

POLREP # 177

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 10<sup>th</sup>, 2022 – April 13<sup>th</sup>, 2023)

- 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.
- O. A subsequent ESD was issued by the Remedial Program on September 26, 2018 which further modified the 2016 Early-Interim ROD, as modified by the 2017 ESD, to expand and continue excavation in the 100-year floodplain within and immediately adjacent to the abandoned canal up to and including the entire length of the canal on the Site, as necessary. Prior to backfilling, topographical survey information was collected and soil samples were collected for offsite laboratory analysis.
- P. An Action Memorandum was signed on December 6, 2018, for the off-Site removal, treatment and disposal of the Pyro devices.
- Q. The Remedial Program finalized the action for this phase of work on the Site. Site exit free release surveys were conducted on all equipment and trailers prior to leaving the site. A final status survey was completed for the entire lagoon/canal area to present final elevations/contours. A gamma walkover survey was conducted in a completed portion of the excavation of the eastern canal and hot spot excavation in the southeast corner of the Site.
- R. The Removal Program issued a Request for Bid (RFP) for disposal of the Pyros on March 1, 2019. Pyros were placed inside the small conex box and concrete barriers were placed in front of the locked conex door restricting access.

## II. ACTIONS TAKEN

- A. Proposals for treatment and disposal of the Pyros were received by May 2, 2019. A contract for the shipment and ultimate treatment/disposal of the Pyros was awarded to NUCLEAR SOURCES AND SERVICES, INC. (NSSI) of Houston, TX, on August 23, 2019.
- B. Pyro shipments to NSSI took place during the weeks of November 4<sup>th</sup>, 2019, February 3<sup>rd</sup>, 2020, October 19<sup>th</sup>, 2020, April 19<sup>th</sup>, 2021 and August 23, 2022.

The August 2022 shipment also included contaminated storage drums and pallets from the conex box. The shipment completes the removal of the pyros from the Site.

- C. The first shipment of Pyros was processed – H3 collected and Depleted Uranium (DU) inerted - by February 2020. The Ubed (Uranium Bed aka ‘Pyro’) Processing Report for Shipment #1 was received on August 6, 2020. Processing of shipment #2 was completed in June 2022. NSSI expects to process shipments #3 & #4 during the fall/winter 2022/2023. Processing of the devices has slowed due to the COVID pandemic.
- D. During a survey of the shoreline between the Site and the Susquehanna River, Remedial and DEP found what appears to be a capped outfall pipe connecting the Site to the river. The area was previously undiscovered, most likely due to the normal water depth in the Susquehanna. Rainfall amounts in much of Pennsylvania have been historically low during 2022 which has caused the average water depth in the Susquehanna to drop considerably. Remedial requested that the OSC assess the area for future a future Removal Action.

### III. FUTURE ACTIONS

- A. Ground Penetrating Radar (GPR) was utilized on Site to determine the presence of any pipes or outfalls which may extend into the Susquehanna River. The GPR assessment located the presence of two linear anomalies within the grass area (near to the former Main Building foundation) as well as south of the perimeter fence in a wooded area. One of the anomalies roughly lines up with the location of the capped pipe found in river. EPA will evaluate the next steps following the receipt of the contractor report.
- B. The RPM was notified of the intent to install sewer lines on the property right-of-way (ROW) by the South Centre Township. As an assessment of the area outside of the fence, adjacent to the Old Berwick Road had never been completed, START completed a gamma survey of the property between the fence and Old Berwick Road and found elevated areas of radioactivity up to 10x background. Removal will mobilize to the Site during the summer to excavate soils in the area of the planned sewer line and will stage it to the rear of the property outside of the flood plain.
- C. EPA will work with PA DEP BRP for the final assessments and decontamination of the on-Site conex box.

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