BGRR Fuel Canal Cleanup Plan Now Available

An Engineering Evaluation/Cost Analysis document exploring cleanup options for the graphite reactor's fuel canal is now available for public review and comment. The comment period runs from August 22 through September 20, 2001. Brookhaven will hold an information session on Tuesday, August 28 and a public meeting on Wednesday, September 12, 2001, both at the Lab's Berkner Hall from 7 to 9 p.m. For more information, contact Kathy Gurski at (631) 344-7459.

The U.S. Department of Energy and Brookhaven National Laboratory are currently decommissioning the Brookhaven Graphite Research Reactor (BGRR), the first reactor ever constructed for peacetime research on the atom. The BGRR is being dismantled in seven steps.

The Brookhaven Graphite Research Reactor

Two of these steps, the removal of old equipment and excavation of a large concrete sump, are complete, and the third, dismantling of the BGRR's above-ground cooling air ducts, is nearly complete. The BGRR project team is now working on the fourth step, cleanup of the reactor's spent-fuel canal. Since several cleanup options are under consideration for this phase of the project, the team is asking for public comment on a document known as an "Engineering Evaluation/Cost Analysis," or EE/CA. The EE/CA evaluates several different cleanup alternatives for the canal and surrounding soils. The alternatives evaluated, including the one being recommended for selection, are summarized below. The complete EE/CA document can be found at http://www.bnl.gov/bgrr/docs.html and at local libraries (see back for locations).

Spent Fuel Canal Description

The spent fuel canal extends from the basement of the reactor building to the BGRR Water Treatment House, and is 64 feet long, 6 feet wide, and ranges from 8.5 to 20 feet deep. From 1950 to 1969, the concrete canal was used to store the reactor's spent fuel and prepare it for shipment off of the site. As a result, the concrete walls of the canal, three small sumps within the canal, and an associated underground storage vault are contaminated with radionuclides, including cesium-137, strontium-90, and, to a lesser extent, isotopes of uranium, plutonium, and americium. Soils surrounding and immediately beneath the canal have also been found to contain strontium-90 and cesium-137, which can be traced to historical water leakage from the canal, primarily through a joint in the canal between the two buildings.

Alternatives Evaluated

The project team is studying cleanup alternatives ranging from "no action" (required by law to be considered as a comparison option) to various scenarios where part or all of the canal, associated systems, and soils would be excavated and removed.

Each of the five alternatives described in detail in the EE/CA was evaluated against criteria including effectiveness, implementability, and cost. Community values identified during public roundtable sessions on the 1999 *BGRR Removal Action Alternatives Study* were also factored into the selection process.

All of the alternatives, including the "no action" alternative, meet protective limits established by regulatory agencies for potential dose from soils and/or groundwater, primarily due to prior cleanup projects involving the canal and BGRR. However, the project team recognized that the "no action" alternative does not address the potential for future exposure to contaminated groundwater by a hypothetical on-site resident, and, as a result, has recommended a more aggressive cleanup option.

The Department of Energy and Brookhaven are recommending a cleanup alternative ("Alternative 2") that would leave the canal itself in place, but would

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involve decontaminating the concrete walls and removing the majority of contaminated soils surrounding the structure. Some small quantities of residual contamination would remain deeply imbedded in the concrete canal structure and within a small pocket of subsurface soil beneath the canal structure. This alternative includes measures to ensure the remaining contamination does not present a threat to a hypothetical future resident.

Federal guidance requires the selected cleanup plan to assure that the potential dose to a hypothetical future resident does not exceed 15 millirem per year. Computer modeling indicates that the "no action" alternative would result in a maximum potential dose to that hypothetical future resident of 4.2 millirem per year. Alternative 2, meanwhile, would lower that potential dose to 0.11 millirem per year. The more aggressive alternatives (alternatives 3-5) would marginally reduce dose but substantially increase worker risk, the volume of waste to be transported, and project cost.

The project team believes the recommended alternative will protect the public, meet regulatory standards (actually reducing the maximum doses to at least100 times below those standards), minimize risk to workers, and minimize the amount of material to be transported off site.

Next Steps

Community members are encouraged to review the complete EE/CA and provide comments to the Department of Energy. These comments can and have influenced several cleanup decisions to date. After reviewing stakeholder input gathered during the comment period, the Department of Energy will officially select a cleanup alternative. As noted above, that alternative may be modified based on input collected during the public comment period. The Department of Energy will then document the selected alternative in an "Action Memorandum" and move ahead with cleanup.

Review the complete "Lower Canal and Water Treatment House, Equipment, and Associated Soils Engineering Evaluation/Cost Analysis" at:

Longwood Public Library
800 Middle Country Rd
Middle Island, NY
(631) 924-6400

Mastics-Moriches-Shirley Public Library
301 William Floyd Parkway
Shirley, NY
(631) 399-1511

BNL Research Library
Building 477A
Upton, NY
(631) 344-3483

U.S. EPA, Region II Library
290 Broadway
New York, NY
(212) 637-4296

Send EE/CA comments to:

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