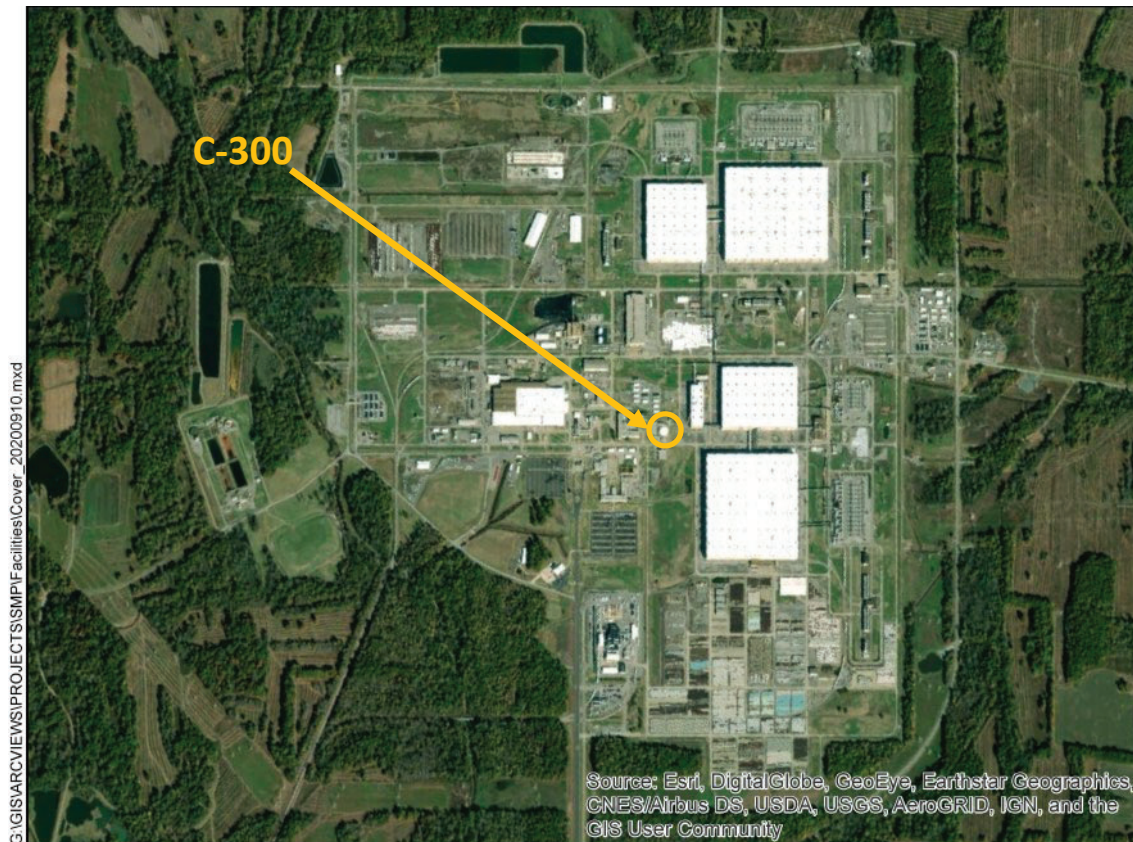


## C-300 Central Control Building



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-300 Central Control 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.
- The remaining slab/soils will be subject to a future CERCLA evaluation under Geographical Area (GA) 15.

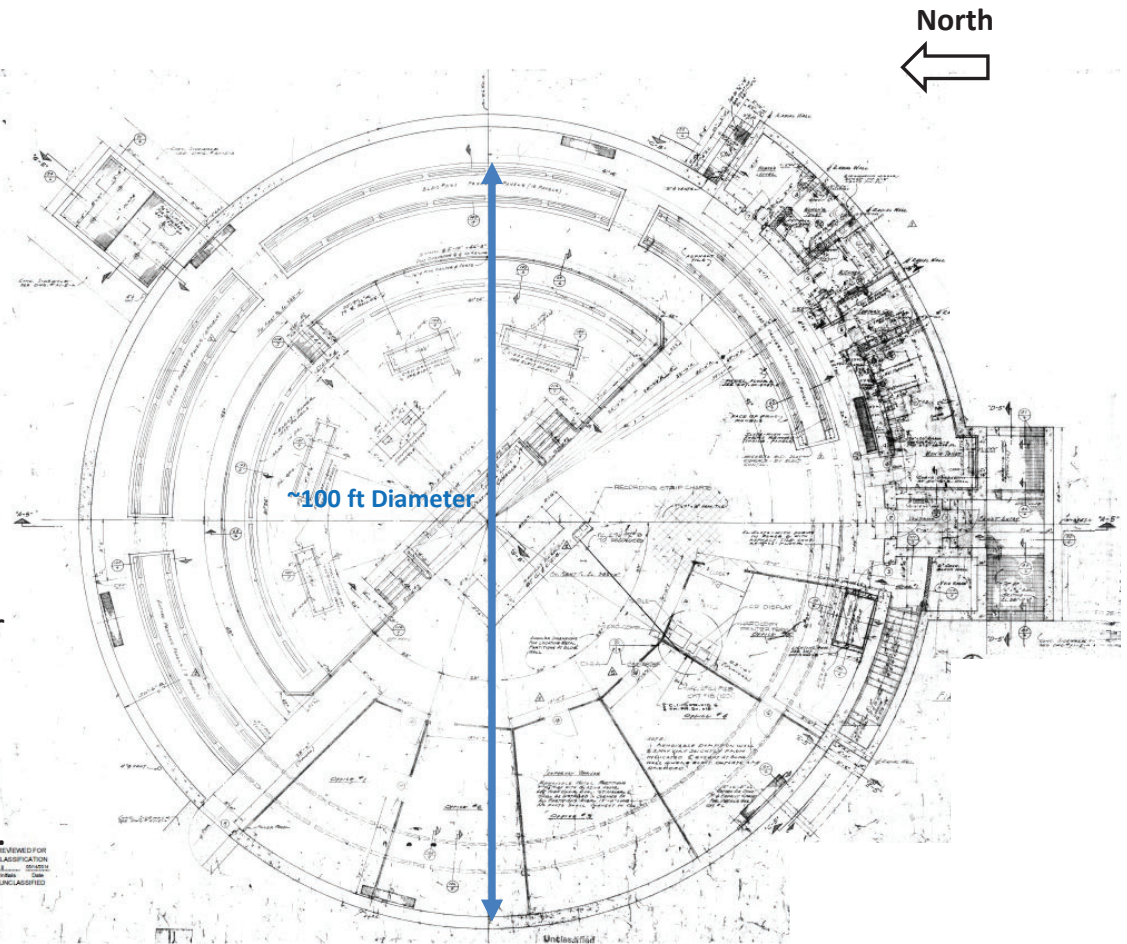


C-300 Building Photo: 9/2021



# Construction History

- C-300 is located within the Paducah Site security fence, west of the C-310 Purge and Product Building and east of the C-710 Technical Services Building.
- The facility was constructed in 1953 as a low, circular, reinforced-concrete structure with a dome-shaped roof with south, east, and west door entrances.
- It consists of a main ground level floor with an elliptical one-story wing on the south façade, and a basement level with a poured slab with estimated slab thickness of ~ 8 inches.
- The facility has a diameter of ~100 ft with a total area of approximately 16,022 ft<sup>2</sup> for both the main level and basement.

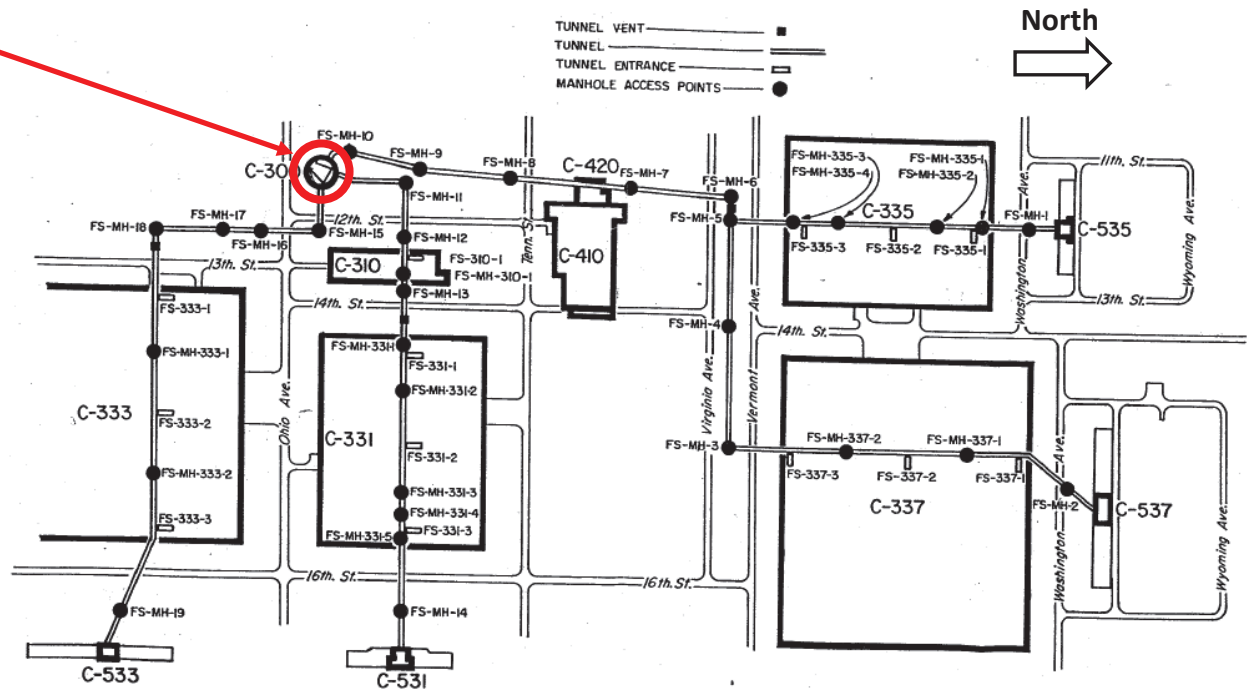


First Floor Plan View: Excerpt D1-3-A. dated 1953

# Construction History

➤ The C-300 basement has the following connecting tunnels.

- ❑ C-300-535 tunnel connects C-300 to the C-535 switchyard with a connection to C-335.
- ❑ C-300-537 tunnel connects C-300 to the C-537 switchyard with a connection to C-337.
- ❑ C-300-531 tunnel connects C-300 to the C-531 switchyard with connections to C-310 and C-331.
- ❑ C-300-533 tunnel connects C-300 to the C-533 switchyard with a connection to C-333.



**Tunnel Routing Plan**  
(KY/H-432, Rev. 1)

➤ The tunnels are constructed of concrete and serve to provide passageways for pedestrian traffic, raceways for equipment and instrumentation cables inside transite cable trays, and aided in monitoring power distribution for plant processes.

# Operational History

- C-300 has functioned as the central control facility from initial construction to present and monitors, coordinates, and controls critical plant processes, power distribution, utilities, communications, and plant alarm systems during normal and emergency operating conditions.
  - ❑ More than 10,000 miles of cable supply electronic information to C-300 about the plant's various process systems.
  - ❑ The connected tunnels provide the primary conduit for housing the cables.
- The main ground level floor houses the various administrative areas (e.g., offices, break rooms, bath rooms) and main instrumentation panels and controls to support plant monitoring and oversight.
- The basement area houses the electrical switchgear and emergency battery backup power.
- USEC leased the facility in the early 1990s and operated it as a central control facility until it was transitioned from USEC to DOE in 2014.



Central Control Room on Main Ground Level Floor



Emergency Operations Command Room



Basement Hallway looking East



# Current Status

- C-300 remains operational and continues to function as the central control facility to monitor and coordinate key plant operations.
- Walkdown inspection conducted in September 2021 and employee interviews confirmed no unusual conditions.
  - ❑ Lead-acid battery bank in the basement for emergency back-up power.
  - ❑ The bathrooms and kitchen gravity drain to the sanitary sewer system.
  - ❑ The basement has floor drains and sump pits that collect condensate overflow, footer water, and floor drain water which is discharged to the plant storm sewer via sump pumps.
  - ❑ Satellite accumulation areas (SAA) for collection and disposal of fluorescent light bulbs, batteries, aerosol cans, and fuses.
  - ❑ No chemicals are being stored except for normal janitorial supplies (e.g., cleaning products, wasp spray) stored in small quantities and in accordance with regulatory requirements and site procedures.
  - ❑ The only known chemical spills or releases that were identified include a leaking acid battery in 2019 which was immediately addressed and condensation/leaks from the chilled water associated with the HVAC system in the basement.
  - ❑ No radiological postings are present within the building but the adjacent tunnels do have some areas posted.

Lead-acid battery bank in basement for emergency back-up power (right)



SAA for fluorescent light bulb and batteries (left)



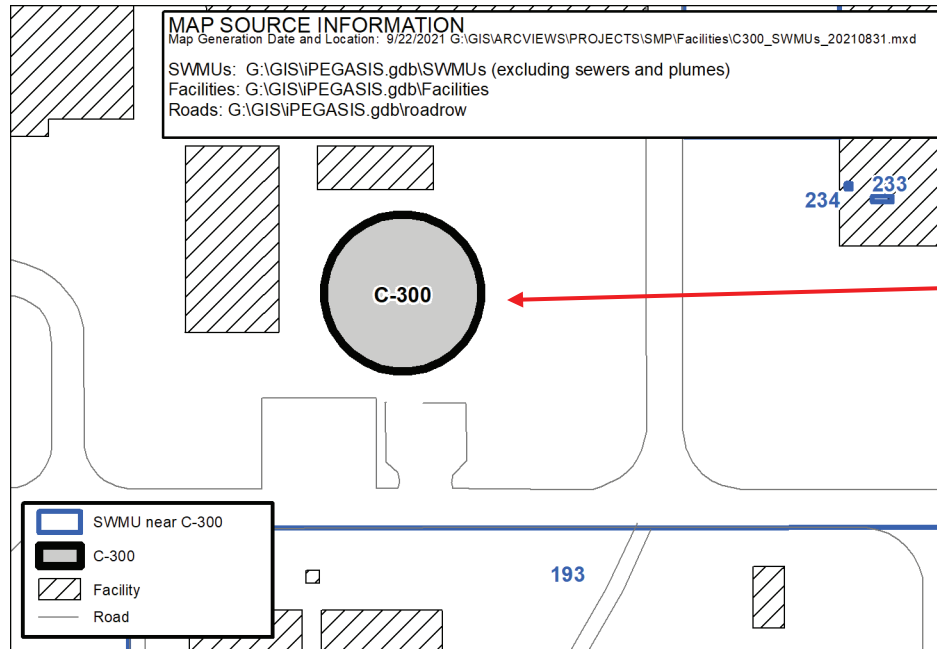
Sump pump/pit in the basement floor of the mechanical room (right)



Floor drain (left)



# Environmental Impacts (Solid Waste Management Units)



- The C-300 Facility is not designated as a SWMU/AOC.

SWMU No.	Facility Name	Current Status	NFA Approval By
193	McGraw Construction Facilities (Southside Cylinder Yards)	DUF6 Footprint Underlying Soils OU	
233	C-310-04 (DMSA)	NFA	KDWM 2/12/2010
234	C-310-05 (DMSA)	NFA	KDWM 2/24/2009

# 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.
  - ❑ C-300 was originally constructed and operated as the central control facility to monitor and coordinate key plant operations since its construction in 1953 to present.
  - ❑ C-300 is identified in the TSCA Compliance Agreement as potentially having impregnated PCBs in ventilation duct gaskets with concentrations exceeding 500 ppm.
    - Confirmed not to be leaking; gaskets can be evaluated for removal during deactivation prior to demolition.
  - ❑ Building materials used for construction contain lead-based paints and ACM, both of which can be effectively verified during a pre-demolition inspection and properly managed using standard demolition and waste management practices.
  - ❑ The building uses a chilled water system for cooling and humidity control that historically contained a chromium-based inhibitor but the use of that inhibitor was discontinued in the 1990s.
    - No spill records were located documenting any spills or releases that may of historically occurred prior to discontinuing the use of the chromium-based inhibitor, but any such spills or releases would have discharged to the plant storm sewer system (SWMU 102b) and through KPDES Outfall 009 (SWMU 62).
    - Some chromium contamination could exist within piping and on some concrete surfaces; however, these areas can be properly managed during the demolition process using standard waste management practices.



# 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.
  - ❑ Any floor drains will be delineated, documented, and isolated prior to demolition.
  - ❑ An evaluation will be made to determine if any measures may be appropriate to stabilize and/or isolate the basement (or portions thereof) from the main floor prior to demolition.
- Pending ceasing of operation, deactivation, and availability of funding, proceeding with demolition and disposal of the C-300 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

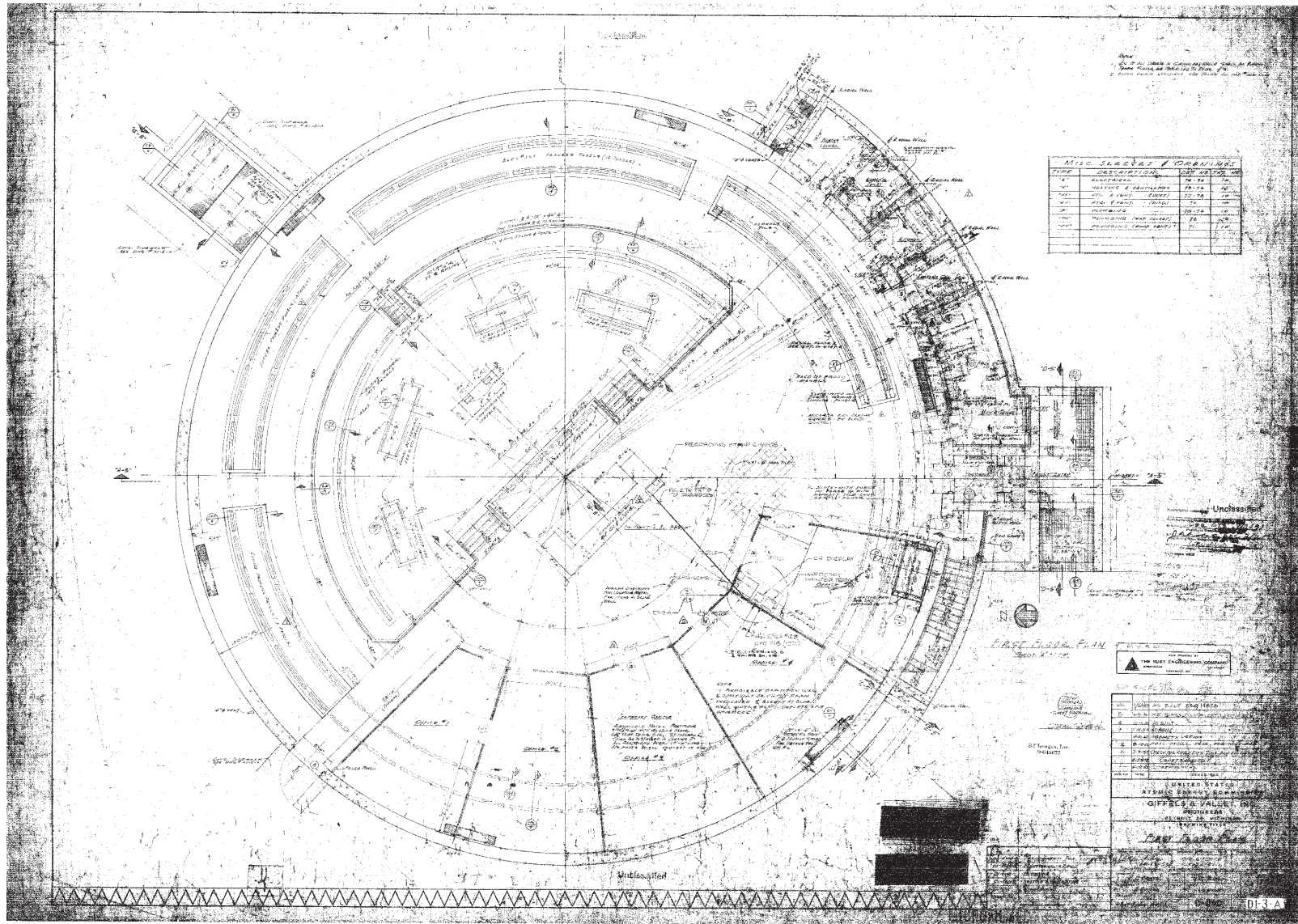
- As part of the demolition of the aboveground structure, the appropriate BMPs will be evaluated and implemented (as needed) to prevent/minimize the pooling and/or migration of storm water that may come into contact with any contamination that may exist on the pad/subsurface structure(s). For example, 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-300 facility will be documented in the appropriate annual SMP revision.
  
- The future evaluation conducted for GA 15 will further evaluate the potential threat of release associated with the slab/soils from the C-300 facility.

# C-300 Central Control Building

## BACKUP INFORMATION

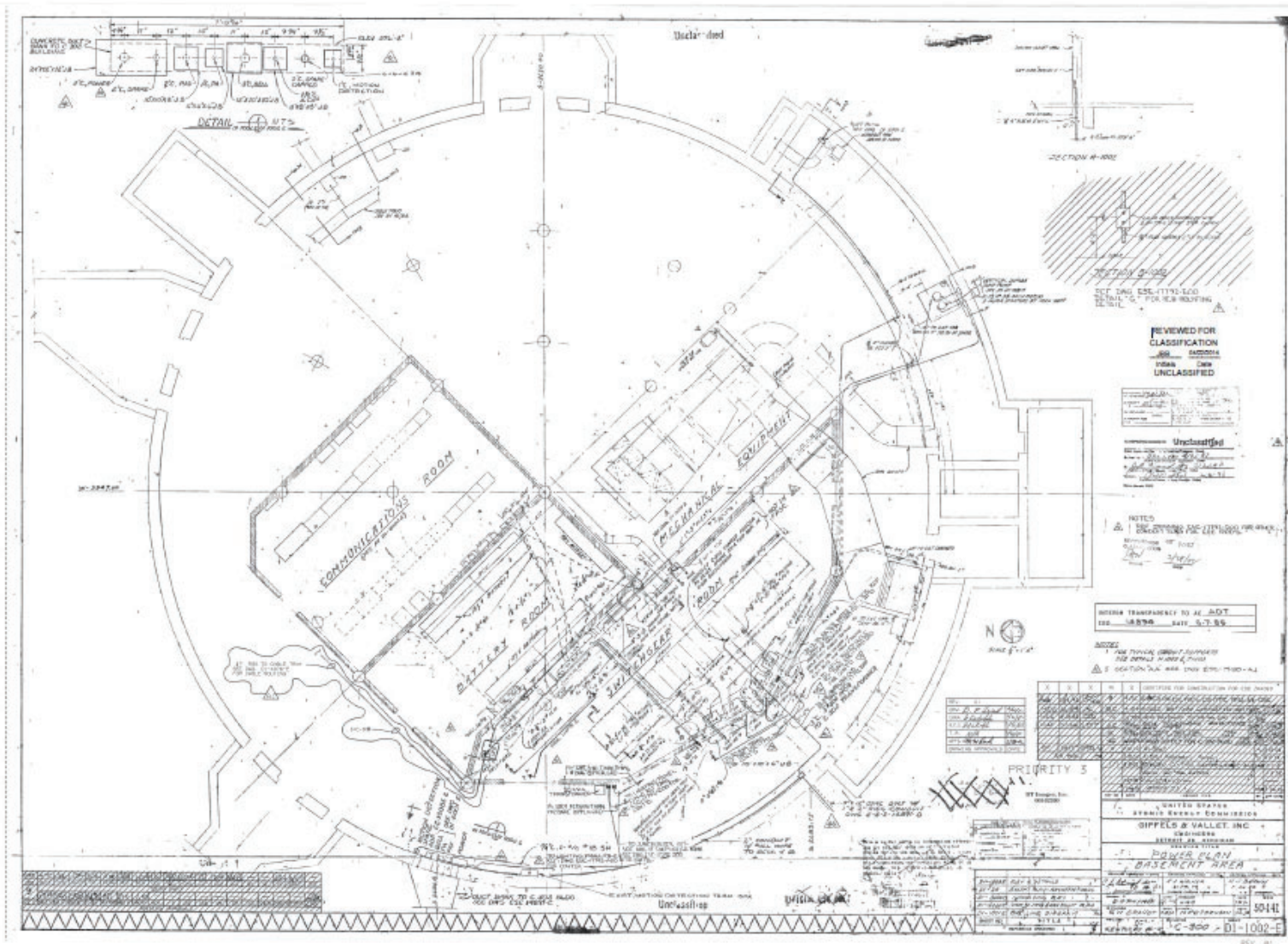


# C-300 Engineering Drawings

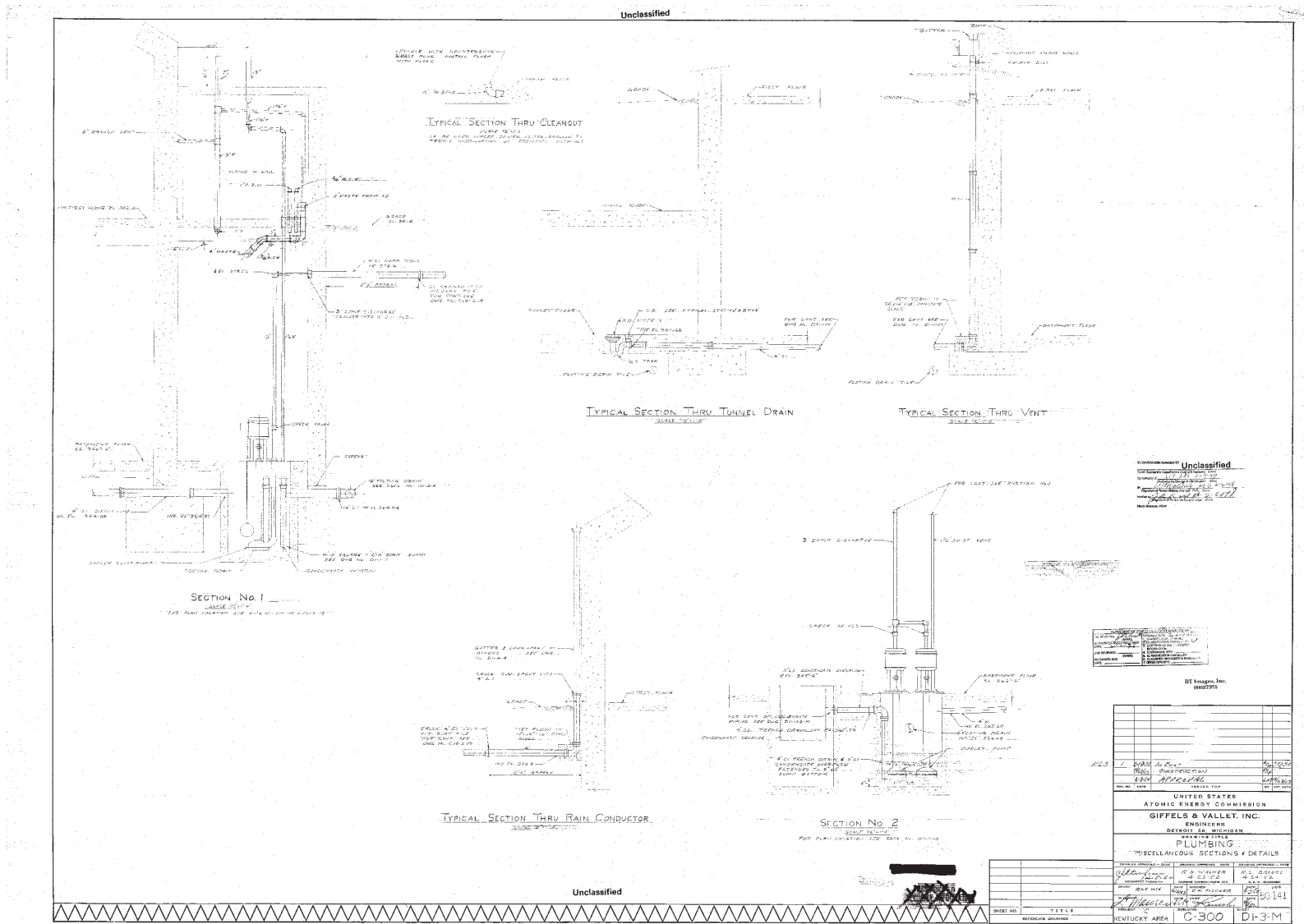


D1-3-A

# C-300 Engineering Drawings



# C-300 Engineering Drawings





# C-300 Sources

- Engineering Drawings:
  - Provided in presentation
- Databases:
  - USEC's BPS
  - Issues Management System
  - Regulatory Compliance Archive Spill Log (pre-2018)
  - PCB Database (1989 – 2021)
  - Active GSAs and SAAs Master List
  - Asbestos Walkdown (October 2020)
- Employee Interviews:
  - Plant Engineering Subject Matter Expert (16 years)
  - Plant Shift Superintendent (19 years plant expertise)
  - Power and Utilities Facility Manager (20 years plant expertise)
  - Utility Operations Subject Matter Expert (45 years plant expertise; operator/manager/supervisor)
  - Compliance Subject Matter Expert (45 years plant expertise)
  - RADCON Manager (12 years)
- Documents:
  - Paducah Gaseous Diffusion Plant Sitewide Strategy Facility Background Information, FPDP-RPT-0021, May 2016
  - Report for Environmental Audit Supporting Transition of the Gaseous Diffusion Plants to the United States Enrichment Corporation, DOE/OR/1087&V5, June 1993
  - Final TSCA FFCA Modification May 30, 2017