

LICENSEE EVENT REPORT (LER)

| | | | | | | | | | | | | | | | | | | | | | | |
|---|--------|--|-------------------|--------------------------|--------------------|------------------|-----------------|-----------|------------------------|---|---|-------------------------------------|-------------------------------|--|--------------------|------|---|---|---|---|---|---|
| FACILITY NAME (1) Rancho Seco Nuclear Generating Station | | | | | | | | | | DOCKET NUMBER (2) 0 5 0 0 0 3 1 2 | | | | | PAGE (3) 1 OF 1 | | | | | | | |
| TITLE (4) Fire Protection Program Deficiencies With Respect to Technical Specifications and Commitments | | | | | | | | | | | | | | | | | | | | | | |
| EVENT DATE (5) | | | LER NUMBER (6) | | | | REPORT DATE (7) | | | OTHER FACILITIES INVOLVED (8) | | | | | | | | | | | | |
| MONTH | DAY | YEAR | YEAR | SEQUENTIA L NUMBER | REVISION NUMBER | MONTH | DAY | YEAR | FACILITY NAMES None | | | | DOCKET NUMBER(S) 0 5 0 0 0 | | | | | | | | | |
| 0 | 5 | 1 | 6 | 8 | 7 | 8 | 7 | 0 | 2 | 9 | 0 | 1 | 0 | 1 | 4 | 8 | 8 | 0 | 5 | 0 | 0 | 0 |
| OPERATING MODE (9) | | THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §: (Check one or more of the following) (11) | | | | | | | | | | | | | | | | | | | | |
| N | | 20.402(b) | | | | 20.405(c) | | | | 50.73(a)(2)(iv) | | | | 73.71(b) | | | | | | | | |
| POWER LEVEL (10) | | 20.405(a)(1)(i) | | | | 50.36(c)(1) | | | | 50.73(a)(2)(v) | | | | 73.71(c) | | | | | | | | |
| 0 | | 20.405(a)(1)(ii) | | | | 50.36(c)(2) | | | | 50.73(a)(2)(vii) | | | | X OTHER (Specify in Abstract below and in Text, NRC Form 366A) | | | | | | | | |
| | | 20.405(a)(1)(iii) | | | | X 50.73(a)(2)(i) | | | | 50.73(a)(2)(viii)(A) | | | | | | | | | | | | |
| | | 20.405(a)(1)(iv) | | | | 50.73(a)(2)(ii) | | | | 50.73(a)(2)(viii)(B) | | | | | | | | | | | | |
| | | 20.405(a)(1)(v) | | | | 50.73(a)(2)(iii) | | | | 50.73(a)(2)(ix) | | | | Special Report | | | | | | | | |
| LICENSEE CONTACT FOR THIS LER (12) | | | | | | | | | | | | | | | | | | | | | | |
| NAME Paul Lavelly, Supervisor, Independent Investigation/Reviews | | | | | | | | | | TELEPHONE NUMBER AREA CODE 9 1 6 4 5 2 - 3 2 1 1 | | | | | | | | | | | | |
| COMPLETE ONE LINE FOR EACH COMPONENT FAILURE DESCRIBED IN THIS REPORT (13) | | | | | | | | | | | | | | | | | | | | | | |
| CAUSE | SYSTEM | COMPONENT | MANUFAC- TURER | REPORTABLE TO NPDOS | | CAUSE | SYSTEM | COMPONENT | MANUFAC- TURER | REPORTABLE TO NPDOS | | | | | | | | | | | | |
| D | 1 | C | | | N | | | | | | | | | | | | | | | | | |
| B | 1 | C | | | N | | | | | | | | | | | | | | | | | |
| SUPPLEMENTAL REPORT EXPECTED (14) | | | | | | | | | | | | EXPECTED SUBMISSION DATE (15) | | MONTH | DAY | YEAR | | | | | | |
| YES (If yes, complete EXPECTED SUBMISSION DATE) | | | | | | | | | | | | X NO | | | | | | | | | | |

ABSTRACT (Limit to 1400 spaces, i.e., approximately fifteen single-space typewritten lines) (16)

The surveillance testing of unsupervised circuits between the Pyrotronics or Notifier panels and the auxiliary relays used to transmit signals to the Control Room was not adequately performed in conformance with Technical Specification 4.18.1.3.

This system was corrected by establishing a continuous fire watch post at the local fire panels to monitor fire alarm system annunciation, thereby eliminating reliance on the unsupervised circuits.

The District committed to comply with various requirements of the National Fire Protection Association standards via the District response dated August 31, 1976 to the NRC Branch Technical Position (BTP) APCS 9.5-1, which was issued by the NRC on May 1, 1976. This commitment was essentially restated by the NRC in the Safety Evaluation Report issued as Amendment 19 to the Facility Operating License on February 28, 1978.

This report provides the NRC with information concerning deviations from several of those commitments which may or may not affect the NRC's SER for the Rancho Seco fire protection program. The specific deviations are contained in District internal report numbers ERPT E-033, -034, -035, -037, -039, -047, and -048.

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LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

APPROVED OMB NO. 3150-0104

EXPIRES: 8/31/88

| FACILITY NAME (1) | DOCKET NUMBER (2) | LER NUMBER (6) | | | PAGE (3) | | |
|--|-------------------|----------------|-------------------|-----------------|----------|----|----|
| | | YEAR | SEQUENTIAL NUMBER | REVISION NUMBER | | | |
| | | | | | | | |
| Rancho Seco Nuclear Generating Station | 05000312 | 87 | 020 | 010 | 2 | OF | 11 |

TEXT (If more space is required, use additional NRC Form 305A's) (17)

This report is of an operation or condition prohibited by the plant's Technical Specifications.

Control Room Fire Alarm Annunciation System Testing

The surveillance testing of unsupervised circuits between the Pyrotronics or Notifier panels and the auxiliary relays used to transmit signals to the Control Room was not adequately performed in conformance with Technical Specification 4.18.1.3 (RE: Occurrence Description Report (ODR) 87-570). That is an event which is reportable as a condition prohibited by the technical specifications (10 CFR Part 50.73(a)(2)(i)(B)). Because of the lack of adequate surveillance, the affected portion of the Control Room fire alarm annunciation system was, thus, inoperable during power operation although it was in-service. The technical specification required thirty day special report following fourteen days of being out-of-service was not made. The failure to report until this LER exceeded the action statement of technical specifications. This occurrence is reportable according to 10 CFR 50.73(a)(2)(i)(B) as a condition prohibited by the plant's technical specifications. This situation was corrected by establishing a continuous fire watch post at the local fire panels to monitor fire alarm system annunciation, thereby eliminating reliance on the unsupervised circuits.

This report is on conditions which deviate from commitments made to the NRC in safety analysis and District positions.

The District committed to comply with various requirements of the National Fire Protection Association standards via the District response dated August 31, 1976 to the NRC Branch Technical Position (BTP) APCSB 9.5-1, which was issued by the NRC on May 1, 1976. This commitment was essentially restated by the NRC in the Safety Evaluation Report issued as Amendment 19 to the Facility Operating License on February 28, 1978.

There are three classes of commitments for the Rancho Seco Fire Protection Program. First, the District made commitments describing how items in the BTP would be handled. Second, the SER provides the final understanding on issues contested during the development of Amendment 19 to the District's license. Third, an undated Fire Hazards Analysis pursuant to 10 CFR Part 50.48 and Appendix R to 10 CFR Part 50 was completed and forwarded to the NRC for approval. Only one SER regarding fire protection at Rancho Seco has been issued by the NRC. That SER was license Amendment 19 dated February 28, 1978.

This report provides the NRC with information concerning deviations from several of those commitments which may or may not affect the NRC's SER for the Rancho Seco fire protection program. The specific deviations are contained in District internal report numbers ERPT E-033, -034, -035, -037, -039, -047, and -048.

LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

| FACILITY NAME (1) | DOCKET NUMBER (2) | LER NUMBER (6) | | | PAGE (3) | | |
|--|-------------------|----------------|-------------------|-----------------|----------|----|----|
| | | YEAR | SEQUENTIAL NUMBER | REVISION NUMBER | | | |
| | | | | | | | |
| Rancho Seco Nuclear Generating Station | 05000312 | 87 | 029 | 010 | 3 | OF | 11 |

TEXT (If more space is required, use additional NRC Form 365A's) (17)

The District committed to comply with the guidelines of the NFPA code sections cited below. The deviations from the codes listed below were reviewed and found:

- not to impact system operability
- not to violate technical specifications
- not to impact the plant's ability to achieve and maintain safe shutdown.

The NFPA codes are as follows:

- carbon dioxide systems -- NFPA 12 (RE: ODR 87-589)
- sprinkler systems -- NFPA 13 (RE: ODR 87-591)
- standpipe and hose stations -- NFPA 14 (RE: ODR 87-603)
- water spray fixed systems -- NFPA 15 (RE: ODR 87-590)
- fire pumps -- NFPA 20 (RE: ODR 87-606)
- private fire service mains -- NFPA 24 (RE: ODR 87-605)

However, as a result of the District's commitment to the guidelines of NFPA 72D (which makes direct reference to NFPA 72E), fire detector locations were also reviewed. Although all detection systems were determined to be operable in accordance with technical specifications, their ability to provide prompt indication of a fire was marginal in some plant areas using criteria from NFPA 72E. To enhance the ability to obtain prompt indication for fires in those areas, fire watches were established.

Control Room Fire Alarm Annunciation System (NFPA 72D)

The Control Room fire alarm annunciation system is not in compliance with the National Fire Protection Association standard for proprietary protective signaling systems, NFPA 72D. It should be noted that the Technical Specifications 4.18.1.2 and 4.18.1.3 do not indicate that not all alarm circuits are required to be supervised, only that unsupervised ones need to be tested monthly. The District is left to determine which circuit is, or is not, supervised. Therefore, this deviation from the NFPA standard may not constitute a Technical Specification violation.

Three conditions which may prevent the system from reliably providing prompt notification to the operators are as follows:

- Portions of the signaling circuits and power supply are unsupervised so that a single break or ground would not be specifically annunciated in the Control Room.
- A trouble signal instead of an alarm signal is annunciated when the first detector senses an alarm condition in the Auxiliary Building carbon dioxide protected zones.
- The computer generated audible alarm in the Control Room for zones in the Nuclear Services Electrical Building, Auxiliary Feedwater Pumps, and two zones in the Auxiliary Building is inadequate per NFPA 72D (because it is not distinct) although visual alarm is provided.

LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

APPROVED OMB NO. 3150-0104

EXPIRES: 8/31/86

| FACILITY NAME (1) | DOCKET NUMBER (2) | LER NUMBER (6) | | | PAGE (3) | | |
|--|-------------------|----------------|-------------------|-----------------|----------|----|----|
| | | YEAR | SEQUENTIAL NUMBER | REVISION NUMBER | | | |
| | | | | | | | |
| Rancho Seco Nuclear Generating Station | 05000312 | 87 | 029 | 010 | 4 | OF | 11 |

TEXT (If more space is required, use additional NRC Form 366A's) (17)

This situation was mitigated by installation of continuous fire watches at the local fire panels to monitor alarm system annunciation which is an adequate compensatory measure for the following reasons:

- Circuitry from the fire detection instrumentation to the local panels is supervised and is tested semi-annually in accordance with Technical Specification 4.18.1.2. The continuous fire watch posts eliminate any reliance on the unsupervised circuits between the local panels and the Control Room.
- The local panels provide a distinct annunciation for fire upon the first detector trip. The continuous fire watch posting is thereby notified at the first indication of fire.

Detection is one element in the fire protection program. Suppression is not affected by fire alarm discrepancies, so this is not a condition which alone could prevent the fulfillment of safety functions of plant systems.

Plant operating conditions before the event.

The plant has operated at power since the time that these conditions were identified to the District.

The method of discovery of each component or system failure or procedural error (testing, investigating, troubleshooting, tour, observation).

Reports provided to the District document an analysis of the conformance of the District's fire protection system to NFPA requirements which became the basis of a fire protection system status review. That system status report was inspected by the NRC during a fire protection program review. The NRC questioned whether the items presented in that report were evaluated against 10 CFR Part 50.72 and 50.73 for reportability to the NRC.

Dates and approximate times of occurrence.

The Occurrence Description Reports for these conditions were filed between May 15 and May 21, 1987. The reports which are the bases of these ODRs are dated July and August 1985.

LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

U.S. NUCLEAR REGULATORY COMMISSION

APPROVED OMB NO. 3150-0104
EXPIRES: 8/31/86

| FACILITY NAME (1) | DOCKET NUMBER (2) | LER NUMBER (6) | | | PAGE (3) | | |
|--|-------------------|----------------|-------------------|-----------------|----------|----|---|
| | | YEAR | SEQUENTIAL NUMBER | REVISION NUMBER | | | |
| Rancho Seco Nuclear Generating Station | 05000312 | 87 | 029 | 010 | 5 | OF | 1 |

TEXT (If more space is required, use additional NRC Form 366A's) (17)

The [intermediate and root] cause[s] of each component or system failure or personnel error, if known.]

Surveillance Procedures -- monthly circuit check deficiency

The surveillance program did not verify that there was an item for item correspondence between technical specification surveillance requirements and procedures which implement them. The procedure for Technical Specification 4.18.1.3 was not fully adequate to demonstrate circuit operability for the normally open contacts in the circuits which serve as the interface between the local fire alarm panels and the Control Room indications.

Failure to provide timely report

The District organization responsible for writing Licensee Event Reports is singly dependent upon the internal generation of an Occurrence Description Report (ODR) which records potentially reportable events. This event demonstrates that the ODR process (embodied in Rancho Seco Administrative Procedure (RSAP) 1302) was not consistently used by every Rancho Seco organization within the District. In addition, the fire protection discrepancies were discussed in the process of developing the restart plan (QCI-12 process). Senior management in those meetings, who otherwise recognized the ODR process, did not write ODRs due to the lack of reportability determination being part of their "QCI-12" charter. Furthermore, the training to the system engineers to write ODRs on significant issued described in their respective system status reports, as an outgrowth of LER 86-21 and LER 86-23, was apparently ineffective in this case.

An assessment of the safety consequences and implications of the event [e.g., implication of the event if it occurred during other plant conditions, especially power operations - or why it could not have happened during power operations]. This includes the availability of other systems or components that can perform the same function as the components and systems that failed during the event [or why there were not any safety implications referring to the USAR analysis].

Summary

The ODRs written to describe the discrepancies from the NFPA standards outlines problems well known to the District. This report is made to satisfy the reporting requirements of the NRC. The discrepancies outlined by the ODRs are compensated by continuous and/or hourly fire watches in the affected parts of the plant. Prior to fire watches being instituted, safety consequences were nominal. Rancho Seco has an active fire protection program based on diverse actions, all designed to minimize eliminate conditions that may initiate or propagate a fire, and mitigate the effects of any fire that might occur in the plant. Controls (e.g., hot work controls, combustible control), personnel activities (e.g., fire brigades) and hardware systems (e.g., equipment separation) provide the plant with defense in depth against fires. An individual fire in any specific area of the plant would not preclude shutdown of the plant.

LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

| FACILITY NAME (1) | DOCKET NUMBER (2) | LER NUMBER (6) | | | PAGE (3) | | |
|--|-------------------|----------------|-------------------|-----------------|----------|----|----|
| | | YEAR | SEQUENTIAL NUMBER | REVISION NUMBER | | | |
| Rancho Seco Nuclear Generating Station | 05000312 | 87 | 029 | 010 | 6 | OF | 11 |

TEXT (If more space is required, use additional NRC Form 366A's) (17)

The NFPA code deviations described in the ODRs were reviewed to determine their impact on the following issues:

- compliance with technical specifications
- impact on the ability to achieve and maintain safe shutdown
- fire protection system reliability.

The criteria for plant safety were derived from technical specification requirements and the Fire Hazards Analysis Report (FHAR). The impact of each issue reported is described below.

Control Room Fire Alarm Annunciation System Testing

The Control Room fire alarm annunciation is actuated by detectors that sense fire conditions within fire zones and detectors that sense operation of a fire suppression system. The fire detectors include:

- (1) smoke detectors
- (2) heat detectors
- (3) flame detectors
- (4) air duct smoke detectors

Monitoring of the fire suppression systems includes the following:

- (1) water flow alarm
- (2) sprinkler system supervision
- (3) fire pump supervision
- (4) carbon dioxide system supervision

Unsupervised circuits between the "instrument" and the Control Room are required to be demonstrated operable at least once every 31 days by section 4.18.1.3 of Technical Specifications. The affected local panels are:

- H4FCP1 -- Turbine Building, Transformer Yard
- H4FCP2 -- Auxiliary Building (other than CO₂ zones), Reactor Building
- H4FCP5 -- Nuclear Service Electrical Building (NSEB)
- H4FCP8 -- Auxiliary Feedwater Pump System and Auxiliary Building Zone 109
- H4FDC02A Auxiliary Building CO₂ protected zones
- H4FDC02B Auxiliary Building CO₂ protected zones
- H4FDC02C Auxiliary Building CO₂ protected zones

LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

U.S. NUCLEAR REGULATORY COMMISSION

APPROVED OMB NO. 3150-0104

EXPIRES: 8/31/88

| FACILITY NAME (1) | DOCKET NUMBER (2) | LER NUMBER (6) | | | PAGE (3) | |
|--|-------------------|----------------|-------------------|-----------------|----------|--------|
| | | YEAR | SEQUENTIAL NUMBER | REVISION NUMBER | | |
| Rancho Seco Nuclear Generating Station | 0 5 0 0 0 3 1 2 | 8 7 | 0 2 9 | 0 1 0 | 7 | OF 1 1 |

TEXT (If more space is required, use additional NRC Form 366A's) (17)

The local fire alarm panels and Control Room annunciators alarm specific fire zones. The alarm circuits to the auxiliary relays in the local panels and to the Control Room annunciators are considered unsupervised because a single break or ground fault will not be distinctly annunciated in the Control Room as a trouble signal. It will either be a false alarm or no signal at all. Because the validity of the Control Room panel indication is based on testing unsupervised circuits every month (which was not adequately performed) the Control Room Fire alarm annunciation system was declared inoperable.

Control Room Fire Alarm Annunciation System (NFPA 72D)

In addition, due to faulty logic conditions, the first detector for a carbon dioxide zone (in the Auxiliary Building only) is annunciated as a trouble condition in the Control Room. The operators will not respond to trouble signals in carbon dioxide protected zones because the same signals are sent whenever the carbon dioxide system is disabled before personnel enter the zone. This situation was created in 1985 when administrative procedures were changed to drop the requirement that personnel notify the Control Room before the carbon dioxide panels were disabled. A cross-zoned detection signal (one detector each from the "A" and "B" loop in the room) must be received in order to have distinct fire signal annunciation in the Control Room. Because two detectors must alarm in order to provide a fire signal, this condition effectively doubles the detector zone spacing and may prevent the operators from receiving early warning of a fire. Suppression initiation is unaffected by this detector circuit logic problem (i.e., a cross-zoned detection will release CO₂).

Alarm signals are annunciated at the local panel over supervised circuits. The lack of the operable unsupervised alarm signaling circuit would not prevent automatic suppression from initiating. The supervised circuits have been tested semi-annually in accordance with Technical Specification 4.18.1.2. As a result of the ODR, a continuous fire watch was placed at the local fire alarm panels. The fire watch posting, therefore, provides a "constantly manned" location directly in front of each local panel. All detector alarms are correctly annunciated at the local panels. Operability concerns and technical specifications are, therefore, satisfied.

The FHAR fire areas which required automatic fire detection and suppression by the BTP 9.5-1, Appendix A and the applicable section of Appendix R to 10 CFR Part 50, were analyzed (RE: SMUD Report ERPT-E0023, August 1985) when the NFPA code deviations were first reported to the District in August 1985. The fire watches recommended in ERPT-E0023 were initiated in 1985. Additional fire watches were initiated recently to enhance the ability to obtain prompt indication of a fire in those areas.

LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

APPROVED OMB NO. 3150-0104
EXPIRES: 8/31/88

| FACILITY NAME (1) | DOCKET NUMBER (2) | LER NUMBER (6) | | | PAGE (3) | |
|--|-------------------|----------------|-------------------|-----------------|----------|-------|
| | | YEAR | SEQUENTIAL NUMBER | REVISION NUMBER | | |
| Rancho Seco Nuclear Generating Station | 05000312 | 87 | 029 | 010 | 8 | OF 11 |

TEXT (If more space is required, use additional NRC Form 366A's) (17)

Eleven fire areas (ten in the Auxiliary Building and one in the Turbine Building) were analyzed (RE: ERPT-E0023). Three of the fire areas had NFPA 72E code deviations which could potentially impact prompt detection of a fire. Although the detection systems were determined to be operable, fire watch patrols were established where judged necessary to ensure prompt and extinguishment of a fire. The fire watches will remain in effect until alternative corrective actions are taken. The following Auxiliary Building zones were determined to have a marginal number of smoke detectors for beam ceiling construction (the detector coverage did not meet the criteria from NFPA 72E):

Zone 13 (Fire Area 17) West 480V Switchgear Room, Mezzanine Level

Zone 16 (Fire Area 20) East 480V Switchgear Room, Mezzanine Level

Zone 43 (Fire Area RG-1) Grade Level Controlled Area

In addition to protecting redundant components, automatic fire detection is important to aid the operators in performing manual actions during a fire. The FHAR credits manual actions in several fire areas. The fire detection system is intended to provide early warning of fires. The operators can use this warning to initiate manual actions, if the fire is located in an area requiring manual actions. Delays in alarm notification can reduce the time available for such action. The FHAR assumes loss of all functions in a fire area during a fire. The analysis concludes that an individual fire will not pose a safety concern.

Fire Pumps (NFPA 20)

The use of the existing controller for the electric motor driven fire pump impacts only the ability to obtain spare parts for maintenance activities. This is because the existing controller is obsolete. A listed controller is available in a warehouse on-site to replace the old controller.

The fire protection water system electric driven fire pump (P-440) and diesel driven fire pump (P-996) have both demonstrated the ability to perform their intended functions during surveillance tests. The discrepancies noted are, therefore, judged by the District not to be significant.

LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

| FACILITY NAME (1) | DOCKET NUMBER (2) | LER NUMBER (6) | | | PAGE (3) | |
|--|-------------------|----------------|-------------------|-----------------|----------|-------|
| | | YEAR | SEQUENTIAL NUMBER | REVISION NUMBER | | |
| | | | | | | |
| Rancho Seco Nuclear Generating Station | 05000312 | 87 | 029 | 010 | 9 | OF 11 |

TEXT (If more space is required, use additional NRC Form 365A's) (17)

A description of any corrective actions planned as a result of the event, including those to reduce the probability of similar event occurring in the future.

Control Room Fire Alarm Annunciation System Testing

An alarm circuit has been installed between each local fire alarm panel and annunciator windows in the Control Room. The alarm circuit provides audible and visual indication in the Control Room for each panel. The operators are able to go to the local panel to determine which zone is alarming. The new alarm circuits are tested once every 31 days, as required by the Technical Specifications.

Control Room Fire Alarm Annunciation System (NFPA 72D)

The fire alarm annunciating system will be upgraded by the conclusion of the next refueling outage (Cycle 8) to comply with NFPA 72D guidelines or demonstrated equivalents. The detailed evaluation of current design discrepancies will be submitted to the NRC by first the quarter of 1988.

Additional smoke detectors have been installed in the East and West 480V Switchgear Rooms.

Alarm circuits have been installed between panels H4FCP1, H4FCP2, H4FCP5, H4FCP8, H4FDC02A and annunciator windows in the Control Room in place of the continuous fire watch at the local panels. The alarm circuit provides audible and visual indication in the Control Room for any detector alarm associated with panels H4FCP1, H4FCP2, H4FCP5, H4FCP8, H4FDC02A and H4FDC02B and C. The operators are able to go to these local panels and determine which zone is in alarm.

As discussed in SMUD letter GCA 87-912 (January 2, 1988), the plan and schedule to complete the long term upgrade modifications will be submitted to the NRC during the first quarter of 1988.

Fire Pumps (NFPA 20)

The controller for the electric motor driven fire pump will be replaced by a controller which satisfies NFPA 20 requirements. The existing controller satisfactorily passed the surveillance required by technical specifications. It will be replaced as part of Rancho Seco's improvement in preventive maintenance. This modification will be completed as soon as all required components are available.

LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

| | | | | | | | |
|---|--|----------------|-------------------|-----------------|----------|----|-----|
| FACILITY NAME (1) Rancho Seco Nuclear Generating Station | DOCKET NUMBER (2) 0 5 0 0 0 3 1 2 | LER NUMBER (6) | | | PAGE (3) | | |
| | | YEAR | SEQUENTIAL NUMBER | REVISION NUMBER | | | |
| | | 8 7 | — 0 2 9 | — 0 1 1 | 0 | OF | 1 1 |

TEXT (If more space is required, use additional NRC Form 365A's) (17)

Root Cause ResponseSurveillance Procedures -- monthly circuit check deficiency

The District conducted a review of the surveillance program to verify that there is an item-for-item correspondence between Technical Specification surveillance requirements and procedures which implement them. This program, initially instituted following Notice of Violation 86-06/07, evaluated the adequacy of the procedures. ODRs were generated when deficiencies were uncovered. The ODRs are tracked to completion of corrective actions.

The procedure for Technical Specification 4.18.1.3 was not identified until 1985. It was the District's position until that time that there were no unsupervised fire alarm circuits. The surveillance subsequent to the discovery of unsupervised circuits did not adequately check the entire instrument loop for the alarms. The Surveillance Procedure, currently SP.338, "Monthly Surveillance of Detector Alarm Circuits," was revised to test the unsupervised circuits following the circuit modification described previously. The modification allows the District to remove the continuous fire watches at the local panels. Surveillance Procedure SP.338 was revised and performed on the new circuits prior to the removal of the continuous fire watches.

Failure to provide timely report

The "QCI-12" charter was evaluated to determine how to assure that events entered into the QCI-12 tracking system would be reviewed for reportability. Changing the "QCI-12" charter would not assure that events would receive the timely review for reportability. Since this LER was submitted the ODR process has been modified, improved, and proceduralized in a Rancho Seco Administrative Procedure. These improvements and the re-emphasis of the importance of using the ODR system should resolve this issue.

The District has re-emphasized to all system engineers, and others responsible for documenting and resolving problems, the importance of adhering to the procedure for issuing Occurrence Description Reports (ODRs).

Additional evaluations of non-safety discrepancies

The remaining NFPA code deficiencies found in 1985 do not impact Technical Specifications or safe shutdown analysis; however, several of these deficiencies affect the overall reliability of the fire protection systems. Correcting some of these deficiencies would benefit plant operations. Many of the deviations identified in 1985 have been corrected, or alleviated by changes in the plant. An internal District report was prepared evaluating reports ERPT-E-033, -034, -035, -037, -039, -047 and -048. Modifications which should be made to enhance the reliability of the fire protection systems were identified.

LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

| FACILITY NAME (1) | DOCKET NUMBER (2) | LER NUMBER (6) | | | PAGE (3) | | |
|--|-------------------|----------------|-------------------|-----------------|----------|----|----|
| | | YEAR | SEQUENTIAL NUMBER | REVISION NUMBER | | | |
| Rancho Seco Nuclear Generating Station | 05000312 | 87 | 029 | 011 | 1 | OF | 11 |

TEXT (If more space is required, use additional NRC Form 366A's) (17)

Reference to any previous similar events at the same plant that are known to the licensee.

LER 86-23 was an instance where the District failed to report conditions in a timely fashion. Fire protection design discrepancies at Rancho Seco were not previously reported as LERs.

The Energy Industry Identification System component function identifier and system name of each component or system referred to in the LER.

The fire Protection deluge spray systems, suppression sprinkler systems, fire protection hose stations, and fire protection water system electric driven fire pump (P-440) and diesel driven fire pump (P-996) are all NRC LER System Code "KP."

The Control Room fire alarm annunciation system is NRC LER System Code "IC."



SMUD

SACRAMENTO MUNICIPAL UTILITY DISTRICT □ 6201 S Street, P.O. Box 15830, Sacramento CA 95852-1830, (916) 452-3211
AN ELECTRIC SYSTEM SERVING THE HEART OF CALIFORNIA

GCA 87-926

JAN 14 1988

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

Docket No. 50-312
Rancho Seco Nuclear Generating Station
License No. DPR-54
**LICENSEE EVENT REPORT 87-29, REVISION 1: FIRE PROTECTION PROGRAM DEFICIENCIES
WITH RESPECT TO TECHNICAL SPECIFICATIONS AND COMMITMENTS**

Dear Sirs:

In our initial submittal of LER 87-29 we committed to provide you a supplemental report. The attached revision is that supplement.

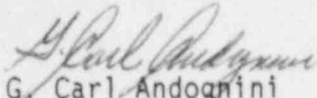
The revision contains three changes to our previous commitments.

- As discussed in our letter GCA 87-912, dated January 2, 1988, submittals that were expected to be provided by January 1, 1988 will now be provided during the first quarter of 1988.
- We did not modify the QCI-12 charter to include a reference to reportability determination. This commitment was changed because it was determined that changing the "QCI-12" charter would not assure that events would receive the timely review for reportability. The Occurrence Description Report (ODR) System is the primary method used to determine reportability. Since this LER was submitted, the ODR process has been modified, improved, and proceduralized in a Rancho Seco Administrative Procedure. These improvements, and the re-emphasis of the importance of using the ODR system, should resolve any concerns about reportability.
- We stated that the component required to replace the controller on the electric motor driven fire pump was already available on-site. Although the controller is available, a suitable cabinet is not. As committed, the present controller will be replaced as part of the improvement process after all the required components are available on-site.

IE22
11

Please contact me if you have any questions. Members of your staff with questions requiring additional information or clarification may contact Mr. Paul Lavelly at (916) 452-3211, extension 4674.

Sincerely,


G. Carl Andognini
Chief Executive Officer,
Nuclear

Attachment

cc w/atch:

G. Kalman, NRC, Bethesda (2)
A. D'Angelo, NRC, Rancho Seco
J. B. Martin (2)
INPO