



US Army Corps
of Engineers®
New England District

FUSRAP Fact Sheet

Facts About the Combustion Engineering Facility, Windsor, Connecticut

December 2001

U.S. Army Corps of Engineers • New England District

Introduction

In 1974, the U.S. Atomic Energy Commission, a predecessor to the U.S. Department of Energy, began the Formerly Utilized Sites Remedial Action Program (FUSRAP). FUSRAP is a government program that was created to address residual radioactive materials above certain guidelines at a number of sites throughout the United States. The U.S. Army Corps of Engineers is responsible for FUSRAP. The Combustion Engineering site, discussed in this fact sheet, is one of the 46 sites nationwide that will be addressed through FUSRAP.

This fact sheet provides an update of FUSRAP activities at the Combustion Engineering site. It is the third in a series of fact sheets. Fact sheets will continue to be developed for the site to update the public on the progress of site cleanup.

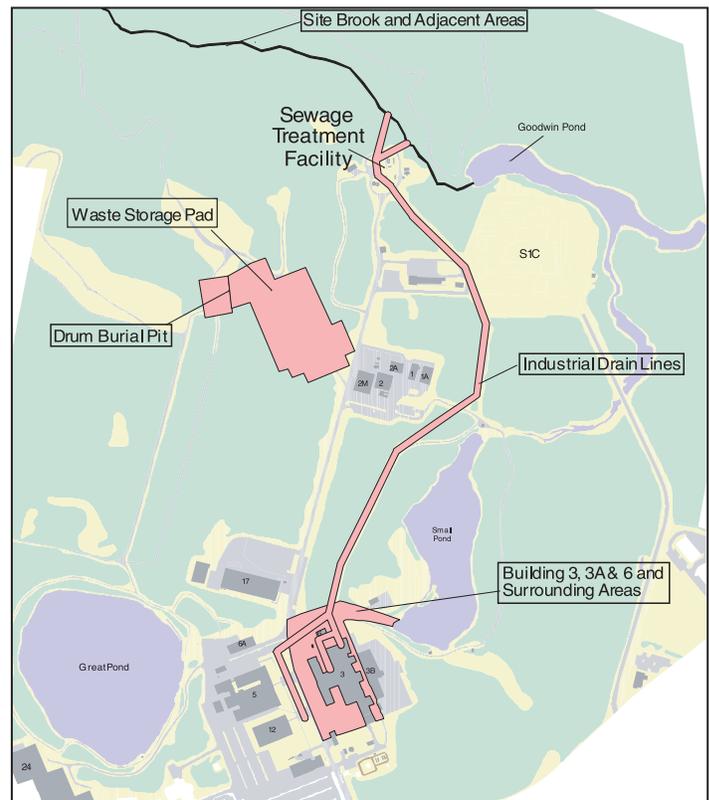
History

Six areas at the Combustion Engineering site are included in the FUSRAP cleanup program. These areas, shown on the adjacent figure, include:

- Buildings 3, 3A, and 6, and the soil around these buildings
- Waste Storage Pad
- Drum Burial Pit
- Site Brook and adjacent areas
- Industrial Drain Lines leading from Buildings 3 and 6 to Site Brook.

Beginning in 1998, the U.S. Army Corps of Engineers began a series of investigations to gather the necessary data to develop and evaluate cleanup alternatives for FUSRAP areas at the Combustion Engineering site:

- The first investigation consisted of a field survey to determine the relative levels of surface radioactivity at the site. This investigation showed that radioactivity was found at the surface of each FUSRAP area.
- The second investigation, also completed in 1998, included a survey of the interior and roof of Buildings 3 and 3A to identify areas of radioactivity. This investigation showed that radiochemicals were present mostly at the north end of Building 3, and mostly on exposed surfaces. This investigation also showed radiochemicals in the drain lines leading from the buildings, but no evidence of radiochemicals at Building 3A.



FUSRAP Locations on CE Facility.

- In 2000, a third investigation was completed to investigate and characterize the remaining FUSRAP areas. This investigation is called the “FUSRAP Characterization,” and is the subject of this fact sheet.

FUSRAP Characterization

The objectives of the FUSRAP characterization completed in 2000 were to:

- Identify where (for example, how wide and how deep) radiochemicals exist at FUSRAP areas,
- Identify if other chemicals are present together with radiochemicals at the FUSRAP areas, and
- Identify how much of the chemicals were present at the FUSRAP areas.

For each of the FUSRAP areas, the field activities completed to accomplish these goals consisted of one or more of the following:

Electromagnetic and Ground Penetrating Radar Survey – This survey was used to define the perimeter and depth of buried materials or utility lines.

Gamma Walkover Survey – This survey was completed to identify areas of elevated radioactivity on the ground surface. This survey was a supplement to the one completed in 1998.

Soil and Sediment Sampling – Samples of soil and sediment were taken and submitted for laboratory analysis. The results were used to identify where and how much radiochemicals are present within the FUSRAP areas.



Photograph showing soil sample locations (blue flags) and monitoring well.

Groundwater Sampling – Samples of groundwater were collected from monitoring wells that already exist at the site. These data, again, were used to identify if radiochemicals are in groundwater within the FUSRAP areas.

Surface Water Sampling – Samples of water in Site Brook were taken and submitted for laboratory analysis. The results were used to identify if radiochemicals are present in the Brook.



Surface water sample locations (orange flag) in Site Brook.

The results of these field activities are summarized in the box below.

<i>Field Activity</i>	<i>Results</i>
Electromagnetic and Ground Penetrating Radar Survey	<ul style="list-style-type: none"> ■ The location and depth of buried utilities were confirmed ■ Buried materials were identified at the drum burial pit
Gama Walkover Survey	<ul style="list-style-type: none"> ■ Elevated radioactivity was found at the ground surface of FUSRAP areas
Soil and Sediment	<ul style="list-style-type: none"> ■ Radiochemicals were found in soil and sediment from FUSRAP areas
Groundwater Sampling	<ul style="list-style-type: none"> ■ Radiochemicals were not found in groundwater
Surface Water Sampling	<ul style="list-style-type: none"> ■ Radiochemicals were not found in Site Brook

Building 6 was also evaluated during the FUSRAP characterization. Several types of samples were collected in this building to evaluate if radiochemicals are present:

- The interior surfaces (for example, floors, vents, tanks, piping, and support beams) were screened with detectors able to identify alpha and beta particles. If these particles were detected, this was an indicator that the potential for radioactivity exists. Therefore, in the areas where the detector identified alpha and beta particles, a sample of the affected interior surface was collected. These samples were used to evaluate the actual level of radiochemicals present.
- Concrete chips were collected from the floor and walls where the detector identified alpha and beta particles. Also, a tool was used to bore through the concrete floor and collect a sample of soil lying directly beneath the floor.



Technician collecting paint samples from exterior of a tank in Building 6.

- Roofing material was sampled where the detector identified alpha or beta within the roofing tar.
- The contents of several sumps and tanks located in the building were sampled to evaluate the presence of radiochemicals.

The results of the Building 6 characterization show that, in general, the building has been affected by radiochemicals.

Glossary of Terms

Alpha Particle:

A large and slowly moving atomic particle, which can travel only a few inches through air, and can be stopped by a sheet of paper or the outer layers of skin.

Beta Particle:

An atomic particle that is smaller and faster than an alpha particle, but can only travel about 10 feet through air; a thin shield (such as a sheet of aluminum) can easily stop these particles.

FUSRAP:

The Formerly Used Sites Remedial Action Program. This program was initiated in 1974 to identify, investigate, and clean up or control sites throughout the U.S. that became contaminated as a result of the Nation's early (the 1940s - 1960s) atomic energy program.

Gamma Radiation:

Radiation via gamma rays, which are a type of electromagnetic wave (like an X ray), that moves at the speed of light. A thick shield of lead, steel, or concrete can stop these rays.

Radioactivity:

A process in which the nucleus of an atom spontaneously disintegrates or "decays" and energy is released. The rate of decay is called the "activity."

Radionuclide:

A radioactive element characterized according to its atomic mass and atomic number, which can be artificial or naturally occurring.

For More Information:

*For further information
about the FUSRAP
activities at the
Combustion
Engineering site,
please contact:*

Mr. Bud Taylor

Project Manager
U.S. Army Corps of Engineers
(978) 318-8084

Mr. Larry Rosenberg

Chief of Public Affairs
U.S. Army Corps of Engineers
(978) 318-8657



U.S. Army Corps of Engineers, New England District
Attn: Public Affairs Office
696 Virginia Road
Concord, MA 01742-2751