

NC STATE UNIVERSITY

Department of Nuclear Engineering
Campus Box 7909
Raleigh, NC 27695-7909

919.515.7294
919.513.1276 (fax)
URL: www.ne.ncsu.edu/NRP/reactor_program.html

27 May 2002

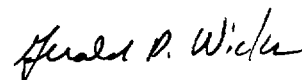
U.S. Nuclear Regulatory Commission
ATTN: Document Control Desk
Washington, DC 20555

Subject: NCSU PULSTAR Annual Report
Docket No. 50-297

Dear Sir or Madam:

In compliance with Section 6.7.4 of the North Carolina State University PULSTAR Technical Specifications, our Nuclear Reactor Program staff has prepared two errata sheets correcting the amount of argon-41 released for the period 01 July 2000 through 30 June 2001. Please insert the corrected pages in your copy(ies). Please feel free to contact me at (919) 515-4601 if you have any questions or comments.

Sincerely,



Gerald D. Wicks
Acting Associate Director
Nuclear Reactor Program

A020

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U. S. Nuclear Regulatory Commission
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27 May 2002

Ref: NCSU PULSTAR Annual Report
Docket No. 50-297

copy w/attachments:

Dr. Nino A. Masnari, Dean
College of Engineering

Dr. Jim E. Riviere, Chairman
Radiation Safety Committee

Dr. Ayman I. Hawari, Chairman
Reactor Safety and Audit Committee

Dr. Paul J. Turinsky, Head
Department of Nuclear Engineering

Dr. Ayman I. Hawari, Director
Nuclear Reactor Program

Mr. David Rainer, Associate Vice Chancellor
Environmental Health and Public Safety

Ms. Amy Orders
Radiation Safety Officer

Mr. Stephen J. Bilyj
Reactor Operations Manager

Mr. Mark Poirier
ANI/MAELU

Mr. Alexander Adams, Jr.
Nuclear Regulatory Commission

Mr. Craig Bassett
Nuclear Regulatory Commission

PULSTAR REACTOR ANNUAL REPORT TO
UNITED STATES NUCLEAR REGULATORY COMMISSION

for

01 July 2000 - 30 June 2001
Revised

NCSU NUCLEAR REACTOR PROGRAM

27 May 2002

Reference: PULSTAR Technical Specifications
Section 6.7.4

Docket No. 50-297

Department of Nuclear Engineering
North Carolina State University
Raleigh, North Carolina 27695

6.7.4.f Radioactive Effluent:

1. Liquid Waste (summarized by quarters)

i. Radioactivity Released During the Reporting Period:

Period	(1) No. of Batches	(2) Total μCi	(3) Tot. Vol. Liters	(4) ¹ Diluent Liters	(5) Tritium μCi
01 Jul - 30 Sep 00	0	0	0	0	0
01 Oct - 31 Dec 00	0	0	0	0	0
01 Jan - 31 Mar 01	1	32	3,220	2.2E4	30
01 Apr - 30 Jun 01	1	25	3,420	4.1E4	21

(6) 51 μCi of tritium was released during this reporting period.

(7) 57 μCi total activity was released during this reporting period.

ii. Identification of Fission and Activation Products:

The gross beta-gamma activity of the batches in (1) above were less than 2×10^{-5} μCi/ml. Isotopic analyses of these batches indicated low levels of typical corrosion and activation products. No fission products were detected.

iii. Disposition of Liquid Effluent not Releasable to Sanitary Sewer System:

All liquid effluent met the requirements of 10 CFR 20 for release to the sanitary sewer.

2. Gaseous Waste (summarized monthly)

i. Radioactivity Discharged During the Reporting Period (in Curies) for:

(1) Gases:

Year	Period	Total Time In Hours	Curies
2000	01 Jul - 31 Jul	744	0
	01 Aug - 31 Aug	744	0.138
	01 Sep - 30 Sep	720	0.355
	01 Oct - 31 Oct	744	0.127
	01 Nov - 30 Nov	720	0.185
	01 Dec - 31 Dec	744	0.087

¹ Based on gross beta activity only. Tritium did not require further dilution.

2001	01 Jan - 31 Jan	744	0.503
	01 Feb - 28 Feb	672	0.402
	01 Mar - 31 Mar	744	0.200
	01 Apr - 30 Apr	720	0.270
	01 May - 31 May	744	0.216
	01 Jun - 30 Jun	720	0.090
Totals		8,760 hours	2.573 curies

(2) Particulates with a half-life of greater than eight days:

Particulate filters from the Stack Particulate Monitoring Channel were analyzed upon removal. There was no particulate activity with $t_{1/2} > 8$ days indicated on any filter during this reporting period.

ii. Gases and Particulates Discharged During the Reporting Period:

(1) Gases:

Total activity of argon-41 release was 2.573 curies.

The yearly average concentration of argon-41 released from the PULSTAR reactor facility exhaust stack during this period was 7.8×10^{-9} $\mu\text{Ci/cc}$. This is below the regulatory limit of 1×10^{-8} $\mu\text{Ci/cc}$ given in 10 CFR 20 Appendix B. Dose calculations were performed using the "COMPLY" code for the fiscal year. "COMPLY" code results were less than the 10 mrem constraint level given in 10 CFR 20.

(2) Particulates:

See gaseous waste i.(2) above.

3. Solid Waste from Reactor²

- Total volume of solid waste - 18 ft³ (0.51 m³)
- Total activity of solid waste - 0.638 mCi
- Dates of shipments and disposal - All waste is transferred to the NCSU Environmental Health and Safety Center for temporary storage and disposal under the NCSU state license. Transfers were made on 01 Aug 00.

² Solid waste generated by the PULSTAR Reactor is transferred to the NCSU Radiation Safety Division for storage or disposal.