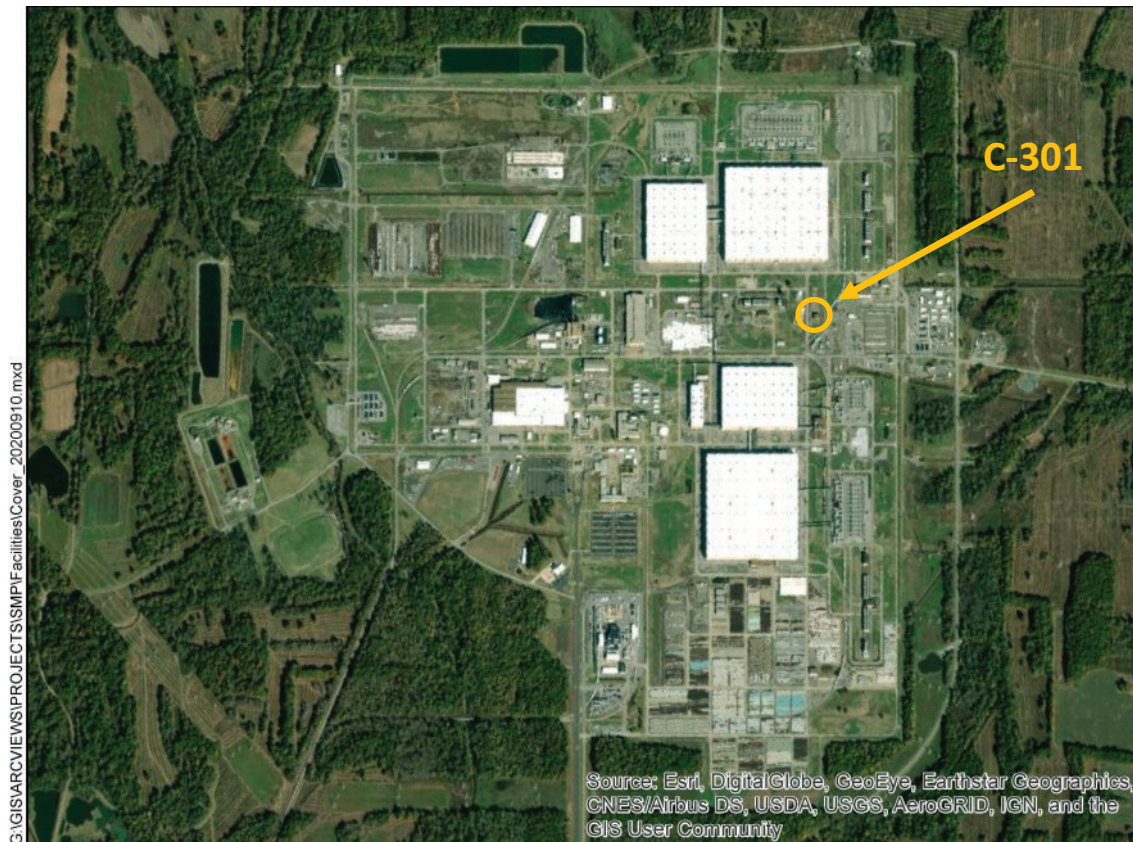




C-301 Former Fire Training Building



Facility Overview Briefing

November 9, 2021

Reflects consultation with EPA and Kentucky in accordance with the Site Management Plan that occurred on October 25, 2021, and includes incorporation of comments from those discussions.

Purpose

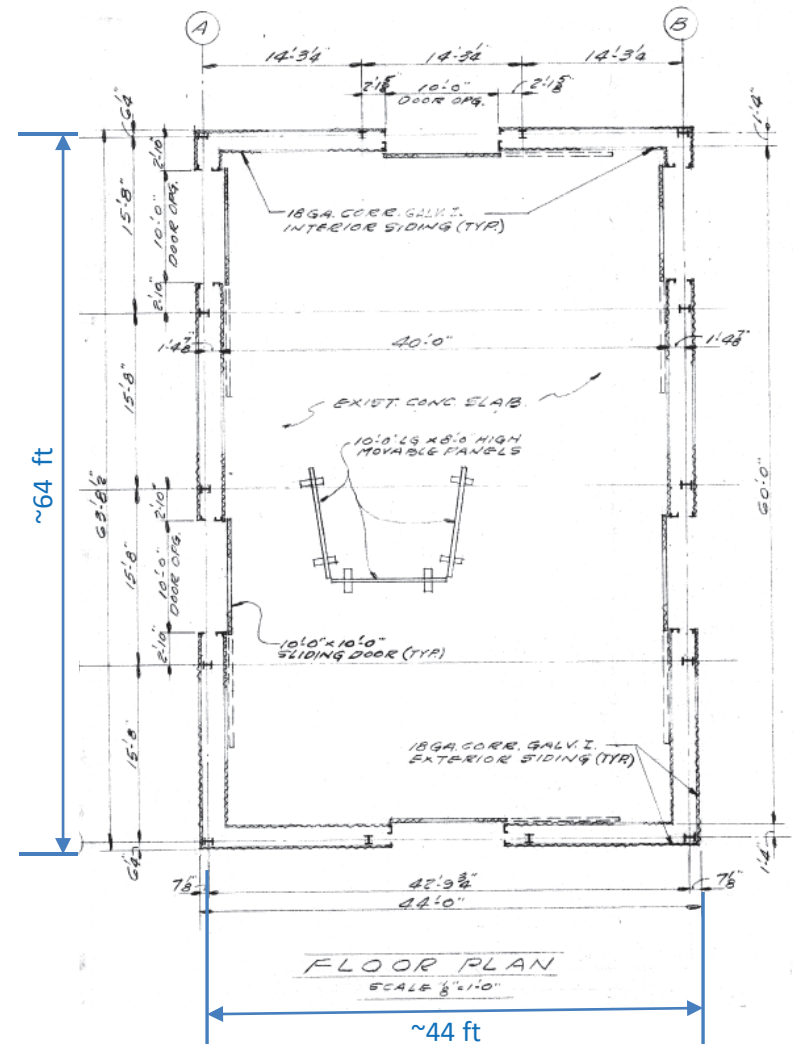
- The C-301 Former Fire Training Building is a candidate for future demolition and disposal, contingent upon funding priorities.
- Listed in Appendix 6 of the Site Management Plan (SMP); requires consultation with EPA and Kentucky for CERCLA screening prior to demolition.
- This presentation is intended to serve as consultation, providing the basis for demolition and disposal of the aboveground structure outside of the FFA/CERCLA process.
- DOE Material Storage Area (DMSA)-OS-12, which includes the entire footprint of C-301 Building (and surrounding pad), is designated as solid waste management unit (SWMU) 223 and has a completed SWMU Assessment Report (site evaluation report equivalent); it is currently assigned to the Soils and Slabs Operable Unit for further CERCLA evaluation under Appendix 4 of the SMP.



C-301 Fire Training Facility Photo: 8/2021 2

Construction History

- C-301 is located inside the Paducah Site security fence on the east central portion of the plant just west of the C-360 Building and south of the C-337 Building.
- The facility was constructed in 1959 of prefabricated metal with a steel frame on a concrete slab.
 - ❑ Entrance openings on all 4 sides
 - ❑ No roof
- A 1952 aerial photograph and DOE Reports (1993, 1995) suggest evidence that the C-301 facility was constructed on a location of previous facilities but details of those facilities are limited except general information that one was an instrument shop and the other could have been a sand blasting facility.
- The facility is approximately 2,816 ft².
 - ❑ Measuring ~ 64 ft x ~ 44 ft.



Floor Plan View: Excerpt from Engineering Drawing D-S-10301-A, Rev 2, dated June 1958

Operational History

- C-301 operated as a fire training facility from approximately 1959 to 1985.
 - ❑ Fire training practices including placing pans with oils to ignite fires that were then extinguished.
 - ❑ Reports indicated that the waste oils used for burning were potentially contaminated with radionuclides, PCBs, and/or solvents.
 - ❑ Aqueous film forming foam (AFFF) was historically used for similar fire training activities elsewhere in the plant and were likely used at this facility.
- Following cessation of fire training activities in 1985, the facility was used for trash sorting in 1988 and then for storage of excess electrical equipment, cooling tower materials, and low level waste, including but not limited to the following:
 - ❑ Solid waste/trash.
 - ❑ Drums of contaminated soils from cleanup activities.
 - ❑ Electrical motors, pumps, and gearboxes.
 - ❑ Transformers.
 - ❑ Scrap metal.
 - ❑ Large quantities of cooling tower wood.
 - ❑ Two G-17 valve subassemblies.
 - ❑ Other miscellaneous debris.
- The area was released by USEC to DOE in 1996 as a DMSA (DMSA-OS-012) and it was designated as SWMU 223.



Operational History

- From 2001 to 2004, DOE characterized the DMSA per an approved DMSA characterization Plan required by a 2003 Agreed Order (AO) between DOE and Kentucky Division of Waste Management (KDWM).
- A Final Inventory and Characterization Report was submitted in 2004 and approved by KDWM on July 28, 2005. Examples of waste types included the following:
 - ❑ Solid waste (e.g., rubber, fiberglass, scrap metal, wood).
 - ❑ Low Level Waste (e.g., carts, wood pallets, equipment).
 - ❑ RCRA hazardous waste (e.g., fuses, waste oil, batteries).
- All the DMSA materials (~10,733 ft³) were removed and properly disposed of in accordance with the AO.
- A RCRA closure was implemented/approved by KDWM in 2007 due to newly discovered hazardous waste (2 fuses).
- A revised SWMU Assessment Report (SAR) dated March of 2009 was approved by KDWM; the SWMU was assigned to the Soils Operable Unit (OU).
- Following DMSA closure of SWMU 223, the facility was temporary used for maintenance and staging activities for other on-going DMSA projects (e.g., metal size reduction within internal carport structures, packaging/staging for off-site waste shipments).
- In 2014, SWMU 223 was included in the Soils OU remedial investigation and subject to a radiological walkover survey and then assigned to the Soils and Slabs OU for further evaluation.



Interior view after completion of the DMSA removal



Outside view pad after completion of the DMSA removal

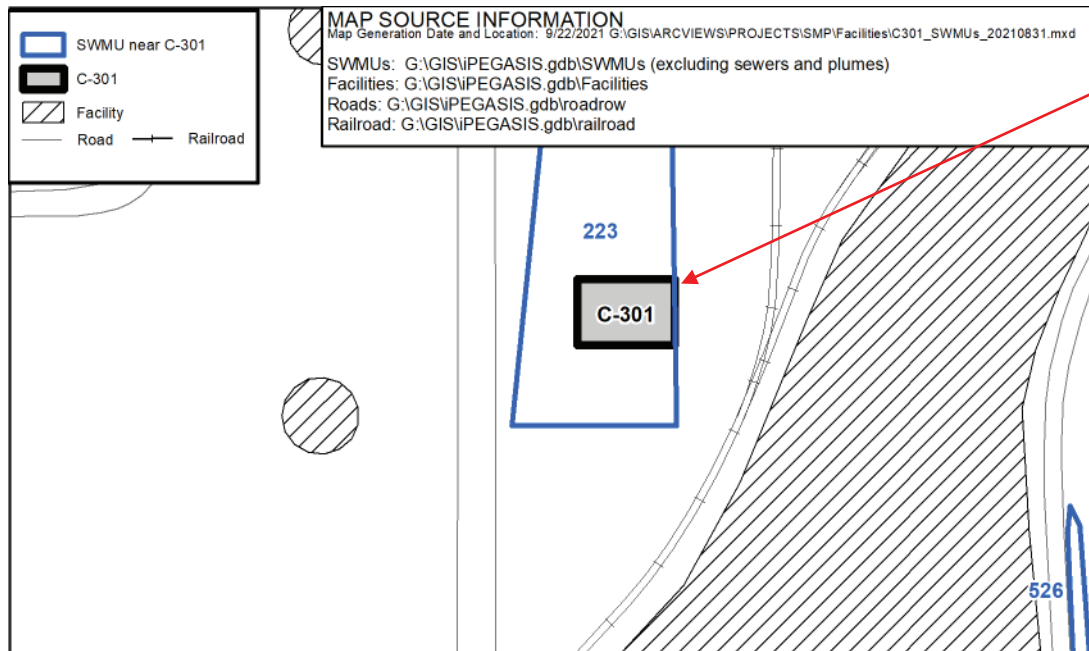
Current Status

- Walkdown inspections conducted in August and November of 2021 and employee interviews confirmed no unusual conditions associated with the facility structure.
 - ❑ Remains in shutdown status.
 - ❑ Empty except for 2 internal carports and lifting hoist.
 - ❑ No chemicals are currently stored at the facility.
 - ❑ No floor drains are depicted on engineering drawings and were confirmed as not being present during the visual walkdown inspections.
 - ❑ Previously reported cracks in the concrete pad (June 1993) were confirmed to be currently present both inside and outside during a November walkdown inspection.
 - ❑ No current generator staging areas (GSA) or satellite accumulation areas (SAA) are present but did temporarily exist during the characterization and cleanup of the DMSAs.
 - ❑ Both asbestos-containing materials (ACM) and lead-based paints are known to be present.
 - ❑ The building and pad has radiological postings associated with fixed contamination areas.



C-301 Facility Photos: 8/2021 & 11/2021

Environmental Impacts (Solid Waste Management Units)



- The C-301 Training Facility is within the footprint and part of SWMU 223.

SWMU No.	Facility Name	Current Status	NFA Approval By
223	DMSA-OS-12	Soils and Slabs OU	
526	Internal Plant Drainage Ditches (includes KPDES 016)	SWOU	

Environmental Impacts

- No information to indicate a release or threatened release of a hazardous substance that would require a CERCLA evaluation for a potential response action for demolition of the aboveground structure to protect future public health or welfare or the environment.
 - ❑ Building materials used for construction may contain lead-based paints or ACM.
 - ❑ Cutting activities to size-reduce contaminated scrap metal from other DMSAs was conducted in the building but small temporary carport structures were constructed inside the building to contain the cutting activities and particulates that could have been emitted.
 - ❑ Building debris generated from demolition of the aboveground structure can be properly managed using standard demolition and waste management practices.

- Materials used during past fire training exercises (waste oil burning, AFFF) and past storage/processing of waste both pose a potential threat of release to the slab, underlying soils, and surrounding soils.
 - ❑ The entire footprint of C-301 Building (and surrounding pad) is designated as SWMU 223 currently assigned to the Soils and Slabs Operable Unit for further CERCLA evaluation under Appendix 4 of the SMP.

Conclusion and Recommendations

- Walkdown inspection of the facility, employee interviews, and other reviewed historical information did not identify any unusual conditions that would pose a potential threat of environmental release during future demolition of the aboveground structure.
 - Deactivation will include removal of any accessible loose items being stored (to the extent practicable) prior to demolition.
 - Air emissions from cutting to downsize
 - Any floor drains (including cracks in the slab) will be delineated, documented, and isolated prior to demolition.

- Pending completion of deactivation and availability of funding, proceeding with demolition and disposal of the C-301 facility (aboveground structure) outside of the FFA/CERCLA process, contingent upon the fact that no additional changes have occurred that would affect the CERCLA determination of the facility prior to demolition, is recommended.

- All applicable laws, regulations, and DOE procedures/protocols will be followed to ensure the demolition and disposal of the aboveground structure occurs in a safe, compliant manner, including conducting any additional radiological characterization through confirmation radiological surveys (as necessary) to support demolition and waste disposition.

Conclusion and Recommendations

- As part of the demolition of the aboveground structure, the appropriate best management practices (BMPs) will be evaluated and implemented (as needed) to prevent/minimize the pooling and/or migration of storm water that may come into contact with any contamination that may exist on the pad/subsurface structure(s). For example, the following BMPs will be implemented as necessary:
 - ❑ Radiological surveying will occur following demolition.
 - ❑ Decontamination and/or application of fixatives and/or barriers to contaminated surfaces above regulatory posting limits.
 - ❑ Isolation measures and other types of barriers to minimize and/or control runoff/pooling of contaminated storm water [e.g., seal inlets to drains/sumps/subsurface structure(s)].

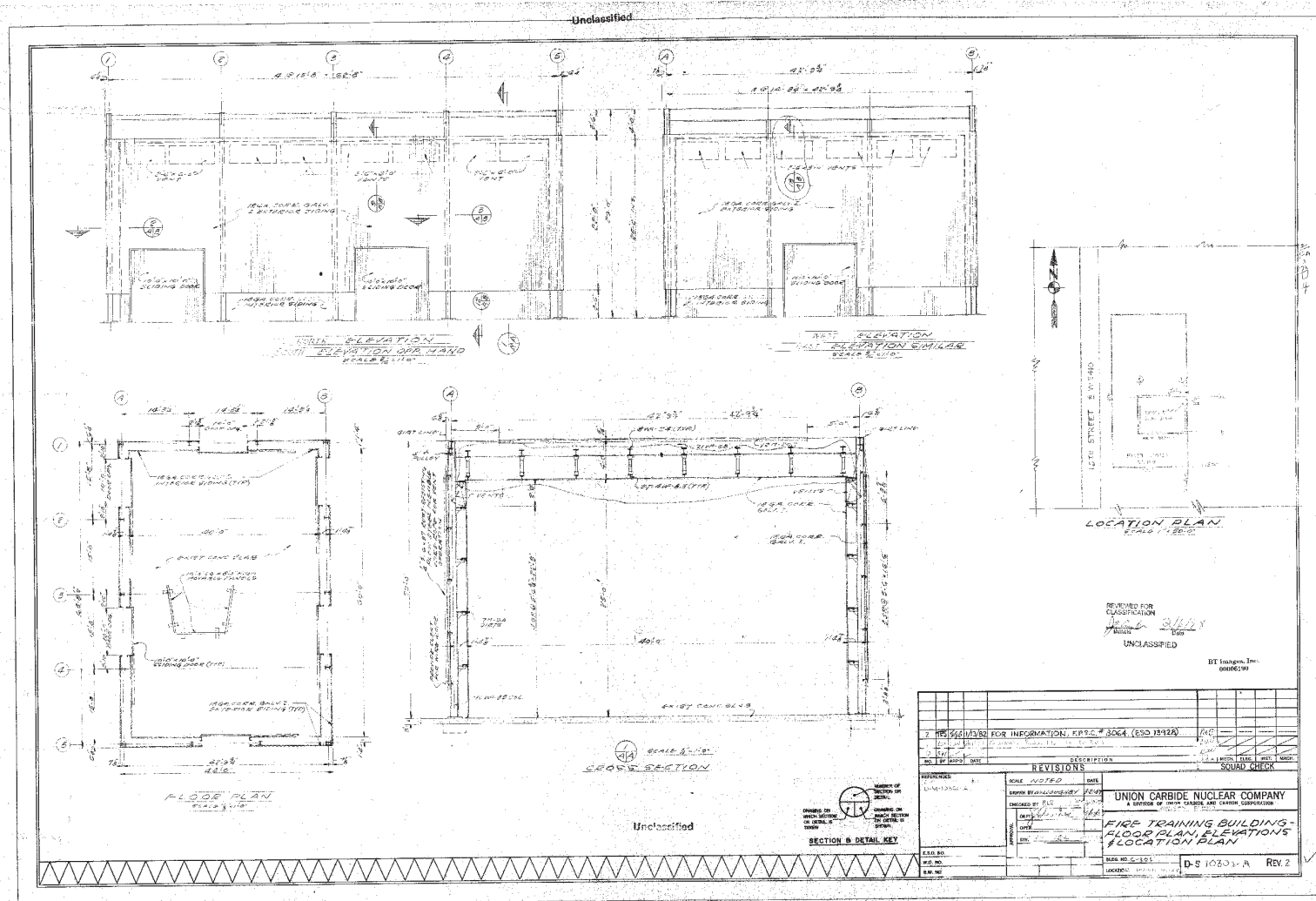
- Removal of the C-301 facility will be documented in the appropriate annual SMP revision.

- The future CERCLA evaluation of SWMU 223, including the C-301 slab and soils (and surrounding pad), will be conducted under the Soils and Slabs Operable Unit of Appendix 4 of the SMP.

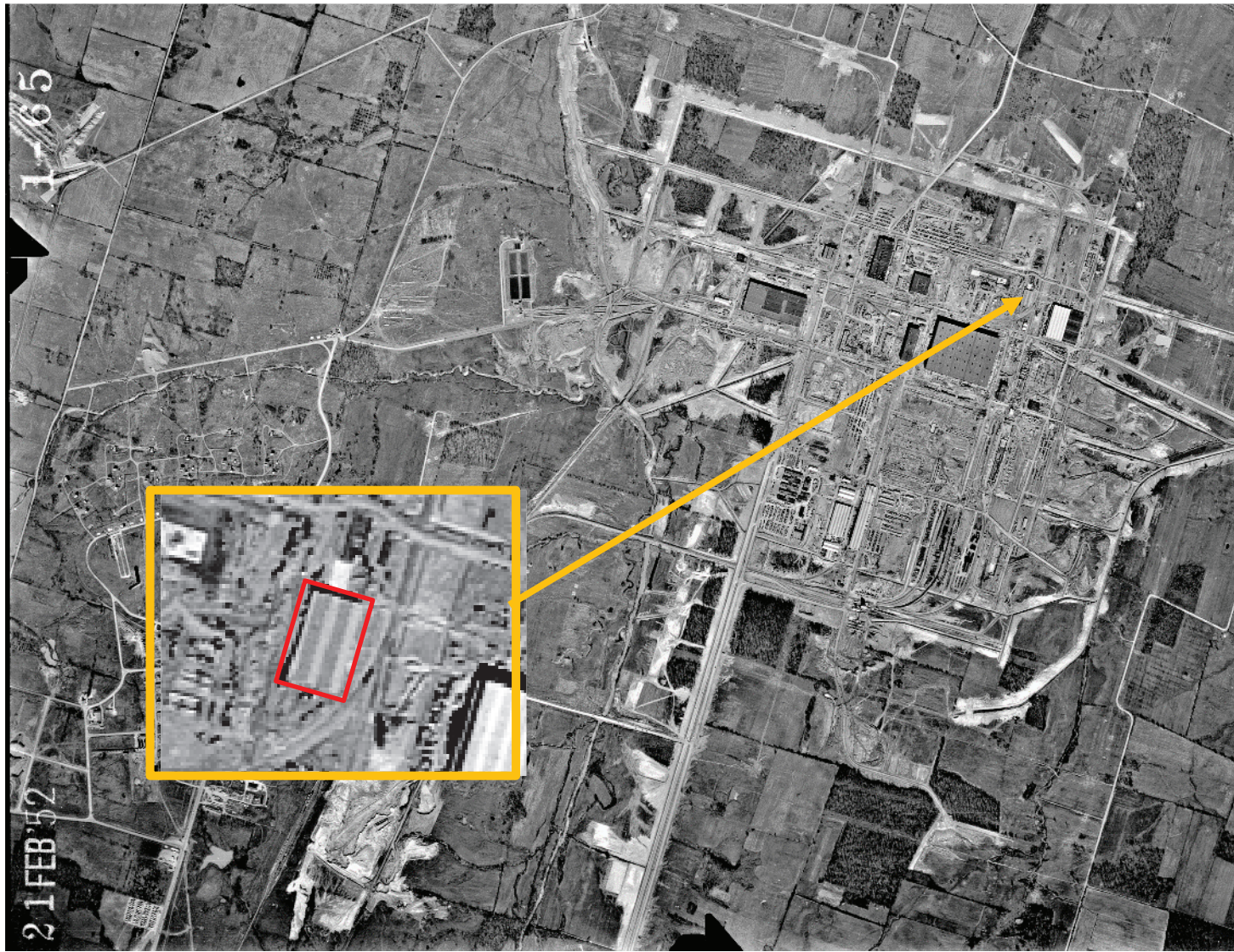
C-301 Fire Training Facility

BACKUP INFORMATION

C-301 Engineering Drawing



C-301 Aerial Photograph



Aerial photo of a possible structure in 1952 prior to construction of C-301 in 1959

C-301 Sources

- Engineering Drawings:
 - Provided in presentation
- Databases:
 - Issues Management System
 - Regulatory Compliance Archive Spill Log (pre-2018)
 - PCB Database (1989 – 2021)
 - Active GSAs and SAAs Master List
- Employee Interviews:
 - Fire Captain/Facility Manager (30 years plant expertise)
 - Compliance Subject Matter Expert (45 years plant expertise)
 - Engineering Subject Matter Expert (16 years plant expertise)
 - Plant RADCON Personnel (12 years plant expertise)
- Documents:
 - Report for Environmental Audit Supporting Transition of the Gaseous Diffusion Plants to the United States Enrichment Corporation, DOE/OR/1087&V4, June 1993
 - Northeast Plume Preliminary Characterization Summary Report, DOE/OR/07-1339 & D2, July 1995
 - Abridged Version of the Final Inventory/Characterization Report for OS-12 DMSA, BJC-PAD 624, March 18, 2004

C-301 Sources

- Paducah Gaseous Diffusion Plant Site Environmental Report for 2008, PRS-ENM-0045, Vol. I
- Paducah Gaseous Diffusion Plant Site Environmental Report for 2009, PRS-ENM-0053, Vol. I
- SWMU Assessment Report for SWMU 223, dated March 15, 2009, DOE/LX/07-0177&D1
- Soils Operable Unit Remedial Investigation 2 Report at the Paducah Gaseous Diffusion Plant, Paducah, Kentucky, March 2016, DOE/LX/07-2306&D2
- Paducah Gaseous Diffusion Plant Sitewide Strategy Facility Background Information, FPDP-RPT-0021, May 2016