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U.S. Nuclear Regulatory Commission
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Gentlemen:

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 1991.

Respectfully submitted,

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Dr. Kevan C. Crawford
Reactor Supervisor

KCC/rdc

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**ANNUAL OPERATING REPORT
FOR 1991**

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 1991 was nearly 97 hours with a total thermal energy output of approximately 64 watt-hours. The monthly breakdown of operation time follows:

<u>Month</u>	<u>Hours</u>	<u>Month</u>	<u>Hours</u>
January	2.6	July	0.0
February	6.8	August	4.3
March	5.9	September	16.7
April	8.6	October	18.0
May	2.9	November	10.9
June	3.1	December	17.3

3. **Unscheduled shutdowns:**
There were no unscheduled shutdowns.

4. Safety related maintenance included the following:

- a. Replacement of various electronic vacuum tubes in the Channel #2 detector chassis was necessary to reduce unwanted electronic noise that was evident by nuclear instrument Ch #2 meter readings. Replacement tubes employed were of equal make or better to ensure that reactor safety integrity was maintained.

5. Changes to the Facility:

- a. There have been no changes to the facility as described in the application for license.
 - b. There were no changes to the procedures as described in this facility's Technical Specifications.
 - c. No new or untried experiments or tests were performed during the reporting period.
6. No summary of safety evaluations are submitted at this time, because there were no changes to operating procedures, testing, or experiments to this facility during the 1991 calendar year.
7. No radiation effluents were released or discharged to the environment during 1991.
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.
9. No person using the facility received a whole body exposure of greater than 50 millirem during 1991.