UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D. C. 20555

SAFETY EVALUATION
AMENDMENT NO. 31 TO NPF-10
AMENDMENT NO. 20 TO NPF-15
SAN ONOFRE NUCLEAR GENERATING STATION, UNITS 2 & 3
DOCKET NOS. 50-361 AND 50-362

INTRODUCTION

Southern California Edison Company, on behalf of itself and the other licensees, San Diego Gas and Electric Company, the City of Riverside, California, and the City of Anaheim, California submitted applications for license amendments for San Onofre Nuclear Generating Station, Units 2 and 3, by letters dated March 2 and April 2, 1984 (reference Proposed Change Numbers 99 through 102 or PCN-99 through PCN-102). The amendments would change the technical specifications (T.S.) relating to radiation and radioactive effluent monitoring instrumentation as follows:

1. Proposed Change PCN-99 is a request to revise Technical Specification 3/4.3.2, "Engineered Safety Features Actuation System (ESFAS) Instrumentation." The proposed change clarifies requirements for radiation monitors which support the containment purge isolation ESFAS function to improve consistency with the Final Safety Analysis Report (FSAR), "Standard Radiological Effluent Technical Specifications for PWRs" (NUREG-0472), and technical specifications for other non-ESFAS functions served by the same instrument. The proposed change also reflects the addition of the dedicated purge effluent monitors which are to be installed in accordance with License Conditions 2.C(17) and 2.C(15) for Units 2 and 3, respectively.

2. Proposed Change PCN-100 is a request to revise Technical Specification 3/4.3.3.1, "Radiation Alarm Monitoring Instrumentation." The proposed change improves consistency with the FSAR and STS, consolidates NUREG-0737 wide range noble gas monitoring requirements from Specification 3/4.3.3.6, "Accident Monitoring Instrumentation," adds increased flexibility to Action statements and revises the applicability for the condenser evacuation system and plant vent stack monitors.

3. Proposed Change PCN-101 is a request to delete from Technical Specification 3/4.3.3.6, "Accident Monitoring Instrumentation," those radiation monitors listed in Table 3.3-10 which were installed to satisfy NUREG-0737 wide range noble gas monitoring requirements. Consistent with Standard Technical Specifications and Proposed Change PCN-100, these NUREG-0737 monitors will be covered by Specification 3/4.3.3.1, "Radiation Monitoring Instrumentation."

4. Proposed change PCN-102 is a request to revise Technical Specification 3/4.3.3.9, "Radioactive Gaseous Effluent Monitoring Instrumentation." The proposed change increases operating flexibility by accommodating recent and near-future design changes when implemented, revising Action statements, and eliminating cross referencing to other specifications not relating to effluent monitoring.

The NRC staff's evaluation of each of these changes is given below.

EVALUATION

1. Proposed Change PCN-99.

This item involves the following specific changes in the technical specifications:

a. Technical Specification Table 3.3-3, Item 12b, "Containment Airborne Radiation Monitors," and Item 12c, "Containment Area Radiation Monitors."

The applicable modes and actions for engineered safety feature actuations are revised to reflect the FSAR (Sections 7.3.1.1.5 and 11.5.2.1.4.5 for airborne radiation monitors, and Sections 7.3.1.1.5 and 12.3.4.3.1 for area radiation monitors) and to be consistent with NUREG-0472, Draft Revision 3, "Standard Radiological Effluent Technical Specifications for PWRs," dated January, 1983. The revised applicable modes require the monitors (gaseous, particulate, and iodine) to actuate containment purge isolation in the event of a fuel handling accident in Mode 6, while the gaseous and particulate channels of the monitors are required to detect a reactor coolant system leak in Modes 1 through 4 and to isolate containment purge. The revised action statements are consistent with NUREG-0472, Revision 3.

b. Technical Specification Table 3.3-4, Item 12b, "Containment Airborne Radiation Monitors," and Item 12c, "Containment Area Radiation Monitors."

The containment airborne monitors currently satisfy the purge effluent monitoring requirements of Specification 3.3.3.9. Accordingly, the setpoints for this monitor are currently specified by the offsite dose calculation manual (ODCM). Prior to startup following the first refueling, Unit 2 License Condition 2.C(17) and Unit 3 License Condition 2.C(15), require installation of a dedicated purge effluent monitor for their respective units. On completion of these design changes, the containment airborne monitors will no longer serve the purge effluent monitoring function. Therefore, it will no longer be appropriate to specify their setpoints in accordance with the ODCM. The proposed change requires that the setpoints be sufficiently high to prevent spurious alarm/trip but low enough to assure alarm/trip on an inadvertent release. This is consistent with the requirements of NUREG-0472, Revision 3, for establishing setpoints.

The containment area radiation monitor trip setpoints for containment purge isolation are specified for applicable operational Modes 1 through 4. The 325 mR/hr trip setpoint value is consistent with the same monitor alarm setpoint listed in Table 3.3-6 (Item 1.b) and the 340 mR/hr allowable value results from the addition of 5% of the trip setpoint value to account for the width of this analog instrument's indicator needle. This is consistent with the practice used to establish the allowable values

from trip setpoints of other radiation monitors with analog indicators in Table 3.3-4.

The proposed changes a. and b. described above meet the requirements of NUREG-0472, and do not remove or relax any existing safety requirements. Therefore, the staff finds proposed change PCN-99 to be acceptable.

2. Proposed Changes PCN-100 and 101.

These items involve the following specific changes in the technical specifications:

a. Technical Specification Sections 3/4.3.3.1, "Radiation Monitoring Instrumentation."

Consistent with NUREG-0472, Revision 3, the word "alarm" is deleted from the sections where it is used in the context of alarm function and words "alarm/trip" are substituted for the word "alarm" where it is used in the context of setpoint. Some of the radiation monitor channels in Table 3.3-6, "Radiation Monitoring Instrumentation" applicable to Sections 3/4.3.3.1 do not provide "alarm" function and others provide "alarm," as well as "trip" functions. The proposed changes will improve the clarity of the monitor channel functions.

b. Technical Specification Tables 3.3-3, 3.3-4, and 3.3-6, "Radiation Monitoring Instrumentation."

Both Tables 3.3-3 and 3.3-6 delineate functional requirements for radiation monitors which provide the control room isolation signal, the fuel handling building isolation signal, and the containment purge isolation signal. The proposed changes to Items 1.b, 2.a, 2.b, and 2.c of Table 3.3-6 make setpoints and Action requirements consistent with those in Tables 3.3-3 and 3.3-4 by direct reference. The proposed changes are consistent with the STS format.

c. Technical Specification Tables 3.3-6, "Radiation Monitoring Instrumentation," and 3.3-10, "Accident Monitoring Instrumentation."

The operability requirements for radiation monitors required by NUREG-0737 (i.e., the containment high range area monitor, main steam line monitor, plant stack monitor, and condenser evacuation monitor) are specified in both Tables 3.3-6 and 3.3-10. The proposed changes consolidate the requirements for these radiation monitors into Table 3.3-6 and delete them from Table 3.3-10. The proposed changes will reduce the complexity of the specifications consistent with the STS format.

In addition, the proposed changes reduce the required number of high range plant vent stack monitors from two to one. We find this change acceptable because (1) exhaust from the shared auxiliary buildings and the two fuel handling buildings from both Unit 2 and 3 are mixed in a

common plenum and released via the Unit 2 and 3 plant vent stacks, (2) the licensee has provided sufficient operating data to show that an effective mixing of vent stack exhaust exists in the common plenum, (3) a valid estimate of the releases from one plant vent stack based on the readings from the other unit's plant vent stack can be obtained, and (4) in addition to two high range noble gas monitors, the normal range monitor will monitor the plant vent stack releases from both units for noble gas during plant normal operation including anticipated operational occurrences. This design feature which utilizes the common plenum has been reviewed and approved by the staff during its operating license review. The staff's favorable evaluation is presented in the San Onofre 2 and 3 Safety Evaluation Report, NUREG-0712.

d. Technical Specification Table 3.3-6, ACTION STATEMENT 18

The current ACTION STATEMENT 18 refers to ACTION STATEMENTS 20 and 21 of Technical Specification 3.3.3.6 (indirect cross reference) and the statement allows 7 days to restore an inoperable channel when one of two channels (containment high range area monitors) become inoperable. The proposed change (1) eliminates the current indirect reference by providing direct and applicable statements in ACTION STATEMENT 18, and (2) allows more time (30 days) to restore an inoperable channel to operable status when one of two required channels becomes inoperable. There is no change for the allowable time limit (72 hours) when both required channels become inoperable.

The licensees state that the high range area monitors have proven to be difficult to troubleshoot. The difficulty associated with troubleshooting these instruments results from the requirement for these instruments to be enviornmentally qualified to operate in the postulated high post-accident radiation fields. This requirement precludes the use of pre-amplifiers located at the detectors. As a result, only the very small currents generated by the detectors are carried by the cables to the instrument electronics located in low radiation areas. Because of the small currents involved, troubleshooting is difficult and time consuming. The proposed change to allow 30 days to restore an inoperable instrument to operable status would significantly reduce the possibility of a reactor shutdown.

The staff finds the proposed changes acceptable because (1) there is no change in the 72 hour allowable time limit when both channels become inoperable and (2) the requirement of 30 days to restore an inoperable channel is consistent with the time allowed for other radiation monitoring instruments.

e. Technical Specification Table 3.3-6, ACTION STATEMENT 19

The proposed change clarifies the word "event" in ACTION STATEMENT 19 by deleting it and substituting the phrase "...initiation of the pre-planned alternate..." The word "event" is ambiguous in that the event could be either the inoperability of the channel or the initiation of the pre-planned

alternate. If "event" refers to the inoperability, then in a situation where the channel was restored to operable status within 72 hours and no pre-planned alternate was initiated, it would be meaningless to require that a special report be prepared outlining the action taken, and plans and schedule for restoring operability. Therefore, the proposed change clarifies ACTION 19 to require a special report only if the inoperability is not corrected with 72 hours and the pre-planned alternate is initiated. The staff finds this change to be acceptable because it improves clarity.

f. Technical Specification Table 3.3-6, APPLICABLE MODES

The plant stack and condenser evacuation system noble gas monitors are required to be operational during normal plant operation, as well as during accident conditions and, therefore, these monitors appear in both Tables 3.3-6, "Radiation Monitoring Instrumentation," and 3.3-13, "Radioactive Gaseous Effluent Monitoring Instrumentation." The current requirements for applicable modes for these monitors are "ALL" modes in both tables. The proposed changes reduce the applicability for the plant vent stack and condenser evacuation system monitors from "ALL" to Modes 1, 2, 3, and 4 in Table 3.3-6. This is consistent with the standard technical specifications for radiation monitoring instrumentation. The effect of this will be to relieve more stringent accident monitoring requirements from being applied in modes where only effluent monitoring is the primary concern.

The condenser evacuation system is monitored because it is a potential gaseous radioactive effluent release path during normal plant operation due to primary to secondary leakage within the allowable limits and in the event of a steam generator tube rupture. However, when the main steam isolation valves (MSIV's) and main steam isolating valve bypass valves are fully closed, the condenser is isolated from its potential source of gaseous activity and, therefore, is not a potential gaseous radioactive effluent release path when these conditions are met. Accordingly, the proposed change requires noble gas monitoring for the condenser evacuation system in Modes 1-4 only when the MSIV's and MSIV bypass valves are open. The staff finds this change to be acceptable because it is consistent with the standard technical specifications.

g. Technical Specification Tables 3.3-6 and 4.3-3

The proposed changes identify all required radiation monitors in Tables 3.3-6 and 4.3-6 by instrument numbers to each monitor to improve clarity of the technical specifications.

Based on the foregoing evaluation, we find that the proposed changes a. through g. described above will not remove or relax any existing requirement related to the probability or consequences of accidents previously considered in the San Onofre 2 and 3 Safety Evaluation Report, and its supplements. Therefore, we find proposed changes PCN-100 and PCN-101 acceptable.

3. Proposed Change PCN-102

This item involves the following specific changes, which are being made to implement editorial changes and clarifications to improve consistency with the actual as-built plant configuration, the commitments made in the San Onofre FSAR, and NUREG-0472, "Standard Radiological Technical Specifications for PWRs," Draft Revision 3, dated January 1983.

a. Table 3.3-13, "Radioactive Gaseous Effluent Monitoring Instrumentation"

(1) Items 1, 3, 4, and 5

The terminology for flow rate measuring devices for each instrument is revised for clarity (i.e., "sample line flows" vs "ventilation air flows").

(2) Item 1

The waste gas holdup system noble gas monitor (2/3 RT-7808) in Item 1 may be replaced by high range plant vent stack noble gas monitors (2RT-7865-1 or 3RT-7865-1) for providing alarm and automatic termination of releases from the waste gas holdup system and for meeting the minimum channels operable requirements. This substitution is acceptable since the plant vent stacks are the final release point for waste gas holdup system tank releases and the plant vent stack monitors provide automatic termination of waste gas holdup system tank releases.

(3) ACTION No. 35

The licensee requested the deletion of the statement "Otherwise suspend release of radioactive effluents in this pathway" and the "14 day limit" requirement with the number of channels operable less than required by the minimum channels operable requirement from ACTION statement No. 35. Consistent with NUREG-0472, Revision 3, we find the deletion of the "14 day limit" requirement to be acceptable. However, we believe the statement "Otherwise suspend..." should remain in the action statement since this statement is now only applicable to subparagraphs (a) and (b) in ACTION No. 35. Without meeting these requirements in (a) and (b), the release should be suspended.

(4) ACTION Statement No. 39

Consistent with NUREG-0472, Revision 3, this action statement is revised to require grab samples at least once per four hours with analysis within next four hours to verify compliance with Technical Specificatin 3.11.2.5 and provide adequate assurance that an explosive gas mixture does not exist. The previous wording required plant hot shutdown within six hours when both channels are inoperable. This action statement is also revised to delete the 14 day system operational

limit requirement with the number of channels operable one less than required by the minimum channels operable. Instead, the action statement now requires the remaining operable channel to be aligned to the waste gas surge tank until both channels are back in operation. The waste gas surge tank is of greater interest from the standpoint of preventing explosive gas mixtures in the decay tanks since the decay tanks are operated always above atmospheric pressure, thereby preventing air/oxygen inleakage, and an explosive gas mixture cannot exist in the decay tanks unless one existed in the surge tank before compression. These revisions will then eliminate potential inconsistency with Technical Specification 3.3.3.9(c) which specifies the provisions of Technical Specifications 3.0.3 and 3.0.4 are not applicable for Technical Specification 3.3.3.9.

(5) 1.5 Item 3, Applicability, Condenser Evacuation System Monitor

The applicability for Item 3 is revised from "all MODES" to "MODES 1-4 with any main steam isolation valve (MSIV) and/or any main steam isolating valve bypass valve not fully closed." The condenser evacuation system is monitored because it is a potential radioactive gaseous release pathway. Primary-to-secondary leakage is the only source of gaseous activity which could be potentially released via this pathway. When the MISV's and MSIV bypass valves are fully closed, this pathway is isolated from the source and, therefore, is not required to be monitored.

(6) 1.6 Item 5, Containment Purge System

Installation of a dedicated purge effluent monitor (2/3 RT-7828) for eact t is required by SONGS Unit Nos. 2 and 3 License Conditions 2(c)1/ and 2(c)15, respectively. In addition, the licensee states that the plant vent stack high range noble gas monitors will be equipped to automatically terminate purge releases from their respective unit. This installation and modification will be completed by the end of the first refueling outage for Unit 2. Accordingly, Notes (1), (2) and (3) are added and Action Statement No. 38 is revised to reflect these changes.

(7) 1.7 ACTION Nos. 35, 36, 37, 38, 39, and 40

The licensees requested the deletion of the limits specified as a fixed number of days in the above Action numbers with the number of channels operable one less than required by the minimum channels operable statement. We find these requested changes to be acceptable because they are consistent with NUREG-0472, Revision 3. Furthermore, for clarity, we are revising Specification 3.3.3.9, Action (b) to read "Exert best efforts to return the instrument to OPERABLE status within 30 days and, additionally, ..."

(8) ACTION No. 36

The licensees requested to use the system design flow rates to estimate ventilation flow since the current ACTION 36 does not specify the means by which flow rates may be estimated. Since the design flow rates are not subject to rapid change, the interval for flow estimation is revised to at least once per 8 hours from once per 4 hours. Notes (4) and (5) are added to clarify the flow monitoring requirements. Because the clarified flow monitoring requirements will provide adequate estimation of ventilation flow, we find the proposed changes to be acceptable.

(9) ACTION No. 37

Consistent with NUREG-0472, Revision 3, the grab sample intervals are increased to 12 hours from 8 hours.

(10) Table Notes (a), (b) and (c)

Consistent with NUREG-0472, Revision 3, these notes are deleted as the functions referred to are specified elsewhere.

(b) Table 4.3-9, Radioactive Gaseous Effluent Monitoring Instrumentation Surveillance Requirements

The licensees propose to delete weekly channel check surveillance requirements for iodine and particulate samplers since they are fixed canisters which are removed weekly in accordance with Technical Specification 4.11.2.1.2, Table 4.11-2, Item D. A channel check is defined as a qualitative assessment of channel behavior during operation by observation. After each weekly replacement of the canisters, a channel check can be easily and routinely performed to assure proper operation of the sample canisters. Therefore, this change is not acceptable to the staff.

Consistent with NUREG-0472, Revision 3, channel check and channel functional test frequencies for the containment purge noble gas monitors are revised to daily and quarterly, respectively, from each shift and monthly.

Based on the foregoing evaluation, we find proposed changes PCN-99 through PCN-102 to be acceptable because they will not remove or relax any existing requirement related to the probability or consequences of accidents previously considered in the San Onofre 2 and 3 Safety Evaluation Report (NUREG-0712) and in supplements thereto. The staff concludes that the proposed changes will not remove or relax any existing requirement needed to provide reasonable assurance that the health and safety of the public will not be endangered by operation in the proposed manner. Therefore, we find the proposed changes acceptable.

CONTACT WITH STATE OFFICIAL

The NRC staff has advised the Chief of the Radiological Health Branch, State Department of Health Services, State of California, of the proposed determinations of no significant hazards consideration. No comments were received.

ENVIRONMENTAL CONSIDERATION

These amendments involve changes in the installation or use of facility components located within the restricted area. The staff has determined that the amendments involve no significant increase in the amounts of any effluents that may be released offsite and that there is no significant increase in individual or cumulative occupation radiation exposure. The Commission has previously issued proposed findings that the amendments involve no significant hazards consideration, and there has been no public comment on such findings. Accordingly, the amendments meet the eligibility criteria for categorical exclusion set forth in 10 CFR Sec. 51.22(c)(9). Pursuant to 10 CFR 51.22(b) no environmental impact statement or environmental assessment need be prepared in connection with the issuance of these amendments.

CONCLUSION

Based upon our evaluation of the proposed changes to the San Onofre Units 2 and 3 Technical Specifications, we have concluded that: there is reasonable assurance that the health and safety of the public will not be endangered by operation in the proposed manner, and such activities will be conducted in compliance with the Commission's regulations and the issuance of this amendment will not be inimical to the common defense and security or to the health and safety of the public. We, therefore, conclude that the proposed changes are acceptable.

Dated: January 11, 1985

January 11, 1985

ISSUANCE OF AMENDMENT NO. 31 TO FACILITY OPERATING LICENSE NPF-10
AND AMENDMENT NO. 20 TO FACILITY OPERATING LICENSE NPF-15
SAN ONOFRE NUCLEAR GENERATING STATION, UNITS 2 AND 3

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