

FACILITY NAME (1) San Onofre Nuclear Generating Station (SONGS) Unit 2	Docket Number (2) 05000-361	Page (3) 1 of 6
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TITLE (4): Missed Technical Specification Surveillance due to Initial Procedural Error

EVENT DATE (5)			LER NUMBER (6)			REPORT DATE			OTHER FACILITIES INVOLVED (8)	
MONTH	DAY	YEAR	YEAR	SEQUENTIAL NUMBER	REVISION NUMBER	MONTH	DAY	YEAR	FACILITY NAME	DOCKET NUMBER
04	21	1998	1998	-- 006	-- 01	10	02	1998	SONGS Unit 3	05000-362
									FACILITY NAME	DOCKET NUMBER

OPERATING MODE POWER LEVEL (10) 100	THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §: (Check One or More) (11)										
	20.2201(b)			20.2203(a)(2)(v)			<input checked="" type="checkbox"/>		50.73(a)(2)(i)		50.73(a)(2)(viii)
	20.2203(a)(1)			20.2203(a)(3)(i)					50.73(a)(2)(ii)		50.73(a)(2)(x)
	20.2203(a)(2)(i)			20.2203(a)(3)(ii)					50.73(a)(2)(iii)		73.71
	20.2203(a)(2)(ii)			20.2203(a)(4)					50.73(a)(2)(iv)		OTHER
	20.2203(a)(2)(iii)			50.36(c)(1)					50.73(a)(2)(v)		Specify in Abstract below or in NRC Form 366A
	20.2203(a)(2)(iv)			50.36(c)(2)					50.73(a)(2)(vii)		

LICENSEE CONTACT FOR THIS LER (12)

NAME R.W. Krieger, Vice President, Nuclear Generation	TELEPHONE NUMBER (Include Area Code) 949-368-6255
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COMPLETE ONE LINE FOR EACH COMPONENT FAILURE DESCRIBED IN THIS REPORT (13)

CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO EPIX	CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO EPIX

SUPPLEMENTAL REPORT EXPECTED (14)				EXPECTED SUBMISSION DATE (15)		MONTH	DAY	YEAR
Yes (If yes, complete EXPECTED SUBMISSION DATE)	<input checked="" type="checkbox"/>	No						

ABSTRACT (Limit to 1400 spaces, i.e., approximately fifteen single-spaced
 On 4/21/98, an operations supervisor questioned procedure adequacy to satisfy the Units 2 and 3 Offsite Dose Calculation Manual (ODCM) dilution pump operation Surveillance Requirement (SR) for continuous releases. The SR confirms all pumps required to be providing dilution are operating and providing dilution to the discharge structure. This SR previously existed in the Technical Specifications (TS). In 1990, SCE transferred this requirement unchanged from the TS to the ODCM. Also transferred from the TS to the ODCM were requirements to perform radiation monitor channel checks and source checks.

It appears that SCE did not perform the dilution pump operation SR in certain instances. In addition, SCE now recognizes that it was not possible to meet the verbatim TS requirements for performing a channel check. Also, the procedure for completing the source check did not comply, verbatim, with the requirements of the TS.

It appears that these events were caused by personnel error during the initial SR procedure development process (circa 1982). Due to the passage of time, SCE has not determined the exact cause of these occurrences.

(4-95)

TEXT CONTINUATION

FACILITY NAME (1)	DOCKET	LER NUMBER (6)			PAGE (3)
		YEAR	SEQUENTIAL NUMBER	REVISION NUMBER	
San Onofre Nuclear Generating Station (SONGS) Unit 2	05000-361	1998	-- 006 -	01	2 OF 6

Plant: San Onofre Nuclear Generating Station (SONGS) Unit 2 and 3
 Reactor Vendor: Combustion Engineering
 Event Date: April 21, 1998
 Unit 2 Unit 3
 Mode: 1, "Power Operation" 1, "Power Operation"
 Power: 100 percent 100 percent

Background:

The SONGS radioactive liquid effluent release points include multiple points which discharge to the discharge structure. The current Units 2 and 3 Offsite Dose Calculation Manual (ODCM) release points are monitored by the following radiation monitors:

Release Point Description	Monitor Identification Number	Discharge Type
1) Liquid Radwaste Effluent Line (common)	RT7813	Batch
2) Blowdown Processing (Neutralization) Sump, Full Flow Condensate Polisher (FFCPD) Effluent Line (one per unit)	RT7817	Batch/Continuous
3) Turbine Plant (TP) Sump, Auxiliary Building (AB) Sump, Component Cooling Water (CCW) Water Sumps, Storage Tank Area Sumps Effluent Line (one per unit)	RT7821	Continuous/Batch
4) Steam Generator (SG) Blowdown Bypass Effluent Line (one per unit)	RT6753	Continuous/Batch
5) SG Blowdown Bypass Effluent Line (one per unit)	RT6759	Continuous/Batch

The radiation monitoring instrumentation (IL) includes an interlock with a valve in the line, such that a high signal will close the valve and terminate the release. The Liquid Radwaste Effluent Line has an additional valve with an interlock to the circulating water pumps. This interlock closes the valve if all four circulating water pump breakers are open (i.e., the pumps are not operating) and allows the valve to open if at least one circulating water pump breaker is closed.

During power operation typically four circulating water pumps per unit and one salt water cooling pump per unit are operating. During a unit shutdown, if the unit's circulating water pumps are not available, the saltwater cooling pumps can provide dilution flow, however, the normal practice is to route the effluent to the other, operating unit.

The Units 2 and 3 ODCM specifies a methodology of calculating the maximum setpoint for the radiation monitors. SCE's practice is to calculate the setpoint using conservative values for the parameters. One such parameter is available dilution flow. The current practice for calculating the radiation monitor setpoints as a function of available dilution flow is summarized as:

Release Type	Available Circulating Water Pumps	Circulating Pumps Assumed In Setpoint Calculation
Continuous	4, 3, or 2	2
Batch	4	3
Batch	3	2
Batch	2	2

(4-95)

TEXT CONTINUATION

FACILITY NAME (1)	DOCKET	LER NUMBER (6)			PAGE (3)
		YEAR	SEQUENTIAL NUMBER	REVISION NUMBER	
San Onofre Nuclear Generating Station (SONGS) Unit 2	05000-361	1998	-- 006 -	01	3 OF 6

The original SONGS Units 2 and 3 Technical Specifications (TS) included specifications for the radioactive effluents (commonly referred to as RETS). The RETS for the liquid effluent monitoring instrumentation included a Surveillance Requirement (SR) to confirm every 4 hours at least one circulating water pump was operating and providing dilution, when dilution was required. Operating License Amendments 57 and 46 for Units 2 and 3, respectively (issued 1/87) revised the SR from "at least one pump" to "all pumps required to be providing dilution." As authorized by the NRC in Operating License Amendments 83 and 73 for Units 2 and 3, respectively (issued 1/90), SCE transferred this requirement unchanged from the TS to the licensee-controlled Units 2 and 3 ODCM.

Also transferred from the TS to the ODCM were requirements to perform radiation monitor channel checks and source checks. The ODCM requires a channel check on flow instrument transmitter FIT-7202 prior to release. However, the procedure that controlled waste gas discharges did not provide a method to check the process flow unless flow was actually present. Consequently, the channel check was performed just after the start of the release. SCE now recognizes that it was not possible to meet the verbatim TS requirements for performing a channel check at that time.

The procedure also performed a source check on the radiation monitor. Over time, the procedure was modified to require valve FV-7202 to close during the source check surveillance (functional testing). Since the signal generated during a source check is typically too low to cause FV-7202 to automatically close, the procedure allowed I&C personnel to generate a test signal to close the valve. However, because the procedure record indicates the source check was unsatisfactory, SCE now recognizes this did not comply, verbatim, with the requirements of the TS.

Description of the event:

As reported in Revision 0 of this LER, on 4/21/98 (discovery date), while reviewing a recent Units 2 and 3 ODCM change (Revision 31), an operations supervisor (utility, licensed) questioned procedure adequacy to satisfy the Units 2 and 3 ODCM dilution pump operation SR for continuous releases. The SR confirms all pumps required to be providing dilution are operating and providing dilution to the discharge structure (The SR does not differentiate whether the release is continuous or batch in nature). Units 2 and 3 ODCM, Revision 31, changed the SR frequency from "4 hours" to "12 hours or after a change in plant mode or pump lineup has been completed."

Based on a review of the existing procedure revision and a sampling of previous procedure revisions, it appears that SCE did not perform the dilution pump operation SR in certain instances. The attached table summarizes SCE's findings.

Because the dilution pump operation SR was previously included in the TS and no documentation exists that this SR was performed when required, when the SR was in the TS, SCE reported this occurrence in accordance with 10CFR50.73(a)(2)(i).

As part of the corrective actions identified in Revision 0 of this LER, a self-assessment was initiated to review the implementing procedures of all of the SRs from the ODCM. This self-assessment identified the two additional SRs discussed above which were not being performed in accordance with the ODCM. Because these SRs were originally in the TS and no documentation exists that these SRs were performed when required, when the SRs were in the TS, SCE is reporting these occurrences in accordance with 10CFR50.73(a)(2)(i).

Cause of the event:

It appears that these events were caused by personnel error during the initial SR procedure development process (circa 1982). The dilution pump operation should have been specifically documented in procedures as a SR. Due to the passage of time, SCE has not determined the exact cause of this occurrence. Similarly, SCE has not been able to determine why the channel check was not performed prior to a release, or why the FV-7202 valve functional test was included in the source check surveillance.

(4-95)

TEXT CONTINUATION

FACILITY NAME (1)	DOCKET	LER NUMBER (6)			PAGE (3)
		YEAR	SEQUENTIAL NUMBER	REVISION NUMBER	
San Onofre Nuclear Generating Station (SONGS) Unit 2	05000-361	1998	-- 006 -	01	4 OF 6

Corrective Actions:

SCE has revised the affected procedures to include appropriate recording of dilution pump operation.

SCE completed a review of the procedures associated with the Units 2 and 3 ODCM surveillances. SCE has revised the affected procedure to provide a new method for performing the channel check prior to a release and to remove the requirement to perform the channel functional test as part of the monitor source check.

SCE believes that the TS and Licensee Controlled Specifications (LCS) SR procedure reviews/revisions performed as a part of the corrective actions for LER 2-1997-001 ensure that the TS and LCS SRs are reflected in procedures.

Safety Significance:

SCE believes that the radioactive liquid effluent monitoring instrumentation for Units 2 and 3 were operable during periods requiring dilution flow and that all pumps required to be providing dilution to meet the site radioactive effluent concentration limits were operating and providing dilution to the discharge structure when required. The circulating water pumps, which provide dilution flow, are normally operating during power operation. During power operation any change in circulating water pump status would be noticed by the control room operators in a short period of time. When a unit is shutdown, the normal practice is, and has been to divert any releases to the operating unit. The procedure for securing a circulating water pump requires evaluation of releases in progress to ensure that the release constraints are still met. In addition, the circulating water pump overcurrent alarm response Required Actions include termination and reevaluation of releases in progress. The minimum dilution flow requirements are verified to be met prior to initiation of a batch release. For the batch releases from the Blowdown Processing (Neutralization) Sump, FFCPD Effluent Line and the TP Sump (CCW Sump and Storage Tank Area Sump) Effluent Line, the release is typically less than the 4 hours and thus would not necessitate the periodic SR.

A source check of the Radiation Effluent Monitors has been performed weekly. This action verifies that a source check has been performed prior to each release, even if not immediately prior. Also, valve FV-7202 has not failed during performance of the channel check SR described above, and would have closed if required.

Therefore, there is no safety significance to these events.

Additional Information:

During the last 3 years SCE has reported the following instances of missed or inadequate Technical Specification surveillances due to procedure errors.

LER 2-96-009-01 reported missed diesel generator surveillances due to an inadequate test procedure developed in 1983.

LER 2-97-007 reported incomplete containment purge exhaust radiation monitor surveillances due to a procedure revision error in 1989.

LER 2-97-013 reported missed surveillances based on lack of identification of a more restrictive technical change to the Fuel Building Post-Accident Cleanup and Control Room Emergency Air Cleanup testing conditions and acceptance criteria during the Technical Specification Improvement Project (TSIP).

Because the errors reported in this LER pre-date the submittal dates of the above referenced LERS, previous corrective actions could not have prevented the occurrences reported herein.

(4-95)

TEXT CONTINUATION

FACILITY NAME (1)	DOCKET	LER NUMBER (6)			PAGE (3)
		YEAR	SEQUENTIAL NUMBER	REVISION NUMBER	
San Onofre Nuclear Generating Station (SONGS) Unit 2	05000-361	1998	-- 006 -	01	5 OF 6

Release Point	Batch Release		Continuous Release	
	Initial SR	Periodic SR	Initial SR	Periodic SR
Liquid Radwaste Effluent Line (Note 13)	Performed (Note 1)	Performed (Note 2)	Not Applicable (Note 15)	Not Applicable (Note 15)
Blowdown Processing (Neutralization) Sump Effluent Line (Note 6)	Performed (Note 1)	Not Performed (Notes 3 & 4)	Not Applicable (Note 8)	Not Applicable (Note 8)
TP Sumps Effluent Line (Note 6)	Not Applicable (Note 7)	Not Applicable (Note 7)	Not Performed (Notes 4 & 10)	Not Performed (Notes 4 & 10)
SG Blowdown Bypass Effluent Lines (RT6753 & RT6759) (Note 5)	Not Applicable (Note 14)	Not Applicable (Note 14)	Not Performed (Note 4)	Not Performed (Note 4)
Miscellaneous Waste Evaporator Condensate Tank (Note 9)	Not Applicable (Note 12)	Not Applicable (Note 12)	Not Applicable (Note 11)	Not Applicable (Note 11)
Salt Water Discharge from Component Cooling Heat Exchanger (Note 9)	Not Applicable (Note 12)	Not Applicable (Note 12)	Not Applicable (Note 11)	Not Applicable (Note 11)

Notes:

- The release permit (which is the mechanism that transmits to operations, the setpoint and other pertinent information for batch releases) requires verification of the minimum dilution flow prior to initiation of a release.
- Procedures associated with the batch releases from the Liquid Radwaste Effluent Line did include a specific SR to verify dilution flow on a periodic basis when a release was in progress.
- Batch releases from this release point are typically less than 4 hours in duration and therefore, would not require the periodic surveillance.
- The dilution flow is normally provided by the operating circulating water pumps. A trip of a circulating water pump would be evident to the control room operators in a short period of time.
- Continuous releases from the SG Blowdown Bypass Effluent Lines were added to RETS in Operating License Amendments 19 and 7 for Units 2 and 3, respectively in May of 1983.
- The FCCPD was added to the Blowdown Processing (Neutralization) Sump Effluent Line release point after the RETS were transferred to the ODCM. The AB Sump, CCW Sumps, and Storage Tank Area Sumps were added to the TP Sump Effluent Line release point after the RETS were transferred to the ODCM.
- Batch releases from the TP Sump Effluent Line release point were not included in the RETS when the RETS were a part of the TS and thus, the SR would not apply. CCW Sump and Storage Tank Area Sump batch releases through the TP Sump Effluent Line release point were evaluated and incorporated into the Units 2 and 3 ODCM. Considering current ODCM requirements, Note 1 would apply to the initial SR, and Notes 3, 4 and 10 would apply to the periodic SR for batch releases from the CCW Sump and the Storage Tank Area Sump.
- Continuous releases from the Blowdown Processing (Neutralization) Sump Effluent Line release point were not included in the RETS when the RETS were a part of the

LICENSEE EVENT REPORT (LER)

(4-95)

TEXT CONTINUATION

FACILITY NAME (1)	DOCKET	LER NUMBER (6)			PAGE (3)
		YEAR	SEQUENTIAL NUMBER	REVISION NUMBER	
San Onofre Nuclear Generating Station (SONGS) Unit 2	05000-361	1998	-- 006 -	01	6 OF 6

- TS and thus, the SR would not apply. Continuous releases from this release point were evaluated and incorporated into the Units 2 and 3 ODCM. Considering current ODCM requirements, Note 4 would apply to the initial and periodic SR.
- 9) The Miscellaneous Waste Evaporator Condensate Tank and Salt Water Discharge from Component Cooling Heat Exchanger were evaluated and removed from the Units 2 and 3 ODCM.
 - 10) In certain instances dilution may have been required to meet the site effluent concentration limits. However, in the absence of failed fuel and minimal primary to secondary leakage, releases from this release point may not have required dilution to meet the site effluent concentration limits. Due to the passage of time, SCE has not evaluated the releases made to determine which releases did not require dilution.
 - 11) No known releases were made from this release point and thus, the initial and periodic SRs would not apply. If releases had been made, Note 4 would apply.
 - 12) Batch releases from the Miscellaneous Waste Evaporator Condensate Tank and Salt Water Discharge from Component Cooling Heat Exchanger release points were not included in the RETS when the RETS were a part of the TS and thus, the SR would not apply.
 - 13) The ODCM allows releases from the Radwaste Primary Tanks, Radwaste Secondary Tanks, Primary Plant Makeup Tanks and Miscellaneous Waste Condensate Monitor Tanks. However, site procedures do not allow release from the Radwaste Primary Tanks without processing through ion exchangers to the Radwaste Secondary Tanks. Therefore, there are no site procedures for the periodic SR of a batch release from the Radwaste Primary Tanks.
 - 14) Batch releases from the SG Blowdown Bypass Effluent Lines were not included in the RETS when the RETS were a part of the TS, and thus, the SR would not apply. Batch releases were evaluated and incorporated into the Units 2 and 3 ODCM. Considering current ODCM requirements, Note 1 would apply to the initial SR and Note 4 would apply to the periodic SR.
 - 15) Continuous releases from Liquid Radwaste Effluent Line release point were not included in the RETS when the RETS were a part of the TS nor are continuous releases included in the ODCM. Thus, the SR would not apply.