

DMB

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HAL B. TUCKER
VICE PRESIDENT
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July 25, 1986

00:11:00
AUG 1 1986

Dr. J. Nelson Grace, Regional Administrator
U. S. Nuclear Regulatory Commission
Region II
101 Marietta Street, NW, Suite 2900
Atlanta, Georgia 30323

Subject: Catawba Nuclear Station
RII:GBZ
50-413/23, 50-414/86-25

Dear Dr. Grace:

Please find attached our response to Violation No. 413/86-23-01, 414/86-25-01,
which was identified in the subject Inspection Report.

Very truly yours,

H.B. Tucker

Hal B. Tucker

LTP/01/slb

Attachment

xc: NRC Resident Inspector
Catawba Nuclear Station

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PDR ADDCK 05000413
Q PDR

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DUKE POWER COMPANY

CATAWBA NUCLEAR STATION

RESPONSE TO VIOLATION IN INSPECTION REPORT

50-413/86-23 and 50-414/86-25

Violation 50-413/85-23-1, 50-414/85-25-01, Severity Level IV

In accordance with the "General Statement of Policy and Procedure for NRC Enforcement Actions," 10 CFR Part 2, Appendix C (1985), the violation is listed below:

Technical Specification 6.8.1 requires procedures to be established, implemented, and maintained for the applicable procedures recommended in Appendix A of Regulatory Guide 1.33, Revision 2, February 1978 and the Quality Assurance Program for effluent and environmental monitoring.

Procedure HP/O/B/1001/16, Operation & Calibration: ORTEC ADCAM Gamma Analysis System, Section 4.1.1.8 requires that dead-time limits for gamma spectroscopy analysis do not exceed 10 percent.

Contrary to the above, the licensee failed to follow procedures in that from January through May 1986 numerous gamma spectroscopy analyses of gaseous effluent process samples exceeded the 10 percent dead-time limits.

Response

1. Admission or denial of the alleged violation:

Duke Power agrees that the violation occurred.

2. Reasons for the violation:

- Began noting high dead-time 12/85 with VQ 4600cc Marinelli (9%).
- Ordered new mixed gamma gas standards 12-30-85 for new calibrations.
- Ordered on 1-86 smaller Marinelli beakers (1260cc versus 4600cc) to decrease volume but maintain sensitivity/higher efficiency.
- Began counting 4600cc Marinelli along with 100cc gas bomb 1-5-86 to develop correlation with the two geometries when sampling VQ Unit #1. These results for total activity were compatible, e.g. 4600cc + 7.30E-04 μ Ci/cc, 100cc + 7.81E-04, μ Ci/cc on 1-8-86, dead-time 5.8% and .3% respectively. This dual sampling was performed to determine if the 100cc bomb could be utilized and stay under the dead-time limit of 10%.
- On 2-21-86, following Unit #1 fuel pin leakage, the daily VQ Unit #1 sample, 4600cc Marinelli resulted with total activity of 2.14E-03 μ Ci/cc and 15% dead-time. The 100cc bomb was also analyzed, total activity of 1.64E-03 μ Ci/cc. The isotopic results of the 4600cc Marinelli were more complete than the 100cc bomb. (See data below.) The decision was made to use the Marinelli results versus 100cc bomb.

Typically, lower activity and fewer isotopes were identified due to the loss in sensitivity between the two sample container in all comparisons made.

2-21-86	<u>ISOTOPE</u>	100cc (0.5% dead-time)	4600cc (15%)	$\mu\text{Ci/cc}$
	KR-85M	3.147E-06	2.97E-06	
	KR-88	5.018E-06	3.072E-06	
	XE-133	1.560E-03	2.024E-03	
	XE-133M	2.426E-05	3.203E-05	
	XE-135	4.317E-05	5.639E-05	
	AR-41	Not Detected	2.379E-06	
	KR-87	"	2.682E-07	
	XE-131M	"	1.484E-05	
	Total Activity	1.635E-03	2.136E-03	

- The 1260cc Marinelli beakers were delayed from the supplier (delivery was to be 3-86) and arrived 4-86.
- Recalibrations for 4600cc Marinellis were performed again on available detectors. The new gas standard used had an average dead-time of 18%. Due to problems from supplier the 1260cc beakers were unavailable for calibrations.
- Mixed gamma gas sources were received on 4-28-86 and new spectra and files were created following testing and comparisons with the 1260cc and 4600cc Marinellis. Use of new 1260cc file was delayed due to volume corrections on the new container. Results were favorable with percent dead-time reduced by a factor of approx. 0.7 for VQ samples. The new calibration file was completed on 5-28-86.
- The 1260cc Marinelli beaker calibration file was put into service on 6-4-86.
- G. Kuzo, USNRC, performed an inspection in the HP area 6-2-86 to 6-5-86.

During the period 1-1-86 to 6-4-86 various steps were taken to decrease the counting dead-time, below 10%, for gaseous sampling containers. Due to the schedule of availability for gas standards and the delay on 1260cc Marinelli beakers, the corrections taken were over months as opposed to weeks. The decisions made to utilize the container with higher dead-time and also greater isotopic identification were the most accurate for use during the period. The completed 1260cc Marinelli calibrations have proven to be very effective for gaseous sampling and analysis.

3. Corrective steps which have been taken and the results achieved:

- a. By 6-4-86, a smaller gas volume geometry container was calibrated and put into use.

This effectively eliminated the problem with exceeding our 10% dead-time limit.

The new 1260cc container produced a higher sensitivity in counting as compared to the 100cc Gas Bomb.

4. Corrective steps which will be taken to avoid further violations:

- a. Evaluation of detector dead-time using ANSI N42.14-1978 Section 6.1, when sources are received by vendor. To be completed by October 15, 1986.
- b. Calibrations for 4600cc Marinelli beaker and 1260cc Marinelli beaker to be completed at distances above detectors. To be accomplished September 15, 1986.

5. Procedure violations concerning deadtime limits ended on 6-4-86 with calibration of the 1260cc gas Marinelli beaker.

Additional tests and calibrations will be completed as listed in paragraph 4.