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NRC SAFETY ASSESSMENT OF BROOKHAVEN NATIONAL LABORATORY HIGH FLUX BEAM REACTOR FINDS NO SAFETY SIGNIFICANT ISSUES

A Nuclear Regulatory Commission safety assessment of the U.S. Department of Energy's (DOE) High Flux Beam Reactor at the Brookhaven National Laboratory on Long Island, N.Y., found no safety significant issues, although it identified several apparent instances of non-compliance with DOE requirements.

Overall, the NRC found safety programs at the High Flux Beam Reactor, located in Suffolk County in eastern Long Island, adequate to protect the health and safety of the public, the workers, and the environment.

NRC did the assessment at the request of DOE, which is considering whether to permanently shut down the reactor. NRC was asked to identify and assess any significant safety issues and DOE's compliance with its safety requirements. NRC was also asked to examine any potential issues pertaining to external oversight of the facility. DOE paid NRC \$225,000 for the study, which began June 8. The effort included about six weeks of on-site observations at Brookhaven, as well as audits of program activities, procedures, and records and interviews with DOE personnel at Brookhaven and other DOE facilities.

Historically, DOE has used the reactor for research in chemistry, physics, advanced materials, the environment, biology and medicine. The reactor has not operated since it was shut down for routine maintenance two years ago. Following shutdown, a plume of water contaminated with low-level radioactive tritium leaked from a pool where spent fuel was stored. Fuel has since been removed from the pool and shipped offsite.

"Actions taken to characterize and control the tritium plume were conservative, and this plume does not represent a radiological hazard to public health or safety," the 86-page NRC report concludes.

The NRC report covers 14 areas: design and control; review and audit; radiation protection; environmental protection and effluent control; operator qualification and requalification; maintenance; surveillance; fuel handling; experiments; procedures; emergency preparedness; safeguards and security; operations; and organizational effectiveness.

Areas of non-compliance with DOE and Brookhaven National Laboratory's requirements included: failure to place low-level contaminated material in a radioactive material storage area;

radiation postings not updated in a timely manner; two instances of incomplete corrective actions; several late or missed reviews or audits; and a failure to inform a manager of radiation survey reductions. None of these were considered safety significant.

The report also concludes that the design and conditions at the High Flux Beam Reactor “do not present any unique regulatory or technical challenges to regulatory oversight” of the reactor by outside regulators, such as NRC. The report recommends that DOE and Brookhaven continue their efforts to clarify lines of authority for management and oversight of the lab. DOE and Brookhaven have recently initiated organizational changes and management programs to address this longstanding issue, but NRC could not assess their effectiveness because they are relatively new.

A copy of the report has been sent to the House of Representatives’ Committee on Appropriations. A copy of the executive summary of the NRC safety assessment is available upon request from the NRC’s Office of Public Affairs. The full report will be posted on the NRC’s Internet homepage at: <http://www.nrc.gov/OPA/reports>.

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