

NRC Form 365  
(9-83)U.S. NUCLEAR REGULATORY COMMISSION  
APPROVED OMB NO. 3150-0104  
EXPIRES 8/31/85

## LICENSEE EVENT REPORT (LER)

FACILITY NAME (1) <b>SURRY POWER STATION, UNIT NO. 1</b>										DOCKET NUMBER (2) <b>0 5 0 0 0 2 8 0</b>				PAGE (3) <b>1 OF 3</b>		
TITLE (4) <b>IODINE SPIKE</b>																
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	6	8	4	8	4	0	1	2	0	0	0 5 0 0 0			
										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 0 0		20.405(a)(1)(ii)				50.36(c)(2)				50.73(a)(2)(vii)				<input checked="" type="checkbox"/> OTHER (Specify in Abstract below and in Text, NRC Form 366A) <b>"SPECIAL REPORT"</b>		
		20.405(a)(1)(iii)				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 <b>J. L. WILSON, STATION MANAGER</b>										TELEPHONE NUMBER						
										AREA CODE						
										<b>8 0 4 3 5 7 - 3 1 8 4</b>						
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							
SUPPLEMENTAL REPORT EXPECTED (14)										EXPECTED SUBMISSION DATE (15)		MONTH	DAY	YEAR		
<input type="checkbox"/> YES (If yes, complete EXPECTED SUBMISSION DATE) <input checked="" type="checkbox"/> NO																

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

On May 26, 1984, at 0515 hours following a unit shutdown from 100% power, the specific activity sample of the reactor coolant showed a peak dose equivalent I-131 level of 1.57 microcuries/cc. This exceeds the dose equivalent I-131 limit of  $\leq 1.0$  microcuries/cc specified in Tech. Specs. 3.1.D.2 and is being reported in accordance with the Special Reporting requirements outlined in T.S.-3.1.D.4.

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## LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

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		YEAR	SEQUENTIAL NUMBER	REVISION NUMBER			
SURRY POWER STATION, UNIT 1	0 5 0 0 0 2 8 0	8 4	— 0 1 2	— 0 0	0 2	OF 0	3

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

Description of the Event

On May 26, 1984, at 015 hours following a unit shutdown from 100%, the Specific Activity Sample of the reactor coolant showed a peak dose equivalent I-131 level of 1.57 microcuries/cc. This exceeds the dose equivalent I-131 of  $\leq 1.0$  microcuries/cc specified in Tech. Spec. 3.1.D.2 and is being reported in accordance with the Special reporting requirements outlined in Tech. Spec. 3.1.D.4.

Probable Consequences and Status of Redundant Equipment

The limitations on the specific activity of the primary coolant ensure that the resulting 2 hour doses at the site boundary will not exceed an appropriately small fraction of 10 CFR 100 limits following a postulated steam generator tube rupture. Since the dose equivalent I-131 peak was below the Technical Specification upper limit of 10 microcuries/cc, the reactor coolant gross activity was below the value analyzed in the FSAR for a tube rupture and 1% failed fuel. Therefore, the health and safety of the public were not affected.

Cause

The Iodine Spike was caused by known, but not specifically located, fuel element defects in the reactor core. Post shutdown conditions enhanced the release of fission products, specifically I-131. This caused an increase of the reactor coolant specific activity.

Immediate Corrective Action

The immediate corrective action was to implement the actions required by Tech. Spec. Table 4.1-2B. Specifically, the level of the dose equivalent I-131 was monitored at least once every 4 hours until the level returned to less than 1.0 microcuries/cc.

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

SUPPLEMENTAL INFORMATION

The supplemental information required by T.S.3.1.D.4 "Special Report" is included as follows:

## 1. Reactor Power History 48 hours prior to the event:

May 24, 1984 - 24 hours at 100%  
 May 25, 1984 - 22 hours at 100%  
 May 26, 1984 @ 0515 - Unit at 0% following ramp.

## 2. Fuel burnup by core region - as of May 26, 1984.

Fuel Batch : S2/6B: 30390 MWD/MTU  
 6C: 33907 MWD/MTU  
 4C: 33313 MWD/MTU  
 7A: 30019 MWD/MTU  
 7B: 38747 MWD/MTU  
 8A: 28113 MWD/MTU  
 8B: 28717 MWD/MTU  
 9: 10648 MWD/MTU  
 Cycle 7 Burnup : 9304 MWD/MTU

## 3. Prior to the reactor shutdown, the unit has established a normal letdown rate of 106 gpm.

## 4. No De-gassing operations were performed.

## 5. Duration of I-131 Spike:

May 26, 1984 @ 0245 - Routine Sample - .188 microcuries/cc.  
 May 26, 1984 @ 0515 - Post Shutdown Sample - 1.18 microcuries/cc.  
 0715 - Post Shutdown Sample - 1.15 microcuries/cc.  
 0915 - Post Shutdown Sample - 1.36 microcuries/cc.  
 1115 - Post Shutdown Sample - 1.57 microcuries/cc.  
 1300 - Post Shutdown Sample - 1.53 microcuries/cc.  
 1500 - Post Shutdown Sample - 1.39 microcuries/cc.  
 1715 - Post Shutdown Sample - 1.20 microcuries/cc.  
 2105 - Post Shutdown Sample - 1.00 microcuries/cc.  
 May 27, 1984 @ 0100 - Post Shutdown Sample - .925 microcuries/cc.

Duration approximately 20 hours.