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U.S. Nuclear Regulatory Commission
Washington DC 20555

NUCLEAR REACTOR FACILITY
Department of Mechanical,
Aerospace & Nuclear Engineering
University of Virginia
Charlottesville, VA 22903-2442
804-982-5440 FAX: 804-982-5473

July 28, 1994

Dear Reader:

Pursuant to 10 CFR Part 21 "Reporting of Defects and Noncompliance" we are reporting a defect in a basic component purchased by us from Nuclear Research Corporation. The nature of the non-compliance of the equipment is of such a nature that it is extremely unlikely that it would be overlooked upon equipment installation and testing thus it might not fall under the requirements of 10 CFR Part 21. The rest of this letter follows the listing of required topics as stated in Paragraph 21.21 Section 4.

i) Reported by:

Bouvard Hosticka
Acting Reactor Supervisor
University of Virginia Reactor Facility
Charlottesville, VA 22903
License # R-66 Docket 50-62

ii) Identification of Basic Component:

Nuclear Research Corporation area monitoring system consisting of model ADM 600A(V10) readout module and GP-100C Geiger-Muller detector.

iii) Identification of Firm supplying components:

Nuclear Research Corporation
125 Titus Ave
P.O. Box H
Warrington, PA 18976

iv) Nature of Defect:

The communication link between the readout module and the detector was incapable of working when the detector and readout were separated by more than 20 feet of cable. The calibration factors are held in memory in the detector and transmitted to the readout module upon energizing the system. Failure of the communication link manifests itself in either wrong calibration and detector type being sent from the detector to the readout or a complete failure of the detector with the appropriate "Probe Missing" message displayed on the readout. It is the situation where wrong calibration factors and configuration information is transmitted to the readout module from the probe that could have safety implications. The advertizing technical specification (NRCorp Bulletin 9103-PB) state that cabling up to 2000 feet can be used with this system. Procurement specifications from the University of Virginia required it to work with up to 300 feet of cabling. It fails to work with 30 feet or more of cabling.

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v) Date of noncompliance noted:

The incorrect calibration factors were noted upon initial pre-installation testing on June 22, 1994. The system was delivered to the facility in March 1993 and had been in storage until June 1994 pending installation of cables.

vi) Number of units supplied:

The University of Virginia Reactor purchased five units for monitoring radiation at various locations throughout the facility.

vii) Corrective actions:

The supplier was immediately informed of the problem and they sent a service representative to our facility on July 12, 1994 to investigate it. Field modifications made to the detector electronics resulted in the readouts not recognizing the probe at all on long (greater than 30 feet) cables. Prior to the modifications, the probe was recognized as being installed but incorrect calibration and configuration information was sent from the probe to the readout module. Further field modification to the readout module allowed them to work with the 30 foot cable but not the 230 foot cable which is our longest run. The supplier has sent a new set of input/output cards for the readout module that they believe will fix the problem. We received them on July 26 and initial testing indicate that the new cards correct the problem.

viii) Advice which has been given concerning this problem:

The facility has been in frequent communication with the supplier to keep them informed of our problems. The supplier's service representative has informally indicated that similar problems have been noted with other installations and that the field modifications made to the detectors, new cards for the readout module, and lower capacitance cabling constitute a permanent solution. For the relatively short runs at the University of Virginia, the present cables may not have to be replaced with the lower capacitance ones.

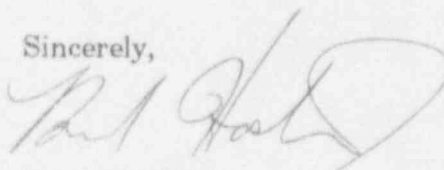
City/County of Albemarle
Commonwealth of Virginia

I hereby certify that the attached document is a true and exact copy of a letter, presented before

me this 28th day of July, 1994
by Bouvard Hosticka
(name of person seeking acknowledgment)

Vickie L. Thomas
Notary Public

Sincerely,


Bouvard Hosticka
Acting Reactor Supervisor

Copies: 2/28 1998
My commission expires USNRC Region II
101 Marietta Street NW,
Suite 2900
Atlanta, GA 30323

Nuclear Research Corp.
125 Titus Ave.
P.O. Box H
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