

Annual Report From the University of Washington  
Facility License R-73

A. A Narrative Summary of Operating Experience for the Period  
January 1, 1980 - December 31, 1980

The University of Washington Nuclear Reactor was operated for 256 hours (baseline to shutdown) and generated 11,534 KWH of energy. The 118 experimental runs consisted of sample irradiation for neutron activation analysis, isotope production, laboratory experiments, class demonstrations, anomaly detection experiments, calibrations and operator training.

B. Unscheduled Shutdowns

1. At power

<u>Date</u>	<u>Power Level</u>	<u>Cause</u>
June 3, 1980	10 kW	Telephone receiver accidentally dropped on scram button
Sept. 18, 1980	95 kW	Safety Amplifier (a)
Oct. 23, 1980	Less than 10 Watts	Spike on Log N
Nov. 19, 1980	95 kW	Safety Amplifier (a)

(a) Trips result from photodiode isolation falling below operational level due to noise on 110 VAC line.

2. Not at power

December 11, 1979 - January 8, 1980 -- Water accidentally spilled into graphite moderator. Operations were suspended until the reactivity worth of the absorbed water was less than  $-0.4\% \Delta k/k$ . Prevention by better orientation procedures plus observation and practice of experimenters.

C. Corrective and Preventative Maintenance Having Safety Significance

1. Routine calibration and maintenance as scheduled.
2. Drying out graphite moderator after accidental spillage of water from reactor top. (See unscheduled shutdowns.)

D. Discussion of Changes Carried Out Pursuant to 10 CFR 50.59

1. None for 1980.

E. Radioactive Releases to the Environs

1. Emptied a retention tank (1440 gallons) to sanitary sewer February 15, 1980 with total activity less than 0.02 microcuries and December 12, 1980 with activation less than 0.03 microcuries.
2. The Argon 41 released to the environments from the facility during 1980 was measured to be 16.7 curies.

F. Environmental Surveys Outside the Facility

See next page for data available on January 30, 1981.

- G. There were no significant exposures through November of 1980, i.e., above 500 mrem. Film badges provided by R.S. Landauer Jr. and Company.

F. Environmental Surveys

Survey by Radiation Safety with TLD and film badges provided by R.S. Landauer, Junior and Company.

Sets were placed at intervals around outside of building.

1. Data for set dated February which were exposed for month of April, 1980.

<u>Badge No.</u>	<u>Film</u>	<u>TLD</u>
39	20 mrem	40 mrem
40	10	M
41	M	M
42	M	M
43	10	20
44	10	40
45	20	30
46	20	40
47	20	40
49	20	50
50	20	50
51	20	40
52	20	40
53	30	60
54	30	40
55	40	70
56	30	40

2. Data for set dated October which were exposed from October 1, 1980 to December 2, 1980.

<u>Badge No.</u>	<u>Film</u>	<u>TLD</u>
41	M	30
42	20	10
43	M	30
44	20	40
45	M	10
46	20	30
47	20	20
48	20	40