor required in the mitigation of any previously evaluated accident and is not relied upon for reactor trip or initiation of any plant safety systems. Therefore, the proposed change does not affect the probability or consequences of an accident previously evaluated.

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

Response: No

Although the HJTCS has been utilized in the Emergency Procedures for corroboration of selected indications, no change to normal operating procedures is involved; thus no new path is created which may lead to a new or different kind of accident. The proposed change is intended solely to enhance the ability of the operator to manage accidents and transients by providing the operator with additional corroborative information.

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

Response: No

The specific purpose of the proposed amendment is to enhance accident and transient monitoring capability and therefore increase the margin of safety.

The Commission has provided guidance concerning the application of the standards for determining whether a significant hazards consideration exists by providing certain examples (48 FR 14870) of amendments that are considered not likely to involve significant hazards considerations. Example (11) relates to a change that constitutes an additional limitation, restriction or control not presently included in the technical specifications. The proposed change is representative of Example (11) in that it is an addition to the accident monitoring instrumentation required by the Nuclear Regulatory Commission's post-TMI-2 Action Plan.

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; (2) create the possibility of a new or different kind of accident from any accident previously evaluated; or (3) involve a significant reduction in a margin of safety. In addition, it is concluded that: (1) there is reasonable assurance that the health and safety of the public will not be endangered by the proposed change; and that (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.

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ATTACHMENT A

TABLE 3.3-10ACCIDENT MONITORING INSTRUMENTATION (CONTINUED)

<u>INSTRUMENT</u>	<u>REQUIRED NUMBER OF CHANNELS</u>	<u>MINIMUM CHANNELS OPERABLE</u>	<u>ACTION</u>
17. Containment Water Level - Wide Range	2	1	20, 21
18. Core Exit Thermocouples	7/core quadrant	4/core quadrant	20, 21
19. Cold Leg HPSI Flow	1/cold leg	N.A.	20
20. Hot Leg HPSI Flow	1/hot leg	N.A.	20

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TABLE 3.3-10 (Continued)

ACTION STATEMENTS

- ACTION 20 - With the number of OPERABLE accident monitoring channels less than the Required Number of Channels, either restore the inoperable channel to OPERABLE status within 7 days, or be in HOT SHUTDOWN within the next 12 hours.
- ACTION 21 - With the number of OPERABLE accident monitoring channels less than the Minimum Channels OPERABLE requirement, either restore the inoperable channel(s) to OPERABLE status within 48 hours or be in at least HOT SHUTDOWN within the next 12 hours.

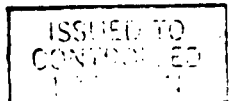


TABLE 4.3-7

ACCIDENT MONITORING INSTRUMENTATION SURVEILLANCE REQUIREMENTS (CONTINUED)

<u>INSTRUMENT</u>	<u>CHANNEL CHECK</u>	<u>CHANNEL CALIBRATION</u>
19. Cold Leg HPSI Flow	M	R
20. Hot Leg HPSI Flow	M	R

INSTRUMENTATION

BASES

room. This capability is required in the event control room habitability is lost and is consistent with General Design Criteria 19 of 10 CFR 50.

The OPERABILITY of the remote shutdown instrumentation in Panel L411 ensures that sufficient capability is available to permit shutdown and maintenance of COLD SHUTDOWN of the facility in the event of a fire in the cable spreading room, control room or remote shutdown panel, L042.

3/4.3.3.6 ACCIDENT MONITORING INSTRUMENTATION

The OPERABILITY of the accident monitoring instrumentation ensures that sufficient information is available on selected plant parameters to monitor and assess these variables following an accident. This capability is consistent with the recommendations of Regulatory Guide 1.97, "Instrumentation for Light-Water-Cooled Nuclear Plants to Assess Plant Conditions During and Following an Accident," December 1975 and NUREG 0578, "TMI-2 Lessons Learned Task Force Status Report and Short-Term Recommendations".

3/4.3.3.7 FIRE DETECTION INSTRUMENTATION

OPERABILITY of the fire detection instrumentation ensures that adequate warning capability is available for the prompt detection of fires. This capability is required in order to detect and locate fires in their early stages. Prompt detection of fires will reduce the potential for damage to safety related equipment and is an integral element in the overall facility fire protection program.

In the event that a portion of the fire detection instrumentation is inoperable, the establishment of frequent fire patrols in the affected areas is required to provide detection capability until the inoperable instrumentation is restored to OPERABILITY.

Since the fire detectors are non-seismic, a plant visual inspection for fires is required within two hours following an earthquake ($\geq 0.02g$). Since safe shutdown systems are protected by seismic Category I barriers rated at two and three hours, any fire after an earthquake should be detected by this inspection before safe shutdown systems would be affected. Additionally, to verify the continued OPERABILITY of fire detection systems after an earthquake, an engineering evaluation of the fire detection instrumentation in the required zones is required to be performed within 72 hours following an earthquake.

ATTACHMENT B

TABLE 3.3-10

ACCIDENT MONITORING INSTRUMENTATION (CONTINUED)

<u>INSTRUMENT</u>	<u>REQUIRED NUMBER OF CHANNELS</u>	<u>MINIMUM CHANNELS OPERABLE</u>	<u>ACTION</u>
17. Containment Water Level - Wide Range	2	1	20, 21
18. Core Exit Thermocouples	7/core quadrant	4/core quadrant	20, 21
19. Cold Leg HPSI Flow	1/cold leg	N.A.	20
20. Hot Leg HPSI Flow	1/hot leg	N.A.	20
21. Heated Junction Thermocouple System- Reactor Vessel Level Monitoring System*	2	1	22, 23

NOTES:

- * A channel is eight sensors in a probe. A channel is OPERABLE if four or more sensors, one sensor in the upper head and 3 sensors in the lower head, are OPERABLE.

TABLE 3.3-10 (Continued)

ACTION STATEMENTS

- ACTION 20 - With the number of OPERABLE accident monitoring channels less than the Required Number of Channels, either restore the inoperable channel to OPERABLE status within 7 days, or be in HOT SHUTDOWN within the next 12 hours.
- ACTION 21 - With the number of OPERABLE accident monitoring channels less than the Minimum Channels OPERABLE requirement, either restore the inoperable channel(s) to OPERABLE status within 48 hours or be in at least HOT SHUTDOWN within the next 12 hours.
- ACTION 22 - With the number of OPERABLE Channels one less than the Required Number of Channels, either restore the system to OPERABLE status within 7 days if repairs are feasible without shutting down or prepare and submit a Special Report to the Commission pursuant to Specification 6.9.2 within 30 days following the event outlining the action taken, the cause of the inoperability and the plans and schedule for restoring the system to OPERABLE status.
- ACTION 23 - With the number of OPERABLE Channels one less than the Minimum Channels OPERABLE in Table 3.3-10, either restore the inoperable channel(s) to OPERABLE status within 48 hours if repairs are feasible without shutting down or:
1. Initiate an alternate method of monitoring the reactor vessel inventory;
 2. Prepare and submit a Special Report to the Commission pursuant to Specification 6.9.2 within 30 days following the event outlining the action taken, the cause of the inoperability and the plans and schedule for restoring the system to OPERABLE status; and
 3. Restore both channels of the system to OPERABLE status at the next scheduled refueling.

TABLE 4.3-7ACCIDENT MONITORING INSTRUMENTATION SURVEILLANCE REQUIREMENTS (CONTINUED)

<u>INSTRUMENT</u>	<u>CHANNEL CHECK</u>	<u>CHANNEL CALIBRATION</u>
19. Cold Leg HPSI Flow	M	R
20. Hot Leg HPSI Flow	M	R
21. Heated Junction Thermocouple System- Reactor Vessel Level Monitoring System	M	R

INSTRUMENTATION

BASES

room. This capability is required in the event control room habitability is lost and is consistent with General Design Criterion 19 of 10 CFR 50.

The OPERABILITY of the remote shutdown instrumentation in Panel L411 ensures that sufficient capability is available to permit shutdown and maintenance of COLD SHUTDOWN of the facility in the event of a fire in the cable spreading room, control room or remote shutdown panel, L042.

3/4.3.3.6 ACCIDENT MONITORING INSTRUMENTATION

The OPERABILITY of the post-accident monitoring instrumentation ensures that sufficient information is available on selected plant parameters to monitor and assess these variables following an accident. This capability is consistent with the recommendations of Regulatory Guide 1.97, "Instrumentation for Light-Water-Cooled Nuclear Plants to Assess Plant Conditions During and Following an Accident," December 1975 and NUREG 0578, "TMI-2 Lessons Learned Task Force Status Report and Short-Term Recommendations."

The containment high range area monitors (RU-148 & RU-149) and the main steamline radiation monitors (RU-139 A&B and RU-140 A&B) are in Table 3.3-5. The high range effluent monitors and samplers (RU-142, RU-144 and RU-146) are in Table 3.3-13. The containment hydrogen monitors are in Specification 3/4.6.5.1. The Post Accident Sampling System (RCS coolant) is in Table 3.3-6.

The Subcooled Margin Monitor (SM), the Heated Junction Thermocouple (HJTC), and the Core Exit Thermocouples (CET) comprise the Inadequate Core Cooling (ICC) instrumentation required by Item II.F.2 NUREG-0737, the Post TMI-2 Action Plan. The function of the ICC instrumentation is to enhance the ability of the plant operator to diagnose the approach to existence of, and recovery from ICC. Additionally, they aid in tracking reactor coolant inventory. These instruments are included in the Technical Specifications at the request of NRC Generic Letter 83-37. These are not required by the accident analysis, nor to bring the plant to Cold Shutdown.

In the event more than four sensors in a Reactor Vessel Level channel are inoperable, repairs may only be possible during the next refueling outage. This is because the sensors are accessible only after the missile shield and reactor vessel head are removed. It is not feasible to repair a channel except during a refueling outage when the missile shield and reactor vessel head are removed to refuel the core. If only one channel is inoperable, it should be restored to OPERABLE status in a refueling outage as soon as reasonably possible. If both channels are inoperable, both channels shall be restored to OPERABLE status in the nearest refueling outage.

In the event that both HJTC channels are inoperable, existing plant instruments and operator training will be used as an alternate method of monitoring the reactor vessel inventory.

INSTRUMENTATION

BASES

3/4.3.3.7 FIRE DETECTION INSTRUMENTATION

OPERABILITY of the fire detection instrumentation ensures that adequate warning capability is available for the prompt detection of fires. This capability is required in order to detect and locate fires in their early stages. Prompt detection of fires will reduce the potential for damage to safety-related equipment and is an integral element in the overall facility fire protection program.

In the event that a portion of the fire detection instrumentation is inoperable, the establishment of frequent fire patrols in the affected areas is required to provide detection capability until the inoperable instrumentation is restored to OPERABILITY.

Since the fire detectors are non-seismic, a plant visual inspection for fires is required within 2 hours following an earthquake ($\geq 0.02g$). Since safe shutdown systems are protected by seismic Category I barriers rated at 2 and 3 hours, any fire after an earthquake should be detected by this inspection before safe shutdown systems would be affected. Additionally, to verify the continued OPERABILITY of fire detection systems after an earthquake, an engineering evaluation of the fire detection instrumentation in the required zones is required to be performed within 72 hours following an earthquake.

3/4.3.3.8 RADIOACTIVE LIQUID EFFLUENT INSTRUMENTATION

The radioactive liquid effluent instrumentation is provided to monitor and control, as applicable, the releases of radioactive materials in liquid effluents during actual or potential releases of liquid effluents. The alarm/trip setpoints for these instruments shall be calculated in accordance with the procedures in the OOCM to ensure that the alarm/trip will occur prior to exceeding the limits of 10 CFR Part 20. The OPERABILITY and use of this instrumentation is consistent with the requirements of General Design Criteria 60, 63 and 64 of Appendix A to 10 CFR Part 50.

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