# Granite City, Illinois, Site

U.S. DEPARTMENT OF ENERGY | Legacy Management

## SITE CERTIFICATION SUMMARY

This Site Certification Summary provides information about the **Granite City, Illinois, Site**. The U.S. Department of Energy Office of Legacy Management is responsible for long-term stewardship of the site under the **Formerly Utilized Sites Remedial Action Program**.

## Site Description and History

The Granite City, Illinois, Site (formerly known as Granite City Steel) is located at 1417 State Street, about 10 miles northeast of St. Louis, Missouri. The U.S. Department of Energy (DOE) remediated the Betatron Building (also known as the Old Betatron Building), a two-story concrete and metal structure with a tar roof. An abandoned railroad spur enters from the north end of the building; passes through a high bay area; and then enters a large, open room at the south end of the building, called the betatron room. From 1958 to 1966, General Steel Castings Corporation, under purchase orders from U.S. Atomic Energy Commission contractor Mallinckrodt Chemical Works, x-rayed uranium-238 ingots in the Betatron Building to detect metallurgical flaws. In 1986, National Steel Corporation built a concrete-bermed area in the Betatron Building to store electrical transformers.

## Site Remediation Timeline

**1989** — Oak Ridge National Laboratory (ORNL) conducted radiological surveys, on behalf of DOE, to determine radiological conditions in and around the Betatron Building.

**1991** — ORNL surveyed a second Betatron Building (referred to as the New Betatron Building) but found no contamination.

**September 1992** — The Granite City site was designated for remedial action under the Formerly Utilized Sites Remedial Action Program (FUSRAP).

**June 7 to 11, 1993** — DOE remediated the Betatron Building.

**June 7, 1994** — DOE certified that the property complied with applicable DOE standards and criteria developed to protect health, safety, and the environment.

**June 14, 1994** — DOE published a notice of certification for the Granite City site in the Federal Register.

## Certification Docket Contents

The Certification Docket documents the successful decontamination of radioactively contaminated areas in the interior of the Betatron Building at the Granite City site in June 1993. The docket includes documents supporting DOE certification that conditions at the Betatron Building comply with applicable radiological guidelines and standards. In addition, the certification docket provides documents certifying that unrestricted use of the property will not result in any measurable radiological hazard to the general public as a result of the past activities of DOE or its predecessor agencies.

## Remedial Action

DOE performed remedial activities at the Granite City site June 7-11, 1993, as part of FUSRAP. See the Fact Sheet for details.

FUSRAP objectives for the site were to:

- Identify and assess all sites formerly used in support of early Manhattan Engineer District and the U.S. Atomic Energy Commission nuclear work to determine whether further decontamination or control is needed.
- Decontaminate or apply controls to these sites to achieve compliance with current applicable guidelines.
- Dispose of or stabilize all generated residues in an environmentally acceptable manner.
- Accomplish all work in accordance with appropriate landowner agreements and local and state environmental and land use requirements to the extent permitted by federal law and applicable DOE orders, regulations, standards, policies, and procedures.
- Certify, at the completion of the remedial action, that the radiological and/or chemical conditions of the sites comply with applicable guidelines and that the sites may be released without restriction for appropriate future use.

## Post-Remediation Sampling

Areas in the Betatron building that required remediation included an industrial vacuum cleaner and its contents, building surfaces near the vacuum cleaner, the ventilation duct above the vacuum cleaner, and a few localized spots on the first floor. Following decontamination of these areas, the radiological support subcontractor performed post-remedial action surveys to determine whether the removal action was complete. Measured exposure rates ranged from 8.2 to 9.0 micro roentgen per hour (µR/h), including background (which averaged 7.4 µR/h). These exposure rates were well below DOE exposure rate criteria for habitable structures and buildings (20 µR/h above background).

After remediation, two areas were surveyed for direct and transferable contamination. In the area along the railroad tracks, direct surface contamination ranged from 23 to 54 disintegrations per minute (dpm)/100 square centimeters ($cm^2$) for alpha and from 624 to 4,935 dpm/100 $cm^2$ for beta-gamma. These measurements were below the guideline of 5,000 dpm/100 $cm^2$ for average direct surface contamination. Transferable contamination concentrations ranged from 3 to 7 dpm/100 $cm^2$ for alpha and from 50 to 102 dpm/100 $cm^2$ for beta-gamma. These measurements were below the guideline of 1,000 dpm/100 $cm^2$. The second surveyed area was the former site of the industrial vacuum cleaner, which had been removed during remediation. In this area, direct measurements ranged from 15 to 223 dpm/100 $cm^2$ for alpha and from 416 to 3,270 dpm/100 $cm^2$ for beta-gamma. Transferable contamination concentrations ranged from 3 to 16 dpm/100 $cm^2$ for alpha and from 50 to 106 dpm/100 $cm^2$ for beta-gamma. Both direct and transferable measurements were below applicable guidelines.

For a detailed map of the site and sampling locations, see the Site Overview Map on page 3.

## Current Site Conditions

Post-remedial action survey results indicate that the decontamination of the Betatron Building was effective and that residual contamination at the site is now below DOE release criteria as specified in DOE Order 5400.5. The Granite City site was released for unrestricted use. DOE has been responsible for long-term stewardship of the Granite City site since 1994. The stewardship requirements and protocols are captured in the FUSRAP Long-Term Surveillance and Maintenance Plan, which is available on the DOE Office of Legacy Management website (www.energy.gov/lm/granite-city-illinois-site).

No Data Summary Worksheet exists for the Granite City site. No data tables were included in the site's Certification Docket or Post-Remedial Action Report.

## ADDITIONAL INFORMATION

**Documents related to FUSRAP activities at the Granite City, Illinois, Site are available on the LM website at lmpublicsearch.lm.doe.gov/SitePages/default.aspx?sitename=Granite_City.**

For other information on site history or current long-term stewardship activities, please contact us at:

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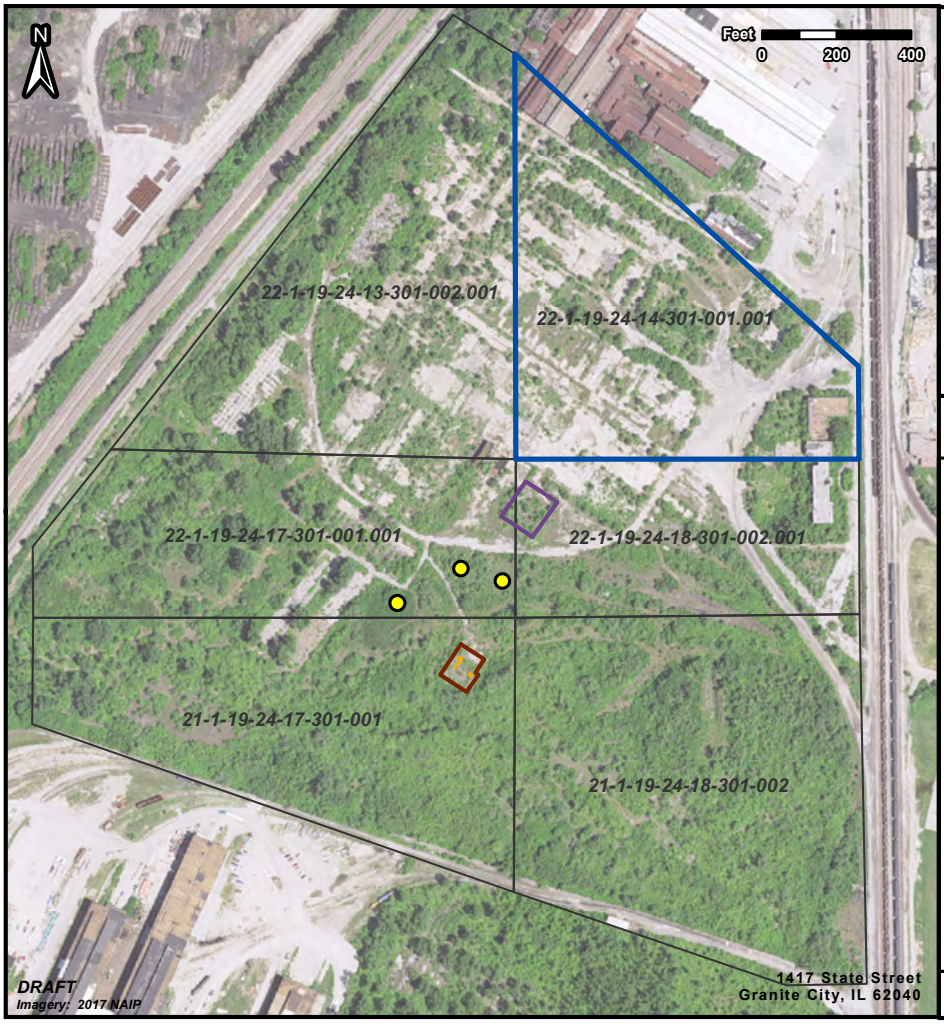
# Granite City, Illinois, Site Map





U.S. DEPARTMENT OF ENERGY
OFFICE OF LEGACY MANAGEMENT

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## Granite City, IL, Site

- Background Measurements
- Areas of Contamination
- New Betatron Building
- FUSRAP Boundary *(per Federal Register)*
- Original Site Boundary *(Old Betatron Building)*

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| DATE PREPARED: | FILE NAME: |
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| March 27, 2019 | GRC_DELIVERABLE |

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