NRC Form 366
(9-83)

U.S. NUCLEAR REGULATORY COMMISSION
APPROVED OMB NO. 3150-0104
EXPIRES: 8/31/88

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 0

TITLE (4)
HOURLY FIRE WATCHES MISSED DURING SECURITY COMPUTER OUTAGE

EVENT DATE (5)			LER NUMBER (6)			REPORT DATE (7)			OTHER FACILITIES INVOLVED (8)	
MONTH	DAY	YEAR	YEAR	SEQUENTIAL NUMBER	REVISION NUMBER	MONTH	DAY	YEAR	FACILITY NAMES	DOCKET NUMBER(S)
0 5	2 9	8 7	8 7	0 3 3	0 0	0 6	2 9	8 7	None	0 5 0 0 0
										0 5 0 0 0

OPERATING MODE (9)	N	THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §: (Check one or more of the following) (11)					
POWER LEVEL (10)	0 0 0	20.402(b)		20.405(c)		50.73(a)(2)(iv)	73.71(b)
		20.405(a)(1)(i)		50.36(c)(1)		50.73(a)(2)(v)	73.71(c)
		20.405(a)(1)(ii)		50.36(c)(2)		50.73(a)(2)(vii)	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)(x)	

LICENSEE CONTACT FOR THIS LER (12)

NAME	TELEPHONE NUMBER
	AREA CODE
Ron W. Colombo, Regulatory Compliance, Superintendent	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	MANUFACTURER	REPORTABLE TO NPRDS		CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NPRDS	
A	I A	C P U	7 8 4 0	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 primary security mission is the protection of plant facilities and the prevention of sabotage that could cause radiological release. A breakdown in the security computer system caused an unexpected demand on available manpower to perform technical specification required fire watches. During this event eleven fire watch patrol stops in 77 inspection zones were not performed as required by technical specifications.

Numerous fire zones in the plant were being manually monitored for fires as required by technical specifications and LER commitments. These "watches" were instituted due to breached fire barriers and carbon dioxide zone monitoring per the District's LER 87-15.

Three of zones where fire watches were missed had functional suppression. However, these sixteen zones were inoperable according to technical specifications because Cardox System level and pressure gages were out-of-calibration.

The pending organizational change to establish a fire watch pool to assume a majority of the security department's fire watch tasks, (among others), will be implemented during the current outage.

8707070242 870629
PDR ADOCK 05000312
S PDR

IE22

1/1

NRC Form 366
(9-83)

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

The primary security mission at the Rancho Seco, Unit No. 1 Nuclear Power Plant is the protection of plant facilities and the prevention of sabotage that could cause radiological release. A breakdown in the security computer system caused an unexpected demand on available manpower which precluded the performance of technical specification required fire watches. During this event (RE: ODR 87-633), eleven technical specification required fire watch patrol stops in 77 inspection zones were not performed as required by technical specifications and LER commitments. This event is reportable according to 10 CFR Part 50.73(a)(2)(i)(B).

The failure mode [undesirable state of a system or component], mechanism (i.e., immediate cause) and effect [the consequence or major concern resulting from the failure] of each failed component, if known.

The computer breakdown was due to several misalignments of disks. The secondary disk was out-of-date with the primary disk.

The misalignments were recognized quickly after the dual security computer failures. They were unplanned, yet not unrecognized failures. The failures required the implementation of a portion of the security plan which required the manual control of vital areas of the plant. A security alert was not initiated because the computer problem was caused by a software/data-type breakdown and compensatory security measures were already taken.

Plant operating conditions before the event.

This event occurred during cold shutdown conditions.

Status of structures, components, or systems that were inoperable at the start of the event that contributed to the event.

Numerous fire zones in the plant were being manually monitored for fires as required by technical specifications. These "watches" were instituted due to breached fire barriers (RE: Special Report 87-10) and carbon dioxide zone monitoring per the District's LER 87-15. In addition, refer to Rancho Seco LER 87-29 and Special Reports 87-11 and 87-12 document concurrent fire protection problems.

Special Report 87-11 describes Zone 32 water suppression and fire detection inoperability.

Three of zones where fire watches were missed had functional suppression. However, these zones were inoperable according to technical specifications because Cardox System level and pressure gages were out-of-calibration (RE: Special Report 87-12).

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

The security watch commander contacted the Control Room shift supervisor to provide notice that the hourly fire watch patrols were being abandoned in favor of security postings in response to the security computer system breakdown. The five continuous fire watches required at the time were maintained throughout this event.

Dates and approximate times of occurrences.

The security computer breakdowns occurred between 6:28 P.M. and 9:02 P.M. on May 29, 1987. The shift supervisor was notified by security at 6:30 P.M. on May 29, 1987 that the security computer was out-of-service. Security was able to take credit for a few fire watch patrols and begin to assess the current fire watch status at approximately 8:00 P.M. on May 29, 1987. Following their review of the fire watch logs, security informed the shift supervisor at 9:00 P.M. about the possibility of missing fire watches during this event.

Operator actions that affected the course of the event, including operator errors, procedural deficiencies, or both, that contributed to the event [positive or negative contributions].

The Nuclear Operations Fire Protection Coordinator (NOFPC) was notified at home of the event at the time of occurrence (approximately 9:00 P.M.). The operations department replaced two continuous fire watch postings with mechanical maintenance personnel who were qualified as fire watches.

For each personnel error, the licensee shall discuss:

- Whether the error was a cognitive error (e.g., failure to recognize the actual plant condition, failure to realize which systems should be functioning, failure to recognize the true nature of the event) or a procedural error;
- Any unusual characteristics of the work location (e.g., heat, noise) that directly contributed to the error; and
- The type of personnel involved (i.e., contractor personnel, utility-licensed operator, utility nonlicensed operator, other utility personnel).

Upon failure of the security computer, the security watch commander was faced with conflicting decisions. He was required by the Security Plan to station personnel in specific plant areas and abandon fire watches. He was also required to maintain fire watches per plant administrative procedures. He made the decision per the security procedures and this resulted in the violation of technical specifications due to inadequate fire watches.

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

The immediate cause of the missed fire watches were:

1. insufficient security staff on duty to manually conduct vital area monitoring and support fire watch patrol duties.

2. failure to implement a fire watch administrative program (AP.64, step 3.2.5) by the Control Room in order to conduct a fire watch program independent from the Security Department.

The security computer failure message to the control room was made in accordance with the Physical Security Plan between the security and operations departments. Security normally provides the manpower in accordance with AP.64 and Security Plan Implementing Procedure (SPIP) 41 for conducting fire watches. There was no method to resolve the conflict of fire protection and security priorities during this event, except for the unilateral action by the security department as provided in the Security Plan. The security department procedure for conducting fire watches does not cover the specific situation of a loss of the security computer system without an accompanying Security Alert. The decision to call a Security Alert is based on an evaluation of the security situation. The Security Plan does not automatically initiate any type of increased security measures.

In any case, a Security Alert is a security-related situation that may not necessarily pose an immediate threat or danger to the plant, but does call for an increased alertness posture by plant personnel and the execution of specified procedures. Security management, at their discretion, can implement certain portions of the Security Plan without declaring a Security Alert.

The loss of the security computer does, assuming the normal manpower assigned to fire watch patrols is used, directly impact the speed at which the patrols are conducted because so many vital areas need to be entered to correctly perform the fire watch. The loss of the security computer does not affect the SPIP 41 requirement for fire watches, unless the loss of the computer causes a Security Alert to be declared. During a Security Alert, the Security Plan, specifically SPIP 41, Revision 4, step 7.4, dictates the abandonment of fire watches in favor of the primary security function.

One operations department procedure is designed to identify those zones which require a fire watch (whether it should be continuous or hourly, i.e., AP.60). Another operations department procedure (AP.64) provides for the actual conduct of the fire watch (e.g., rounds through the plant, maintaining a log of the zones checked).

The shift supervisor was notified when the first security computer failed. In that notification, it was not clear that the fire watch patrols needed to be abandoned, i.e., a Security Alert was not called. The shift Supervisor, being conscious of the potential technical specification problem, contacted the night-shift Maintenance Manager and the night Shift Manager who started actions to find individuals in the maintenance group to take the place of a security personnel manning continuous fire watch posts. Maintenance personnel are qualified as ignition source work fire watches per AP.64, but have little or no experience for efficiently conducting the roving fire watch patrols. This maintenance for security personnel substitution was initiated during the event. The freed-up security personnel were more suited by experience for the fire watch patrol. By the time that these people were made available for the fire watch patrol, one of the security computers had been brought back to service. With the computer back in-service, security personnel resumed their normal routine watches.

The Control Room was not immediately aware which fire watches were being missed because security had the immediate status of the fire watch patrols. Several hours after the "repair" of the security computer and the normal security duties were resumed, the Security Watch Commander determined the status of the fire watch patrols and which ones were missed. The determination was complicated by legitimately taking credit for security personnel being coincidentally in the various fire zones during the manual vital area postings during this event.

The need to manually maintain vital areas and conduct the unusually large amounts of fire watches during the current outage is an infrequent occurrence.

The Physical Security Plan considers fire watches a secondary function which needs to be abandoned if a security contingency arises. A pending organizational change to establish a fire watch patrol personnel pool for conducting fire watches, (among other tasks), has not been implemented yet.

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

Rancho Seco has an active fire protection program based on diverse actions, all designed to minimize or 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.

Out of over 290 fire watch patrol stops that needed to be performed during this event, the following five zones were not inspected a total eleven times. One of the zones does not contain safety-related equipment.

Although the regular fire watch patrol missed several stops, credit was taken for the coincidental vital area posting. The following missed zones form the basis of this report. That is not to say that other non-security employees were not coincidentally in the zone during the missed times. In addition, the District interprets an hourly fire watch to be fulfilled if the fire watch patrol round, for the designated zones, is completed within about one hour and a subsequent round commences immediately (i.e., it is not necessary to visit each designated zone on a precise 60 minute cycle.) To be specific, the assigned fire watch patrols were missed in the following zones:

Zone 14 -- four hours
West Cable Tray Area

Consequences of a fire in this zone:

The fire protection features provided are expected to limit the fire at the boundaries defining the fire area. Fire detection was operable in this zone during this event. The fire suppression system was functional, but inoperable according to Technical Specification 1.3, in this zone during this event. There were several fire barrier breaches during this event. According to the Fire Hazards Analysis Report, should propagation of the fire occur through the non-rated metal hatch to adjacent area 31, additional operator actions may be required to isolate and mitigate the spurious operation of components. Redundant instruments and train "B" systems required for hot and cold shutdown will remain available. Damage resulting from the fire will be limited to one train of systems required for hot or cold shutdown.

Zone 32 -- four hours
Main Lube Oil Area, Grade Level

Consequences of a fire in this zone:

No safety-related equipment is in this zone.

Zone 36 (Area 30) -- one hour, seven minutes
West Battery Room Grade Level

Consequences of a fire in this zone:

If the hypothetical fire were to occur, the loss of cables for train "A" steam generator pressure transmitters PT-20543B, C, D and for train "B" steam generator pressure transmitter PT-20543A would be expected. Cables for the redundant train "A" pressure transmitters PT-20519A, PT-20520A and train "B" pressure transmitters PT-20519B, PT-20520B are routed outside the fire area and will remain available.

There are no cables or equipment in the fire area which are:

- o required to achieve or maintain cold shutdown
- o maintain the high/low pressure interface
- o for components whose spurious operation would adversely affect safe shutdown.

Fire barriers were breached in this zone during this event. The design basis fire is not expected to propagate beyond the fire area because suppression was functional (but Technical Specification 1.3 inoperable) and detection was operable during this event.

Zone 38 (Area 32)-- one hour, thirteen minutes
East 4160V Switchgear Room

Consequences of a fire in this zone:

There were no breaches logged for this zone during this event. The design basis fire is insufficient to breach the barriers defining the fire area. The fire detection system for this zone was operable during this event. The fire suppression system for this zone was functional, but inoperable per Technical Specification 1.3. Damage resulting from the fire will be limited to one train of systems required for hot shutdown due to the routing of redundant cables.

Zone 85 (Area 85) -- one hour, fifty-four minutes
Nuclear Services Electrical Building -- Corridor at Elev. 40'
Nuclear Services Electrical Building -- Train A Cable Room 364
Nuclear Services Electrical Building -- Train B Cable Room 365
Nuclear Services Electrical Building -- Access Bridge Room 368/9
Nuclear Services Electrical Building -- Elevator and Machinery Room

Consequences of a fire in this zone:

Loss of control cables for train "B" NSEB HVAC system dampers HV-50154 and HV-50162 and train "A" NSEB HVAC system dampers HV-50155 and HV-50161 is to be expected. Operator action will be required to open the doors to the train "A" and "B" switchgear rooms to provide ventilation.

The fire suppression and detection for this zone were operable during this event. The design basis fire is insufficient to breach the barriers defining the fire area. Damage to redundant trains of HVAC will be mitigated by operator action.

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.

Security department procedures will be revised so that during a security computer failure, or any other failure which impacts the amount of manpower available to perform fire watches, the log with the current fire watch status maintained by security will be delivered to the Control Room (i.e., the hour by hour log as opposed to the shiftly verified security/operations concurrent log of zones which need fire watch patrols). Until the security department gathers sufficient manpower to resume fire watch responsibilities, the Control Room will ensure the performance of fire watches by the use of on-shift operations and maintenance personnel according to AP.64, step 3.2.5.

Procedure AP.64, revision 1, "Firewatch," steps 3.2.1 and 3.2.4 concerning responsibilities of the shift supervisor and watch commander will be expanded by September 4, 1987 to include instructions and options for conducting fire watch patrols by personnel other than security when SPIP 41 is suspended.

The security department will be authorized, subsequent to turning-over fire watch responsibilities to the Control Room during security manpower shortages, to call-in additional personnel during personnel shortages to maintain plant technical specification fire watches. The additional personnel will allow the security department to resume fire watch responsibilities beginning with the next shift.

The pending organizational change to establish a fire watch pool to assume a majority of the security department's fire watch tasks, (among others), will be implemented during the current outage.

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

LER 87-04 reported an event where the security alarm station supervisor unilaterally authorized the abandonment of a continuous fire watch without authorization from the Control Room.

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

The NRC LER System Code for the security computer system is "IA." The computer is NRC LER System Component Code "CPU."

The manufacturer and model number (or other identification) of each component that failed during the event.

The security computer is a Classic 7840, manufactured by MODCOMP (which does not have an NRC LER System Manufacturer Code).

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 87-241

JUN 2 9 1987

U. S. Nuclear Regulatory Commission
Attn Document Control Desk
Washington, D. C. 20555

Docket No. 50-312
Rancho Seco Nuclear Generating Station
License No. DPR-54
LICENSEE EVENT REPORT 87-33: HOURLY FIRE WATCHES MISSED DURING SECURITY COMPUTER OUTAGE

Dear Sirs:

In accordance with the requirements of 10 CFR Part 50.73(a)(2)(i)(B) the Sacramento Municipal Utility District hereby submits Licensee Event Report Number 87-33.

If there are any questions concerning this report, please contact Mr. Ron W. Colombo at (916) 452-3211, extension 4236.

Sincerely,

G. Carl Andognini
Chief Executive Officer, Nuclear

Attachment

cc: A. D'Angelo
G. Kalman
J. Martin (2)
INPO

IE22
1/1

RANCHO SECO NUCLEAR GENERATING STATION ☐ 14440 Twin Cities Road, Herald, CA 95638-9799; (209) 333-2935