

POLREP # 160

Safety Light Corporation Site

South Centre Township, Columbia County, PA 17815

Latitude: 41.0157 North

Longitude: -76.3762 West

EVENT: Removal Action/Remedial Action – Material Clearance, and Waste Disposal

ATTN: Regional Response Center, John Banks, Martha Rider, Bryan Werner, Cheryl Sinclair

I. SITUATION: (September 10th, 2018 through September 23rd, 2018)

- A. The Safety Light Corp (SLC) Superfund Site encompasses 10 acres along the Susquehanna River in South Centre Township, Columbia County, Pennsylvania, just east of Bloomsburg, Pennsylvania. SLC and its corporate predecessors used radioactive materials to manufacture commercial quantities of luminous devices for military and commercial purposes at the site. The first introduction of radioactive materials to the site was by United States Radium Corporation (USRC) in the late 1940s. Early operations at the facility included the handling of Radium-226, Tritium, Strontium-90, and Cesium-137. Throughout the history of the site, operations have varied significantly. During the 1950's, USRC produced materials using Tritium, Carbon-14, Thallium-204, Krypton-85, and Nickel-63. In 1956, the Atomic Energy Commission issued a license to the facility that authorized the use and distribution of products containing Carbon-14, Iron-55, Cobalt-60, Nickel-63, Zinc-65, Strontium-90, Cesium-137, Polonium-210, Neptunium-237, Uranium-238, Promethium-147, Cesium-144, Ruthenium-106, Actinium-227, and Americium-241. In the late 1960's, work with all radionuclides other than tritium ceased. Tritium was used at the site through 2007.
- B. A Remedial Investigation (RI) of Operable Unit 01 (OU-01) was conducted by EPA contractors in 2006. The RI Report was submitted to EPA in July 2009. In 2008, United States Army Corps of Engineers (USACE) contractors were tasked to demolish seven structures and the temporary waste silo at the Site. In addition, they were tasked to perform waste packaging and transportation. These activities were completed in November 2009. Concerns regarding the stability and possible collapse of the Main Building documented in the Structural Condition Assessment of the Main Building prepared in September 2012 led to site activities resuming in the winter of 2012.
- C. An Action Memo requesting approval for a funding increase and change of scope to secure the deteriorating Main Building, the largest and most radioactively contaminated building on the Site, was approved in November 2012. EPA contractors conducted repairs to ensure a collapse of the Main Building did not occur. During site activities, portions of the Butler Building were also determined to be deteriorating and in need of rehabilitation, documented in the Butler Building weatherproofing and stability analysis memo prepared in January 2013.

- D. An Action Memo requesting approval for a funding increase and change of scope to continue rehabilitation of the Main Building and securing of the Butler Building was approved on February 20, 2013.
- E. An Action Memo requesting approval for a funding increase and change of scope to conduct demolition of six smaller peripheral buildings, disposal of materials from those buildings, an assessment and design for grading and stabilization activities of the West Dump, and additional maintenance of the Site and Main Building, was approved on June 11, 2013.
- F. An Action Memo requesting a funding increase and change of scope to conduct the demolition of the Main Building, the Butler Building and other activities, was approved on December 16, 2013.
- G. A Remedial Task Order providing additional funding to complete all activities associated with the demolition and offsite disposal of the Tritium Building, Nuclear Machine Shop, and Pump House; offsite recycling of the Water Tank; removal and offsite disposal of the foundations associated with the Butler Building and Main Building; removal and disposal of other materials including hazardous wastes, as necessary; and, storage of onsite files for retention as directed by ORC/RPM, was approved on June 20, 2014.
- H. An Action Memo requesting a funding increase and change of scope to further secure the Site by excavation, removal and disposal of contaminated discrete buried objects, buried tanks, associated piping, and contaminated soils was approved on September 26, 2014.
- I. An Action Memo requesting a funding increase and change of scope to further secure the Site by excavation, removal and disposal of contaminated discrete buried objects, buried tanks, associated piping, and contaminated soils was approved on June 15, 2015.
- J. An Action Memo requesting a funding increase and change of scope to continue the removal action, off-site disposal of radioactively contaminated soils and the completion of other actions necessary to stabilize Site conditions was approved on September 30, 2015.
- K. An Action Memo requesting a change in scope to conduct removal actions in the East Lagoon and East Dump, in which extensive soil contamination and contaminated objects had been identified, was approved on February 1, 2016.
- L. An Early Interim Record of Decision was issued by the Remedial Program in June 2016 for the West Dump, West Lagoon, East Dump, and East Lagoon areas of Operable Unit Three (OU-3) of the Site.

- M. A Remedial Task Order providing additional funding was approved on August 12, 2016. The TO provides for the excavation, removal, and off-site disposal of radionuclide-contaminated soils/debris, radioactive discrete objects, and other non-radionuclide contaminants, from the West Dump, West Lagoon, East Dump, and East Lagoon, including backfilling with clean material, regrading, and placement of gravel protective cover.
- N. An Explanation of Significant Differences (ESD) was issued by the Remedial Program on August 24, 2017 to include additional areas for excavation of radionuclide-contaminated soils/debris, which include radioactive discrete objects in the 100-year floodplain and within and immediately adjacent to the abandoned canal on the Site.

II. ACTIONS TAKEN

- A. Excavation of soils from the former canal continued. Prior to being loaded into IMCs, soils were surveyed to determine if any off-spec material or discrete radioactive objects were present. Soil excavation and disposal activities associated with the canal and assessment areas are currently being conducted under the Remedial Task Order.
- B. Approximately 387 tons of soil was loaded from the soil staging area into 23 IMCs and transported to the ISOCS survey area for analysis. All IMCs were analyzed by ISOCS to ensure material meets the waste acceptance criteria. Approximately 19,815 tons of soil have been loaded into 1,195 IMCs during the combined Removal and Remedial phases of the site cleanup. A total of 1,161 IMCs have been shipped offsite to date. IMCs are transported by truck to either Berwick, Pennsylvania or Binghamton, New York, where they are loaded onto railcars and transported to Energy Solutions in Clive, Utah for disposal.
- C. Laboratory results from air filters exhibiting elevated alpha activity during handling of soils related to the former underground silo area were confirmed to be related to radium-226. More stringent site-related alpha-emitting nuclides were not identified on air filters analyzed. Air monitoring during the handling of soils related to the former underground silo area will be compared against action levels for radium-226. Details regarding this determination are discussed in the Air Filter Laboratory Analysis Report issued on August 2, 2018.
- D. Perimeter and work zone air monitoring was conducted during soil handling activities. No radioactivity was detected above applicable action levels.
- E. Site entry surveys were conducted on any equipment being delivered to the Site. Equipment being used onsite was surveyed for free release prior to leaving the site.

- F. Daily response checks of radiation equipment were performed to ensure instruments were functioning properly.

III. FUTURE ACTIONS

- A. Excavation will continue along the canal towards the Vance Walton Property. Discrete objects will be removed from the excavated material based upon surveys conducted by the radiation control technician within the excavation area. Soils will continue to be loaded into IMCs, surveyed with the ISOCS, and transported offsite for disposal.
- B. Any discrete radioactive objects will be assessed and disposed as appropriate.
- C. Disposal of contaminated items collected under EPA Removal Program activities, include two lead pigs, two liquid scintillation sources, and one drum of scintillation fluid will continue to be evaluated.
- D. Disposal of depleted uranium/tritium-containing pyros collected under EPA Removal Program activities will continue to be evaluated.
- E. Laboratory results from soil samples collected from locations previously identified to contain concentrations of thallium-204 will be reviewed to determine if thallium-204 is actually present or previously misidentified.

John Banks, Remedial Project Manager
US EPA Region III
Philadelphia, PA
215.814.3214