

National Aeronautics and  
Space Administration  
John H. Glenn Research Center  
Lewis Field  
Cleveland, OH 44135-3191



September 9, 2004

Reply to Attn of: QO

U. S. Nuclear Regulatory Commission  
Region III  
2443 Warrenville Road, Suite 210  
Lisle, IL 60532-4352

Subject: License # 34-00507-16  
Docket # 030-05626

We are requesting that our specific materials license be amended to include interim possession of seven activated control rods from the National Aeronautics and Space Administration's Plum Brook Research Reactor Facility currently undergoing decommissioning under NRC license numbers TR-3 and R-93, docket numbers 050-00030<sup>TM</sup> and 050-00185.

The control rods have a cadmium core which is jacketed by stainless steel. An activation analysis of the seven control rods estimated a total activity of approximately 60 Curies with the following major radioisotopes:

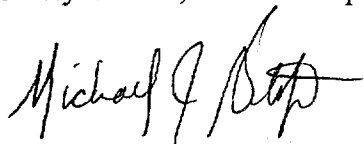
Nuclide	Activity (mCi)
H-3	2.24 E+01
C-14	7.67 E+01
Fe-55	3.72 E+02
Ni-59	3.25 E+02
Co-60	1.27 E+04
Ni-63	4.64 E+04
Nb-94	7.58 E-01
Tc-99	1.13 E-01
<i>Total</i>	<i>5.99 E04</i>

The seven control rods will be placed in an OP-246 liner, which will be stored in an On Site Storage Container (OSSC). The OSSC is a Secure Environmental Container (SEC<sup>TM</sup>) model 14-200-H manufactured by Dufrane Nuclear Shielding, Inc. This system provides 4.5 inches lead equivalent shielding which is sufficient to keep external dose rates at an acceptable level with the control rods in place. Radiation levels on contact with the OSSC are estimated to be on the order of 10 millirem per hour.

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The OSSC will be stored on 8 inch thick, 17 foot by 17 foot concrete pad and surrounded by a security fence outside the pad's perimeter. The perimeter of the security fence will be on the order of 24 feet by 24 feet, which will keep fence-line dose rate below 2 millirem per hour. Access to the OSSC will be controlled by the Center's Radiation Safety Officer or a designee, although no need for such access is anticipated. Radiation surveys and, possibly, dosimetry will be used to establish the dose to the public per 20.1301.

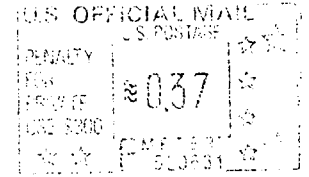
Should you have questions or require additional information, you may contact the Radiation Safety Officer, Mr. Christopher Blasio, at (216)433-6520.

A handwritten signature in black ink, appearing to read "Michael J. Blotzer". The signature is written in a cursive style with a large, sweeping initial "M".

Michael J. Blotzer, Chief  
Environmental Management Office

National Aeronautics and  
Space Administration

John H. Glenn Research Center  
Mail Code 6-4  
21000 Brookpark Road  
Cleveland, OH 44135-3191



Official Business  
Penalty for Private Use, \$300

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