NRC FORM 366 (7-77)

U. S. NUCLEAR REGULATORY COMMISSION

LICENSEE EVENT REPORT

CONTROL BLOCK: (1) (PLEASE PRINT OR TYPE ALL REQUIRED INFORMATION)

Line	Field	Value
0 1	LICENSEE CODE (2)	V A S P S 1
	LICENSE NUMBER (3)	0 0 - 0 0 0 0 0 - 0 0
	LICENSE TYPE (4)	4 1 1 1 1
	CAT (5)	
CON'T 0 1	REPORT SOURCE (6)	L
	DOCKET NUMBER (7)	0 5 0 0 0 2 8 0
	EVENT DATE (8)	0 8 2 4 8 2
	REPORT DATE (9)	0 9 2 1 8 2

EVENT DESCRIPTION AND PROBABLE CONSEQUENCES (10)

0 2 On August 24, post reactor trip specific activity samples of the reactor coolant
0 3 system indicated a dose equivalent I-131 level greater than the T.S.3.1.D.3 limit.
0 4 Since the RCS average temperature was reduced to less than 500^0F and the integrity
0 5 of the steam generator tubes was maintained, the health and safety of the public
0 6 were not affected. This event is reportable per T.S.6.6.2.b(2) and the special
0 7 reporting requirements of T.S.3.1.D.4.
0 8

0 9	SYSTEM CODE (11)	CAUSE CODE (12)	CAUSE SUBCODE (13)	COMPONENT CODE (14)	COMP. SUBCODE (15)	VALVE SUBCODE (16)
	R C	E	C	F U E L X X	Z	Z

(17) LER/RO REPORT NUMBER

EVENT YEAR		SEQUENTIAL REPORT NO.		OCCURRENCE CODE	REPORT TYPE		REVISION NO.
8 2	—	0 8 5	/	0 3	L	—	0

ACTION TAKEN (18)	FUTURE ACTION (19)	EFFECT ON PLANT (20)	SHUTDOWN METHOD (21)	HOURS (22)	ATTACHMENT SUBMITTED (23)	NPRD-4 FORM SUB. (24)	PRIME COMP. SUPPLIER (25)	COMPONENT MANUFACTURER (26)
X	Z	C	Z	0 0 0 0	Y	N	N	W 1 2 0

CAUSE DESCRIPTION AND CORRECTIVE ACTIONS (27)

1 0 The event was caused by fuel defects in the reactor core. Post trip conditions
1 1 enhanced the release of fission products to the reactor coolant system, resulting
1 2 in an Iodine Spike. RCS temperature was reduced below 500^0F until the I-131 was
1 3 less than the T.S.3.1.D.3 limit. An accelerated sampling frequency was implemented
1 4 until RCS specific activity returned to less than the T.S.3.1.D.2 limit.

Line	FACILITY STATUS (28)	% POWER (29)	OTHER STATUS (30)	METHOD OF DISCOVERY (31)	DISCOVERY DESCRIPTION (32)
1 5	G	0 0 0	N/A	C	Post trip Chemistry Sample

Line	ACTIVITY RELEASED (33)	CONTENT OF RELEASE (34)	AMOUNT OF ACTIVITY (35)	LOCATION OF RELEASE (36)
1 6	Z	Z	N/A	N/A

Line	PERSONNEL EXPOSURES NUMBER (37)	TYPE (38)	DESCRIPTION (39)
1 7	0 0 0	Z	N/A

Line	PERSONNEL INJURIES NUMBER (40)	DESCRIPTION (41)
1 8	0 0 0	N/A

Line	LOSS OF OR DAMAGE TO FACILITY TYPE (42)	DESCRIPTION (43)
1 9	Z	N/A

Line	PUBLICITY ISSUED (44)	DESCRIPTION (45)	NRC USE ONLY
2 0	N	N/A	

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ATTACHMENT 1
SURRY POWER STATION, UNIT NO. 1
DOCKET NO: 50-280
REPORT NO: 82-085/03L-0
EVENT DATE: 08-24-82

TITLE OF THE EVENT: High Dose Equivalent I-131 in RCS

1. DESCRIPTION OF THE EVENT:

On August 24, 1982 at 1715 hours, following a reactor trip from 100% power, the specific activity sample of the reactor coolant showed a peak dose equivalent I-131 level of 10.53 microcuries/cc. From 1415 hours on 8/24/82 until 2325 hours on 8/25/82, the dose equivalent I-131 exceeded the T.S.3.1.D.2 limit of $\leq$ 1.0 microcuries/cc., and exceeded the 10 microcuries/cc limit of T.S.3.1.D.3 from 1520 hours until 2115 hours on 8/24/82. This event is reportable per T.S.6.6.2.b(2) and the special reporting requirements of T.S.3.1.D.4.

2. PROBABLE CONSEQUENCES and STATUS of REDUNDANT EQUIPMENT:

The limitations on the specific activity of the primary coolant ensure that the resulting 2 hour dose at the site boundary will not exceed an appropriately small fraction of the 10 CFR 100 limits following a postulated steam generator tube rupture. With the specific activity of the reactor coolant greater than 10 microcuries/cc., the reactor was shut down and the RCS cooled to less than 500^0F within the time span specified in Tech. Specs. When the specific activity fell to less than 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.

3. CAUSE of the EVENT:

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

4. IMMEDIATE CORRECTIVE ACTION:

The immediate corrective action was to implement the actions required by T.S. Table 4.1-2B. Specifically, the level of the dose equivalent I-131 was monitored every four hours until the level returned to less than 1.0 microcurie/cc.

5. SUBSEQUENT CORRECTIVE ACTION:

The RCS was cooled and maintained at less than 500^0F until the dose equivalent I-131 dropped below 10 microcuries/cc.

6. ACTIONS TAKEN TO PREVENT RECURRENCE:

The specific activity of the reactor coolant will continue to be monitored as required by T.S. Table 4.1-2B.

7. GENERIC IMPLICATIONS:

None.

SUPPLEMENTAL INFORMATION:

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

1. Reactor Power history 48 hours prior to these events:

August 22, 1982	24 hours at 100% power
August 23, 1982	24 hours at 100% power
August 24, 1982	1315 hours - Reactor trip and Safety Injection

2. Fuel burnup by core region as of August 24, 1982:

FUEL BATCH:	4A:	23,761 MWD/MTU
	6B:	22,473 MWD/MTU
	4C:	29,855 MWD/MTU
	6C:	32,802 MWD/MTU
	7A:	23,543 MWD/MTU
	7B:	28,829 MWD/MTU
	8A:	14,570 MWD/MTU
	8B:	12,256 MWD/MTU
CYCLE 6 BURNUP:		11,695 MWD/MTU

3. Prior to the trip, the letdown flowrate had been established at 111 gpm.

4. De-gassing operations were not being performed.

5. Duration of I-131 spike:

August 24, 1982:	0835 hours - Pre Trip Sample 0.138 microcuries/cc.
	1415 hours - Post Trip Sample 5.76 microcuries/cc.
	1520 hours - Post Trip Sample 10.04 microcuries/cc.
	1715 hours - Post Trip Sample 10.53 microcuries/cc.
	1915 hours - Post Trip Sample 10.06 microcuries/cc.
	2018 hours - RCS Temperature less than 500^0F.
	2115 hours - Post Trip Sample 7.97 microcuries/cc.
	2215 hours - Post Trip Sample 7.35 microcuries/cc.
	2245 hours - Commenced heat up of RCS temperature to 520^0F.
	2315 hours - Post Trip Sample 7.16 microcuries/cc.

5. Duration of I-131 Spike (continued)

August 25, 1982:
0315 hours - Post Trip Sample 6.04 microcuries/cc.
0723 hours - Post Trip Sample 4.70 microcuries/cc.
1115 hours - Post Trip Sample 2.85 microcuries/cc.
1255 hours - Post Trip Sample 2.41 microcuries/cc.
1525 hours - Post Trip Sample 1.80 microcuries/cc.
1925 hours - Post Trip Sample 1.05 microcuries/cc.
2325 hours - Post Trip Sample 0.785 microcuries/cc.

The dose equivalent I-131 level was greater than 10 microcuries/cc for approximately 6 hours. Total duration of the iodine spike was 33 hours, 10 minutes. RCS temperature was less than 500^0F for 2 hours, 27 minutes during the spike.