



DOE – ENVIRONMENTAL MANAGEMENT SEPARATIONS PROCESS RESEARCH UNIT (SPRU) DISPOSITION PROJECT

LAND EE/CA RESPONSE TO COMMENTS DOCUMENT FACT SHEET

July 2007

The U.S. Department of Energy (DOE) prepared a Land Areas Engineering Evaluation/Cost Analysis (EE/CA) for the Separations Process Research Unit (SPRU) Disposition Project in December 2006. The EE/CA described alternatives under consideration for cleanup of SPRU-related land areas. This fact sheet addresses many of the comments and concerns raised during the public comment period related to the alternatives described in the EE/CA. After careful review of all comments received, DOE identified five major SPRU land areas topics that were important to the public; this fact sheet addresses these five areas.

Site Characterization

The SPRU facilities were built between 1947 and 1949 at the Knolls Atomic Power Laboratory (KAPL), and were operated for the government by General Electric for approximately three years. The SPRU mission was to research the chemical process to extract plutonium from irradiated materials. Some areas of the Knolls Site were used to temporarily store waste generated during SPRU operations and facilities decontamination in the 1950's. A history of the SPRU land areas is documented in the Land Areas Historical Site Assessment (Land HSA), which is available in the public reading room at the Niskayuna Branch of the Schenectady County Public Library.

Beginning in 2000, DOE Office of Environmental Management (EM) began an assessment of the land areas and facilities at the Knolls Site impacted by past SPRU operations. More than 1600 soil and groundwater samples were collected and analyzed for approximately 16,000 radiological parameters and approximately 50,000 chemical parameters. Results of the land areas investigations are contained in the following documents:

- Resource Conservation and Recovery Act (RCRA) Facility Assessment Sampling Visit Report for Separations Process Research Unit Solid Waste Management Units/Areas of Concern, February 2002
- RCRA Facility Investigation Report for Groundwater Upper and Lower Levels, SPRU Project, April 2006
- Radiological Characterization Report for SPRU Outside Areas Separations Process Research Unit Project, June 2006
- SPRU RCRA Facility Assessment Sampling Visit Report Addendum Red Pines Area, April 2006.

These documents are available for review in the public reading room at the Niskayuna Branch of the Schenectady County Public Library.

The investigation revealed no evidence of wastes buried in the land areas, consistent with Knolls Site practices during SPRU operations to not dispose of radioactive waste on site. The nature and extent of radioactive and chemical contamination indicates that sources of contamination in the land areas are primarily leaks and spills from waste containers during storage and loading onto vehicles.



*Aerial Photograph of the SPRU Site,
Niskayuna, New York*

Other Knolls Site areas require additional investigation by KAPL, including the North Field area and the landfill (discussed during the public meeting). In the future, KAPL intends to investigate and characterize the soil and groundwater in these areas for chemical contamination.

Radiation Exposure

As discussed in the land areas public meeting on January 18, 2007, there is no off-site exposure to radioactivity from the land areas. The comprehensive Knolls Site radiation-monitoring program shows that the radiation exposure to persons off-site is too small to be measured. Therefore, KAPL has employed calculational techniques that conservatively estimate potential exposures. These calculational techniques consider exposure pathways that include fishing, boating, and swimming in the Mohawk River, using the river water for drinking and irrigation, breathing the air, and eating regionally produced animal and

vegetable food. The most recent assessment for 2005 shows that maximum potential radiation exposure to a member of the public was less than 0.1 millirem for the entire year. This is about one-twentieth of the exposure that a person would receive from naturally occurring radiation from a single cross-country airplane flight. For more information on Knolls Site operations and the monitoring conducted please see the Knolls Site Annual Environmental Monitoring Reports available in the Niskayuna Branch of the Schenectady County Public Library.

Groundwater Quality

Low-level radioactive contamination is present in isolated areas of groundwater but poses no threat to the environment or public health. The isolated areas are within the Lower Level Railroad Staging Area and the Upper Level immediately adjacent to Building H2. Upper Level groundwater is currently collected and processed to remove radioactivity. Low-level radioactivity in Lower Level groundwater is lower than the cleanup criteria and does not require collection. Groundwater is not impacted by chemicals above cleanup criteria in any of the SPRU-related land areas.

address the source of low-level radioactivity in groundwater in the Upper Level, eventually eliminating the need for groundwater collection and processing. Removal of contaminated soil in the Lower Level Railbed will eliminate the source of radioactivity in the groundwater in the Lower Level.

The proposed removal of the SPRU facilities and impacted soils in the Upper Level is expected to fully

Groundwater investigation results are contained in the Radiological Characterization Report for SPRU Outside Areas and the RCRA Facility Investigation (RFI) Report for Groundwater Upper and Lower Levels, April 2006, available for review at the Niskayuna Branch of the Schenectady County Public Library.

Funding

The SPRU Project has sufficient funds to initiate cleanup activities during 2008. DOE EM plans on funding SPRU to project completion; however, DOE competes each year with other Executive departments for funding of the many national priorities. Although DOE plans to complete the SPRU project cleanup activities by 2014, funding may not match project needs in some years, which may delay completion.

At this time, the preferred alternatives for cleanup of the SPRU buildings and land areas are under DOE Headquarters review. When the preferred alternatives are approved, the process of selecting a contractor will begin.

Safety

DOE has developed orders, many of which were specifically created to ensure the safety of workers, the public, and the environment. The Applicable and/or Relevant and Appropriate Requirements (ARARs) section of the EE/CA for the SPRU facilities identifies the DOE orders that must be followed to conduct work at the SPRU site.

DOE Order 5400.5 Radiation Protection of the Public and the Environment
Establishes standards and requirements for DOE operations with respect to protection of members of the public against radiation, and contains a discussion of DOE's "As Low As Reasonably Achievable" (ALARA) approach.

DOE also has a number of orders which are not promulgated regulations. However, in many instances the orders are more stringent than requirements for training and worker safety developed by other agencies. Some of the DOE Orders that must be followed include:

DOE Order 5480.1B, Chg. 5 Environment, Safety, and Health Program for DOE Operations
Establishes the requirements for an environment, safety, and health program for DOE operations.

DOE Order 5480.3 Safety Requirements for the Packaging and Transportation of Hazardous Materials, Hazardous Substances, and Hazardous Wastes

Establishes packaging and transportation requirements for hazardous materials, substances, and wastes.

DOE Order 5480.8 Contractor Occupational Medical Program

Establishes requirements for an occupational medical monitoring program for contractor personnel.

DOE Order 5480.9 Construction Safety and Health Program

Establishes requirements for a program to protect DOE and contractor employees and the general public.

DOE Order 5480.10 Contractor Industrial Hygiene Program

Establishes requirements for implementing an industrial hygiene program.

DOE Order 5480.20A Personnel Selection, Qualification, and Training Requirements for DOE Nuclear Facilities

Establishes DOE requirements for staff and contractor personnel selection, qualification, and training.

DOE Order 420.1 Facility Safety

Establishes facility safety requirements related to nuclear safety, criticality safety, fire protection, and mitigation of natural hazards.

The health and safety of workers has always been of the utmost importance and a prime consideration in site operations. Significant effort has been applied to ensure that workers' exposure to radiation or radioactive material is ALARA – well below any level that would pose a health threat. Radiological controls and protection measures will continue throughout the SPRU disposition project.

The process of disassembly and removal of SPRU facilities will be accomplished in a careful, methodical manner designed to prevent the release of radioactivity. Containment and control of radioactivity will be maintained during disassembly. Dismantlement will be performed in a manner that minimizes or contains dust from building disassembly and reduces the likelihood of radioactivity entering the environment. Careful monitoring of potential release points, such as ventilation exhausts and storm drains, and environmental monitoring will be used to confirm that environmental releases do not occur.

A comprehensive Land Areas EE/CA Response to Public Comments document is available in the Niskayuna Branch of the Schenectady County Public Library. This document was prepared in response to questions and concerns raised during the public comment period for the Land Areas EE/CA document for the SPRU Disposition Project. This fact sheet is included in Section 2 of the Response to Public Comments document.

As discussed during the public meeting, the alternatives identified for the disposition of the contaminated SPRU buildings were summarized in a May 2006 fact sheet and the draft Facilities EE/CA document, and were presented at a public meeting held May 25, 2006.

The Response to Public Comments document is organized into the following sections:

- Section 1 Public Meeting Transcript – January 2007
- Section 2 Land EE/CA Response to Comments Fact Sheet

- Section 3 DOE Responses to Questions
- Section 4 Additional KAPL Responses
- Section 5 NYSDEC Review Letter

Section 3 contains questions asked during the public meeting requiring additional responses and those submitted in writing during or after the public meeting. The questions and responses are organized alphabetically and tabbed with names for ease of reference. Certain questions asked by the public required a response directly from KAPL; these responses are in Section 4, alphabetically tabbed by name. Finally, the letter received from the New York State Department of Environmental Conservation (NYSDEC) and the DOE responses to the concerns raised in this letter are included in Section 5.

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