

NUCLEAR ENGINEERING SCIENCES DEPARTMENT  
Nuclear Reactor Facility  
University of Florida



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May 6, 1988

United States Nuclear Regulatory Commission  
Attn: Document Control Desk  
Washington, D.C. 20555

Re: Reply to Notice of Violation  
Inspection Report No. 50-83/88-01

Dear Sir:

This report is divided into two parts to address the two violations cited in Inspection Report No. 50-83/88-01.

A. Inspection Report No. 50-83/88-01 cites the UFTR facility with a Severity Level IV violation for failure to conduct adequate surveys to evaluate the extent of radiation hazards present in liquid and gaseous effluents released from the facility in two cases as quoted here:

1. For measurements of Ar-41 in gaseous effluents, the gamma spectroscopy detection system was calibrated using a 1,000 cubic centimeter (cc) matrix calibration standard and sample concentration results were calculated for a 1,000 cc sample volume. The actual volume of the sample container utilized to measure concentrations in Ar-41 gaseous effluents was 1,250 cc.
2. The lower limit of detection for liquid waste tank effluent analyses,  $1.08 \text{ E-7}$  microcuries per milliliter ( $\mu\text{Ci/ml}$ ), was greater than 25% of the concentration ( $4.0 \text{ E-7}$   $\mu\text{Ci/ml}$ ) allowed for release to the sanitary sewer and the individual isotopes present in the effluent were not identified as required by Technical Specifications.

1a. Admission or Denial of the Violation

- 1) For the Ar-41 measurements, the statement of violation repeated above is admitted; however, this methodology has been considered conservative.
- 2) For the failure to identify individual isotopes present in the liquid effluent, the statement of violation is also admitted, though no credit for dilution is taken for the radioactivity level in the liquid effluent.

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1b. Reasons for the Violation

- 1) The reason for the violation on Ar-41 measurements is the belief that the methodology in use was conservative, though admittedly not as accurate as possible. The methodology had been reviewed independently by an Environmental Engineering Professor; though he had documented his walk-through review of the Argon-41 measurement considering the procedure adequate, he did not document any consideration of whether the measurement is conservative.
- 2) The reason for the violation involving failure to identify individual isotopes in the liquid effluent is that releases are usually less than 5-10 per cent or less of allowed release concentrations. Such a concentration was probably applicable on the one 1986-1987 release for which we are cited. The  $1.08E-7$   $\mu\text{Ci/ml}$  value is the lower limit of detection, not an actual quantified release concentration. The only reason for the quoted  $1.08E-7$   $\mu\text{Ci/ml}$  level in the effluent is that the count time for the sample was shortened representing an increase in the lower limit of detection to the point where the LLD was greater than 25% of the allowable release concentration. As a result there was an oversight for the monitoring requirement for specifying individual isotopes for inclusion in the Annual Report per Paragraph 6.6.1(5) of the UFTR Technical Specifications.

1c. Corrective Steps Taken/Results Achieved

- 1) The next scheduled Argon-41 measurement will not be performed until we have documented analysis to assure the conservatism of the present methodology or obtained a calibration source that more closely models the 1250 cc sample containers and performed an appropriate evaluation for its use.
- 2) No further liquid releases have been made since the NRC inspection on March 14-17, 1988. When releases are next made samples will be counted sufficiently to assure the activity level is below 25% of that allowed or the contributing individual isotopes will be identified. It is worth noting that two liquid waste releases in September, 1987 and another in January, 1988 average  $2.96 \times 10^{-8}$   $\mu\text{Ci/ml}$  which is only about 7.4% of the allowable concentration. All three have been well below the 25% cutoff for requiring identification of individual nuclides.

ld. Corrective Steps to be Taken to Avoid Further Violations

- 1) The Argon-41 methodology is being reviewed as part of a student project under the direction of the Director of Nuclear Facilities. In addition, a new calibration source at 1250 cc is being ordered and should be available for the next Argon-41 measurement due in June, 1988 and required by August, 1988.
- 2) The Radiation Control Technique procedure #21 used to control sampling and release of liquid effluents will be reviewed and approved by the Director of Nuclear Facilities and it will be revised to assure all changes to the technique are adequately reviewed prior to implementation before any further releases are made from the holdup tanks. A revised version of Radiation Control Technique #21 is currently under review with approval expected by May 31, 1988.

le. Date When Full Compliance Will Be Achieved

- 1) Full compliance has effectively been achieved as of the NRC Inspection, in that certain evaluations of the current methodology and/or acquisition of a new calibration source will be accomplished before the next Argon-41 measurement due in June, 1988 with a 2 month window allowed. The corrective steps to be taken to avoid further violations in the monitoring of gaseous effluents per Section ld.1) above will be completed by August 31, 1988.
- 2) The corrective steps to be taken to avoid further violations in the monitoring of liquid effluent releases will be implemented fully by June 15, 1988.

B. Inspection Report No. 50-83/88-01 cites the UFTR facility for a Severity Level IV violation for failure to follow Technical Specification 6.3 requiring that the facility be operated in accordance with approved written procedures. All procedures and major revisions thereto shall be reviewed and approved by the Director of Nuclear Facilities before going into effect. Contrary to the above, for the reporting period from September 1, 1986, to August 31, 1987, the licensee is cited for failure to have the Director of Nuclear Facilities approve the Radiation Control Technique procedures used to conduct environmental surveillances and effluent release measurements required by Technical Specifications.

a. Admission or Denial of the Violation

The violation is admitted.

b. Reason for the Violation

The manual of Radiation Control Technique Procedures has been developed by the Radiation Control Office to serve the entire University of Florida campus. Some of the Techniques applicable to the UFTR have been in the manual for many years prior to the relicensing of the UFTR in 1982 when the procedures were required to be reviewed by the Director of Nuclear Facilities. As a result, they were grandfathered in for the facility and occasionally updated (improved) by the Radiation Control Office, sometimes based on input from the UFTR staff and management. However, because of the historical development of these Radiation Control Techniques, they were not formally documented as reviewed by the Director of Nuclear Facilities. The failure to do so is an oversight.

c. Corrective Steps Taken to Date/Results Achieved

All applicable Radiation Control Techniques used on a frequent basis have been reviewed by the Director of Nuclear Facilities as of May 5, 1988 to assure no unreviewed Radiation Control Techniques procedures are used to support operation of the UFTR facilities. This step is assuring that this violation will not recur.

d. Corrective Steps to be Taken to Avoid Further Violations

As a group all the Radiation Control Techniques used to support operation of the UFTR facility are being reviewed by the Director of Nuclear Facilities and current copies will then be maintained in a separate notebook at the UFTR facility with a cover page documenting a dated review by the Director of Nuclear Facilities. In addition, a memorandum of understanding is being generated between the Radiation Control Office and the Director of Nuclear Facilities to assure changes to these Techniques are reviewed by the Director of Nuclear Facilities prior to implementation to support UFTR operations.

e. Date of Full Compliance

Compliance has been achieved via the interim measure noted in Paragraph (c) as of May 5, 1988. Full compliance with documented review of all applicable Radiation Control Techniques maintained in a separate notebook will be achieved by July 31, 1988.

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We trust this response satisfies the requirements delineated in Inspection Report No. 50-83/88-01. If there are further questions, please advise.

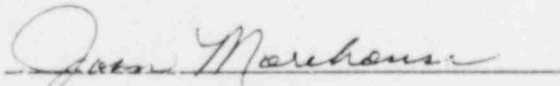

Sincerely,



William G. Vernetson  
Director of Nuclear Facilities

WGV/ps

cc: NRC Region II Regional Administrator  
P.M. Whaley  
J.S. Tulenko  
Reactor Safety Review Subcommittee (RSRS)

  
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Notary Public  
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Date

Joan Marchant, State of Florida  
My Commission Expires Aug. 27, 1989  
Burdett Trust Trust Insurance, Inc.