

LICENSEE EVENT REPORT

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

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On 11-25-81, following a Reactor Trip, and again on 11-26-81, during a return to full power, specific activity sample of the reactor coolant system indicated dose equivalent I-131 levels greater than the T.S.3.1.D.2 limit. Since the integrity of the steam generator tubes was maintained and the activity remained below the T.S.3.1.D.3 limit, the health and safety of the public were not affected. This event is reportable per T.S.6.6.2.b.(2) and T.S.3.1.D. 4.

SYSTEM CODE: R C 11; CAUSE CODE: E 12; CAUSE SUBCODE: C 13; COMPONENT CODE: F U E L X X 14; COMP SUBCODE: Z 15; VALVE SUBCODE: Z 16; EVENT YEAR: 8 1; SEQUENTIAL REPORT NO.: 0 7 2; OCCURRENCE CODE: 0 3; REPORT TYPE: L; REVISION NO.: 0; ACTION TAKEN: X 18; FUTURE ACTION: Z 19; EFFECT ON PLANT: C 20; SHUTDOWN METHOD: Z 21; HOURS: 0 0 0 0 0; ATTACHMENT SUBMITTED: Y 23; NRC-4 FORM SUB.: N 24; PRIME COMP SUPPLIER: N 25; COMPONENT MANUFACTURER: W 1 2 0 26

This event was caused by a fuel element defect in the Reactor Core. Post Trip conditions in the core enhanced the release of fission products to the reactor coolant system (RCS) resulting in Iodine spike. An accelerated sampling frequency was implemented until the RCS specific activity returned to less than the limit of T.S. 3.1.D.2.

FACILITY STATUS: G 28; % POWER: 0 0 0 29; OTHER STATUS: N/A 30; METHOD OF DISCOVERY: C 31; DISCOVERY DESCRIPTION: RadioIodine Sample 32

ACTIVITY CONTENT RELEASED OF RELEASE: Z 33; AMOUNT OF ACTIVITY: N/A 35; LOCATION OF RELEASE: N/A 36

PERSONNEL EXPOSURES NUMBER: 0 0 0 37; TYPE: Z 38; DESCRIPTION: N/A 39

PERSONNEL INJURIES NUMBER: 0 0 0 40; DESCRIPTION: N/A 41

LOSS OF OR DAMAGE TO FACILITY TYPE: Z 42; DESCRIPTION: N/A 43

PUBLICITY ISSUED DESCRIPTION: N 44; NRC USE ONLY

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ATTACHMENT 1  
SURRY POWER STATION, UNIT 1  
DOCKET NO: 50-280  
REPORT NO: 81-072/03L-0  
EVENT DATE: 11-26-81

TITLE OF THE EVENT: HIGH I-131 IN RCS

1. DESCRIPTION OF EVENT:

On November 25, 1981, at 1650 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 6.89 microcuries/cc. On November 26, 1981, at 0632, during the return to full power following the trip, the specific activity sample of the reactor coolant showed a peak dose equivalent I-131 level of 1.85 microcuries/cc. From the initial trip until 2205 hours on November 26, 1981, the dose equivalent I-131 exceeded T.S.3.1.D.2 limit of  $\leq 1.0$  microcuries/cc. 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:

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.

3. CAUSE OF EVENT.

The Iodine Spike was caused by known, yet 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 in the 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 dose equivalent I-131 was monitored every 4 hours until the level returned to less than 1.0 microcurie/cc.

5. SCHEDULED CORRECTIVE ACTION:

No further corrective actions will be taken at this time.

6. ACTION TAKEN TO PREVENT RECURRENCE:

The specific activity of the reactor coolant system will continue to be monitored as required by T.S. Table 4.1.2.B.

7. GENERIC IMPLICATIONS:

There are no generic implications associated with this event.

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 these events:

NOVEMBER

November 23,1981 - 24 hours at 100%

November 24,1981 - 24 hours at 100%

November 25,1981 - 1331 Reactor Trip

November 26,1981 - 0714 Reactor Critical

2. Fuel burnup by core region - as of 1331 November 25,1981:

FUEL BATCH 4A: 15308 MWD/MTU

6B: 15120 MWD/MTU

4C: 26773 MWD/MTU

6C: 24911 MWD/MTU

7A: 19239 MWD/MTU

7B: 19962 MWD/MTU

8A: 4722 MWD/MTU

8B: 4044 MWD/MTU

CYCLE 6 BURNUP: 3897.9 MWD/MTU

3. Prior to the trip, the unit had established a normal letdown rate of 116 GPM. During the dilution to criticality, the unit established a letdown rate of approximately 116 GPM.
4. No De-Gassing operations were performed.
5. Duration of I-131 spike

November 25,1981 - 1650 hours - Post Trip Sample 5.75 microcuries/cc

1650 hours - Post Trip Sample 6.89 microcuries/cc \*

1755 hours - Post Trip Sample 4.92 microcuries/cc

2105 hours - Post Trip Sample 4.25 microcuries/cc

2305 hours - Post Trip Sample 3.51 microcuries/cc

\* This sample was counted on North Anna Geli. The accuracy of Surry's Geli was questionable during the initial loss of station power.

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November 26, 1981 - 0012 hours - Post Trip Sample	3.04 microcuries/cc
0405 hours -	2.03 microcuries/cc
0632 hours -	1.85 microcuries/cc
0810 hours -	1.75 microcuries/cc
1230 hours -	1.76 microcuries/cc
1640 hours -	1.56 microcuries/cc
2012 hours -	1.03 microcuries/cc
2205 hours -	.890 microcuries/cc

Duration approximately 29.92 hours.