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MEMORANDUM FOR: Malcolm R. Knapp, Director  
Division of Radiation Safety and Safeguards

FROM: Ronald R. Bellamy, Chief  
Facilities Radiological Safety and Safeguards Branch  
Division of Radiation Safety and Safeguards

SUBJECT: RADIOACTIVE CONTAMINATION CLEANUP RESPONSIBILITIES -  
PAWLING, NEW YORK, NUCLEAR LAKE PROPERTY

At your request, the staff has compiled the following information to assist in determining who may be responsible for cleanup of radioactive contamination at the Nuclear Lake property site in Pawling, New York.

BACKGROUND

Beginning in 1958, licensed nuclear fuels research and development were conducted at the site near Pawling in Dutchess County, New York, known locally as Nuclear Lake. Facilities included laboratories for fabrication and testing of uranium, thorium, and plutonium fuels, a hot cell, three research reactors (Docket Nos. 50-23, 50-101 and 50-290), and a sodium test loop. The original site owner and licensee was Nuclear Development Associates which, after a few years, became United Nuclear Corporation (UNC). In 1971, the licenses were transferred to a partnership formed of Gulf General Atomics (itself a partnership of Gulf Oil and Royal Dutch Shell) and UNC, known as Gulf United Nuclear Fuels Corporation (GUNFC). UNC retained ownership of the site and was also a co-licensee with GUNFC for the remaining two reactors, Docket Nos. 50-101 and 50-290. (One reactor license, Docket No. 50-23, had been terminated in June 1961). In 1972, activities at the site were discontinued, and the site was decommissioned. Survey reports, indicating that the facilities met the guidance for decontamination, were prepared by a licensee contractor and were submitted to the Atomic Energy Commission (AEC) in support of requests for termination of the licenses.

A closeout survey and inspection was conducted by the AEC at the site during April 1974. That inspection (70-903/74-01) found that the site met the release criteria specified in the AEC's "Guidelines for Decontamination of Facilities and Equipment Prior to Release for Unrestricted Use or Termination of Licenses for Byproduct, Source or Special Nuclear Material for Unrestricted Use". The reactor licenses were terminated in June 1961 (Docket No. 50-23) and June 1974 (Docket Nos. 50-101 and 50-290), and the materials license (Docket No. 70-903) was terminated in July 1975 by the NRC.

The Nuclear Lake property was transferred in November 1977 to Harpoon, Incorporated, a wholly-owned subsidiary of UNC, which sold it to the U. S. Department of the Interior for the National Park Service, Appalachian Trail Project Office in June 1979. In February 1984, Nuclear Energy Services,

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Incorporated, of Danbury, Connecticut, conducted a radiological survey of the site under contract to the National Park Service. During the course of that survey, it was discovered that a small area of the concrete floor in what was the Waste Storage Building had fixed beta-gamma radiation levels of 25 to 35 mrem/hr. The National Park Service notified NRC Region I of this condition by letter dated March 12, 1984. A verification survey was conducted by the NRC on May 22, 1984. Most of the contamination was removed from the area by destructive sampling by the NRC on February 25-26, 1985. At the request of the Town of Pawling (New York), Conservation Advisory Board, additional destructive sampling was performed by the NRC on February 28, 1986. On September 18-23, 1986, Oak Ridge Associated Universities (ORAU) conducted a site-wide radiological survey for the National Park Service. A report of that survey was issued in July 1988. On September 26, 1989, a joint meeting among the National Park Service, NRC, and ORAU was held to discuss options available to the National Park Service for additional surveys and/or cleanup of the site. At the meeting, the following options were discussed: (1) do nothing, since there was no evidence that the health and safety of the public was compromised; (2) NRC could issue an Order to the National Park Service, as owner of the site, requiring cleanup of the site; and (3) NRC and the National Park Service could inform the former licensee and/or owner that they may be responsible for cleanup of the site. It was decided to pursue the first part of Option 3, i.e., contact the former licensee to determine its willingness to assume responsibility for cleanup of the site. (The former licensee's successors have now become General Atomic and Valley Pines Associates, a subsidiary of Chevron Corporation. Valley Pines Associates has assumed the residual responsibilities of GUNFC. UNC exists as UNC, Inc.)

On April 3, 1990, representatives of the National Park Service, NRC, and Valley Pines Associates met at the Pawling site to tour the site, to observe the areas in the Plutonium Laboratory and Multiple Failure Building where residual contamination exists, and to discuss various cleanup options. The ORAU survey report identified limited areas of residual contamination in the Plutonium Laboratory and the Multiple Failure Building and outside the Shield Mock-up Building, as well as the presence of "targets" (solid objects) submerged in Nuclear Lake. At the April 3, 1990 meeting, a representative of Valley Pines Associates raised the question about the legal responsibility of the former site owner and licensee, UNC, with regard to potential cleanup at the site.

#### D. DISCUSSION

Based on the ORAU survey report for the National Park Service, there is residual radioactive contamination in the former Plutonium Laboratory and Multiple Failure Buildings and outside the former Shield Mock-up Building. From available NRC records, it is clear that GUNFC used the Plutonium Laboratory for preparation of plutonium-bearing fuels. However, there is no specific information which indicates that GUNFC conducted activities with radioactive materials in either

the Multiple Failure Building or the Shield Mock-up Building, although GUNFC was authorized to do so and included these and other buildings in its radiological surveys performed in connection with its request for termination of licenses. The implied fact that these buildings were not used by GUNFC was stated orally by the former President of GUNFC, currently a consultant to Valley Pines Associates, during the April 3, 1990, site visit. If this information is true, it indicates that the radioactive contamination inside and/or outside the above listed buildings resulted from operations conducted by UNC, not GUNFC. In addition, in the Warranty Deed provided by Harpoon, Inc. to the National Park Service, Harpoon guaranteed that Harpoon, Inc. has the right to convey the land; Harpoon, Inc. has done no act to encumber the land; that the National Park Service shall have quiet and peaceful possession and enjoyment of the property; that the land is free and clear from any and all encumbrances; that Harpoon, Inc. warrants generally the property being conveyed; and that Harpoon, Inc. will execute any further assurances of the said land as may be required. No information is available, however, describing the nature of the contractual arrangements between Harpoon and UNC, and those between UNC and GUNFC, as lessor and lessee, respectively.

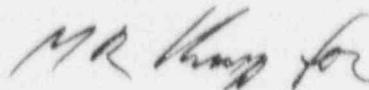
#### CONCLUSION

On the basis of available information, it is not clear that residual contamination at the Pawling site resulted from the use of radioactive material solely by the last former licensee of record, Gulf United Nuclear Fuels Corporation. It is clear that cleanup of residual contamination in the Plutonium Laboratory was the responsibility of GUNFC. However, it is not clear that cleanup of residual contamination in other onsite buildings, such as the Multiple Failure Building and Shield Mock-up Building, was attempted by GUNFC, since these buildings may not have been used by GUNFC. If GUNFC was a current licensee, NRC could likely hold it responsible for remediation necessitated by any activities authorized at the site. However, since there is no current licensee, the contractual arrangements between former licensees is unknown, and the terms of the sale of the property imply that Harpoon, Inc. (UNC) should have been knowledgeable of any problems (in this case, contamination at the site), the successors of both GUNFC and UNC should be held responsible for remediation.

#### RECOMMENDATIONS

1. Require Valley Pines Associates, as successor to the last former licensee, Gulf United Nuclear Fuels Corporation, to clean up the Plutonium Laboratory building.
2. Require UNC, Inc., as successor to the former owner, United Nuclear Corporation, to clean up other buildings and areas on site which are contaminated.

3. Require both organizations to characterize and remove, if appropriate, solid objects (targets) identified in Nuclear Lake to assure that these objects do not contain radioactive materials.



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