EPA SUPERFUND PROGRAM
RECORD OF DECISION
SAFETY LIGHT CORPORATION SUPERFUND SITE
BLOOMSBURG, PENNSYLVANIA

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August 2010

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LIST OF ACRONYMS AND ABBREVIATIONS

ARAR	Applicable or Relevant and Appropriate Requirements
AOC	Administrative Order on Consent
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act of 1980
CFR	Code of Federal Regulations
CFS	cubic feet per second
CSM	Conceptual Site Model
EE/CA	Engineering Evaluation/Cost Analysis
EPA	United States Environmental Protection Agency
FS	Feasibility Study
HRS	Hazard Ranking Score
HSCD	Hazardous Site Cleanup Division
NCP	National Contingency Plan
NPL	National Priorities List
NRC	Nuclear Regulatory Commission
O&M	Operations and Maintenance
OU	Operable Unit
PADEP	Pennsylvania Department of Environmental Protection
PRG	Preliminary Remediation Goal
PRP	Potentially Responsible Party
PRAP	Proposed Remedial Action Plan
RAC	Remedial Action Contract
ROD	Record of Decision
RESRAD-BUILD	Residual Radioactivity in Buildings
ROC	Radionuclide of Concern
RI	Remedial Investigation
ROD	Record of Decision
SLC	Safety Light Corporation
UAO	Unilateral Administrative Order
USRC	United States Radium Corporation

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1.0 DECLARATION

1.1 SITE NAME AND LOCATION

Safety Light Corporation Superfund Site
Bloomsburg, Columbia County, Pennsylvania
Comprehensive Environmental Response, Compensation and Liability Information System (CERCLIS) ID#: PAD987295276

This Record of Decision (ROD) pertains to Operable Unit 1 (OU-1) of the Safety Light Corporation Superfund Site (Site). OU-1 addresses 10 buildings, 2 water tanks, and an aboveground silo on the Site. The Site is located along Old Berwick Road in Bloomsburg, Columbia County, Pennsylvania.

1.2 STATEMENT OF BASIS AND PURPOSE

This decision document presents the Selected Remedy for OU-1 of the Safety Light Corporation Superfund Site (Site), in Bloomsburg, Pennsylvania, which was chosen in accordance with Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA), as amended, and, to the extent practicable, the National Contingency Plan (NCP). This decision is based on the Administrative Record File for this Site.

The State of Pennsylvania concurs with the Selected Remedy identified for OU-1 (Figure 5).

1.3 ASSESSMENT OF THE SITE

The response action selected in this ROD is necessary to protect the public health or welfare or the environment from actual or threatened releases of hazardous substances into the environment.

1.4 DESCRIPTION OF THE SELECTED REMEDY

This ROD addresses the remaining 10 buildings, 2 water tanks, and an aboveground silo at the Site. The overall cleanup strategy at the Site for OU-1 is demolition of the remaining structures at the Site (10 buildings, 2 water tanks, 1 aboveground silo), and disposal of the demolition debris at off-Site waste disposal facilities. This response action will remove structures from the Site that represent a threat of release of hazardous substances to the environment, and/or will facilitate the performance of future response actions at the Site, including the completion of the investigation of contaminated soils/waste.

The overall objective of the cleanup actions required by this ROD is to remove structures from the Site that represent the threat of a release of hazardous substances (radionuclides) to the environment, and/or structures that must be removed to complete the investigation of contaminated soils/waste at the Site. Remedial Investigations and Feasibility Studies will be prepared for contaminated soil and ground water at the Site. When the RI/FS reports for contaminated soil and ground water are complete, EPA will propose preferred remedial alternatives in Proposed Remedial Action Plans. EPA's selected remedies for contaminated soil and ground water at the Site will be included in future RODs for the Site. This ROD (OU-1) does not address contaminated soil or ground water at the Site.

The Selected Remedy for OU-1 consists of the following:

1. Characterize and dispose of off-Site the contents of the structures identified below, in accordance with CERCLA §121(d)(3). Demolish and dispose of off-Site the structures identified below, including concrete slabs/basements, in accordance with CERCLA §121(d)(3):

- Multi-Metals building
- Carpenter Shop
- Utility building
- Liquid Waste building
- Main building
- 8'X8' building
- Machine Shop
- Metal Silo (aboveground)
- Solid Waste building

2. Characterize and dispose of off-Site the contents of the structures identified below. Demolish and dispose of off-Site the structures identified below, including concrete slabs/basements:

- Butler building
- Tritium building
- Elevation Water Tank (adjacent to Main building)
- Water tank (eastern side of Site)

Dispose of radioactively contaminated media in accordance with CERCLA §121(d)(3). Dispose of non-radioactively contaminated media in accordance with local, State, and Federal requirements.

3. To the extent necessary to facilitate demolition and disposal of the Safety Light buildings (as described in #1, and #2, above)), and/or to facilitate completion of the characterization of soil contamination at the Site, remove and dispose of off-Site the debris located in the area of the Site

buildings. This includes piles of wooden pallets, and two abandoned trucks. Dispose of radioactively contaminated media in accordance with CERCLA §121(d)(3). Dispose of non-radioactively contaminated media in accordance with local, State, and Federal requirements.

The estimated cost to complete the Selected Remedy is $16,908,242.

1.5 STATUTORY DETERMINATION

Selected Remedy

The Selected Remedy is protective of human health and the environment, complies with Federal and State requirements that are applicable or relevant and appropriate to the remedial action (unless justified by a waiver), is cost-effective, and utilizes permanent solutions and alternative treatment (or resource recovery) technologies to the maximum extent practicable.

As stated above, OU-1 includes the remaining 13 Safety Light structures (10 buildings, two water tanks, and an aboveground silo). As part of the OU-1 Selected Remedy, the remaining 13 Safety Light structures will be demolished and disposed of off-Site. Therefore, at the conclusion of the OU-1 Selected Remedy Five-Year Reviews will not be necessary for the 13 Safety Light structures which will no longer be present at the Site. However, at the conclusion of the OU-1 remedial action, contaminated soils and ground water will be present at the Site. When the investigation of contaminated soil and ground water at the Site is complete, EPA will select remedies for those contaminated media in accordance with CERCLA and the NCP.

1.6 ROD DATA CERTIFICATION CHECKLIST

The following information is included in the Decision Summary section of this ROD. Additional information can be found in the Administrative Record for the Site.

- Contaminants of concern (COCs) and their respective concentrations (Section 2.7)
- Baseline risk represented by the COCs (Section 2.7, and Table 1)
- Cleanup levels established for COCs and the basis for these levels (Not applicable)
- How source materials constituting principal threats are addressed (Not applicable)
- Current and reasonable anticipated future land use assumptions and current and potential future beneficial uses of ground water used in the baseline risk assessment and ROD (Section 2.6)
- Potential land and ground water use that will be available at the site as a result of the Selected Remedy (Not applicable)
- Estimated capital, annual operation and maintenance (O&M), and total present worth costs, discount rate, and the number of years over which the remedy cost estimates are projected (Table 2)
- Key factor(s) that led to selecting the remedy (Section 2.10)

K. Hargrove for

Ronald J. Borsellino, Director
Hazardous Site Cleanup Division
EPA Region III

9/2/2010
Date

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2.0 DECISION SUMMARY

2.1 SITE NAME, LOCATION, AND BRIEF DESCRIPTION

The Safety Light Superfund Site (Site) consists of approximately 10 acres located south of Old Berwick Road in South Centre Township, Columbia County, Pennsylvania. For purposes of this OU-1, the Site is defined to include the property located at 4150 Old Berwick Road, Bloomsburg, PA, and the areal extent of contamination there, as well as all suitable areas in very close proximity to the contamination necessary for implementation of the response action. Safety Light Corporation formerly operated a manufacturing business at the Site.

The CERCLIS identification number for the Site is PAD987295276.

The Site location is shown on Figure 1.

The EPA is the lead agency for Site activities and the Pennsylvania Department of Environmental Protection (PADEP) is the support agency.

At present, ten buildings, two water tanks, and an aboveground silo are located on the Site. A list of the structures (buildings, water tanks, aboveground silo) currently on the Site is included as Table 3 of this ROD.

The Site includes the following parcels, which are referred to collectively, herein, as the "Safety Light Property":

Parcel Number	Owner
12 01A08200	U.S. Radium Corporation
12 01A08100	Metreal Corporation
12 01A08300	U.S. Radium Corporation
12 01B02600	U.S. Radium Corporation
12 01B02303	Safety Light Corporation

Safety Light Corporation ("Safety Light") ceased on-site manufacturing operations in approximately December 2007. When operating, Safety Light made lighting products with radioactive material (tritium) as the energy source under two licenses formerly administered by the U.S. Nuclear Regulatory Commission (NRC) and now administered by PADEP. The licenses are License Number 37-00030-02 for the characterization and cleanup of contaminated facilities, equipment, and land from past activities, and License Number 37-00030-08 for the use of byproduct material to make exit signs. These licenses expired on December 31, 2007. Tritium (H-3) was used in the production of luminous signs and dials, paints, gas chromatograph foils, and accelerator targets. Safety Light also held a license administered by the Pennsylvania Department of Environmental Protection (license # PA-0166), for the radium contamination at the Site and for sealed calibration and/or reference Radium-226 sources up to 10 millicuries; this license expired on March 31, 2008.

Activities at the Site have varied over time and have involved the use of a number of different radionuclides. In 1948, the United States Radium Corporation's (USRC) radium operations were relocated from Brooklyn, New York to the Site. At that time, USRC used mainly radium (Ra-226) and minor amounts of polonium (Po-210) in the manufacture of self-illuminating watch and instrument dials. From 1948 until 1954, USRC used an on-site lagoon for disposal of sewage and process wastewater. During the 1950s, USRC expanded its operations to include the manufacture of civil defense check sources and radiation sources utilizing cesium (Cs-137), and the production of deck markers for the U.S. Navy involving the use of strontium (Sr-90). During this same time period, radium was also used primarily for clocks and watches (dials and hands) and in the production of high level neutron and radiation therapy sources. During the production of the various devices, the company placed radioactive wastes in two underground silos located south of the Main Building. These two underground silos were closed in 1960. Based on a review of historical documents for the Site, the underground silos were closed by pouring concrete over the existing silo lids.

During the 1950s, USRC began producing light sources using tritium (H-3), carbon (C-14), and krypton (Kr-85); low level ionization sources using nickel (Ni-63) and tritium; and beta radiation sources using krypton. Waste from these operations was buried in the previously mentioned underground silos. All operations using radium were discontinued in 1968, and in 1969 USRC sold all of the radioisotopes business except for the tritium activities.

As noted above, U.S. Radium Corporation purchased and began operating at the Site in approximately 1948. In 1980, U.S. Radium underwent a corporate restructuring resulting in the creation of a new entity, USR Industries, and the merger of U.S. Radium into USR Industries as a wholly owned subsidiary. In turn, U.S. Radium (then a wholly owned subsidiary of USR Industries) changed its name to Safety Light Corporation. At the same time, U.S. Radium's divisions separately incorporated into four new subsidiary corporations: USR Chemicals, Inc.; USR Lighting, Inc.; USR Metals, Inc.; and USR Natural Resources, Inc. Safety Light operated a manufacturing business (as described further below) on the Site from 1980 until approximately December 2007. USR Metals operated a metal products business at the Site, and relocated its operations from the Site in approximately 2007.

Pursuant to a September 14, 1994 Settlement Agreement (Agreement) with the NRC, Safety Light has engaged in certain cleanup efforts at the Site. Cleanup pursuant to the Agreement resulted in the removal of certain radioactive wastes from the two above-mentioned underground silos and staging of the waste in drums and containers on-site. By June 20, 2000, the company had staged 176 drums (55-gallon) and 26 B-25 containers (4ft x 4ft x 6ft) that contained various types of radioactive wastes. The staging area was near the southern edge of the Site, approximately 200 feet from the Susquehanna River. However, Safety Light did not arrange for the majority of the exhumed wastes to be disposed of off-Site. After numerous attempts by the NRC to require Safety Light to remove the waste from the Site, NRC requested EPA's assistance in completing these actions at the Site.

2.2 SITE HISTORY AND ENFORCEMENT ACTIVITIES

National Priority Listing

An initial investigation of the Site was conducted by NUS Corporation, an EPA contractor, in July 1991, to determine the Hazard Ranking System (HRS) score for further evaluation under CERCLA. A HRS preliminary score of 65.84 was calculated for the Site, which was based on the various radionuclides detected on-site. From 1991 until approximately 2000, Safety Light was performing cleanup work at the Site. However, when it became clear that Safety Light was unable to complete the necessary cleanup work at the Site, it was proposed for the National Priorities List (NPL) on September 23, 2004, and listed as final on the NPL on April 27, 2005. A second HRS score was prepared for the Site in 2003, prior to the proposal and final listing on the NPL. The second HRS score was 70.71, with soil exposure and air migration pathways not evaluated.

Removal Action – Radioactive waste from two underground silos

In February 2003, EPA and Safety Light entered into an Administrative Order on Consent (AOC) to complete the silo waste characterization/staging activities. By May 2004, Safety Light still had not completed the work required in the AOC. In July 2004, EPA determined that takeover of the work was necessary, and issued an Action Memorandum (Action Memo) for the Site, which approved federal funding for a time-critical removal action to complete the characterization, packaging, and off-site disposal of the silo waste. The time-critical removal action began on June 13, 2005.

On September 23, 2005, EPA Region III entered into an Inter-Agency Agreement with the United States Army Corps of Engineers (USACE) to complete the characterization, packaging, and off-Site disposal of the silo waste.

At present, the characterization, packaging, off-Site transportation, and storage/disposal of the silo wastes is substantially complete. The majority of the waste materials from the underground silos have been disposed of off-Site or placed off-Site in a secure licensed storage facility for radioactive wastes.

Removal Action - Demolition of seven buildings

During the scoping activities for the remedial investigation (RI) for on-Site buildings, EPA determined that four buildings on the Site were deteriorating, unoccupied, and unmaintained by the Site owner/operator. The four buildings were identified as Old House, Radium Vault, Personnel Office Building, and a portion of the Etching Building. Based on their poor physical condition, EPA did not believe that radiological characterization of the buildings could be safely performed, and therefore directed the Remedial Action Contract (RAC) contractor performing the remedial investigation to prepare an Engineering Evaluation/Cost Analysis (EE/CA) for the demolition and disposal of these four buildings. The EE/CA Approval Memorandum documenting EPA management approval and funding for the EE/CA was signed by the Director of the EPA Region III Hazardous Site Cleanup Division (HSCD) on August 4, 2006.

During the performance of the remedial investigation, EPA determined that three additional deteriorated and unoccupied buildings on the Site were in poor physical condition, and were considered to be too structurally unstable to safely characterize during the RI. EPA determined that the three additional buildings should be addressed in the EE/CA and subsequent removal action. The three additional buildings are identified as the Lacquer Storage Building, Well House, and Pipe Shop.

The following seven buildings, identified above, were addressed by the EPA removal action:

- Old House
- Radium Vault
- Personnel Office Building
- Portion of the Etching Building
- Lacquer Storage Building
- Well House
- Pipe Shop

These seven buildings were no longer used by the Safety Light Corporation, and a visual review of each of these seven buildings indicated that the buildings were in poor physical condition. The buildings exhibited ceilings, roofs, floors, and walls in severe disrepair, with signs of deterioration evident. The seven buildings represented physical and environmental hazards to persons on and near the Site (adjacent residents, EPA employees and contractors, etc). Based on a records review performed during the preparation of the EE/CA, radioactive contamination at levels that would qualify building materials as regulated radioactive waste were identified in six of the seven buildings, with the exception being the Radium Vault.

EPA issued two Action Memos to address the seven aforementioned buildings. On June 21, 2007, the EPA Region III Hazardous Site Cleanup Division Director signed an Action Memo for the demolition of the seven buildings. A ceiling increase was signed by the Division Director July 11, 2008 which increased the budget of the demolition project. The demolition of the seven buildings and off-Site disposal of the resultant demolition debris was performed during 2008/2009 and is complete. All seven of the buildings have been demolished and resultant demolition debris disposed of off-Site.

Unilateral Administrative Order

Safety Light manufacturing activities which involved radionuclides ceased in approximately December 2007. Safety Light manufacturing activities which did not involve radionuclides ceased in approximately 2008. Given the radioactive contamination within Site buildings (discussed below), EPA determined that it was necessary to ensure continued operation and maintenance of safety/security systems at the Site. The safety/security systems include exterior Site fencing, building doors and windows, electronic intrusion detection and smoke alarms present in certain Site buildings, and the sprinkler system present in certain Site buildings. EPA issued an Action Memo on October 22, 2007 pertaining to the operation and maintenance of safety/security systems at the Site. The work required in the 2007 Action Memo is being performed by Safety Light in accordance with a Unilateral Administrative Order (UAO). As

required by the UAO Safety Light is currently performing certain work activities at the Site, including maintenance of a fence around the Safety Light buildings; maintenance of electronic intrusion/fire detection systems present in the Main building, Tritium building, and Butler building; maintenance of a sprinkler system present in the Main building, Tritium building, and Butler building; and maintenance of building windows and doors. The UAO was issued by EPA to Safety Light Corporation, Isolite Corporation, and Metreal Corporation on November 13, 2007. The UAO-related work is coordinated by the Safety Light employee who remains at the Site.

2.3 COMMUNITY PARTICIPATION

The RI/FS and Proposed Remedial Action Plan for the Site were made available to the public in April 2010. They can be found in the Administrative Record file and the information repository maintained at the EPA Docket Room in Region III and at the Bloomsburg Area Public Library. The notice of the availability of these two documents was published in the Press Enterprise newspaper. A public comment period was held from April 12, 2010 to May 11, 2010. In addition, a public meeting was held on April 29, 2010 to present the Proposed Remedial Action Plan to a broader community audience than those that had already been involved at the Site. At this meeting, representatives from EPA answered questions about the remedial alternatives evaluated, and EPA's Preferred Alternative. EPA's response to comments received during the public comment period is included in the Responsiveness Summary, which is part of this ROD.

2.4 SCOPE AND ROLE OF OPERABLE UNIT OR RESPONSE ACTION

As with many Superfund sites, the problems at the Safety Light Corporation Site are complex. As a result, EPA has organized the work into three operable units (OUs):

- Operable Unit 1: Remaining structures at the Site, including 10 buildings, 2 water tanks, and an aboveground silo
- Operable Unit 2: Contaminated ground water
- Operable Unit 3: Contaminated soil/waste, surface water, sediment

The overall objective of the response actions required by this ROD is to remove structures from the Site that represent the threat of a release of hazardous substances (radionuclides) to the environment, and/or structures that must be removed to facilitate future response actions at the Site, including completion of the investigation of contaminated soils/waste at the Site (OU-3).

2.5 SITE CHARACTERISTICS

Physical Characteristics and Land Use

A Site Location Map is attached to this ROD as Figure 1. A map identifying the remaining Safety Light structures is included as Figure 2. An aerial photograph taken of the Site in June 2009, which depicts the remaining structures on-Site, is included as Figure 3.

Residential areas are located adjacent to the north of the Safety Light Property, across Old Berwick Road, and adjacent to the east and west of the Safety Light Property. The Susquehanna River is located to the south of the Safety Light Property. At an elevation of 490 feet above mean sea level, the Site is located on an old terrace and flood plain on the north bank of the Susquehanna River. The Safety Light buildings are surrounded by a chain-link fence which provides security.

Site Drainage and Surface Water

The Susquehanna River is the only natural surface water body on or adjacent to the Site. Site ground water flows toward the Susquehanna River. The river has an estimated average flow rate of 10,000 to 100,000 cubic feet per second (cfs). Currently, the storm drains on the SLC property appear to direct surface water directly to the Susquehanna River, which is located immediately adjacent to the southern boundary of the property. The southern portion of the Safety Light Property, from the bank of the Susquehanna River to about 200 feet inland from the river's bank, is within the 100 year floodplain of the river.

Based on a review of historical Site plans, it is apparent that sewage, wastewater, and storm water management structures and systems have evolved over the facility's 50-plus year history. Evaluation of sewage, waste water, and storm water management structures and systems may require further evaluation as part of OU-3.

Remedial Investigation

The RI/FS at the Site is being performed by EPA. Currently, there are three operable units. Operable Unit One (OU-1) addresses the remaining Safety Light structures. The RI/FS for OU-1 is complete. OU-2 addresses ground water contamination. The OU-2 RI/FS report is currently being prepared. OU-3 addresses soil, sediment, and surface water contamination. The OU-3 RI/FS report is currently being prepared. Additional field activities may be necessary prior to finalizing the OU-2 and OU-3 RI/FS reports.

EPA approved the RI report for Operable Unit One (OU-1, remaining structures) in 2009. The RI report is included in the Administrative Record.

The field work for the OU-1 RI was performed in two phases. Phase I was performed from July 2006 to October 2006, and included the following structures (eight buildings, one aboveground metal silo):

- Machine Shop
- Multi-Metals building
- Carpenter Shop
- Utility building
- 8'X8' building
- Liquid Waste building
- Metal Silo (aboveground)
- Butler building
- Main building (including Cesium Ion Exchange Hut, which is adjacent to Main building)*

[*NOTE: For the purposes of development and evaluation of remedial alternatives (below), the Cesium Ion Exchange Hut was evaluated as part of the "Main building", as they are contiguous.]

Phase II was performed in January 2008 and included the following two buildings:

- Tritium building
- Solid Waste building

RI Objectives

The objectives of the OU-1 RI for the Site included:

- Characterize the nature and extent of radioactive contamination of on-Site buildings and structures.
- Evaluate the buildings and structures for remedial alternatives in accordance with EPA requirements.

Provide a comprehensive assessment of the current and potential human health and environmental risks associated with radioactive contamination of buildings at the Site.

RI Results - Site structures

The RI report is included in the publicly available Administrative Record for the Site. The RI report includes the radiological measurements which were performed on-Site during the RI, as well as the analytical results for building material samples which were collected during the RI and analyzed at an off-Site laboratory. The RI report also includes documentation pertaining to the risk assessment which was performed for the Safety Light structures in accordance with Superfund requirements.

Broadly, the RI results indicate that radioactive contamination is present in most of the Safety Light structures. Radiological measurements performed during the RI indicate radioactive contamination levels above Preliminary Remediation Goals (PRGs) in all Safety Light structures where radiological measurements were performed with the exception of the Tritium building. (Note: radiological measurements were not performed in the Solid Waste building (described further below), or at the two water tanks) PRGs are conservative screening levels for Site-specific Radionuclides of Concern (ROC) which were generated for the Site using the

computer code RESRAD-BUILD. The RESRAD-BUILD computer code is a pathway analysis model designed to evaluate the potential radiological dose or risk incurred by an individual who works or lives in a building contaminated with radioactive material. The PRGs were calculated for the Site assuming the receptor was an occupational worker (office worker). Specific information regarding RESRAD-BUILD, and the generation of PRGs for the Site is included in the RI/FS report.

Based on the radiological surveying that was performed during the RI with on-Site instrumentation, and off-Site laboratory analysis of building materials, the following radionuclides of concern were identified in Safety Light structures:

- Cobalt-60 (Co-60)
- Cesium-137 (Cs-137)
- Lead-210 (Pb-210)
- Radium-226 (Ra-226)
- Actinium-227 (Ac-227)
- Neptunium-237 (Np-237)

Further building-specific information obtained during the remedial investigation follows:

Radioactively Contaminated Buildings

As described below, in Section 2.7 of this ROD, the following five Safety Light buildings exhibited cancer risk levels above EPA's acceptable cancer risk range ($1x10^{-4}$ to $1x10^{-6}$ cancer risk), due to radioactive contamination within the buildings:

- Multi-Metals building (cancer risk = $1.1x10^{-3}$)
- Carpenter Shop (cancer risk = $3.4x10^{-3}$)
- Utility building (cancer risk = $4.1x10^{-4}$)
- Liquid Waste building (cancer risk = $1.5x10^{-3}$)
- Main building (cancer risk = $2.1x10^{-2}$)

Based on the results of the RI, the following four buildings did not exhibit unacceptable cancer risk based on the Site-specific risk assessment performed (See Section 2.7 of this ROD), however, the four buildings exhibited or have the potential to exhibit significant radioactive contamination:

- 8'X8' building
- Machine Shop
- Metal Silo (aboveground)
- Solid Waste building

Additional information regarding the radioactive contamination status of these four buildings is included, as follows:

- **8' x 8' Building:** The building material samples collected from the 8'x8' building could not be submitted for laboratory analysis because the radioactivity levels of those samples exceeded allowable shipping requirements. Therefore, although unacceptable risk was not established in the 8'x8' building, the risk assessment for that building was performed using data generated with field instrumentation only (without laboratory sample results for building materials), and therefore may have underestimated actual risk from radioactive contamination within this building. The door to the 8'x8' building was posted as containing "Radioactive Material." In addition, all walls and floors of the 8'x8' building were identified using field instrumentation to exhibit elevated radioactivity levels above PRGs (described in the RI/FS report).

- **Machine Shop:** The machine shop is posted as containing "radioactive material." Although unacceptable cancer risks were not identified in the Machine Shop based on the human health risk assessment, radioactive contamination above PRGs was identified within this structure. In addition, radioactively contaminated materials identified in this building were moved to a radiological control area in the Main building.

- **Metal Silo (aboveground):** Although unacceptable cancer risks were not identified in the Metal Silo (aboveground), radioactive contamination above PRGs was identified within this structure. In addition, this structure was posted as a "radiation area," and the majority of the items located within the structure, including mechanical equipment, and containers, were contaminated with fixed and transferable radioactive contamination.

- **Solid Waste Building:** The interior of the Solid Waste building was not characterized because the building is the waste storage area for radioactive waste from previous Safety Light operations, and the RI personnel did not meet Safety Light requirements for entry into this portion of the facility (SLC radiological training, and tritium surveillance program). However, a radiological material inventory was performed by Safety Light personnel. Review of the inventory indicates that the Solid Waste building contains various containers of radioactive waste, including tritium exit sign waste, paper waste, hood filters, dry sludge, contaminated oil, biological fluids, etc. Based on a radioactive dose survey performed by a USACE-contractor, and the Safety Light radioactive materials survey, the estimated costs to dispose of off-Site the radioactive wastes in the Solid Waste building is $1,000,000. The estimated costs to address these wastes have been included in the FS cost evaluations for Alternatives 2 and 3.

Low-Radioactively Contaminated Buildings

As described below, four Safety Light structures did not exhibit significant radioactive contamination based on the RI; these structures are identified as the Butler building, the Tritium building, and two water tanks (described further below). For the reasons described

below, EPA determined it was necessary to include an Alternative in the FS (identified as Alternative 2A) that included demolition and off-Site disposal of these structures:

- **Butler building:** The Butler building comprises a portion of a larger building, called the Etching building, which was demolished and removed from the Site as part of an EPA non-time critical removal action (discussed above). The Butler building was temporarily braced at the completion of the removal action which included demolition and off-Site disposal of the majority of the Etching building. The temporary bracing was not performed to assure the long-term structural integrity of the Butler building, and eventual collapse of this building is of concern. It is considered necessary to demolish the Butler building to address the building's potential threat as a collapse hazard. Collapse of the building would result in some release of radionuclides to the environment, as follows. Although static measurements performed during the RI did not reveal radioactive contamination levels above PRGs within the Butler building, building material samples collected during the RI from the Butler building did reveal radioactive contamination levels above PRGs for Pb-210, Ra-226, and Ac-227. In addition, characterization of potential radioactive contamination beneath the footprint of the Butler building is necessary. Careful evaluation of radioactive contamination levels is necessary prior to off-Site disposal of the Butler building and its contents. Radioactively contaminated demolition debris/building contents from the structure will be disposed of in accordance with CERCLA § 121(d)(3). Demolition debris/building contents from the structure which do not exhibit radioactive contamination will be disposed of off-Site in accordance with local, State, and Federal requirements.

- **Tritium building:** Based on the RI, the Tritium building does not exhibit significant radioactive contamination. However, subsurface disposal of radioactive waste materials beneath Safety Light structures has occurred during the facility's history (e.g. the subsurface disposal of radioactive duct work on a portion of the Site where the Pipe Shop was later constructed). In addition, the presence of underground piping and utilities beneath this building may have provided a pathway for contamination to the subsurface, or the Susquehanna River. Therefore, EPA considers it necessary to characterize the surface/subsurface beneath the Tritium building as part of response activities at the Site. Such characterization would be comprised of surface and subsurface investigative activities, potentially including surface scanning for determination of radioactivity levels, subsurface borings, and geophysical testing. To facilitate such characterization of the surface/subsurface beneath this structure, it is necessary to demolish the Tritium building. It is noted that tritium may be located in certain process lines within the Tritium building. Also, two rooms within the Tritium building were not evaluated during the RI due to SLC entry requirements (SLC radiological training, and tritium surveillance program). Therefore, careful evaluation of radioactive contamination levels is necessary prior to off-Site disposal of the Tritium building and its contents. Radioactively contaminated demolition debris/building contents from the structure will be disposed of in accordance with CERCLA§121(d)(3). Demolition debris/building contents from the structure which do not exhibit radioactive

contamination will be disposed of in accordance with local, State, and Federal requirements.

As discussed below, EPA included two on-Site water tanks in Alternative 2A. The water tanks were not evaluated for radioactive contamination status during the Remedial Investigation; however, neither of these on-Site structures are expected to exhibit significant radioactive contamination:

- **Water tanks:** The two water tanks on-Site comprise portions of current and former fire suppression systems at the Site. Given the potential for disposal of radioactive waste beneath Safety Light structures (see above), it is considered to be necessary to remove the current aboveground water tank located in the eastern portion of the Safety Light Property, in order to facilitate characterization of the surface/subsurface beneath that structure. In addition, the gravity tank located in the western portion of the Site is approximately 150' high. In order to mitigate the potential for an accident involving the gravity tank during future remedial actions at the Site (e.g. during structure demolition activities, and/or future remedial actions for contaminated soils or ground water), it is necessary to remove the gravity tank. Radioactively contaminated demolition debris/building contents from these structures will be disposed of in accordance with CERCLA§121(d)(3). Demolition debris/building contents from these structures which do not exhibit radioactive contamination will be disposed of in accordance with local, State, and Federal requirements.

2.5.1 Conceptual Site Model

During the RI/FS, a conceptual site model (CSM) was established to evaluate potential routes of exposure between Site-related contaminants and human receptors. The CSM for the Human Health Risk Assessment is described further below in Section 2.7 (Summary of Site Risk), and on Figure 4 (HHRA CSM).

2.6 CURRENT & POTENTIAL FUTURE LAND & RESOURCE USES

The Safety Light property is currently occupied by 10 buildings, 2 water tanks, and an aboveground silo. Safety Light no longer operates a manufacturing business at the Site. One Safety Light employee currently works at the Site. This employee oversees maintenance of the safety and security systems associated with the Site and Safety Light structures. The maintenance of safety and security systems at the Site is performed in accordance with a UAO that was issued by EPA to three potentially responsible parties (PRPs), including Safety Light. The safety and security systems include the Site fence, smoke detectors and intrusion detection systems that are present in certain Site buildings, sprinklers that are present in certain buildings, and Site building doors and windows. Overall, the condition of the Site buildings appears to have deteriorated since the Safety Light manufacturing business ceased operations in approximately December 2007, and structural deterioration is expected to continue as Safety Light is no longer an operating manufacturing business. For example, roof leaks and internal water damage are evident within the Main building, which is the largest structure at the Site

which exhibits radioactive contamination. However, certain Safety Light buildings, such as the Tritium building, appear to be in better condition than other Safety Light buildings, such as the Main building. Therefore, reuse of the Site buildings is considered possible, although unlikely. The human health risk assessment performed as part of the RI (discussed below) was performed to evaluate what types of health risk would be associated with reuse of the Site buildings, given their current radioactive contamination status.

Residential areas are located adjacent to the north of the Safety Light Property, across Old Berwick Road, and adjacent to the east and west of the Safety Light Property. The Susquehanna River is located to the south of the Safety Light Property.

2.7 SUMMARY OF SITE RISK

Threat of Release of Hazardous Substances to the Environment

As stated above, based on the radiological surveying that was performed during the RI with on-Site instrumentation, and off-Site laboratory analysis of building materials, the following radionuclides of concern were identified in Safety Light structures:

- Cobalt-60 (Co-60)
- Cesium-137 (Cs-137)
- Lead-210 (Pb-210)
- Radium-226 (Ra-226)
- Actinium-227 (Ac-227)
- Neptunium-237 (Np-237)

The above-listed radionuclides of concern are hazardous substances in accordance with NCP § 302.4.

The Safety Light buildings are no longer used by Safety Light as an active manufacturing business. As required by a Unilateral Administrative Order (UAO), Safety Light is currently performing certain work activities at the Site, including maintenance of a fence around the Safety Light buildings; maintenance of electronic intrusion/fire detection systems present in the Main building, Tritium building, and Butler building; maintenance of a sprinkler system present in the Main building, Tritium building, and Butler building; and maintenance of building windows and doors. The UAO was issued by EPA to Safety Light Corporation, Isolite Corporation, and Metreal Corporation on November 13, 2007. The UAO-related work is coordinated by one Safety Light employee who remains at the Site. Notwithstanding Safety Light's work efforts at the Site, the physical condition of the Safety Light structures has deteriorated since Safety Light operations ceased in approximately December 2007, and structural deterioration is expected to continue as Safety Light is no longer an operating manufacturing business. For example, roof leaks and internal water damage are evident within the Main building, which is the largest radioactively contaminated structure at the Site. As the Safety Light structures deteriorate with time, it is expected that the threat of a release of radioactive contamination to the environment will increase via the following release mechanisms:

- Fire. In the event of a fire, a potential airborne release of radioactive contamination (smoke) could impact emergency responders or residential areas located adjacent to the Site. In addition, in the event of a fire, a physical hazard would be posed to on-Site personnel and emergency responders who would be summoned to respond to the fire.

- Building collapse. In the event of a building collapse, it is expected that additional radioactive contamination would enter the environment via dust dispersal, and increased weathering of exposed radioactive building materials and debris. In addition, in the event of a building collapse, a physical hazard would be posed to workers present in the area during collapse.

- Trespass. As further described below, trespass has occurred recently at the Safety Light Site. Trespassers who enter the Site have the potential to be exposed to radioactive contamination within Safety Light buildings. In addition, trespassers may transport radioactive contamination to off-Site locations on their person (e.g. transferrable contamination on their footwear and clothing), or may intentionally attempt to remove radioactively contaminated objects from the Site. For example, on November 18, 2007, several individuals illegally entered a Safety Light building, and attempted to steal scrap metal. The individuals were arrested by the police, and the radioactive contamination status of the stolen metal, and the individuals themselves was evaluated by local, and State emergency authorities.

In order to mitigate the three above-listed release mechanisms, EPA has considered the feasibility of long-term operation and maintenance (O&M) of the Safety Light structures, and associated safety/security systems (including fence line, integrity of doors and windows, electronic intrusion detection, and fire detection/sprinkler system). The primary radionuclide of concern at the Site is Radium-226. The half-life or Radium-226 is 1,600 years. After 1,600 years, the radioactive contamination associated with Radium-226 at Safety Light buildings will diminish by one-half due to natural radioactive decay. Therefore, it is expected that radioactive contamination will be present in most Safety Light structures for the foreseeable future and beyond. Therefore, it is not considered practicable to attempt to mitigate the possibility of a release of radioactive contamination to the environment by long-term O&M of the Safety Light structures and associated safety/security systems, since it would be necessary to maintain such systems for 1,600 years or more.

EPA also considered the feasibility of decontaminating the Safety Light structures. During preparation of the FS, this option was not considered to be practicable given the overall deteriorating condition of the Safety Light structures. In addition, leaving Safety Light structures in-place would disallow subsurface investigation beneath those structures. Subsurface investigation beneath Safety Light structures is considered to be necessary, because the disposal of radioactive waste materials in the subsurface and subsequent construction of at least one building (ie. Pipe Shop) on top of buried radioactive waste is known to have occurred at the Site.

Photographs of the current condition of the Safety Light structures are included in the Administrative Record for the Site.

Threat to Human Health

As part of the RI/FS, the current and future risks posed to humans by the contamination in the Safety Light structures were evaluated. The risk assessment performed during the RI/FS evaluated the potential for health risks to people exposed to Site contamination within the Safety Light structures, such as the risk of developing cancer. All radionuclides are considered known human carcinogens (Class A), based on their property of emitting ionizing radiation and on the extensive weight of evidence provided by epidemiological studies of radiogenic cancers in humans.

The generally low concentrations of radionuclides identified in the risk assessment do not pose non-cancer risks for human health. Therefore, an evaluation of non-cancer risks was not included in the human health risk assessment.

WHAT IS HUMAN HEALTH RISK AND HOW IS IT CALCULATED?

A Superfund human health risk assessment estimates the "baseline risk." This is an estimate of the likelihood of developing cancer or non-cancer health effects if no cleanup action were taken at a site. To estimate baseline risk at a Superfund site, EPA undertakes a four-step process:

Step 1: Analyze Contamination
Step 2: Estimate Exposure
Step 3: Assess Potential Health Threats
Step 4: Characterize Site Risk

In Step 1, EPA looks at the concentrations of contaminants found at a site as well as past scientific studies on the effects these contaminants have had on people (or animals, when human studies are unavailable). A comparison between site-specific concentrations and concentrations reported in past studies helps EPA to determine which contaminants are most likely to pose the greatest threat to human health.

In Step 2, EPA considers the different ways that people might be exposed to the contaminants identified in Step 1, the concentrations that people might be exposed to, and the potential frequency and duration of exposure. Using this information, EPA calculates a "reasonable maximum exposure" (RME), which portrays the highest level of exposure that could reasonably be expected to occur.

In Step 3, EPA uses the information from Step 2 combined with information on the toxicity of each chemical to assess potential health risks. EPA considers two types of risk: cancer and non-cancer. The likelihood of any kind of cancer resulting from a Superfund site is generally expressed as an upper bound probability; for example, a 1 in 10,000 chance of developing cancer from site-related exposures. In other words, for every 10,000 people that could be exposed, one extra cancer may occur as a result of exposure to site contaminants. An extra cancer case means that one more person could get cancer than would normally be expected to from all other causes. For non-cancer health effects, EPA calculates a "hazard index." The key concept here is that a "threshold level" (measured usually as a hazard index of equal to 1) exists below which non-cancer health effects are no longer predicted.

In Step 4, EPA determines whether site risks are great enough to cause health problems for people at or near the Superfund site. The results of the three previous steps are combined, evaluated and summarized. EPA adds up the potential risks from the individual contaminants and exposure pathways and calculates a total site risk.

Human Health Risk Assessment

Potential receptors and exposure pathways were identified based on the current and future land use and the radioactive contamination identified by the RI findings. The population evaluated during the human health portion of the risk assessment was occupational workers (office workers) on the Site. Exposure routes (i.e. ingestion, dermal contact, and inhalation) were evaluated as appropriate for the receptors potentially affected by the impacted media. EPA's acceptable risk range for carcinogenic risks, expressed in scientific notation, is $1x10^{-4}$ to $1x10^{-6}$, and the benchmark for non-carcinogenic risks is a hazard index (HI) of less than 1. In other words, the Agency considers a cancer risk greater than 1 in 10,000 and an HI of greater than 1 to be unacceptable. A cancer risk of 1 in 10,000 can also be written as "$1x10^{-4}$", or "1E-4".

The generally low concentrations of radionuclides identified in the risk assessment do not pose non-cancer risks for human health. Therefore, an evaluation of non-cancer risks was not included in the human health risk assessment.

The human health risk assessment was performed to evaluate the health risks associated with reuse of the Safety Light buildings. As stated above, the primary radionuclide of concern at the Site is Radium-226. The half-life of Radium-226 is 1,600 years. After 1,600 years, the radioactive contamination associated with Radium-226 at Safety Light buildings will diminish by one-half due to natural radioactive decay. Therefore, it is expected that radioactive contamination will be present in most Safety Light structures for the foreseeable future and beyond, and it is possible the buildings could be reused in that time, should they remain standing.

The Conceptual Site Model, which depicts anticipated exposure pathways between Site hazardous substances (radionuclides) within Site buildings and future potential receptors, is included in Figure 4.

Safety Light Structures

Based on the results of the risk assessment, the following radionuclides of concern were identified in the Safety Light structures:

- Cobalt-60 (Co-60)
- Cesium-137 (Cs-137)
- Lead-210 (Pb-210)
- Radium-226 (Ra-226)
- Actinium-227 (Ac-227)
- Neptunium-237 (Np-237)

Contaminated structures on the Safety Light Property were evaluated for risk to the following group:

- Occupational Workers (office workers): Full-time workers who could be exposed to radionuclides in Safety Light structures on a daily basis, throughout the year, over multiple

years.

Based on the risk assessment, unacceptable risks were identified in the following Safety Light structures:

- Multi-Metals building
- Carpenter Shop
- Utility building
- Liquid Waste building
- Main building

The calculated risk levels are included in Table 1.

2.7.1 Basis for Taking Action

Based on the radioactive contamination identified within Site structures, current Site conditions, and the results of the HHRA, the response action selected in this ROD is necessary to protect the public health or welfare or the environment from actual or threatened releases of hazardous substances into the environment.

2.8 REMEDIAL ACTION OBJECTIVES

To protect the public and the environment from potential current and future health risks, the following remedial action objectives (RAO) have been developed to address the Safety Light structures:

1. Prevent future release of radioactive contamination from the Safety Light structures to the environment
2. Facilitate characterization beneath Safety Light structures
3. Prevent future potential human exposure to radioactive contamination in the Safety Light structures

In addition to RAOs #1 and #3, which were considered in the FS, EPA considers it necessary to perform a remedial action for Safety Light structures (OU-1) that facilitates characterization of the surface/subsurface beneath Safety Light structures (RAO #2). This RAO is necessary because of the past occurrence at the Safety Light facility where radioactively contaminated waste was buried in the subsurface and a structure was constructed atop the buried waste materials (Pipe Shop). In addition, there are subsurface piping, drains, etc. present beneath several of the Safety Light buildings which may have acted as pathways for contamination to the subsurface. Investigation of these areas will be conducted as part of the OU-3 RI.

2.9 DESCRIPTION OF ALTERNATIVES

During the FS, alternatives were prepared to achieve the RAOs identified above (see Section 2.8, above). A complete description of the evaluated alternatives is included in the FS, which is in the Administrative Record for the Site. A summary of each of these remedial alternatives is

presented below. The alternatives identified below are numbered to correspond with the numbering used in the FS report.

Preferred Remedial Alternative:

EPA's Preferred Alternative is a combination of Alternative 2A (Demolition of four low-radioactively contaminated Safety Light structures) and Alternative 3 (Demolition of nine radioactively contaminated Safety Light structures) and off-Site disposal of demolition debris.

The following section is a summary of the cleanup alternatives that were considered during the Feasibility Study and their associated costs.

Alternative 1 - No Action

Capital Cost:	$0
Annual Operation and Maintenance (O&M) Costs:	$0
Total O&M Costs:	$0
Total Present Worth Cost:	$0

Under this alternative, no further action would be taken with regard to the Safety Light structures. The physical condition of the structures would be expected to degrade with time and, ultimately, collapse of the structures would occur. Collapse of radioactively contaminated structures would result in release of radionuclides to the environment. In addition, trespassing onto the Site and illegal entry into abandoned Safety Light structures has occurred since Safety Light ceased operations in December 2007. Under Alternative 1, such trespassing may continue, which could pose a threat to human health by exposing trespassers to radioactive contamination within Safety Light structures, and potentially exacerbating the threat of a structure fire on the Site. A fire in a radioactively contaminated structure could result in an off-Site release of radionuclides, and could also expose emergency response personnel to radioactive contamination. Alternatively, if the on-Site buildings were reused in the future, which given their current condition (with the potential exception of the Tritium building) is not expected, unacceptable threats to human health could occur, dependent upon which structure was reused and the specific exposure scenario. In addition, this alternative would not allow characterization of potential radioactive contamination beneath on-Site structures (e.g. surface scanning for determination of radioactivity levels, subsurface borings, and geophysical testing).

This alternative would not reduce human health risk to acceptable levels, and would not achieve the remedial action objectives. This alternative would not be protective of human health, and will not be considered further.

Alternative 2 - Demolition of Safety Light structures (radioactively contaminated), screening of demolition debris for radioactive contamination, segregation of waste streams, off-site disposal

Capital Cost:	$12,159,760
Annual Operation and Maintenance (O&M) Costs:	$0

Total O&M Costs:	$0
Total Present Worth Cost:	$12,159,760

Under Alternative 2, the following remedial actions would take place:

The contents of the following nine structures would be characterized and disposed of off-Site. Upon removal of the contents, the structures would be demolished and disposed off-Site:

- Multi-Metals building
- Carpenter Shop
- Utility building
- Liquid Waste building
- Main building
- 8'X8' building
- Machine Shop
- Metal Silo (aboveground)
- Solid Waste Building.

Radioactively contaminated demolition debris/building contents from the structures would be disposed of off-Site in accordance with CERCLA § 121(d)(3). Demolition debris/building contents from the structures which do not exhibit radioactive contamination would be disposed of off-Site in accordance with local, State, and Federal requirements. Characterization of the contents of these structures would include identification of asbestos containing materials, hazardous wastes, universal wastes, radioactive waste, radioactive sources, etc.

Under this Alternative, characterization and segregation of demolition debris would be performed with the goal of creating separate waste streams from the Site for demolition debris: one waste stream which exhibits radioactive contamination; and another waste stream which does not exhibit radioactive contamination. The primary goal of implementation of Alternative 2 would be to achieve a cost savings by disposing of non-radioactive wastes in local waste disposal facilities, and reducing the amount of radioactive wastes that must be transported great distances for disposal. For example, much of the demolition debris generated during the prior demolition of seven buildings at the Site (performed as a non-time critical removal action, and discussed above) was disposed of in a waste disposal facility in Idaho. Also, a goal of implementation of Alternative 2 would be to conserve waste disposal space in facilities which are licensed to receive radioactive waste, by only sending confirmed radioactive waste to those facilities, while sending confirmed non-radioactive waste to local disposal facilities.

At the completion of Alternative 2, the Safety Light structures would be disposed of at off-Site waste disposal facilities. Therefore, at the completion of Alternative 2, institutional controls will not be required for OU-1 because the Safety Light structures will be disposed of in off-Site disposal facilities.

Alternative 2A - Demolition of Safety Light structures (low-radioactively contaminated), off-Site disposal

Capital Cost:	$793,704
Annual Operation and Maintenance (O&M) Costs:	$0
Total O&M Costs:	$0
Total Present Worth Cost:	$793,704

Under Alternative 2A, the following remedial actions would take place:

The contents of the following four structures would be characterized and disposed of off-Site. Upon removal of the contents, the structures would be demolished and disposed off-Site:

- Butler building
- Tritium building
- Elevation water tank (adjacent to Main building)
- Water tank (eastern side of Site)

Disposal of the demolition debris/building contents would be performed in accordance with applicable local, State, and Federal requirements. Characterization of the contents of these buildings would include identification of asbestos containing materials, hazardous wastes, universal wastes, radioactive waste, radioactive sources, etc. Radioactively contaminated media (demolition debris/building contents), if identified in the structures included in Alternative 2A during demolition activities, would be disposed of off-Site in accordance with CERCLA §121(d)(3).

At the completion of Alternative 2A, the Safety Light structures would be disposed of at off-Site waste disposal facilities. Therefore, at the completion of Alternative 2A, institutional controls will not be required for OU-1 because the Safety Light structures will be disposed of in off-Site disposal facilities.

Alternative 3 - Demolition of Safety Light structures (radioactively contaminated), off-Site disposal

Capital Cost:	$16,114,538
Annual Operation and Maintenance (O&M) Costs:	$0
Total O&M Costs:	$0
Total Present Worth Cost:	$16,114,538

The contents of the following nine structures would be characterized and disposed of off-Site in accordance with CERCLA § 121(d)(3). Upon removal of the contents, the structures would be demolished and disposed off-Site in accordance with CERCLA § 121(d)(3):

- Multi-Metals building
- Carpenter Shop
- Utility building
- Liquid Waste building
- Main building

- 8'X8' building
- Machine Shop
- Metal Silo (aboveground)
- Solid Waste Building.

Characterization of the contents of these structures would include identification of asbestos containing materials, hazardous wastes, universal wastes, radioactive waste, radioactive sources, etc.

Under Alternative 3, significant characterization and segregation of demolition debris would not be performed. The entire demolition debris waste stream would be treated as radioactively contaminated, and would be disposed of off-Site in accordance with CERCLA§121(d)(3).

NOTE: It should be noted that the difference between Alternative 2 and Alternative 3 is the degree of characterization of demolition debris. Alternative 2 would include significant characterization of demolition debris in order to determine what demolition debris materials could be disposed of off-Site as non-radioactive waste (for example at a local construction/demolition debris landfill). Alternative 3 would not include significant radiological characterization of demolition debris; demolition debris would be assumed to be radioactive waste and would be disposed of off-Site in accordance with CERCLA §121(d)(3). The advantages/disadvantages to each of these approaches is discussed in Section 2.10.

At the completion of Alternative 3, the remaining Safety Light structures would be disposed of at off-Site waste disposal facilities. Therefore, at the completion of Alternative 3, institutional controls will not be required for OU-1 because the Safety Light structures will be disposed of in off-Site disposal facilities.

2.10 SUMMARY OF COMPARATIVE ANALYSIS OF ALTERNATIVES

As part of the remedy selection process, EPA evaluates each proposed remedy against the nine criteria specified in the NCP, 40 CFR §300.430(e)(9)(iii). The alternative selected must first satisfy the threshold criteria set out in the NCP. Next, the primary balancing criteria are used to weigh the tradeoffs or advantages and disadvantages of each of the alternatives. The modifying criteria, which are State and community acceptance, are evaluated at the end of the public comment period. This section of the ROD summarizes the relative performance of each alternative against the seven criteria, noting how it compares with the other options under consideration. For additional information on the comparison of the remedial alternatives, refer to the FS report.

Below is a summary of the nine criteria used to evaluate remedial alternatives.

THRESHOLD CRITERIA

Overall Protection of Human Health and the Environment

Evaluates whether an alternative provides adequate protection and how risks posed through each pathway are eliminated, reduced or controlled through treatment, engineering controls, or institutional controls.

Compliance with Applicable or Relevant and Appropriate Requirements (ARARs)

Evaluates whether or not an alternative will meet all ARARs of Federal and State environmental statutes and/or justifies a waiver.

PRIMARY BALANCING CRITERIA

Long-Term Effectiveness and Permanence

Addresses the ability of an alternative to afford long term, effective and permanent protection to human health and the environment over time.

Reduction of Toxicity, Mobility or Volume

Addresses the extent to which an alternative will reduce the toxicity, mobility, or volume of the contaminants causing the Site risks.

Short Term Effectiveness

Considers the length of time until protection is achieved and the short term risk or impact to the community, on-Site workers and the environment that may be posed during the construction and implementation of the alternative.

Implementability

Considers the technical and administrative feasibility of an alternative, including the availability of materials and services needed to implement that remedy.

Cost

Includes estimated capital, O&M, and net present worth costs.

MODIFYING CRITERIA

State Acceptance

Addresses whether the State concurs with, opposes, or has no comment on the Preferred Alternative.

Community Acceptance

Considers whether the public agrees with EPA's analyses of the Preferred Alternative described in the PRAP.

These evaluation criteria relate directly to the requirements of Section 121 of CERCLA, 42 U.S.C. §9621, for determining the overall feasibility and acceptability of an alternative. Threshold criteria must be satisfied for an alternative to be eligible for selection. Primary balancing criteria are used to weigh major trade-offs between alternatives. The modifying criteria are formally taken into account after public comment is received on the Proposed Remedial Action Plan (PRAP).

DETAILED ANALYSIS OF THE REMEDIAL ALTERNATIVES

Overall Protectiveness of Human Health and the Environment

Under Alternative 1, no further action would be taken with regard to the Safety Light structures. The physical condition of the structures is expected to degrade with time and, ultimately, collapse of the structures would occur. Collapse of radioactively contaminated structures would result in release of radionuclides to the environment. In addition, trespassing onto the Site and illegal entry into abandoned Safety Light structures has occurred since Safety Light ceased operations in December 2007. Under Alternative 1, such trespassing may continue, which could pose a threat to human health and the environment by exposing trespassers to radioactive contamination within Safety Light structures, and potentially exacerbating the threat of a structure fire on the Site. A fire in a radioactively contaminated structure could result in an off-Site release of radionuclides, and could also expose emergency response personnel to radioactive contamination. Alternatively, if the on-Site buildings were reused in the future, which given their current condition (with the potential exception of the Tritium building) is not expected, unacceptable threats to human health could occur, dependent upon which structure was reused and the specific exposure scenario. In addition, this alternative would not allow characterization of potential radioactive contamination beneath on-Site structures (e.g. surface scanning for determination of radioactivity levels, subsurface borings, and geophysical testing). This alternative would not reduce human health risk to acceptable levels, and would not achieve the remedial action objectives. This alternative would not be protective of human health and the environment, and will not be considered further.

Alternatives 2, 2A, and 3 each involve the demolition and off-Site disposal of the remaining Safety Light structures and contents. The difference between Alternative 2 and Alternative 3 is the degree of characterization of demolition debris. Alternative 2 would include significant characterization of demolition debris in order to determine what demolition debris materials could be disposed of off-Site as non-radioactive waste (for example at a local construction/demolition debris landfill). Alternative 3 would not include significant radiological characterization of demolition debris; demolition debris would be assumed to be radioactive waste and would be disposed of off-Site in accordance with CERCLA §121(d)(3).

When complete, each of these Alternatives (2, 2A, and 3) would be fully protective of human health and the environment. The Safety Light structures and contents would be disposed of off-Site. Protection of human health during the demolition and off-Site disposal of the Safety Light structures is discussed under "Short Term Effectiveness," below.

Compliance with Applicable or Relevant and Appropriate Requirements

Each of the remedial alternatives under consideration involves demolition of the remaining Safety Light structures, and off-Site disposal of demolition debris. Significant differences with regard to ARARs do not exist between remedial alternatives 2 and 3. Remedial activities performed on-Site (demolition of structures, etc.) will comply with ARARs, and ARAR waivers are not anticipated to be necessary at this time. ARARs for the Selected Remedy described in this ROD are included in Table 4.

One ARAR of special note for the Site is the National Historic Preservation Act of 1966, as amended, 16 U.S.C. §§ 470 *et seq.* ("NHPA") and its implementing regulations. The Pennsylvania State Historic Preservation Officer ("PA SHPO") has determined that the Safety Light Corporation Site is eligible for listing in the National Register of Historic Places. This determination is based upon the industrial history of the Site. Necessary cultural resource surveys and the development of mitigation plans are anticipated prior to the beginning of any remedial action. Additionally, the PA SHPO has recommended scanning and analyzing all original documentation found at the Site. These activities and other appropriate measures towards mitigation will be performed during the remedial design phase, to the extent practicable, and in consultation with the PA SHPO.

Long-Term Effectiveness and Permanence

The remedial alternatives under consideration (2, 2A, 3) each include demolition and off-Site disposal of Safety Light structures and contents off-Site. Therefore, each of the Alternatives exhibits equal long-term effectiveness and permanence.

Reduction of Toxicity, Mobility or Volume though Treatment

The remedial alternatives under consideration (2, 2A, 3) each include demolition and off-Site disposal of Safety Light structures and contents at off-Site waste disposal facilities. Certain waste materials from the Site (e.g. hazardous wastes) may require some form of treatment prior to permanent disposal. However, such treatment is expected to be performed at off-Site facilities. Where necessary, treatment of waste materials from the Site will be performed prior to permanent disposal. Therefore, none of the alternatives under consideration (2, 2A, 3) offer specific advantages/disadvantages with regard to this criteria.

Short Term Effectiveness

The remedial activities included in Alternatives 2, 2A, and 3 will pose a potential short-term threat to the nearby community, and to workers performing the work. Potential threats to the nearby community include the potential for off-Site migration of radioactively contaminated dusts, and accidents with trucks transporting waste materials from the Site to off-Site waste

disposal facilities. Potential threats to the nearby community will be mitigated through detailed work planning and execution. It should be noted that seven buildings were demolished and disposed of off-Site as part of a removal action at the Site (discussed above in Section 2.2) in a manner that was protective of human health and the environment. As each of the alternatives involve demolition on the Safety Light Property, and disposal of demolition debris off-Site, none of the alternatives offer comparative advantage with regard to short-term effectiveness for the nearby community. As stated above, detailed work planning, air monitoring, dust suppression, and detailed transportation planning will be performed to minimize the potential for an adverse impact to the community during the remedial action.

In terms of worker health and safety, it is expected that Alternative 2 would require significantly more exposure of demolition workers to demolition debris due to the radiological screening activities that would be necessary to segregate radioactive and non-radioactive waste streams. Alternative 3 reduces, to the extent practicable, worker exposure to potentially radioactive demolition debris because it would require less radiological screening/segregation of demolition debris, and therefore Alternative 3 is expected to be superior to Alternative 2 with regard to reducing demolition worker radiation exposure and overall demolition worker health and safety.

Implementability

The alternatives under consideration for the remaining Safety Light structures include demolition of the Safety Light structures and disposal of the structures and contents at off-Site disposal facilities. Alternative 3 is similar to the demolition of the seven Safety Light structures, which was performed as a non-time critical removal action, and which is now substantially complete (see above, and Administrative Record for a complete description). Based on the outcome of the non-time critical removal action, it is expected that Alternative 3 can be implemented.

Alternative 2A involves structures which did not exhibit significant radioactive contamination. It is not expected that performance of Alternative 2A would pose significant problems with regard to implementability.

Alternative 2 would involve significant radiological screening of demolition debris from radioactive contaminated structures in order to create radioactive and non-radioactive waste streams. Each of the waste streams would be disposed of off-Site. Radioactively contaminated demolition debris/building contents would be disposed of off-Site in accordance with CERCLA§121(d)(3). Demolition debris/building contents which do not exhibit radioactive contamination would be disposed of off-Site in accordance with local, State, and Federal requirements. EPA has the following concern with regard to implementabilty of Alternative 2: EPA is concerned that radiological screening of the estimated 19,889 cubic yards of demolition debris may be very difficult to implement in the field and may pose significant health and safety concerns with regard to the workers who will have to actually evaluate the demolition debris for radioactive contamination.

Cost

The estimated present worth costs for the alternatives, not including the No Action alternative (Alternative 1), were $793,704 to address the low radioactively contaminated structures (Alternative 2A), and ranged from $12,159,760 to $16,114,538 to address the radioactively contaminated structures (Alternatives 2 and 3). The detailed cost estimates of remedial alternatives are presented in the FS report, and Administrative Record. Table 2 summarizes the cost estimates prepared as part of the FS.

State Acceptance

The State of Pennsylvania concurs with the Selected Remedy identified for OU-1 in this ROD (letter included as Figure 5).

Community Acceptance

The local community did not express opposition to the Preferred Alternative included in the PRAP. In addition, Safety Light Corporation, a Site PRP, did not express opposition to the Preferred Alternative.

Specific issues raised by the community, and EPA's responses to those concerns, with regard to the Preferred Alternative are discussed in Section 3 of the ROD (Responsiveness Summary).

2.11 PRINCIPAL THREAT WASTE

The NCP establishes an expectation that EPA will use treatment to address the principal threats posed by a site wherever practicable (40 CFR §300.430(a)(1)(iii)(A)). The "principal threat" concept is applied to the characterization of "source materials" at a Superfund Site. A source material is material that includes or contains hazardous substances, pollutants or contaminants that act as a reservoir for migration of contamination to ground water, surface water or air, or acts as a source for direct exposure. Contaminated ground water generally is not considered to be a source material. Principal threat wastes are those materials considered to be highly toxic or highly mobile that generally cannot be reliably contained, or would present a significant risk to human health or the environment should exposure occur.

It is important to note that the hazardous substances identified within the remaining Site structures are radioactive elements, which exist in atomic form. It is not possible to implement a form of treatment for the radioactively contaminated media that will reduce the toxicity or volume of the radioactive contamination. The goal of the remedial action described in this ROD is to permanently reduce the overall mobility of the radionuclides which constitute the radioactive contamination associated with Site buildings and building contents. The mobility of this radioactive contamination will be permanently reduced by demolishing the Safety Light buildings in a manner to minimize the potential for a release of radioactive contamination from the Safety Light buildings to the environment, and permanent disposal of the demolition debris in waste disposal facilities which have been designed and permitted to receive waste which exhibits radioactive contamination.

2.12 SELECTED REMEDY

Summary of the Rationale for the Selected Remedy

Upon completion, EPA's Selected Remedy for OU-1 will be protective of human health and the environment. The Safety Light buildings will have been demolished, and the resultant demolition debris will be permanently disposed of in off-Site waste disposal facilities.

Description of Selected Remedy and Performance Standards

The Selected Remedy for OU-1 consists of the following:

1. Characterize and dispose of off-Site the contents of the structures identified below, in accordance with CERCLA §121(d)(3). Demolish and dispose of off-Site the structures identified below, including concrete slabs/basements, in accordance with CERCLA §121(d)(3):

- Multi-Metals building
- Carpenter Shop

- Utility building
- Liquid Waste building
- Main building
- 8'X8' building
- Machine Shop
- Metal Silo (aboveground)
- Solid Waste building

2. Characterize and dispose of off-Site the contents of the structures identified below. Demolish and dispose of off-Site the structures identified below, including concrete slabs/basements:

- Butler building
- Tritium building
- Elevation Water Tank (adjacent to Main building)
- Water tank (eastern side of Site)

Dispose of radioactively contaminated media in accordance with CERCLA §121(d)(3). Dispose of non-radioactively contaminated media in accordance with local, State, and Federal requirements.

3. To the extent necessary to facilitate demolition and disposal of the Safety Light buildings (as described in #1, and #2, above)), and/or to facilitate completion of the characterization of soil contamination at the Site, remove and dispose of off-Site the debris located in the area of the Site buildings. This includes piles of wooden pallets, and two abandoned trucks. Dispose of radioactively contaminated media in accordance with CERCLA §121(d)(3). Dispose of non-radioactively contaminated media in accordance with local, State, and Federal requirements.

Summary of the Estimated Remedy Costs

A summary of the estimated costs of the Selected Remedy is included in Table 2. The information in this cost estimate summary table is based on the best available information regarding the anticipated scope of the remedial alternative. Changes in the cost elements are likely to occur as a result of new information and data collected during the engineering design of the remedial alternative. Major changes may be documented in the form of a memorandum in the Administrative Record file, an Explanation of Significant Differences, or a ROD Amendment. This is an order of magnitude engineering cost estimate that is expected to be within +50 to -30% of the actual project cost.

Expected Outcome of the Selected Remedy

The expected outcome of the Selected Remedy is that the remaining Safety Light structures (10 buildings, 2 water tanks, 1 aboveground silo) will be demolished and disposed off-Site. The threat of a release of hazardous substances (radionuclides) from Safety Light buildings will be

addressed. The investigation of contaminated soils at the Site will be completed as part of the OU-3 Remedial Investigation.

2.13 STATUTORY DETERMINATION

Under CERCLA §121 and the NCP, the lead agency must select remedies that are protective of human health and the environment, comply with ARARs (unless a statutory waiver is justified), are cost-effective, and utilize permanent solutions and alternative treatment technologies or resource recovery technologies to the maximum extent practicable. In addition, CERCLA includes a preference for remedies that employ treatment that permanently and significantly reduces the volume, toxicity, or mobility of hazardous wastes as a principal element and a bias against off-site disposal of untreated wastes. The following sections discuss how the Selected Remedy meets these statutory requirements.

Protection of Human Health and the Environment

The Selected Remedy included in this ROD will be fully protective of human health and the environment during implementation and after completion. The Safety Light buildings will be demolished and disposed of off-Site, which will permanently mitigate the threat of a release of hazardous substances to the environment from the Safety Light buildings. Demolition debris which exhibits radioactive contamination will be disposed of in off-Site disposal facilities which have been designed and permitted to receive waste materials that exhibit radioactive contamination.

Compliance with Applicable or Relevant and Appropriate Requirements

The Selected Remedy of demolishing the Safety Light structures, and disposal of the demolition debris at off-Site waste disposal facilities will comply with the ARARs identified in Table 4.

Cost Effectiveness

The Selected Remedy is cost-effective and represents a reasonable value for the money to be spent. The NCP requires that, "a remedy shall be cost-effective if its costs are proportional to its overall effectiveness." (NCP §300.430(f)(1)(ii)(D)). In evaluating this requirement, EPA evaluated the "overall effectiveness" of those alternatives that satisfied the threshold criteria (i.e., were both protective of human health and the environment and ARAR-compliant). Overall effectiveness was evaluated by assessing three of the five balancing criteria in combination (long-term effectiveness and permanence; reduction in toxicity, mobility, and volume through treatment; and short-term effectiveness). Overall effectiveness was then compared to costs to determine cost effectiveness. The relationship of the overall effectiveness of this remedial alternative was determined to be proportional to its cost and hence this alternative represents a reasonable value for the money to be spent.

It is noted that Alternative 2 ($12,159,760) is less costly than Alternative 3 ($16,114,538). As noted above, the difference between Alternative 2 and Alternative 3 is the degree of

characterization of demolition debris. Alternative 2 would include significant characterization of demolition debris in order to determine what demolition debris materials could be disposed of off-Site as non-radioactive waste (for example at a local construction/demolition debris landfill). Alternative 3 would not include significant radiological characterization of demolition debris; demolition debris would be assumed to be radioactive waste and would be disposed of off-Site in accordance with CERCLA §121(d)(3). The advantages/disadvantages to each of these approaches is discussed in Section 2.10. The cost estimate for Alternative 2 was based on the assumption that significant screening of demolition debris would determine that 50% of the overall demolition debris would be classified as non-radioactive and could be disposed of at an off-Site waste disposal facility which was not designed or permitted to receive radioactively contaminated waste materials. Overall, Alternative 3 was considered by EPA to be superior to Alternative 2 because of the uncertainty pertaining to the final amounts of radioactively contaminated and non-radioactively contaminated demolition debris, and the health and safety advantages that Alternative 3 was expected to provide to the workers actually performing the demolition and off-Site disposal of the Safety Light structures.

The estimated cost to complete the Selected Remedy (which consists of Alternative 2A and Alternative 3) is $16,908,242.

Utilization of Permanent Solutions and Alternative Treatment Technologies (or Resource Recovery Technologies) to the Maximum Extent Practicable

EPA has determined that the Selected Remedy represents the maximum extent to which permanent solutions and treatment technologies can be utilized in a practicable manner at the Site. Of those alternatives that are protective of human health and the environment and comply with ARARs, EPA has determined that the Selected Remedy provides the best balance of trade-offs in terms of the five balancing criteria, while also considering the statutory preference for treatment as a principal element and bias against off-site treatment and disposal, and considering State and community acceptance.

The Selected Remedy will represent a permanent solution for the Safety Light structures; the Safety Light structures will be demolished and disposed of at off-Site waste disposal facilities.

Preference for Treatment as a Principal Element

As noted above, the hazardous substances identified within the remaining Site structures are radioactive elements, which exist in atomic form. It is not possible to implement a form of treatment for the radioactively contaminated media that will reduce the toxicity or volume of the radioactive contamination. The goal of the remedial action described in this ROD is to permanently reduce the overall mobility of the radionuclides which constitute the radioactive contamination associated with Site buildings and building contents. The mobility of this radioactive contamination will be permanently reduced by demolishing the Safety Light buildings in a manner to minimize the potential for a release of radioactive contamination from the Safety Light buildings, and permanent disposal of the demolition debris in waste disposal

facilities, which have been designed and permitted to receive waste exhibiting radioactive contamination.

Five-Year Review Requirements

As stated above, the Selected Remedy in this ROD is for OU-1 (remaining structures at the Site), and includes demolition of the remaining structures, and disposal of the resultant demolition debris off-Site. For OU-1, the Selected Remedy will not result in hazardous substances, pollutants, or contaminants remaining on-site above levels that allow for unlimited use and unrestricted exposure. Therefore, a statutory-review will be not be conducted within five years after the initiation of remedial action for OU-1 to ensure that the remedy is, or will be, protective of human health and the environment pursuant to CERCLA §121(c), and the NCP, 40 CFR §300.430(f)(5)(iii)(c).

Contaminated soils and ground water will remain at the Site at the completion of the OU-1 Selected Remedy (described in this ROD). When the RI/FS reports for contaminated soil (OU-3) and ground water (OU-2) are complete, EPA will select remedies for those contaminated media in accordance with CERCLA and the NCP.

2.14 DOCUMENTATION OF SIGNIFICANT CHANGES

The PRAP for OU-1 of the Safety Light Site was released for public comment in April 2010. The PRAP identified the Preferred Alternative as a combination of Alternative 2A and 3, to address the remaining Safety Light structures. EPA reviewed all written and verbal comments submitted during the public comment period. It was determined that no significant changes to the remedy, as originally identified in the PRAP, were necessary or appropriate.

3.0 RESPONSIVENESS SUMMARY

This Responsiveness Summary documents public participation in the remedy selection process for the Safety Light Site. It contains a summary of the significant comments received by EPA on the PRAP for the Site and EPA's responses to those comments.

3.1 STAKEHOLDER COMMENTS AND LEAD AGENCY RESPONSES

Safety Light Corporation sent EPA a letter, dated May 5, 2010, regarding the PRAP. Safety Light Corporation indicated that they had no objections to the cleanup plan outlined in the PRAP.

One comment was received from a community member during the public meeting, as follows:

Community Comment: One community member expressed a concern during the public meeting regarding the potential release of personally identifiable information (names, addresses, social security numbers, etc.), such as may be used by identity thieves, during the demolition of the Safety Light structures. Several buildings contain records pertaining to Safety Light Corporation and U.S. Radium Corporation.

EPA Response: EPA acknowledges this comment and concern, and will consider this comment during the development of the Remedial Design for the demolition of the remaining Safety Light structures. During the remedial action for OU1, EPA will seek to minimize the potential for paper documentation from the Site to be accessed or viewed by non-cleanup related personnel. In addition, EPA will require its response action contractor(s) to take safeguards to protect the confidentiality and security of any such personally identifiable information handled during this response action.

3.2 TECHNICAL AND LEGAL COMMENTS

Technical and legal comments were not received on the PRAP.

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FIGURES

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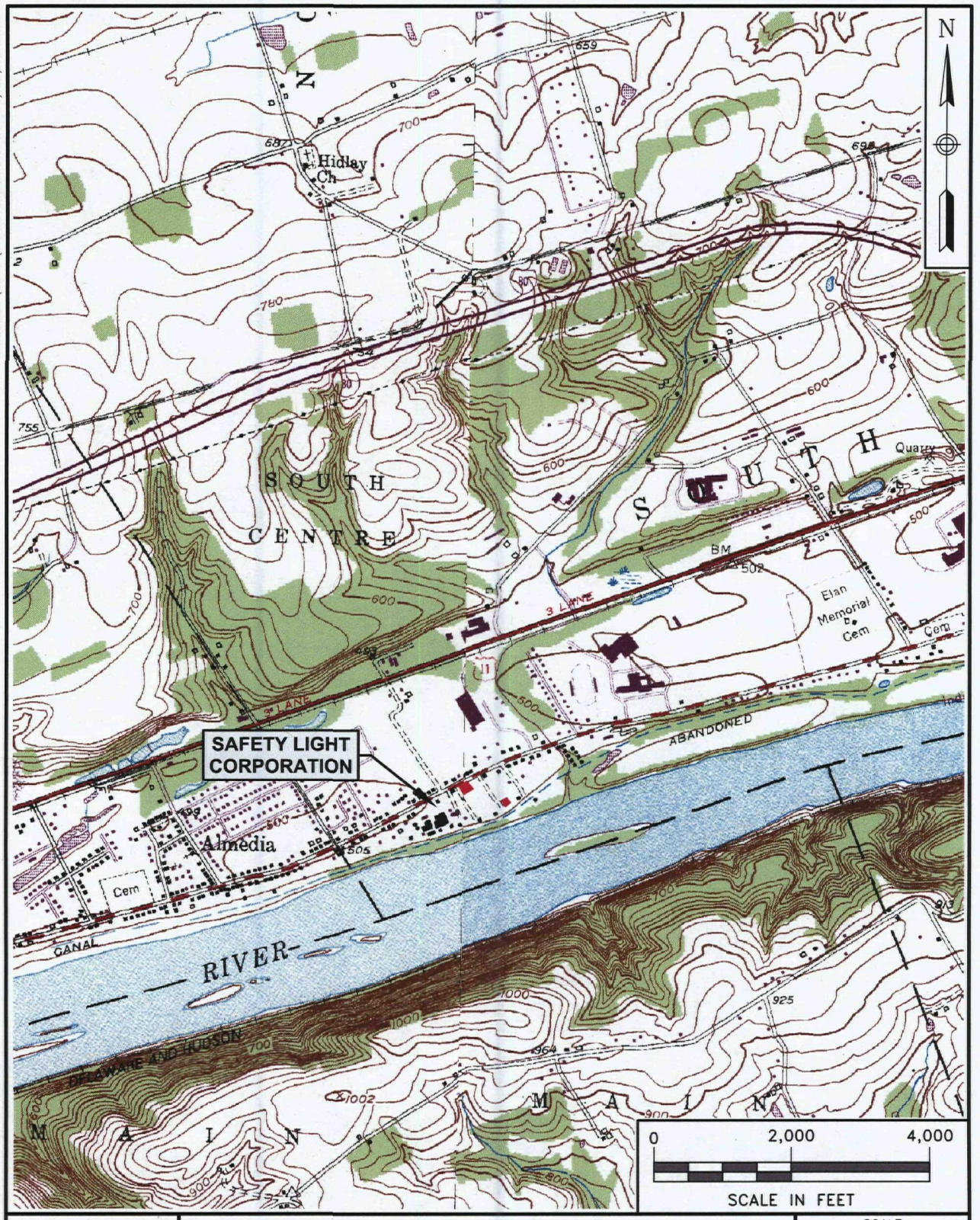

TETRA TECH NUS, INC.

SITE LOCATION MAP
SAFETY LIGHT CORPORATION
BLOOMSBURG, COLUMBIA COUNTY, PENNSYLVANIA

SCALE	AS NOTED
FILE	112G01039CM01
REV	0
DATE	03/05/10
FIGURE NUMBER	FIGURE 1

AR300594

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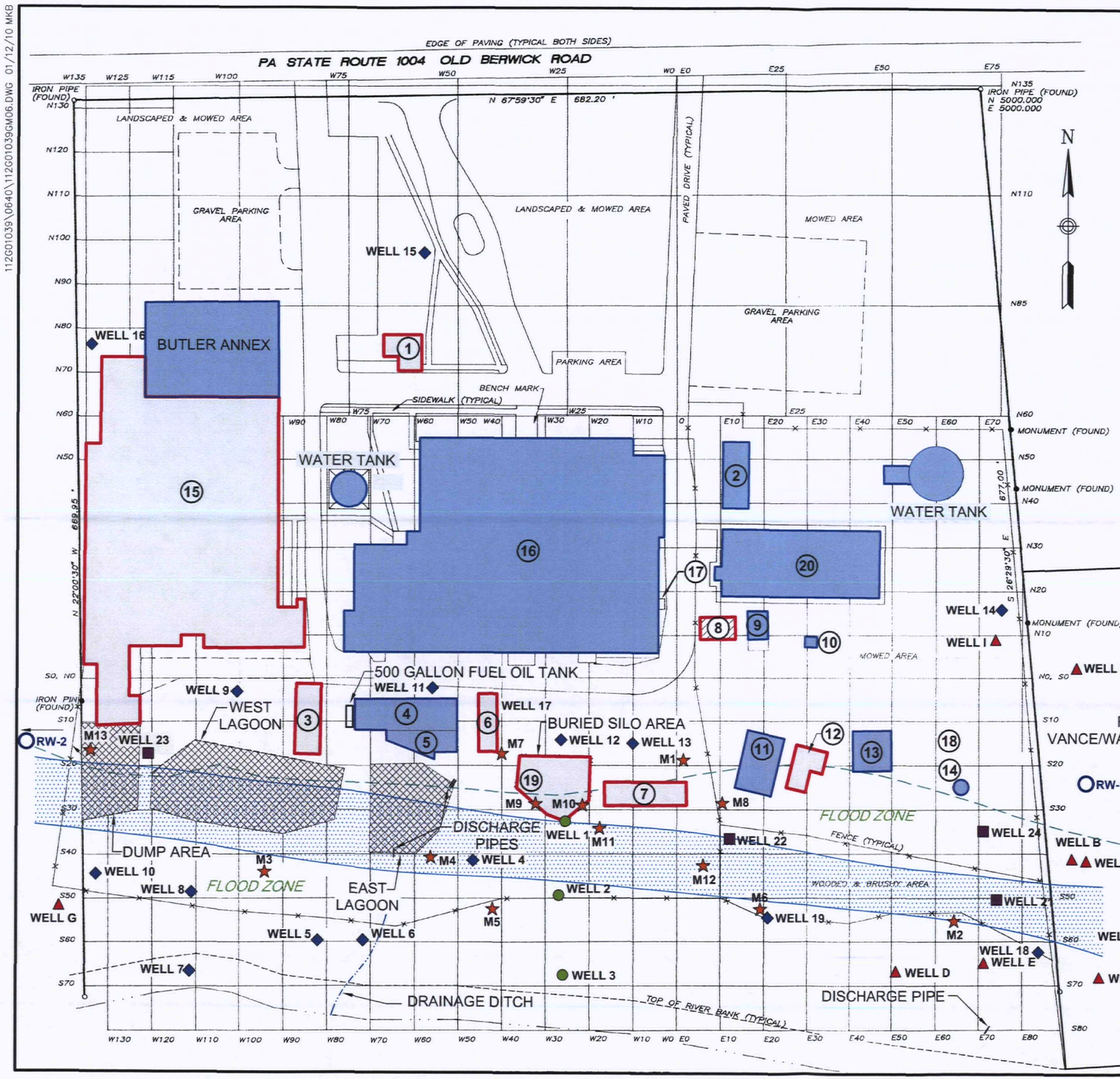


1. PERSONNEL OFFICE BUILDING (OLD NURSES STATION)
2. MACHINE SHOP
3. PIPE SHOP
4. MULTI–METALS WASTE TREATMENT PLANT
5. CARPENTER SHOP (ADJACENT TO MULTI–METALS WASTE TREATMENT PLANT)
6. WELL HOUSE
7. LACQUER STORAGE BUILDING
8. RADIUM VAULT
9. UTILITY BUILDING (SR–90 SOURCE VAULT)
10. 8' X 8' BUILDING
11. LIQUID WASTE BUILDING (INCLUDING UNDERGROUND TANKS)
12. OLD HOUSE
13. SOLID WASTE BUILDING
14. METAL SILO (ABOVE–GROUND)
15. ETCHING BUILDING
16. MAIN BUILDING – INCLUDES BASEMENT, FIRST FLOOR, SECOND FLOOR, AND ATTIC
17. CESIUM ION EXCHANGE HUT (ATTACHED TO MAIN BUILDING)
18. OLD GARAGE FOUNDATION (WHERE DRUMS OF REMOVED RADIOACTIVE WASTE WERE PREVIOUSLY STORED)
19. POLE BUILDING
20. NUCLEAR BUILDING (TRITIUM BUILDING)

LEGEND

- MONITORING WELL LOCATION, GILES DRILLING (1978)
- MONITORING WELL LOCATION, MEISER & EARLE (1979)
- MONITORING WELL LOCATION, SLC
- MONITORING WELL LOCATION, CNSI (1990)
- MONITORING WELL LOCATION, MONSERCO (1995)
- RESIDENTIAL WELL LOCATION
- PROPERTY CORNER
- WIRE FENCE
- STREAM/WATER EDGE
- 100 YEAR FLOOD ZONE
- (12) BUILDING NUMBER
- BUILDING DEMOLISHED DURING EPA REMOVAL ACTION
- ABANDONED CANAL
- STRUCTURE TO BE DEMOLISHED AS PART OF THE REMEDIAL ACTION

0 80 160
SCALE IN FEET

TETRA TECH NUS, INC.

SITE LAYOUT
SAFETY LIGHT CORPORATION
BLOOMSBURG, COLUMBIA COUNTY, PENNSYLVANIA

FILE	SCALE
112G01039GM06	AS NOTED
FIGURE NUMBER: FIGURE 2	REV: 0 DATE: 01/12/10

AR300595

N

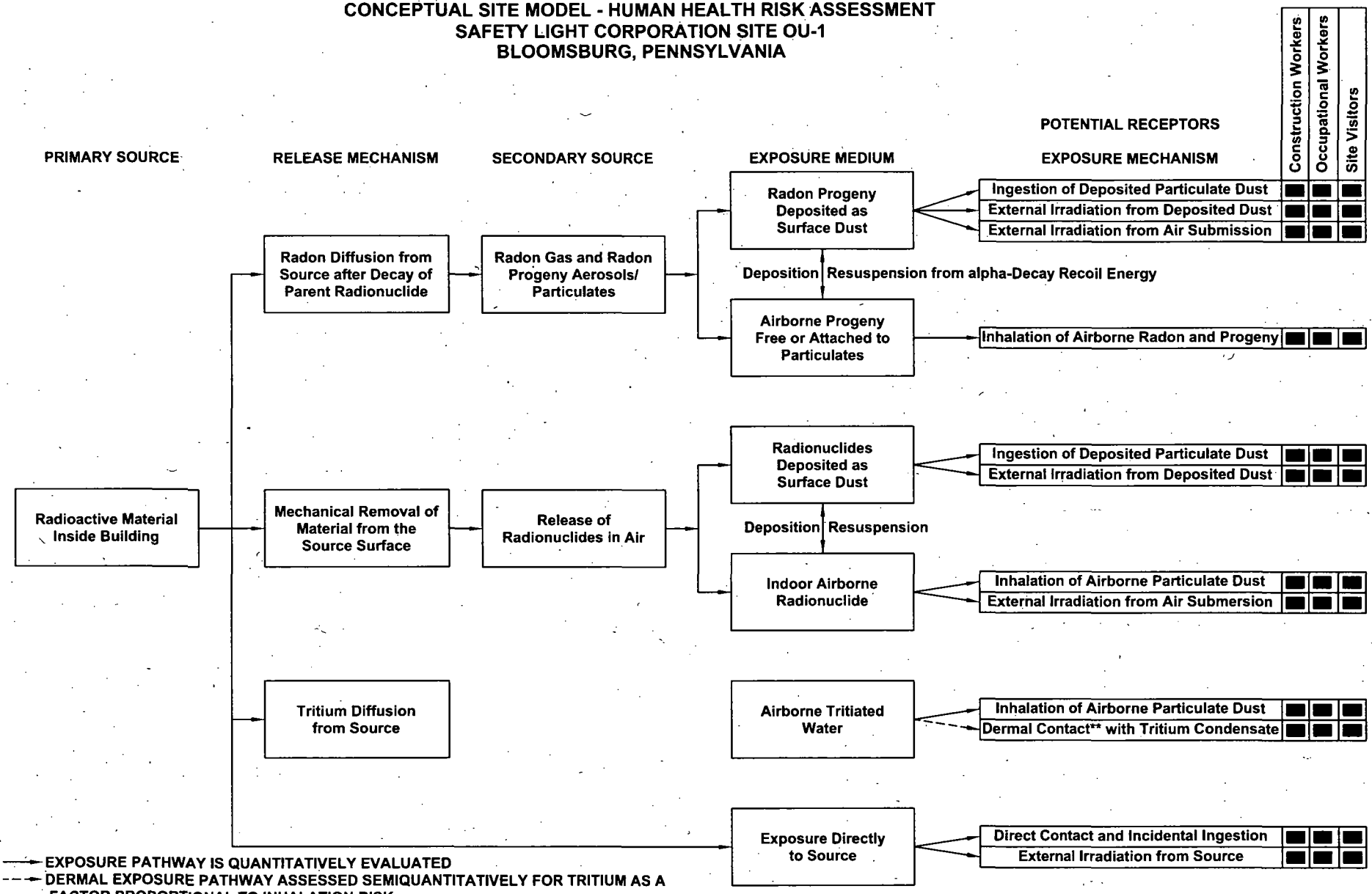
TETRA TECH NUS, INC.

EXISTING BUILDING IDENTIFICATION
SAFETY LIGHT CORPORATION
BLOOMSBURG, COLUMBIA COUNTY, PENNSYLVANIA

FILE	SCALE
112G01039GM11-1	NOT TO SCALE
FIGURE NUMBER: FIGURE 3	REV: 0 DATE: 12/15/09

AR300596

FIGURE 4
CONCEPTUAL SITE MODEL - HUMAN HEALTH RISK ASSESSMENT
SAFETY LIGHT CORPORATION SITE OU-1
BLOOMSBURG, PENNSYLVANIA



pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION
NORTHCENTRAL REGIONAL OFFICE

May 27, 2010

Ms. Kathryn Hodgkiss
Acting Director
Hazardous Sites Cleanup Division
US EPA Region III
1650 Arch Street (3HS00)
Philadelphia, PA 19103-2029

Re: Record of Decision (ROD)
Safety Light Corporation Superfund Site
S. Centre Twp., Columbia County, Pennsylvania

Dear Ms. Hodgkiss:

The Department of Environmental Protection has received and reviewed the July 2010 Record of Decision (ROD) for the Safety Light Corporation Superfund Site in S. Centre Twp., Columbia County. This ROD presents the selected remedial action for Operable Unit One (OU-1), which addresses the remaining buildings and debris at the Site. Seven buildings were demolished and disposed of off-site during a 2008/2009 EPA Removal Action due to structural integrity concerns. The overall cleanup strategy at the Site for OU-1 is demolition of the remaining structures at the Site (10 buildings, 2 water tanks, 1 aboveground silo), and disposal of the demolition debris at off-Site waste disposal facilities.

EPA's selected remedy for the Site includes the following major components:

- For the radioactively contaminated structures identified in Alternative 3: characterize and dispose of off-Site the contents of the structures, the structures, and the concrete slabs/basements, in accordance with CERCLA §121(d)(3). The radioactively contaminated structures identified in Alternative 3 are: Multi-Metals building, Carpenter Shop, Utility building, Liquid Waste building, Main building, 8'X8' building, Machine Shop, Metal Silo (aboveground), and Solid Waste building.

- For the low-radioactively contaminated structures identified in Alternative 2A: characterize and dispose of off-Site the contents of the structures. Demolish and dispose of off-Site the structures including concrete slabs/basements; disposal of demolition debris (including building contents) will be performed in accordance with applicable local, State, and Federal requirements. Radioactively contaminated media, if identified in the structures included in Alternative 2A during demolition activities, will be disposed of off-Site in accordance with CERCLA §121(d)(3).

The low-radioactively contaminated structures identified in Alternative 2A are: Butler building, Tritium building, Elevation Water Tank (adjacent to Main building), and Water tank (eastern side of Site).

- To the extent necessary to facilitate demolition and disposal of the Safety Light buildings (as described in #1, and #2, above)), and/or to facilitate completion of the characterization of soil contamination at the Site, dispose of off-Site the debris located in the area of the Site buildings. This includes piles of wooden pallets, and two abandoned trucks.

The Department hereby concurs with EPA's proposed remedy with the following conditions:

- The Department will be given the opportunity to review and comment on documents and concur with decisions related to the design and implementation of the remedial action, to assure compliance with Pennsylvania Applicable or Relevant and Appropriate Requirements (ARARs).
- Public comment and the issuance of an Explanation of Significant Difference (ESD) must occur before any modification of the ROD.
- This concurrence with the selected remedial action is not intended to provide any assurances pursuant to CERCLA § 9604(c)(3).
- DEP reserves the right and responsibility to take independent enforcement actions pursuant to state law.

Thank you for the opportunity to comment on this EPA Record of Decision. If you have any questions regarding this matter, please do not hesitate to contact me.

Sincerely,

Nels J. Taber
Regional Director
Northcentral Region

cc: Mitch Cron, EPA
Craig Olewiler, DEP
Jeffrey Whitehead, DEP
Denny Wright, DEP
File

NT/lb

pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

NORTHCENTRAL REGIONAL OFFICE
OFFICE OF CHIEF COUNSEL

FYI — Mitch

June 25, 2010

Ms. Kathryn Hodgkiss
Acting Director
Hazardous Sites Cleanup Division
US EPA Region III
1650 Arch Street (3HS00)
Philadelphia, PA 19103-2029

Re: Record of Decision (ROD)
Safety Light Corporation Superfund Site
Centre Twp, Columbia County
Pennsylvania

Dear Ms. Hodgkiss:

This letter makes two (2) amendments to the Department's letter dated May 27, 2010, ("May 27, 2010 Letter") pertinent to the referenced Superfund Site ROD.

1. The following "bullet point" found on page two (2) of the May 27, 2010 Letter:

-- The Department will be given the opportunity to review and comment on documents and concur with decisions related to the design and implementation of the remedial action, to assure compliance with Pennsylvania Applicable or Relevant and Appropriate Requirements (ARARs).

is replaced with:

-- The Department will be given the opportunity to review and comment on the documents related to the design and implementation of the remedial action, and any proposed determinations on potential Pennsylvania Applicable or Relevant and Appropriate Requirements (ARARs) and to be considered requirements (TBCs).

2. The following "bullet point" found on page two (2) of the May 27, 2010 Letter:

-- Public comment and the issuance of an Explanation of Significant Difference (ESD) must occur before any modification of the ROD.

is replaced with:

-- The Department will have the opportunity to review any modification to the ROD.

All other aspects of the May 247, 2010 Letter remain unaffected. Thank you for the opportunity to comment on this EPA Record of Decision. If you have any questions regarding this matter, please do not hesitate to contact me.

Sincerely,

Nels J. Taber
Regional Director
Northcentral Region

cc: Mitch Cron, EPA
Craig Olewiler, DEP
Jeffrey Whitehead, DEP
Denny Wright, DEP
File

TABLES

Safety Light OU-1 ROD
Table 1
Risk Levels in Safety Light Structures

Area of the Site	Cancer Risk	Radionuclides of Concern
Machine Shop	$2.5x10^{-6}$	Levels of radionuclides pose cancer risk of less than $1.0X10^{-4}$
Multi-Metals building	$1.1x10^{-3}$	Ra-226 Pb-210
Carpenter Shop	$3.4x10^{-3}$	Ra-226 Pb-210 Co-60
Utility building	$4.1x10^{-4}$	Ra-226 Pb-210
8'x8' building*	$2.3x10^{-5}$	Levels of radionuclides pose cancer risk of less than $1.0X10^{-4}$
Liquid Waste building	$1.5x10^{-3}$	Ra-226 Pb-210 Ac-227
Metal Silo (aboveground)	$2.4x10^{-5}$	Levels of radionuclides pose cancer risk of less than $1.0X10^{-4}$
Butler building (remaining portion of Etching building)	$4.1x10^{-5}$	Levels of radionuclides pose cancer risk of less than $1.0X10^{-4}$
Tritium building**	$6.2x10^{-8}$	Levels of radionuclides pose cancer risk of less than $1.0X10^{-4}$
Main building* **	$2.1x10^{-2}$	Np-237 Ra-226 Pb-210
Solid Waste Building	Not characterized****	

*As discussed elsewhere in this ROD, the 8'X8' building exhibited significant radioactive contamination. However, certain building material samples could not be shipped to the laboratory due to significant radioactive contamination.
** As discussed elsewhere in this ROD, two rooms within the Tritium building, which may exhibit radioactive contamination, were not evaluated due to room access restrictions.
*** The $2.1x10^{-2}$ cancer risk represents the highest cancer risk survey unit, out of the 13 survey units evaluated in the Main building (1st floor, Survey Unit E).
**** The Solid Waste building was not characterized during the Remedial Investigation, as discussed in Section 2.5 of this ROD.
(NOTE: buildings in **bold** above exceeded EPA's acceptable cancer risk range)

Safety Light OU-1 ROD
Table 2
Cost Estimates for Remedial Alternatives

	Alternative 2	Alternative 2A	Alternative 3
Capital Costs:	$12,159,760	$793,704	$16,114,538
Annual O&M Costs	$0	$0	$0
Total O&M costs	$0	$0	$0
Present Worth for Capital and 30-yr O&M costs	$12,159,760	$793,704	$16,114,538

Safety Light OU-1 ROD
Table 3
Remedial Action Matrix

Building, Structure or Area	Cancer Risk Estimate	Action Under Alternative 1	Action Under Alternative 2	Action Under Alternative 2A	Action Under Alternative 3
Machine Shop	2.5E-06	No Action	Demolish, Characterize, Segregate, Dispose		Demolish, Dispose
Multi-Metals Building	1.1E-03	No Action	Demolish, Characterize, Segregate, Dispose		Demolish, Dispose
Carpenter Shop	3.4E-03	No Action	Demolish, Characterize, Segregate, Dispose		Demolish, Dispose
Utility Building	4.1E-04	No Action	Demolish, Characterize, Segregate, Dispose		Demolish, Dispose
8'x8' Building	2.3E-05	No Action	Demolish, Characterize, Segregate, Dispose		Demolish, Dispose
Liquid Waste Building	1.5E-03	No Action	Demolish, Characterize, Segregate, Dispose		Demolish, Dispose
Metal Silo (above ground)	2.4E-05	No Action	Demolish, Characterize, Segregate, Dispose		Demolish, Dispose
Butler Building	4.1E-05	No Action		Demolish, Characterize, Segregate, Dispose	
Tritium Building	6.2E-08	No Action		Demolish, Characterize, Segregate, Dispose	
Main Building	2.1E-02	No Action	Demolish, Characterize, Segregate, Dispose		Demolish, Dispose
Solid Waste Building	N/A	No Action	Demolish, Characterize, Segregate, Dispose		Demolish, Dispose
Water Tower	N/A	No Action		Demolish, Dispose	
Water Tank	N/A	No Action		Demolish, Dispose	

N/A – not applicable (not evaluated – see ROD text)

Safety Light OU-1 ROD
Table 4
Summary of ARARs and TBC Criteria

Requirement	Citation	Status	Synopsis	Comment
Contaminant-Specific ARARs and TBC				
National Emission Standards for Hazardous Air Pollutants (NESHAP), Subpart H: National Emission Standard for Radionuclides at DOE Sites.	40 C.F.R. §61	Relevant and Appropriate	EPA regulation pertaining to limit of radiological dose to public from air emissions at DOE facilities	Provides 10 millirem/year standard for protecting the public.
Cleanup of Radioactively Contaminated Superfund Sites	OSWER Directive 9200.4-18	To Be Considered	EPA guidance to use the Superfund remedy selection framework when addressing radionuclides	Provides guidance that NRC rules are not protective and that even if they are ARARs, risk range should be achieved.
Standards for Protection Against Radiation	10 C.F.R. Part 20, Appendix B, Table 2	Relevant and Appropriate	NRC regulation pertaining to radiological standards for discharge/emissions	The substantive portions of these requirements will be complied with during response actions at the Site.
Termination of Byproduct, Source, and Special Nuclear Material Licenses	NRC Policy and Guidance Directive FC83-23	To Be Considered	NRC guidance for release of radiological contaminated materials	This guidance will be considered for demolition activities, and segregation of demolition debris as radioactively contaminated or non-radioactively contaminated
Location-Specific ARARs and TBC				
National Historic Preservation Act of 1966, as amended	16 U.S.C. § 470	Applicable	Requirements relating to preserving historical and archaeological resources; requires Federal agencies to evaluate the impact of their undertakings on properties included on, or eligible for inclusion in, the National Register of Historic Places.	The preferred alternative has the potential for disturbing historically significant resources. Further action will be taken to identify and mitigate adverse effects on such identified resources. The substantive requirements will be met.
Action-Specific ARARs and TBC				
National Emissions Standards for Hazardous Air Pollutants (NESHAP), Subpart M: National Emission Standard for Asbestos	40 C.F.R. §§ 61.141, 61.145, 61.150	Applicable	Establishes standards for demolition/renovation projects involving asbestos	The substantive portions of these requirements will be complied with during demolition activities; site buildings are expected to contain asbestos.

Requirement	Citation	Status	Synopsis	Comment
----- Pennsylvania regulation	----- 25 Pa. Code §124.3			----- Pennsylvania has adopted the federal NESHAP (40 C.F.R. Part 61) in its entirety.
Resource Conservation and Recovery Act of 1976; Hazardous and Solid Waste Amendments of 1984 ("RCRA")	42 U.S.C. §6901 et seq.			
a. RCRA regulations	40 C.F.R. Part 261 Federal regulations would not apply for those regulations which Pennsylvania has been delegated by EPA the authority to administer	Applicable	Defines criteria for determining whether a solid waste is regulated as a hazardous waste.	The substantive federal requirements that are not part of Pennsylvania's authorized State RCRA program shall be implemented in the event that OU1 activities involve handling hazardous waste.
	40 C.F.R. Part 262.11 Hazardous Waste Determination	Applicable	Establishes standards for generators of hazardous wastes	The substantive federal requirements that are not part of Pennsylvania's authorized State RCRA program shall be implemented in the event that OU1 activities involve handling hazardous waste.
	40 CFR Part 264: ▪ Subpart B §§264.10-.19 General Facility Stds; ▪ Subpart C §§264.30-.37 Preparedness and Prevention; ▪ Subpart D §§264.50-.56 Contingency Plan and Emergency Procedures; ▪ Subpart G §264.111 Closure Performance Standard §264.114 –	Applicable	Regulations for owners and operators of TSDFs which define acceptable management of hazardous wastes.	The substantive federal requirements that are not part of Pennsylvania's authorized State RCRA program shall be implemented in the event that OU1 activities involve handling hazardous waste in the manner addressed by the regulations (e.g., containers, waste piles).

Requirement	Citation	Status	Synopsis	Comment
	Disposal or decontamination of equipment structures and soil; ▪ Subpart I §§264.170-.179 Use and Management of Containers; ▪ Subpart L §§264.250-.252, .254, .256-.259 Waste Piles; ▪ Subpart CC Air emission standards for tanks, surface impoundments and containers; §§264.1080-1083 (Applicability, Definitions, Standards and Waste Determination procedures.) §264.1086 (Standards for Containers)			
	40 C.F.R. Part 273 Standards of Universal Waste Management ▪Subpart A – §§273.1-273.9 ▪Subpart B - §§273.10, 273.11, 273.13	Applicable	Establishes requirements for managing certain "universal wastes" including batteries, mercury containing equipment and lamps.	The substantive federal requirements that are not part of Pennsylvania's authorized State RCRA program shall be implemented in the event that OU1 activities involve handling universal waste.
b. Pennsylvania regulations governing Hazardous Waste Management	25 Pa. Code Chapters 261a (incorporating 40 CFR 261 except as expressly provided)	Applicable	Defines criteria for determining whether a solid waste is regulated as a hazardous waste.	In the event that materials generated from the OU1 activities are determined to be hazardous waste, the substantive requirements of the State regulations will be met, for those regulations EPA has authorized Pennsylvania to implement pursuant to 40 CFR Part 271.
	Chapter 264a Owners and Operators of Haz. Waste TSD Facilities;	Applicable	Identifies requirements for management of certain hazardous waste in containers, for safe management.	Substantive requirements apply; no permit applications will be submitted.

Requirement	Citation	Status	Synopsis	Comment
	•Subchapter I. Use and Management of Containers 25 Pa. Code §264a. 173			
	25 Pa. Code Chapter 266: Universal Waste Management (Incorporating 40 CFR Part 273 except as expressly provided)	Applicable	Universal wastes, including lamps (if hazardous waste under 40 CFR Part 261) and "oil based finishes," are subject to specific waste management and handling requirements.	In the event that the specified universal wastes are identified at the Site and require disposal, the substantive requirements will apply.
Pennsylvania regulations governing Residual Waste Management	25 Pa. Code Chapter 287: §287.1 Definitions; §287.2 Scope	Applicable	Provides requirements for persons who generate, manage or handle residual waste, and specifies that certain residual wastes (including construction/demolition debris, waste from grubbing and excavation and friable asbestos containing waste) shall be regulated as municipal waste (Article VIII) rather than as a residual waste.	In the event that material from the OU1 activities meets the definition of "residual waste," the substantive requirements of this regulation would apply.
Pennsylvania regulations governing Municipal Waste Management (Article VIII) – Chapter 285	Subchapter A – Storage of Municipal Waste 25 Pa. Code Chapter 285	Applicable	Specifies requirements for persons who store municipal waste	The substantive requirements of this regulation will apply for material that meets the definition of municipal waste, or is otherwise subject to Article VIII pursuant to 25 Pa. Code Chapter 287.
Pennsylvania Standards for Contamination for Fugitive Particulate Matter	25 Pa. Code §123.2	Applicable	Prohibits release of visible fugitive particulate matter from outside the property.	Applicable during demolition activities.
Pennsylvania Clean Streams Law	Erosion and Sediment Control 25 Pa. Code §102.4(b)	Applicable	Requires erosion and sediment control for non-agricultural earth disturbance activities.	Substantive portions of this ARAR will be complied with during the OU-1 remedial action.