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NASA - Plum Brook

1.0 Site Identification

Type of Site: Research and Test Reactor Facility
Location: Sandusky, OH
License No.: TR-3
Docket No.: 50-30
License Status: Decon
Project Manager: Chad Glenn

2.0 Site Status Summary

The National Aeronautics and Space Administration (NASA) Plum Brook Reactor Facility (PBRF) is located within a fenced area in the northern portion of NASA's Plum Brook Station. The PBRF operated from 1961 to 1973. The Plum Brook Station is located about 6-km (4-mi) south of Sandusky, Ohio, about midway between Cleveland and Toledo, south of Lake Erie, and just north of the Ohio Turnpike. The Plum Brook Station is surrounded by farmlands and low density housing. NASA currently has two 10 CFR Part 50 facility licenses to possess but not operate two reactors within the PBRF. U.S. Nuclear Regulatory Commission (NRC) license TR-3 is for the 60-megawatt research test reactor, constructed for testing materials to be used in space program applications. NRC license R-93 is for the 100-kilowatt swimming-pool type mock-up reactor.

NASA has decided that the PBRF be decommissioned. The objective of decommissioning is to remove the PBRF from service and reduce residual radioactivity to a level that permits release of the 27-acre PBRF for unrestricted use and license termination. The radiological criteria for license termination are set forth in 10 CFR Part 20, Subpart E - Radiological Criteria for License Termination.

3.0 Major Technical or Regulatory Issues

In 2005, NASA discovered radioactive contamination off the NASA PBRF site near Sandusky, Ohio. The material was identified as cesium-137 and cobalt-60 in a drainage ditch leaving their property, and in Plum Brook approximately one mile downstream towards Lake Erie. The radioactive materials are likely the result of reactor operations which ended in 1973. Sediment samples identified up to 38 pCi/l cesium-137 (background is about 1 pCi/g). The stream, on its five-mile journey to Lake Erie, crosses residential areas, school-owned lands and a golf course. In 2008, NASA completed a characterization study to further assess the nature and extent of contamination in Plum Brook. The results of this study will be used with other information to inform any remediation actions. In 2009, NASA submitted a license amendment request that would require that NASA assess this residual radioactivity and demonstrate that the stream bed and banks of Plum Brook between Plum Brook Station and Sandusky Bay meet the radiological criteria for unrestricted use prior to terminating Licenses TR-3 and R-93. In February 2010, NRC completed its review and approved the license amendment request. In September 2010, NASA completed final radiological characterization and ALARA activities in Plum Brook.

4.0 Estimated Date For Closure

12/31/2011

Page Last Reviewed/Updated Wednesday, April 13, 2011

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