



Idaho State University
Pocatello, Idaho
83209-8060

Office of the Dean
College of Engineering
Box 8060
(208) 236-2902

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Charles L. Miller
Division of Licensing Standardization
and Special Projects Branch
U.S. Nuclear Regulatory Commission
Mail Stop 34D
Washington, D.C. 20555

Dear Mr. Miller:

Attached is the Annual Operating Report for the Idaho State University AGN-201 Nuclear Reactor, License R-110, Docket No. 50-284, for the calendar year 1990.

Respectfully submitted,

A. E. Wilson, P.E.
Reactor Supervisor

AEW/mjp

cc: V. Charyulu, Dean, College of Engineering
U.S. Nuclear Regulatory Commission
c/o Document Management Branch
Washington, D.C. 20555

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ANNUAL OPERATING REPORT
FOR 1990

1. Brief Narrative of Changes:

- a. There were no changes to the facility design, performance characteristics or operating procedures relating to reactor safety during this reporting period.
- b. Results of major surveillance tests and inspections.
 - 1) Channel tests on all safety channels were performed and all scram interlocks were tested and found to be satisfactory and within specification.
 - 2) Power and period calibrations were performed with satisfactory results.
 - 3) The shield tank was inspected and no leaks or excessive corrosion were noted.
 - 4)
 - a) The control rod drive mechanisms were inspected and tested with satisfactory results.
 - b) Scram times were measured and found to be less than 130 milliseconds.
 - c) Control and safety rod worths and run up times were measured; from these values the reactivity insertion rate was determined to be less than 0.045% per second for any rod.
 - d) The shutdown margin was determined to be greater than 2.0% with the most reactive rod fully inserted.

2. The total operating time for the reactor during 1990 was nearly 157 hours with a total thermal energy output of approximately 147 watt-hours. The monthly breakdown of operation time follows:

<u>Month</u>	<u>Hours</u>	<u>Month</u>	<u>Hours</u>
January	7.8	July	4.5
February	20.6	August	2.1
March	34.6	September	10.2
April	23.4	October	12.2
May	10.7	November	9.8
June	14.5	December	4.3

3. Unscheduled shutdowns:

There were no unscheduled shutdown.

4. Safety related maintenance included the following:

a. Replacement of various tubes in channel 2.

5. Changes to the Facility.

a. There have been no changes to the facility as described in the application for license.

b. No new or untried experiments or tests were performed during the reporting period.

6. No radioactive effluents were released or discharged to the environment during 1990.

7. No person using the facility received a whole body exposure of greater than 50 millirem during 1990.

8. Neutron and beta/gamma radiation surveys performed on the exterior walls of the facility indicated that maximum combined contact radiation levels were less than 2 mrem/hr.