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the southern electric system

W. G. Hairston, III
Senior Vice President
Nuclear Operations

HL-1447
0000216

January 25, 1991

U.S. Nuclear Regulatory Commission
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Washington, D.C. 20555

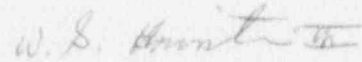
PLANT E. I. HATCH - UNITS 1, 2
NRC DOCKETS 50-321, 50-366
OPERATING LICENSES DPR-57, NPF-5
LICENSEE EVENT REPORT
OFFGAS SAMPLES NOT COLLECTED AND ANALYZED
AS REQUIRED BY TECHNICAL SPECIFICATIONS

Gentlemen:

In accordance with the requirements of 10 CFR 50.73(a)(2)(i), Georgia Power Company (GPC) is submitting the enclosed Licensee Event Report (LER) concerning Offgas Samples that were not collected and analyzed as required by the Technical Specifications. This event occurred at Plant Hatch - Units 1 and 2.

If you have any questions in this regard, please call this office.

Sincerely,


W. G. Hairston, III

WGH/rw

Enclosure: LER 50-321/1990-24

c: (See next page.)

JE22 1/1

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c: Georgia Power Company

Mr. H. L. Sumner, General Manager - Nuclear Plant

Mr. J. D. Heidt, Manager Engineering and Licensing - Hatch
NORMS

U.S. Nuclear Regulatory Commission, Washington, D.C.

Mr. K. Jabbour, Licensing Project Manager - Hatch

U.S. Nuclear Regulatory Commission, Region II

Mr. S. D. Ebnetter, Regional Administrator

Mr. L. D. Wert, Senior Resident Inspector - Hatch

LICENSEE EVENT REPORT (LER)

FACILITY NAME (1) PLANT HATCH, UNIT 1

DOCKET NUMBER (2)
05000321PAGE (3)
1 OF 6

TITLE (4)

OFFGAS SAMPLES NOT COLLECTED AND ANALYZED AS REQUIRED BY TECHNICAL SPECIFICATIONS

EVENT DATE (5)			LER NUMBER (6)			REPORT DATE (7)			OTHER FACILITIES INVOLVED (8)	
MONTH	DAY	YEAR	YEAR	SEQ NUM	REV	MONTH	DAY	YEAR	FACILITY NAMES	DOCKET NUMBER(S)
12	28	90	90	024	00	01	27	91	PLANT HATCH, UNIT 2	05000366
										05000

OPERATING MODE (9)		THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR (11)									
POWER LEVEL	100	20.402(b)	20.405(c)	50.73(a)(2)(iv)	73.71(b)						
		20.405(a)(1)(i)	50.36(c)(1)	50.73(a)(2)(v)	73.71(c)						
		20.405(a)(1)(ii)	50.36(c)(2)	50.73(a)(2)(vii)	OTHER (Specify in						
		20.405(a)(1)(iii)	X 50.73(a)(2)(i)	50.73(a)(2)(viii)(A)	Abstract below)						
		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	TELEPHONE NUMBER
STEVEN B. TIPPS, MANAGER NUCLEAR SAFETY AND COMPLIANCE, HATCH	912 367-7851

COMPLETE ONE LINE FOR EACH FAILURE DESCRIBED IN THIS REPORT (13)

CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORT TO NRC	CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORT TO NRC

SUPPLEMENTAL REPORT EXPECTED (14)

YES (If yes, complete EXPECTED SUBMISSION DATE)		X NO		EXPECTED SUBMISSION DATE (15)	MONTH	DAY	YEAR
		X					

ABSTRACT (16)

On 12/28/90 at approximately 0800 CST, Unit 1 and Unit 2 were in the Run mode at an approximate power level of 2436 CMWT (approximately 100% rated thermal power). At that time, it was determined the requirements of Unit 1 Technical Specifications Section 4.15.2.7.2.b and Unit 2 Technical Specifications Section 4.11.2.7.2.b had not been met. Specifically, representative samples of gases at the pretreatment monitoring station were not always collected and analyzed within 4 hours of an increase of greater than 50% in a nominal steady-state fission gas release value as required by the aforementioned Technical Specifications. It is highly unlikely any Technical Specifications offgas pretreatment activity limits were exceeded. The fission gas release values were a small fraction of the limit, and samples were routinely collected and analyzed to confirm the calibration of the pretreatment monitors.

The cause of this event was a misinterpretation of the Technical Specifications requirements. Contributing to the event were ambiguous Technical Specifications.

Corrective actions include providing the correct interpretation of the requirements to Chemistry personnel, issuing a Technical Specifications Clarification, and reviewing Chemistry procedures.

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TEXT

PLANT AND SYSTEM IDENTIFICATION

General Electric - Boiling Water Reactor

Energy Industry Identification System codes are identified in the text as (EIIIS Code XX).

SUMMARY OF EVENT

On 12/28/90 at approximately 0800 CST, Unit 1 and Unit 2 were in the Run mode at an approximate power level of 2436 CMWT (approximately 100% rated thermal power). At that time, it was determined the requirements of Unit 1 Technical Specifications Section 4.15.2.7.2.b and Unit 2 Technical Specifications Section 4.11.2.7.2.b had not been met. Specifically, representative samples of gases at the pretreatment monitoring station were not always collected and analyzed within 4 hours of an increase of greater than 50% in a nominal steady-state fission gas release value as required by the aforementioned Technical Specifications. It is highly unlikely any Technical Specifications offgas pretreatment activity limits were exceeded. The fission gas release values were a small fraction of the limit, and samples were routinely collected and analyzed to confirm the calibration of the pretreatment monitors.

The cause of this event was a misinterpretation of the Technical Specifications requirements. Contributing to the event were ambiguous Technical Specifications.

Corrective actions include providing the correct interpretation of the requirements to Chemistry personnel, issuing a Technical Specifications Clarification, and reviewing Chemistry procedures.

DESCRIPTION OF THE EVENT

During a routine audit, plant Safety Audit and Engineering Review personnel reviewed a sample of Unit 1 and Unit 2 offgas pretreatment activity data sheets for 1990. Plant Chemistry personnel complete these data sheets once per day, recording the pretreatment monitor (EIIIS, Code IL) reading, calculating the current activity release rate, and comparing the current release rate with a nominal steady-state release rate. This is done in order to determine whether the release rate has increased by more than 50% over the nominal steady-state release rate and whether a sample of gases at the pretreatment monitoring station must be collected and analyzed. These actions are performed to meet the requirements of Unit 1 Technical Specifications Section 4.15.2.7.2.b and Unit 2 Technical Specifications Section 4.11.2.7.2.b.

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TEXT

The review of the sample of Unit 1 and Unit 2 1990 data sheets showed samples were not collected and analyzed within 4 hours of determining the release rate had increased by greater than 50% over the nominal steady-state release rate. For Unit 1, 24 days of data were reviewed. On two of those days the release rate was more than 50% higher than the nominal steady-state value, yet no samples were collected and analyzed. For Unit 2, 31 days of data were reviewed. Again, on two of those days the release rate was more than 50% higher than the nominal steady-state value and no samples were collected and analyzed.

After being notified by Safety Audit and Engineering Review personnel of this problem, plant Nuclear Safety and Compliance personnel expanded the review to include Unit 1 and Unit 2 data sheets from 1988, 1989, and 1990. Approximately 718 days of Unit 1 data sheets were reviewed, representing over 60% of the data sheets completed for this 3-year period. It was determined one sample should have been collected and analyzed but was not. Similarly, approximately 687 days of Unit 2 data sheets were reviewed. This also represented over 60% of the data sheets completed for 1988, 1989, and 1990. It was determined five samples should have been collected and analyzed, but only two actually were.

The offgas sample is used to ensure the pretreatment monitor reading and setpoint accurately reflect the offgas activity. The pretreatment activity for those periods in which samples should have been collected and analyzed, but were not, was less than 50,000 uCi/second. This is less than 21% of the Technical Specifications limit of 240,000 uCi/second. Furthermore, pretreatment gases were collected and analyzed routinely. Although these routine samples did not meet the requirements of Unit 1 Technical Specifications Section 4.15.2.7.2.b or Unit 2 Technical Specifications Section 4.11.2.7.2.b, they did help to ensure the pretreatment monitors were accurately reflecting the pretreatment activity levels. Therefore, it is highly unlikely any Technical Specifications offgas pretreatment activity limits were exceeded.

CAUSE OF THE EVENT

The cause of this event was a misinterpretation of the Technical Specifications requirements. Contributing to the misinterpretation were ambiguous requirements concerning the nominal steady-state fission gas release value. Plant Chemistry personnel felt the Specifications allowed them the flexibility to recalculate the nominal steady-state value following a gradual increase in the activity level without first collecting and analyzing a pretreatment sample. The Specifications do not address how and when to calculate the nominal steady-state value or when it may be updated.

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TEXT

Chemistry personnel also felt the Specifications allowed them to factor out known causes such as changes in offgas system flow rate and moisture in the system which affect pretreatment activity levels. The Specifications allow changes in activity levels caused by changes in thermal power to be factored out. It was felt this allowance could logically be extended to include other known factors which might affect calculated activity levels. Consequently, samples were not collected and analyzed when pretreatment activity increased by greater than 50% over a nominal steady-state value when the increase was attributable to a known cause.

REPORTABILITY ANALYSIS AND SAFETY ASSESSMENT

This report is required by 10 CFR 50.73(a)(2)(1) because a condition existed which was prohibited by the plant's Technical Specifications. Specifically, the requirements of Unit 1 Technical Specifications Section 4.15.2.7.2.b and Unit 2 Technical Specifications Section 4.11.2.7.2.b were not met. On at least eight occasions in the past 3 years, pretreatment gas samples were not collected and analyzed when the data showed an increase in activity levels of greater than 50% over a nominal steady-state release value.

Noncondensable radioactive offgas is continuously removed from the main condenser by the air ejector during plant operation. The offgas is routed through the Offgas Recombiner Charcoal System (EIIIS Code WF) where it is treated before release through the Main Stack. Radiation monitors are located before and after the charcoal adsorbers in the offgas system. They are known as the pretreatment monitor and the post-treatment monitor, respectively.

The pretreatment monitor continuously monitors the input to the charcoal adsorbers. This monitor is used to provide an alarm on high radiation to assist in ensuring Technical Specification pretreatment activity limits are not exceeded. It displays an mR/hour value. The Technical Specifications limit at the pretreatment monitor is expressed in uCi/second, thus, the monitor reading must be converted from mR/hour to uCi/second. This is done by calculating a conversion factor, called the k-factor, from a sample of the offgas to convert from mR/hour to uCi/second for any given offgas flow expressed in cubic feet/minute.

The k-factor serves two major purposes: it allows a direct reading from the monitor to be readily converted to a value which can be compared to the Technical Specifications limit, and it allows the calculation of an alarm setpoint in mR/hour equivalent to the limit of 240,000 uCi/second. The k-factor, however, is dependent on the mix of radioactive isotopes in the offgas. The mix is subject to change during large increases in offgas activity; therefore, the k-factor is also subject to change under these conditions.

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TEXT

In order to ensure the k-factor is current and correct and the pretreatment monitor reading and setpoint accurately reflect the offgas activity, the Technical Specifications require a gas sample to be collected and analyzed whenever there is a large increase in the pretreatment monitor reading. This is defined as an increase of greater than 50% as compared to a nominal steady-state value. In the event described in this report, a gas sample was not collected and analyzed after every increase of greater than 50%. At least eight times in the last 3 years, activity increased by 50% over a nominal steady-state value and no sample was collected and analyzed.

It is highly unlikely, however, that Technical Specifications limits were violated as a result of this event. In all eight cases, pretreatment activity was less than 50,000 uCi/second. This is less than 21% of the limit of 240,000 uCi/second. The k-factor would have to have been almost five times higher than the one in use at those times for the limit to have been unknowingly reached. This could not have been the case because the k-factor is relatively stable at activity levels below approximately 100,000 uCi/second. In other words, increases in activity levels of 50% or more would not significantly affect the k-factor as long as the absolute activity level remained below approximately 100,000 uCi/second.

Additionally, routine offgas samples were collected and analyzed. This was done about once per week. Any changes in the k-factor would have been noted when these samples were analyzed. While this did not meet the Technical Specification requirements, it did help ensure the k-factor and, hence, the pretreatment monitor reading and alarm setpoint were current and correct. Since the increases in offgas activity levels, in general, were gradual and not step changes, the routine offgas samples provided a degree of confidence the pretreatment monitors were accurately reflecting the activity levels.

Based on the above discussion, it is concluded this event had no adverse effect on nuclear safety or public health and safety.

CORRECTIVE ACTIONS

As an interim action, Chemistry personnel were instructed by their management to collect and analyze an offgas sample if the activity increases by 50% over the calculated nominal steady-state value regardless of the reason for the increase/difference. This was done by 1/8/91.

A Technical Specification Clarification will be issued per approved plant procedures by 1/31/91. The Clarification will resolve any ambiguities in the Specifications and provide clear instructions concerning implementation of the Specifications including how to calculate a nominal steady-state value, what to do with the results of the sample analysis, and when a new nominal value may be calculated and used.

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(TEXT)

Appropriate Chemistry procedures will be reviewed and revised as needed to implement the Clarification. The procedures will be reviewed and any necessary revisions issued by 3/15/91.

ADDITIONAL INFORMATION

No plant systems other than the offgas pretreatment monitor were affected by this event.

No failed components caused or resulted from this event.

Previous similar events in the last 2 years in which Technical Specifications required samples were not collected and/or analyzed in accordance with the Specifications were reported in the following LERs:

50-321/1989-002, dated 02/28/89
50-321/1989-013, dated 10/31/89
50-321/1990-009, dated 06/15/90
50-321/1990-023, dated 01/19/91
50-366/1989-001, dated 02/02/89
50-366/1989-003, dated 08/22/89
50-366/1990-011, dated 11/29/90
50-366/1990-013, dated 01/18/91

Corrective actions for these events could not have prevented this event because the root causes were different. The previous events were caused by inadequate procedures and/or personnel error whereas this event was caused by a misinterpretation of the sampling and analysis requirements.