



Radiation Center
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May 24, 2006

U.S. Nuclear Regulatory Commission
Attn: Mr. Alexander Adams
Office of Nuclear Reactor Regulation
Mail Stop O12- G13
One White Flint North
11555 Rockville Pike
Rockville, MD 20852-2738

Reference: Oregon State University TRIGA Reactor (OSTR),
Docket No. 50-243, License No. R-106
USNRC Request for Additional Information (RAI) dated May 15, 2006

Subject: Response to RAI

Mr. Adams:

The attachment to this letter answers the questions presented in the RAI dated May 15, 2006. If there are any questions regarding the information submitted, please let me know. I declare under penalty of perjury that the foregoing is true and correct.

Executed on 5/24/06.

Yours sincerely,

Steven R. Reese
Director

cc: Document Control, USNRC (w/o enclosure)
Ken Niles, ODOE (w/o enclosure)
John Cassady, OSU (w/o enclosure)
Rich Holdren, OSU (w/o enclosure)
John Ringle, OSU (w/o enclosure)

Enclosure

A020

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1. **Section 3.2.4 of the environmental report states, "Liquid radioactive wastes generated at the facility are discharged only to the sanitary sewer serving the facility." Table V.B.1.b of the Oregon State University Radiation Center and TRIGA Reactor Annual Report for the period July 1, 1999 through June 30, 2000 indicates that liquid waste was packaged and transferred to the Radiation Safety Office. Please describe the effluent stream that comprises the packaging and transfer of liquid radioactive waste to the Radiation Safety Office.**

Section 3.2.4 should be amended to say, "Liquid radioactive wastes generated at the facility are discharged to the sanitary sewer serving the facility. The discharge of radioactive liquid effluents is controlled by sampling a waste tank before discharge. All of the liquid waste volumes and their activities are recorded. For cases where the liquid radioactive effluents do not meet the requirements of 10 CFR 20.2003, those liquids are transferred to OSU Radiation Safety to be disposed of at an appropriate waste disposal facility." The liquid wastes in the 2000 OSTR Annual Report did not meet the requirements for solubility identified in 10 CFR 20.2003 and were therefore transferred to OSU Radiation Safety. Once transferred to OSU Radiation Safety, the material moves off the OSTR license and onto the OSU general license.

2. **Please discuss water usage in support of licensed activities and the environmental impact of the water usage including disposal of waste water. Are any chemicals (such as those used to control biological growth in the system or prevent the build up of scale in the system) used in connection with operation of the secondary cooling system and the cooling tower? If chemicals are used, please discuss their usage and environmental impact. Please describe the use, disposal and environmental impact of any other chemicals (such as those used in laboratories) used in connection with activities performed under the reactor license.**

The amount of water usage by the facility for license activities is approximately 1,500 gallons a day (5 and 1,500 gallons per day for the primary and secondary systems, respectively) of municipal water to replace losses due to evaporation. In contrast, the City of Corvallis produces and average of approximately 6 million gallons per day for municipal water supplies. Water discharges to the sanitary sewer from licensed activities totals only 50 gallons over the last five years. In contrast, the Corvallis Waste Water Treatment Plant processes approximately 11 million gallons of waste water per day. For both water use and discharges, the impact of continued operation represents only a small fraction of the current capacity of the City of Corvallis.

Sodium hydroxide is the only chemical used for license activities. It is used as a corrosion and scale inhibitor for the secondary water system. It is injected into the system slowly

during daily operation amounting to approximately 2 gallons per month. It immediately becomes highly diluted and ultimately either evaporates or goes to the sanitary sewer during the blow down cycle of the chemical addition system. Due to the extremely low concentrations, no environmental impact has been observed with its use nor is any expected. Additionally, we are using the minimum amount of chemicals necessary to maintain water quality on the secondary system thereby minimizing the possibility for environmental impact.

3. Discuss if continued operation of the reactor facility during the renewal period will have any impact on historical properties.

The nearest historical property listed on the National Listing of Historic Places (Oregon Parks and Recreation Department) is the College Hill West Historical District and is located approximately 0.5 miles from the OSTR. This is a neighborhood of homes located on the northwest border with Oregon State University. As the footprint and operation of the facility should remain unchanged, continued operation of the facility during the renewal period will have no expected impact on the district.

4. Discuss if continued operation of the reactor facility during the renewal period will have any impact on endangered or threatened species.

A comprehensive listing of threatened and endangered species found in the State of Oregon can be found in The Oregon Conservation Strategy (Oregon Department of Fish and Wildlife, February 2006). None of the species listed in the document are known to exist nor do the environs listed for each species match that found within the site boundary of the OSTR. Additionally, it is highly unlikely that any threatened or endangered species would be affected by continued operation of the OSTR because the footprint and operation of the facility should remain unchanged and no environmental impact has been observed nor is it expected. This is particularly true for water and watershed resources associated with endangered or threatened fish species because the water use and discharge rates are minimal.