[7590-01-P]

NUCLEAR REGULATORY COMMISSION

DOCKET NO. 030-29288

NOTICE OF AVAILABILITY OF ENVIRONMENTAL ASSESSMENT AND FINDING OF NO SIGNIFICANT IMPACT FOR LICENSE AMENDMENT TO BYPRODUCT MATERIALS LICENSE NO. 37-17860-02, TO INCORPORATE REVISION FOUR OF THE DECOMMISSIONING PLAN FOR THE PENNSYLVANIA DEPARTMENT OF ENVIRONMENTAL PROTECTION, BUREAU OF RADIATION PROTECTION'S QUEHANNA FACILITY IN KARTHAUS, PENNSYLVANIA

AGENCY: Nuclear Regulatory Commission.

ACTION: Issuance of Environmental Assessment and Finding of No Significant Impact for License Amendment.

FOR FURTHER INFORMATION CONTACT: James Kottan, Senior Health Physicist, Decommissioning Branch, Division of Nuclear Materials Safety, Region I, 475 Allendale Road, King of Prussia, PA 19406; telephone (610) 337-5214; fax number (610) 337-5269; or by email: jjk @nrc.gov.

SUPPLEMENTARY INFORMATION:

I. Introduction

The U.S. Nuclear Regulatory Commission (NRC) is considering the issuance of a license amendment to Byproduct Materials License No. 37-17860-02**.** This license is held by the Pennsylvania Department of Environmental Protection, Bureau of Radiation Protection (PADEP, BRP) (the Licensee), for its Quehanna Facility (the Facility), located in Karthaus, Pennsylvania**.** Issuance of the amendment would incorporate revision four of the Decommissioning Plan (DP)

into the license to allow completion of decommissioning activities at the site and eventual unrestricted release of the Facility.

The Quehanna Facility is located near Karthaus, Clearfield County, Pennsylvania, in the Quehanna Wild Area of the Moshannon State Forest. The site is approximately seven acres in size, and the area is heavily wooded and sparsely populated. The land in the vicinity of the Facility is used for recreational activities, including hiking, camping, and hunting. The site contains one large building, several smaller buildings, asphalt parking lots and driveways, a septic system leach field used for sanitary sewer waste, and an approximately one acre pond. The main building was constructed to house a pool reactor and associated laboratories, hot cells, and offices. Auxiliary buildings included the waste water treatment building with associated underground tanks and piping and the water storage building.

The Facility was constructed in 1957 after the Commonwealth of Pennsylvania enacted legislation for the location of a research facility at the Quehanna site. The Commonwealth of Pennsylvania anticipated that the project would be a contributor to the economy in the area. The facility was to be operated by Curtiss-Wright Corporation. Plans for the facility included development of nuclear jet engines, and research in nucleonics, metallurgy, and other areas. In 1958, the AEC issued a license to the Curtiss-Wright Corporation to operate a pool reactor at the facility. The license also included use of the hot cells and laboratories.

In September 1960, Curtiss-Wright Corporation donated the Facility to the Pennsylvania State University (PSU). PSU planned to use the reactor for training and research and leased the hot cells to Martin-Marietta Corporation. Beginning in 1962 Martin-Marietta Corporation used the hot cells to manufacture thermoelectric generators, known as SNAP generators. The SNAP generators contained Sr-90, with as much as 80,000 Curies per generator. In 1967, Martin-Marietta Corporation terminated its lease for use of the hot cells after performing a partial decontamination. However, licensable quantities of Sr-90 contamination remained in the hot

cells and associated facilities. Martin-Marietta Corporation was the last user of Sr-90 at the facility.

Also in 1967, PSU returned the site back to the Commonwealth of Pennsylvania. The Commonwealth then leased the site to NUMEC, a subsidiary of the Atlantic-Richfield Corporation. NUMEC used the reactor pool, after removal and shipment of the reactor components and nuclear fuel, as a storage pool for a large (approximately one million Curies) Co-60 irradiator. The irradiator was used for various projects, including food irradiation, sterilization, and irradiation of polymer-impregnated hardwood.

In 1978, a group of Atlantic-Richfield Corporation employees purchased the wood irradiation process, including the Co-60 pool irradiator. The new company was named Permagrain Products Corporation (Permagrain), and this company was issued NRC Byproduct Materials License No. 37-17860-01. Permagrain also assumed responsibility for the radioactive material left on site by the previous tenants. In 1998 NRC Byproduct Materials License No. 37-17860-02 was issued to Permagrain for the radioactive material remaining on site from past operations. In December 2002, Permagrain initiated bankruptcy proceedings, and NRC Byproduct Materials License No. 37-17860-02 was transferred to PADEP, BRP. In 2003, the Co-60 in the irradiator was removed from the pool and shipped to a licensed disposal site, and in 2004 Permagrain's NRC Byproduct Materials License No. 37-17860-01 was terminated.

No information is available regarding decontamination of the site by previous tenants, Martin-Marietta Corporation, and Atlantic-Richfield Corporation. In the early 1990s, the Commonwealth of Pennsylvania contracted with Canberra, Inc. to perform a site characterization. The characterization determined that the radioactive contaminants of concern were Co-60 and Sr-90. In 1998, a DP for the site was submitted to the NRC, and decommissioning of the site began. A revision to the DP was submitted to the NRC in 2003, and decommissioning of the site continued under this revision to the DP. In February 2005 a Final

Status Survey Report (FSSR) was submitted to the NRC for review. The FSSR indicated that the site met the release criteria specified in the NRC approved DP.

A subsequent confirmatory survey by the NRC in May 2005 indicated that the site did not meet the release criteria specified in the NRC approved DP. An investigation by the licensee determined that the site failed to meet the release criteria, because Sr-90 had leached to the surface of the concrete resulting in contamination levels in excess of the release limits. This finding indicated that concrete thought to contain only surface contamination was volumetrically contaminated. Therefore, the previous criteria for release of the site for unrestricted use, which were based on surface contamination only, were no longer applicable.

In a letter dated March 9, 2006, the Licensee submitted revision four of the DP which included dose based criteria for unrestricted release of the site in accordance with 10 CFR 20, Subpart E, taking into account the volumetrically contaminated concrete. The Licensee's March 9, 2006 license amendment request was noticed in the *Federal Register* on May 22, 2006 (71 FR 29357). This *Federal Register* notice also provided an opportunity for a hearing on this licensing action. No hearing requests were received. The NRC has prepared an Environmental Assessment (EA) in support of this proposed action in accordance with the requirements of Title 10, Code of Federal Regulations (CFR), Part 51 (10 CFR Part 51). Based on the EA, the NRC has concluded that a Finding of No Significant Impact (FONSI) is appropriate with respect to the proposed action. The amendment will be issued to the Licensee following the publication of this FONSI and EA in the *Federal Register*.

II. Environmental Assessment

Identification of Proposed Action

The proposed action would approve the Licensee's March 9, 2006 license amendment request to incorporate revision four of the DP into the license resulting in final decommissioning of the Facility and subsequent release of the Facility and surrounding site for unrestricted use. In addition to granting the licensee's license amendment request, the proposed action would also grant, pursuant to 10 CFR 30.11(a), an exemption to the Onyx Greentree Landfill, LLC (located in Kersey, Pennsylvania) from 10 CFR Part 30 licensing requirements. This disposal facility will receive the low-contaminated above-grade demolition material generated during the Facility and site remediation activities. 10 CFR 30.11(a) provides that the Commission may, upon application by an interested person, "or upon its own initiative, grant such exemptions" from the 10 CFR Part 30 requirements "as it determines are authorized by law and will not endanger life or property or the common defense and security and are otherwise in the public interest." Under the exemption granted to the Onyx Greentree Landfill, any low-contaminated demolition material from the Facility and site would, upon its receipt at the Onyx Greentree Landfill, no longer be subject to NRC regulation and would no longer be NRC licensed material.

Need for the Proposed Action

The proposed action is to approve revision four of the DP so that the Licensee may complete Facility decommissioning activities. Completion of decommissioning activities will reduce residual radioactivity at the Quehanna site and Facility. NRC regulations require licensees to begin timely decommissioning of their sites, or any separate buildings that contain residual radioactivity, upon cessation of licensed operational activities, in accordance with 10 CFR 30.36(d). Additionally, due to the fact that the site is located in the Quehanna Wild Area of the Moshannon State Forest, the Licensee plans to eventually restore and return the land to

beneficial unrestricted use. The proposed licensing action will support such an ultimate goal. NRC is fulfilling its responsibilities under the Atomic Energy Act and the National Environmental Policy Act to make a decision on a proposed license amendment for decommissioning that ensures protection of the public health and safety and the environment.

Environmental Impacts of the Proposed Action

The affected environment was described in the **Introduction** section of this EA. The NRC staff has reviewed the license amendment request for the PADEP, BRP Quehanna site in Karthaus, Pennsylvania and examined the impacts of this license amendment request. Potential impacts include water resource impact (e.g., water may be used for dust control) , air quality impacts from dust emissions, temporary local traffic impacts resulting from transporting demolition debris to a landfill, beneficial local economic effects due to the creation of jobs to perform the decommissioning, human health impacts, noise impacts from equipment operation, scenic quality impacts, and waste management impacts. The resultant dose arising from granting the related exemption would be less than one mrem per year.

Based on its review, the staff has determined that no surface water or ground water impacts are expected from the dismantlement, deconstruction, and decontamination activities. Additionally, the staff has determined that significant air quality, noise, land use, and off-site radiation exposure impacts are also not expected. No significant air quality impacts are anticipated because of the contamination controls that will be implemented by PADEP, BRP during dismantlement and deconstruction. In addition, the environmental impacts associated with dismantlement and deconstruction and the decontamination activities are bounded by impacts evaluated by NUREG-0586, “Final Generic Environmental Impact Statement on the Decommissioning of Nuclear Facilities,” (GEIS). Generic impacts for this type of dismantlement

and deconstruction and decontamination process were previously evaluated and described in the GEIS, which concludes that the environmental consequences are small. The risk to human health from the transportation of all radioactive material in the U.S. was evaluated in NUREG-0170, "Final Environmental Statement on the Transportation of Radioactive Materials by Air and Other Modes." The principal radiological environmental impact during normal transportation is direct radiation exposure to nearby persons from radioactive material in the package. The average annual individual dose from all radioactive material transportation in the U.S. was calculated to be approximately 0.5 mrem, well below the 10 CFR 20.1301 limit of 100 mrem for a member of the public. Additionally, PADEP, BRP estimates that approximately 2,800 cubic yards of low-contaminated demolition material waste will leave the site over the course of the decommissioning project for disposal at Onyx Greentree Landfill (a non-NRC licensed landfill). The trucks will travel on local roads then on Commonwealth highways to their intended destinations. This proposed action will not significantly increase the probability or consequences of accidents, no changes are being made in the types of any effluents that may be released off site, and there is no significant increase in occupational or public radiation exposure. Thus, waste management and transportation impacts from the building dismantlement and deconstruction will not be significant.

Occupational health was also considered in the "Final Environmental Impact Statement on the Transportation of Radioactive Material by Air and Other Modes." The Department of Transportation (DOT) regulations in 49 CFR 177.842(g) require that the radiation dose may not exceed 0.02 mSv (2 mrem) per hour in any position normally occupied by an individual in a motor vehicle. Shipment of these materials would not affect the assessment of environmental impacts or the conclusions in the "Final Environmental Impact Statement on the Transportation of Radioactive Material by Air and Other Modes."

The Staff also finds that the proposed license amendment will meet the radiological criteria for unrestricted release as specified in 10 CFR 20.1402. The Licensee demonstrated this through the development of derived concentration guideline limits (DCGLs) for its Facility. The Licensee conducted site specific dose modeling using parameters specific to the Facility that adequately bounded the potential dose. This included dose modeling for three scenarios: building surfaces, remaining concrete, and soil. The building surface scenario was based on the disposal of the above-grade structure demolition debris in an industrial landfill, and the concrete and soil dose modeling were based on a hunting camp scenario.

PADEP, BRP will maintain an appropriate level of radiation protection staff, procedures, and capabilities, and, through its Radiation Safety Officer, will implement an acceptable program to keep exposure to radioactive materials as low as reasonably achievable (ALARA). Work activities are not anticipated to result in radiation exposures to the public in excess of 10 percent of the 10 CFR 20.1301 limits.

The NRC also evaluated whether cumulative environmental impacts could result from an incremental impact of the proposed action when added to other past, present, or reasonably foreseeable future actions in the area. The proposed NRC approval of the license amendment request, when combined with known effects on resource areas at the site, including further site remediation, are not anticipated to result in any cumulative impacts at the site.

Environmental Impacts of the Alternatives to the Proposed Action

The only alternative to the proposed action of decommissioning the Facility is no action. The no action alternative is not acceptable because it conflicts with 10 CFR 30.36(d) which requires that decommissioning of byproduct material facilities be completed and approved by the NRC after licensed activities cease. The no action alternative would keep radioactive material

on site without disposal. Maintaining the buildings on site would provide negligible, if any, environmental benefit, but would greatly reduce options for future use of the site, including restoring the site to its wild state.

Conclusion

The NRC staff has concluded that the proposed action is consistent with NRC guidance and regulations. Because the proposed action will not significantly impact the quality of the human environment, the NRC staff concludes that the proposed action is the preferred alternative.

Agencies and Persons Consulted

The NRC staff prepared this EA with input from the U.S. Fish and Wildlife Service in its letter dated August 22, 2006. The Fish and Wildlife Service indicated, in its letter, that on the basis of current information, no current Federally identified or proposed threatened or endangered species under U.S. Fish and Wildlife Service jurisdiction are known to occur in the site project area. Additionally, NRC had contacted the Pennsylvania Historical and Museum Commission, Bureau for Historical Preservation, in June 2003 regarding preparation of an EA for a previous licensing action for this Facility. At that time the Pennsylvania Historical and Museum Commission, Bureau for Historical Preservation stated that “there are no National Register eligible or listed historical or archaeological properties in the area of the proposed project and your responsibility for consultation with the State Historic Preservation Office for this project, under Section 106, is complete.” Therefore, no further consultation is required under Section 106 of the National Historic Preservation Act for this EA.

NRC provided a draft of this EA to PADEP, BRP for review . On July 27, 2006, PADEP, BRP responded by email. PADEP, BRP agreed with the conclusions of the EA, and otherwise had no substantive comments.

III. Finding of No Significant Impact

The NRC staff has prepared this EA in support of the proposed action. On the basis of this EA, the NRC finds that there are no significant environmental impacts from the proposed action, and that preparation of an environmental impact statement is not warranted. Accordingly, the NRC has determined that a FONSI is appropriate.

IV. Further Information

Documents related to this action, including the application for license amendment and supporting documentation, are available electronically at the NRC's Electronic Reading Room at http://www.nrc.gov/reading-rm/adams.html. From this site, you can access the NRC's Agencywide Document Access and Management System (ADAMS), which provides text and image files of NRC's public documents. The documents related to this action are listed below, along with their ADAMS accession numbers.

1. Amendment request with revision four of the DP (ML060790152);

2. The Licensee's March 9, 2006, license amendment request was noticed in the *Federal Register* on May 22, 2006 (71 FR 29357). This *Federal Register* notice also provided an opportunity for a hearing on this licensing action;

3. NUREG-0170, "Final Environmental Impact Statement on the Transportation of Radioactive Material by Air and Other Modes;"

4. NUREG-0586, "Final Generic Environmental Impact Statement on the Decommissioning of Nuclear Facilities;"

5. NUREG-1748, "Environmental Review Guidance for Licensing Actions Associated with NMSS Programs;"

6. NUREG-1757, "Consolidated NMSS Decommissioning Guidance;"

7. Title 10 Code of Federal Regulations, Part 20, Subpart E, "Radiological Criteria for License Termination;"

8. Title 10, Code of Federal Regulations, Part 51, "Environmental Protection Regulations for Domestic Licensing and Related Regulatory Functions;"

9. NUREG-1496, "Generic Environmental Impact Statement in Support of Rulemaking on Radiological Criteria for License Termination of NRC-Licensed Nuclear Facilities"

If you do not have access to ADAMS, or if there are problems in accessing the documents located in ADAMS, contact the NRC Public Document Room (PDR) Reference staff at 1-800-397-4209, 301-415-4737, or by email to pdr@nrc.gov. These documents may also be viewed electronically on the public computers located at the NRC's PDR, O 1 F21, One White Flint North, 11555 Rockville Pike, Rockville, MD 20852. The PDR reproduction contractor will copy documents for a fee.

Dated at King of Prussia, Pennsylvania this 29th day of September 2006.

FOR THE NUCLEAR REGULATORY COMMISSION

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James Kottan, Acting Chief
Decommissioning Branch
Division of Nuclear Materials Safety
Region I