

# Vepco

VIRGINIA ELECTRIC AND POWER COMPANY

NORTH ANNA POWER STATION

P. O. BOX 402

MINERAL, VIRGINIA 23117

February 1, 1984

Mr. James P. O'Reilly, Regional Administrator  
U. S. Nuclear Regulatory Commission  
Region II  
101 Marietta Street, Suite 2900  
Atlanta, Georgia 30303

Serial No. N-84-01  
NO/JRR: 11  
Docket No. 50-338  
License No. NPF-4

Dear Mr. O'Reilly:

Pursuant to North Anna Power Station Technical Specifications, the Virginia Electric and Power Company hereby submits the following Special Report applicable to North Anna Unit No. 1.

Report No.

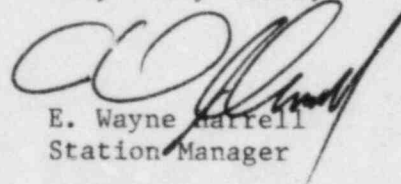
Applicable Technical Specifications

Special Report SP-N1-84-01

T.S. 6.9.2.f

This report has been reviewed by the Station Nuclear Safety and Operating Committee and will be forwarded to Safety Evaluation and Control for their review.

Very Truly Yours,

  
E. Wayne Harrell  
Station Manager

Enclosures (3 copies)

cc: Document Control Desk (1 copy)  
016 Phillips Bldg.  
U.S. Nuclear Regulatory Commission  
Washington, D. C. 20555

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#### Description of Event

On January 9, 1984 at 0603 following a unit rampdown, the I-131 Dose Equivalent specific activity exceeded 1.0 microcurie/gram. The specific activity returned to within the T.S. 3.4.8 limit by 0345 on January 10, 1984. This event is reportable as a Special Report pursuant to T.S. 6.9.2.f.

#### Probable Consequences of Occurrence

Primary coolant I-131 Dose Equivalent specific activity peaked at 1.64 microcurie/gram at 1110 on January 9, 1984, and returned to within limits by 0345 on January 10, 1984. Daily samples taken prior to the rampdown were consistently less than 0.1 microcurie/gram Dose Equivalent I-131. The primary coolant Dose Equivalent I-131 exceeded the 1.0 microcurie/gram limit for a time period less than or equal to 22 hours. The 4 hour sampling surveillance frequency required by T.S. Table 4.4-4 was maintained throughout the event. The health and safety of the public were not affected.

#### Cause of Event

On January 8, 1984 at approximately 2318, a unit rampdown was initiated as a result of a suspected unidentified Reactor Coolant System leakage greater than 1 gallon/minute. At 0516 on January 9, 1984 the turbine was manually tripped while the reactor was maintained critical at 1 percent power. The reactor was maintained at this power level until 2200 when it was shutdown by manually inserting control rods.

The increase in Dose Equivalent I-131 activity occurred as a result of known, but not specifically identified, minor fuel element defects present in the reactor core. The diffusion of iodine into the reactor coolant was enhanced by the rapid decrease in reactor power. Iodine spiking with power changes is a well documented and accepted phenomenon.

#### Immediate Corrective Action

The primary coolant was sampled and analyzed at the accelerated frequency required by Item 4a of Technical Specification 3.4.8, Table 4.4-4.

#### Scheduled Corrective Action

None are required.

Action Taken To Prevent Recurrence

Iodine spiking from minor fuel defects following rapid power changes is expected. Unit 1 reactor power change rates during normal operation have been administratively limited to reduce the probability of recurrence.

Generic Implications

Iodine spiking as a recurring phenomenon in Unit 1 and has been previously reported.

Supplemental Information

This event is reportable as a "Special Report" pursuant to T.S. 6.9.2. In addition the supplemental information required by T.S. 3.4.8 is included as follows:

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

<u>DATE</u>	<u>TIME</u>	<u>POWER</u>	<u>MWe</u>	<u>COMMENTS</u>
01-06-84	0000-2400	100%	940	a
01-07-84	0000-2200	100%	940	a
01-08-84	0000	93%	877	b
01-08-84	0100	91.5%	866	b
01-08-84	0300	98.2%	921	b
01-08-84	0500-2300	100%	940	a
01-09-84	0000	92%	869	c
01-09-84	0300	42.1%	376	c
01-09-84	0511	5.4%	24	c
01-09-84	0521	1.0%	0	d
01-09-84	1200	1.0%	0	e
01-09-84	2151	1.0%	0	f
01-09-84	2200	0%	0	g

- a) Steady state power operation.
- b) Reactor/Turbine power decrease in order to perform Turbine Valve Freedom Test.
- c) Began rampdown at 2318 due to suspected Unidentified Reactor Coolant System leakage >1.0 gallon/minute.
- d) Turbine manually tripped at 0516 while maintaining reactor critical in Mode 2.
- e) Reactor maintained critical in Mode 2.

- f) Reactor shutdown commenced by manually inserting control rods.
- g) Reactor shutdown.

2. Fuel Burnup by Core Region - As of January 8, 1984:

<u>FUEL BATCH</u>	<u>BURNUP (MWD/MTU)</u>
4A2	32,092.9
5A	25,186.7
6A	11,027.5

- 3. One mixed bed demineralizer was in service from 48 hours prior to the event until 1615 on January 8, 1984. At that time the demineralizer was bypassed in an effort to locate the cause of the unidentified RCS leakage. The demineralizer was returned to service at 2325 on January 8, 1984 and remained in service during and following the event. The average flowrate through the demineralizer when it was inservice was 127 gpm.
- 4. No de-gassing operations were performed.

5. Duration of Dose Equivalent I-131 above 1.0 microcurie/gram:

<u>DATE</u>	<u>TIME</u>	<u>DOSE EQUIVALENT I-131 (MICROCURIES/GRAM)</u>
01-07-84	0212	0.0769
01-08-84	0148	0.0985
01-09-84	0158	0.176
01-09-84	0603	1.14
01-09-84	0915	1.53
01-09-84	1110	1.64
01-09-84	1355	1.41

01-09-84	1545	1.16
01-09-84	1945	1.24
01-09-84	2345	1.10
01-10-84	0345	0.989
01-10-84	0742	0.844
01-11-84	0052	0.413