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**William A. Eaton**  
Vice President,  
Operations  
Grand Gulf Nuclear Station

September 1, 2000

U.S. Nuclear Regulatory Commission  
Attention: Document Control Desk  
Washington, D.C. 20555

Subject: Grand Gulf Nuclear Station  
Docket No. 50-416  
License No. NPF-29  
Use of Inaccurate Meteorological Data  
Voluntary LER 2000-003-00

GNRO-2000/00063

Ladies & Gentlemen:

Attached is voluntary Licensee Event Report (LER) 2000-003-00, which is a final report.

Yours truly,

A handwritten signature in cursive script, reading "William A. Eaton".

WAE/PLB:plb  
attachment:  
LER 2000-003-00

cc:

Ms. J. L. Dixon-Herrity, GGNS Senior Resident (w/a)  
Mr. D. E. Levanway (Wise Carter) (w/a)  
Mr. L. J. Smith (Wise Carter) (w/a)  
Mr. N. S. Reynolds (w/a)  
Mr. H. L. Thomas (w/o)

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cc (cont):

Mr. E. W. Merschoff (w/2)  
Regional Administrator  
U.S. Nuclear Regulatory Commission  
Region IV  
611 Ryan Plaza Drive,  
Suite 400 Arlington, TX 76011

**ATTN: ADDRESSEE ONLY**

Mr. S. P. Sekerak, NRR/DLPM/PD IV-1 (w/2)  
U.S. Nuclear Regulatory Commission  
One White Flint North, Mail Stop O7-D1  
11555 Rockville Pike  
Rockville, MD 20852-2378

NRC FORM 366  
(6-1998)

## U.S. NUCLEAR REGULATORY COMMISSION

## LICENSEE EVENT REPORT (LER)

APPROVED BY OMB NO. 3150-0104 EXPIRES 06/30/2001

Estimated burden per response to comply with this mandatory information collection request: 50.0 hrs. Reported lessons learned are incorporated into the licensing process and fed back to industry. Forward comments regarding burden estimate to the Records Management Branch (T-6 F33), U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001, and to the Paperwork Reduction Project (3150-0104), Office of Management and Budget, Washington, DC 20503. If an information collection does not display a currently valid OMB control number, the NRC may not conduct or sponsor, and a person is not required to respond to, the information collection.

FACILITY NAME (1)

Grand Gulf Nuclear Station, Unit 1

DOCKET NUMBER (2)

05000-416

PAGE (3)

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TITLE (4)

Title: Use of Inaccurate Meteorological Data Units

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 NAME	DOCKET NUMBER
06	15	2000	2000	003	00	09	01	2000	N/A	N/A
									FACILITY NAME	DOCKET NUMBER
									N/A	N/A

OPERATING MODE (9)	1	THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR § (Check one or more) (11)							
		20.2201(b)		20.2203(a)(2)(v)		50.73(a)(2)(i)		50.73(a)(2)(viii)	
POWER LEVEL (10)	100	20.2203(a)(2)(i)		20.2203(a)(3)(i)		50.73(a)(2)(ii)		50.73(a)(2)(x)	
		20.405(a)(1)(ii)		20.2203(a)(3)(ii)		50.73(a)(2)(iii)		73.71	
		20.2203(a)(2)(ii)		20.2203(a)(4)		50.73(a)(2)(iv)	X	OTHER Voluntary	
		20.2203(a)(2)(iii)		50.36(c)(1)		50.73(a)(2)(v)		Specify in Abstract below or in NRC Form 366A	
		20.2203(a)(2)(iv)		50.36(c)(2)		50.73(a)(2)(vii)			

## LICENSEE CONTACT FOR THIS LER (12)

NAME

Name / Title: Charles E. Brooks, Sr. Licensing Specialist / Patricia L. Barnes, Licensing Specialist-R

TELEPHONE NUMBER (Include Area Code)

601-437-6555

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

CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO EPIX	CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO EPIX

## SUPPLEMENTAL REPORT EXPECTED (14)

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

## ABSTRACT (Limit to 1400 spaces, i. e., approximately 15 single-spaced typewritten lines) (16)

Meteorological data is required to calculate atmospheric dispersion of a radiation release. Plant staff supplied meteorological data to an end user with inconsistent units of measure. This resulted in calculation of inaccurate dispersion coefficients. The dispersion coefficients were not used for actual release calculations but were used as the basis for some changes to the plant.

Dose calculations that applied these values were used as inputs for secondary containment relaxation during a refueling outage. Technical Specification changes based on these calculations were approved in License Amendment 139. Other dose calculations using these values have also been submitted to the NRC as part of the GGNS full scope alternative source term application. Both of these sets of calculations were performed conservatively.

Using met data previously submitted by GGNS, a NRC staff reviewer identified inconsistencies in the alternative source term application and requested additional information. These questions facilitated the identification of the inaccurate data.

Plant personnel determined the deficiency in the units of measure used for the calculations. A condition report was issued and a root cause investigation initiated.

Acting conservatively, a 10CFR50.9 notification was made to the NRC Region IV Administrator on June 15, 2000.

Engineering re-calculated the dispersion coefficients using accurate and more recent data. The described condition has no effect on the public health and safety as the new calculations using the correct units are within the bounds of previously analyzed acceptance criteria.

This voluntary LER addresses the referenced 10CFR50.9 notification.

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U.S. NUCLEAR REGULATORY COMMISSION

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

**A. Reportable Occurrence**

None

**B. Initial Conditions**

At the time of the discovery of the event, the Unit OPERATIONAL CONDITION was MODE 1, Power Operation. Reactor Power was about 100 percent and Reactor Coolant Temperature was about 527 degrees Fahrenheit.

**C. Description of Occurrence**

Meteorological data is required to calculate atmospheric dispersion of a radiation release. Plant staff supplied meteorological data (met data) to an end user with inconsistent units of measure. Metric units were used in some data sets rather than English units. This resulted in calculation of inaccurate atmospheric dispersion coefficients. Plant staff generated Annual Joint Frequency Distributions (JFD) using less than 90% of the total data set. These dispersion coefficients were not used for actual release calculations but were used as the basis for some changes to the plant.

Engineering calculations generated the dispersion coefficients for the offsite dose points and control room intakes based on this inconsistent met data. Dose calculations that applied these revised values were used as inputs for secondary containment relaxation Technical Specification changes approved in License Amendment 139. The results of this calculation were used to establish the definition of "recently irradiated fuel" as applied in the Technical Specifications Bases. The Technical Specification Bases currently report recently irradiated fuel as having 8 days of decay. Other dose calculations using these values were submitted to the NRC as part of the GGNS full scope alternative source term application. Although some of the units were incorrect, all other parts of the calculations were performed correctly.

The discrepancy in the data was identified during review of records in response to a request for additional information from the staff.

Plant personnel determined the deficiency in the units of measure used for the calculations. A condition report was issued and a root cause investigation initiated. Acting conservatively, a 10CFR50.9 notification was made to the NRC Region IV Administrator on June 15, 2000.

To rectify the condition, correct engineering calculations for offsite dose points and the control room dispersion values have been completed and approved.

The only current design basis analysis in which the outdated values were applied was the fuel handling accident. This calculation is currently used to support secondary containment relaxation after 8 days of decay. The offsite dose and control room impacts are described separately below.

The EAB and LPZ dispersion values decreased from those currently applied in the fuel handling accident calculation. Therefore, the existing fuel handling accident is conservative for the offsite dose.

The control room value increased somewhat over that currently applied in the fuel handling accident calculation. However, a review of the actual GGNS operation indicates that the maximum EOC radial peaking factor was significantly less than the bounding value assumed in the accident analysis. This actual decreased radial peaking factor was found to more than offset the increased control room X/Q. Consequently, the

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YEAR

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

control room dose from a fuel handling accident without secondary containment after 8 days of decay is bounded by the current design basis value.

On these bases, both the control room and offsite doses associated with a Refueling Outage 10 (RF10) fuel handling accident without secondary containment after 8 days of decay would have met the applicable NRC acceptance criteria (within 10CFR100 and GDC 19) in addition to the dose results in SAR Section 15.7.4.

**D. Apparent Cause**

The apparent cause of this condition was the absence of a design specification for meteorological software that would have precipitated software controls, change management issues related to the transfer of responsibilities from one plant department to another, communication and lack of procedural controls.

**E. Corrective Actions****Immediate Corrective Actions:**

CR-GG-2000-0847 was issued and a root cause investigation was initiated.

**Long Term Corrective Actions:**

1. An initial response to the NRC's request for additional information dated May 9, 2000 was submitted on June 29, 2000. A supplemental response was also provided on September 1, 2000. The remainder of the requested information will be submitted by September 30, 2000. Updated dispersion values will be submitted in the September response supporting the review of GNRO-2000/200005 (GGNS letter to NRC Dated January 21, 2000), GGNS Pilot Full-Scope Application of NUREG-1465 Alternative Source Term Insights, License Document Change 1999-082.

**F. Safety Assessment**

This is a voluntary LER. Based on further evaluation by safety and engineering analysis, the original assumption of 8 days for recently irradiated fuel was valid for RF10. Therefore, there was no impact on the health and safety of the public.

**G. Additional Information**

None