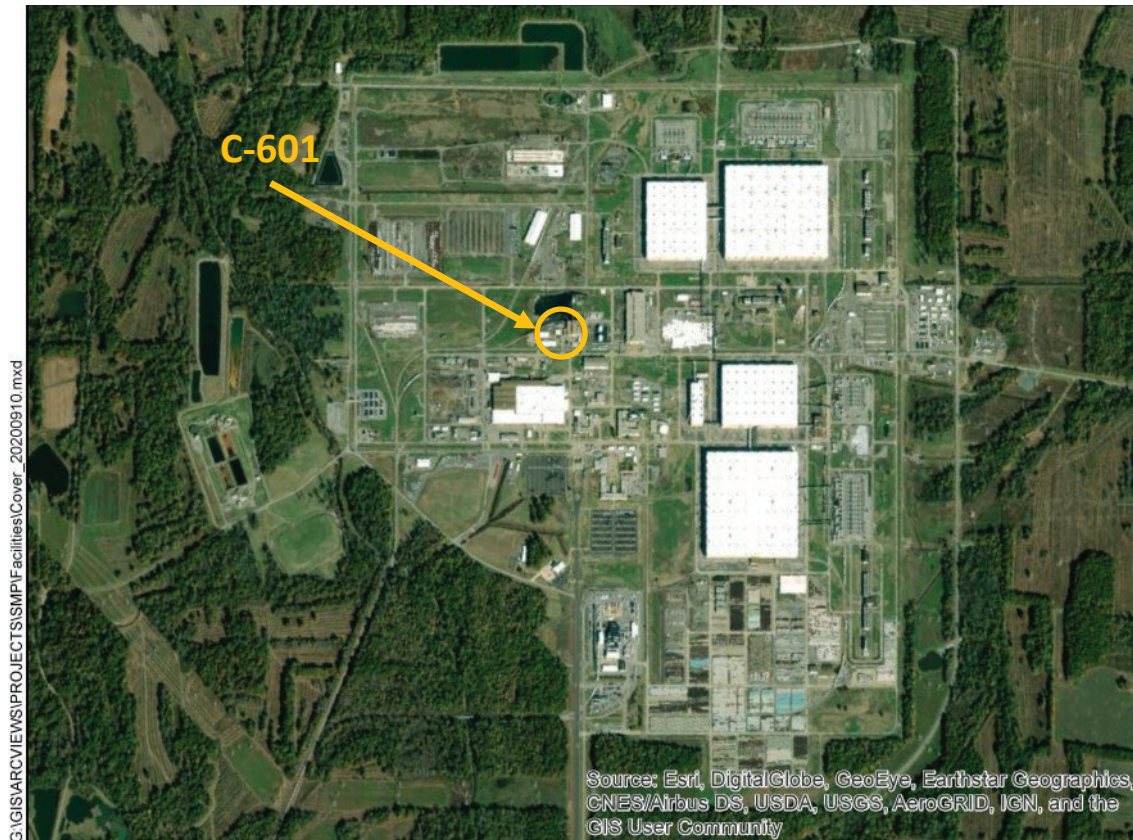


# C-601 Nitrogen Generator Building Addition



Facility Overview Briefing

March 24, 2021

Reflects consultation with EPA and Kentucky in accordance with the Site Management Plan that occurred on March 17, 2021, and includes incorporation of comments from those discussions

# Purpose

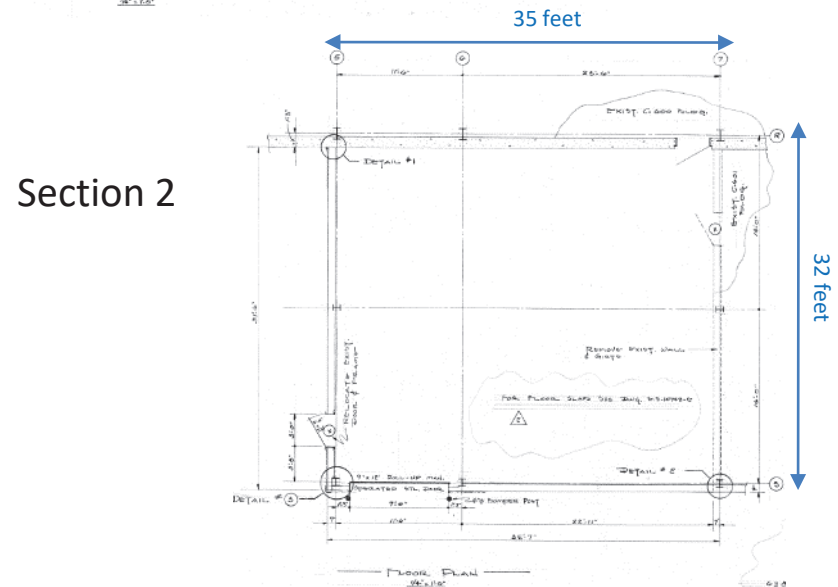
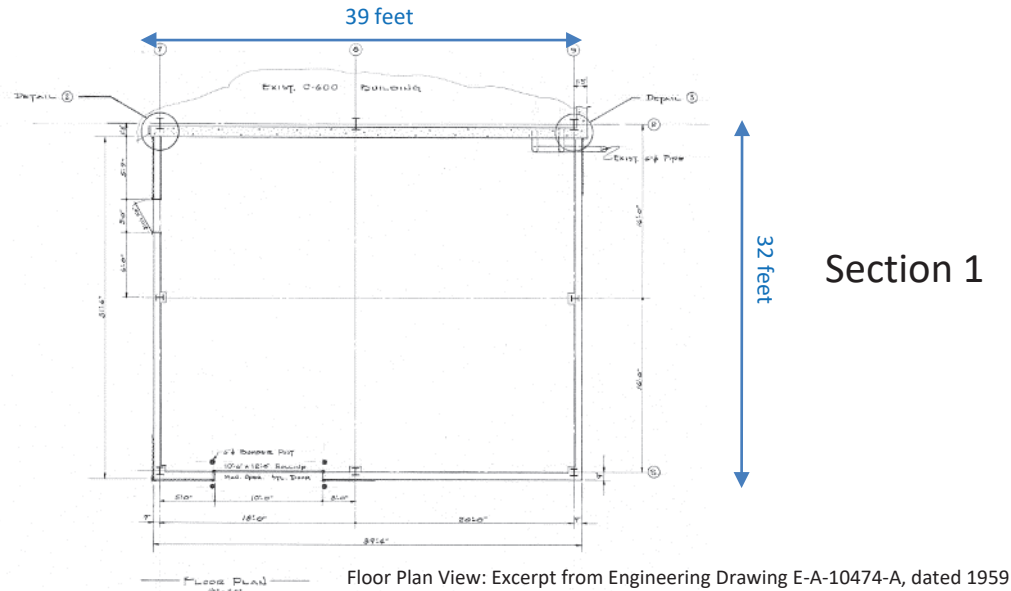
- The C-601 Nitrogen Generator Building Addition is a candidate for future demolition and disposal, contingent upon funding priorities.
- Listed in Appendix 6 of the Site Management Plan (SMP); requires consultation with EPA and Kentucky for CERCLA screening prior to demolition.
- This presentation is 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 future CERCLA evaluation under Geographical Area (GA) 12.



C-601 Facility Photo: 8/2020

# Construction History

- C-601 is located within the Paducah Site security fence, west of C-600.
- Construction began in 1959 (Section 1) and was finished in 1960 (Section 2).
- Construction consists of two joined sections (Sections 1 and 2) of structural steel and corrugated cement asbestos (transite) siding on a concrete foundation.
- Section 1 (1959) of the facility is approximately 1,248 ft<sup>2</sup>.
  - ❑ Measuring ~ 32ft x ~39 ft.
- Section 2 (1960) of the facility is approximately 1,120 ft<sup>2</sup>.
  - ❑ Measuring ~ 32ft x ~35 ft.



# Operational History

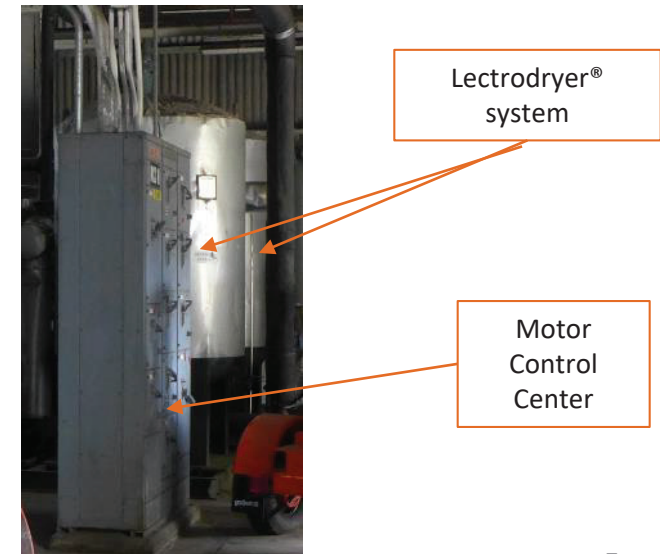
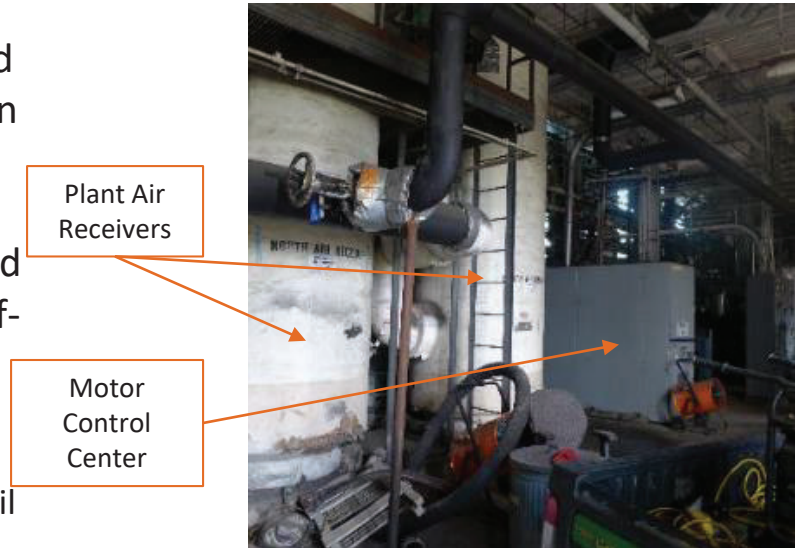
- C-601 operated as a support facility to supply liquid and gaseous nitrogen to the Paducah Site from 1960 to approximately 2007.
  - ❑ C-601 liquid nitrogen equipment consisted of a 5-stage compressor, sieve beds, a separation column, storage facilities, piping, and a cooling vessel.
- USEC leased the facility in the early 1990s and continued to use C-601 to supply liquid and gaseous nitrogen until approximately 2007 when the system was removed and lines were cut and capped.
- In 2007, USEC upgraded the plant air system and installed a Centac® air compressor and Lectrodryer® system in C-601.
  - ❑ The Centac® air compressor and Lectrodryer® system tied into existing plant air receivers located in C-601.
- C-601 transitioned from USEC to DOE in 2014 and continued to support the plant air system until approximately 2016 when the Centac® air compressor and Lectrodryer® system were taken out-of-service.



C-601 Facility Photos: 8/2020

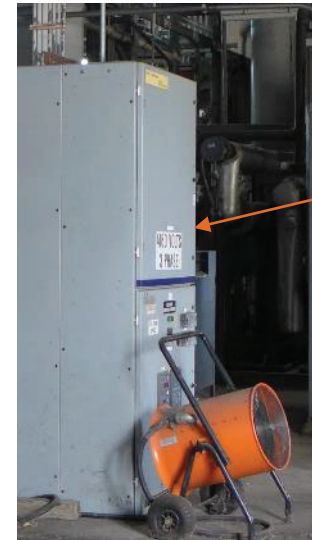
# Operational History

- During USEC operations, USEC established and maintained a Generator Staging Area (GSA) and Satellite Accumulation Area (SAA) in C-601; these are still present.
- C-601 currently contains a variety of equipment associated with plant air process, all of which have been taken out-of-service.
  - ❑ Lectrodryer® system
  - ❑ Plant air receivers (2)
  - ❑ Centac® air compressor; contains approximately 60-gal of oil
  - ❑ Motor control center for Centac® air compressor
  - ❑ Plant water return tank (contained plant water used to cool the compressor)
  - ❑ Plant water supply pump (pumped water back into the plant water distribution system)
  - ❑ Motor control center for the Lectrodryer® system
- C-601 is currently used as a storage facility to store portable pump trailers.



# Current Status

- C-601 no longer provides liquid or gaseous nitrogen or supplied plant air and currently is used as a storage facility for portable pump trailers.
  
- Walkdown inspection conducted in October 2020 and employee interviews confirmed no unusual conditions.
  - ❑ No floor sumps; however, floor drains are present.
  - ❑ Not used for radiological storage; facility does not contain any radiological postings.
  - ❑ Lubricants for compressors are properly stored in the facility.
    - 60 gal of oil remains in the Centac® air compressor
    - One 55-gal drum of Shell BG oil
    - One 55-gal drum of Conoco Synco R&O Oil (Centac® oil)
  - ❑ GSA (floor sweep) and SAA (light bulbs).
  - ❑ Minor oil leaks from compressors that were immediately addressed; no known chemical spills.
  - ❑ A 24-inch plant water line runs underneath the facility.



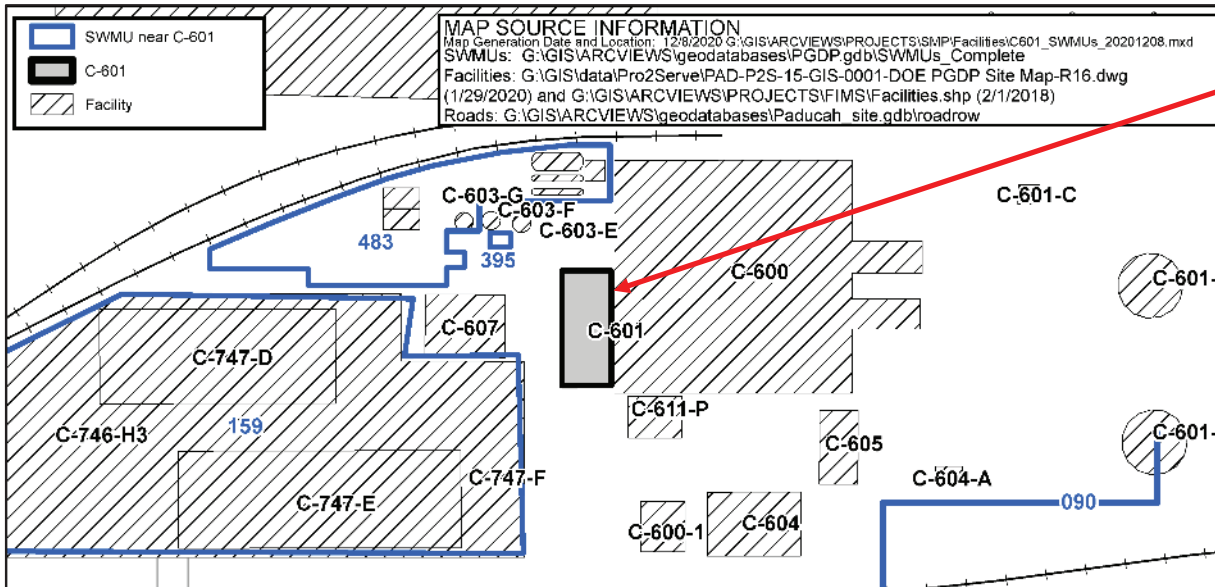
Electrical Switch Gear

Centac® Air Compressor



C-601 Facility Photos: 8/2020

# Environmental Impacts (Solid Waste Management Units)



The C-601 Nitrogen Generator Building Addition is not designated as a SWMU/AOC.

SWMU No.	Facility Name	Current Status	NFA Approval By
090	C-720 Petroleum Naphtha Pipe	NFA	KDWM 1/14/2015
159	C-746-H3 Storage Pad slab and underlying soils	Soils and Slabs OU	
395	G-600-01	NFA	KDWM 3/8/2007
483	Nitrogen Generating Facilities slab and underlying soils	Soils and Slabs OU	

# Environmental Impacts

- No information to indicate a release or threatened release of a hazardous substance that would require an evaluation for a potential response action to protect future public health or welfare or the environment.
  - ❑ C-601 was operated as a support facility that produced liquid and gaseous nitrogen from 1960 to 2007 and supplied plant air from 1960 to 2016; C-601 is currently used to store portable pump trailers.
  - ❑ C-601 has a GSA (floor sweep) and an SAA (light bulbs); both securely containerized with no known releases or spills, that are operated in accordance with applicable requirements and procedures.
  - ❑ Building materials used for construction could contain lead-based paints and asbestos materials, both of which can be effectively verified during a predemolition inspection and properly managed using standard demolition and waste management practices.
    - C-601 has asbestos-containing materials present in the siding.
  - ❑ No history or records of chemical use or spills that would pose environmental release threat.



# 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.
  - ❑ Floor drains will be delineated and isolated prior to demolition.
- Pending ceasing of operation, deactivation, and availability of funding, proceeding with demolition and disposal of the C-601 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.

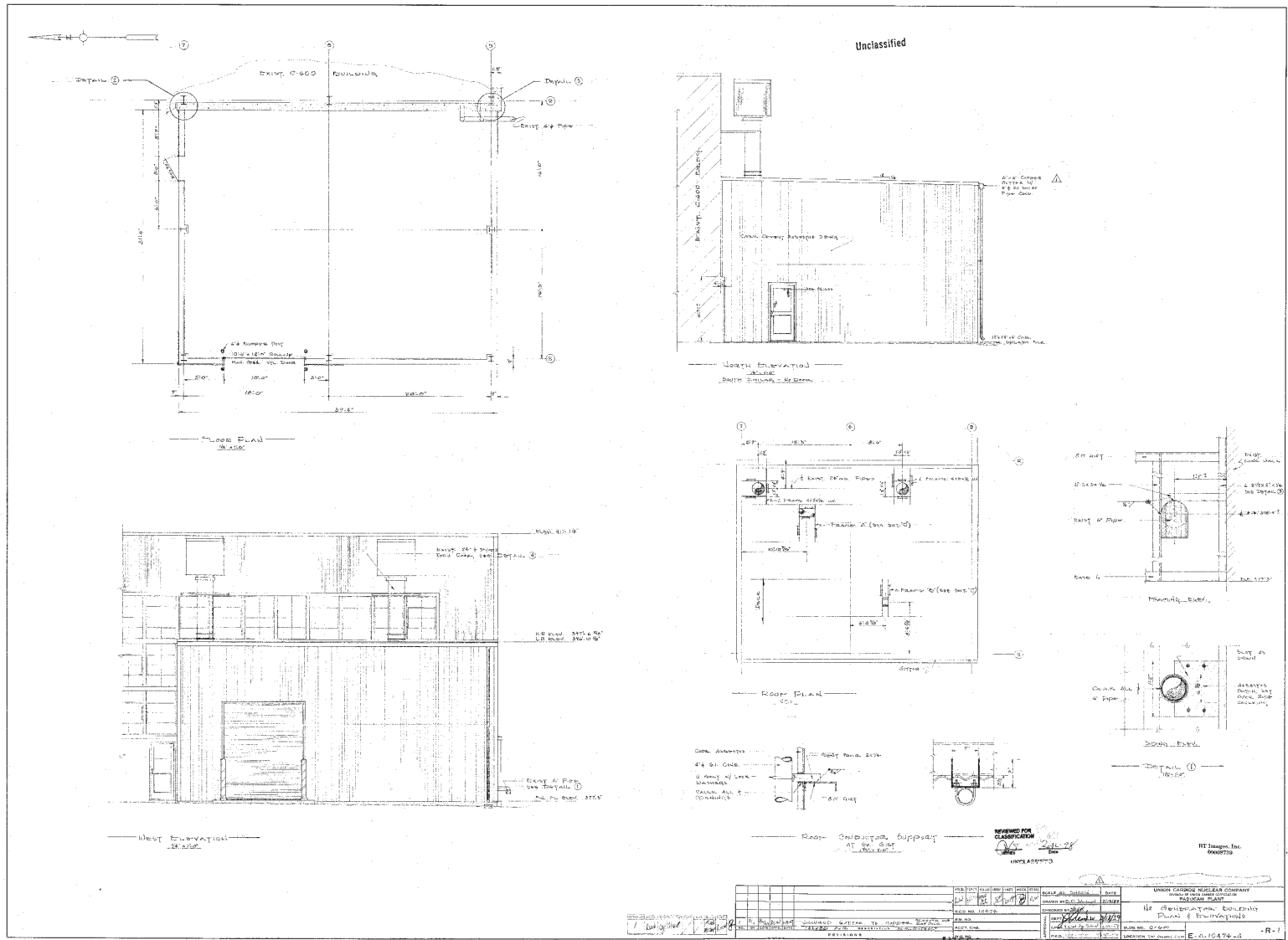
# Conclusion and Recommendations

- 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 will be applied 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-601 facility will be documented in the appropriate annual SMP revision.
- The future evaluation conducted for GA 12 will further evaluate the potential threat of release associated with the slab/soils from the C-601 facility.

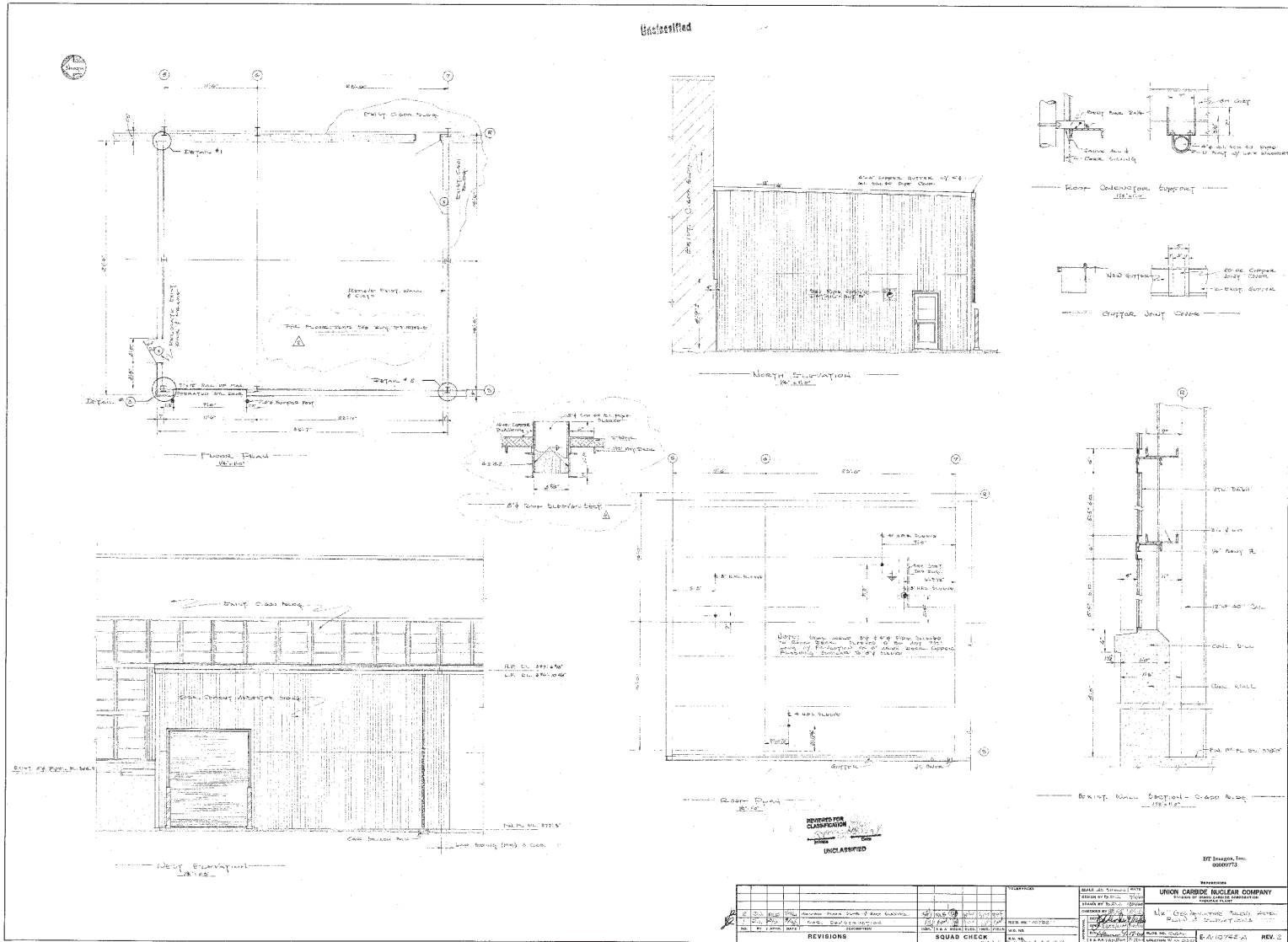
# C-601 Nitrogen Generator Building Addition

BACKUP INFORMATION

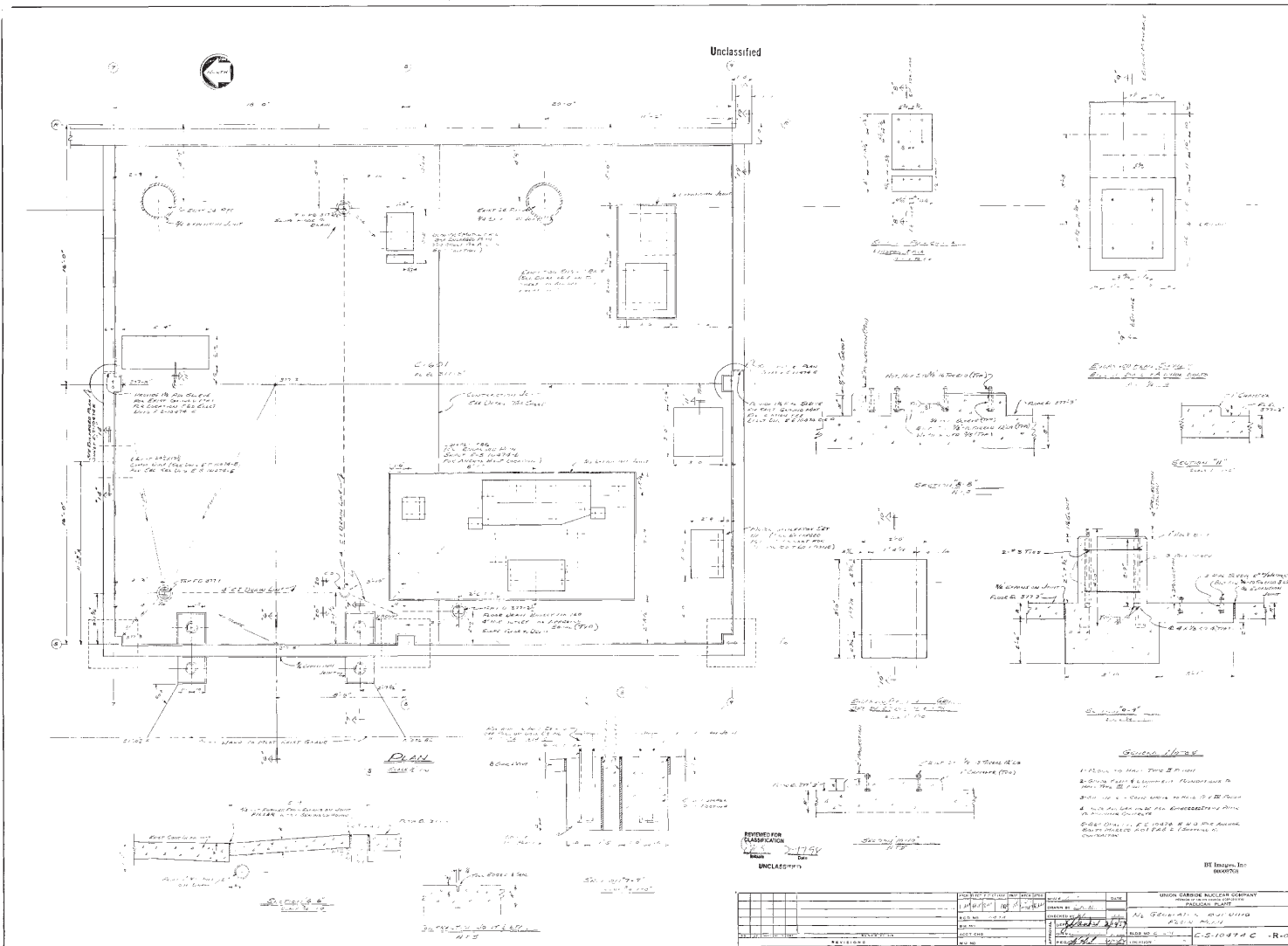
# C-601 Engineering Drawings



# C-601 Engineering Drawings



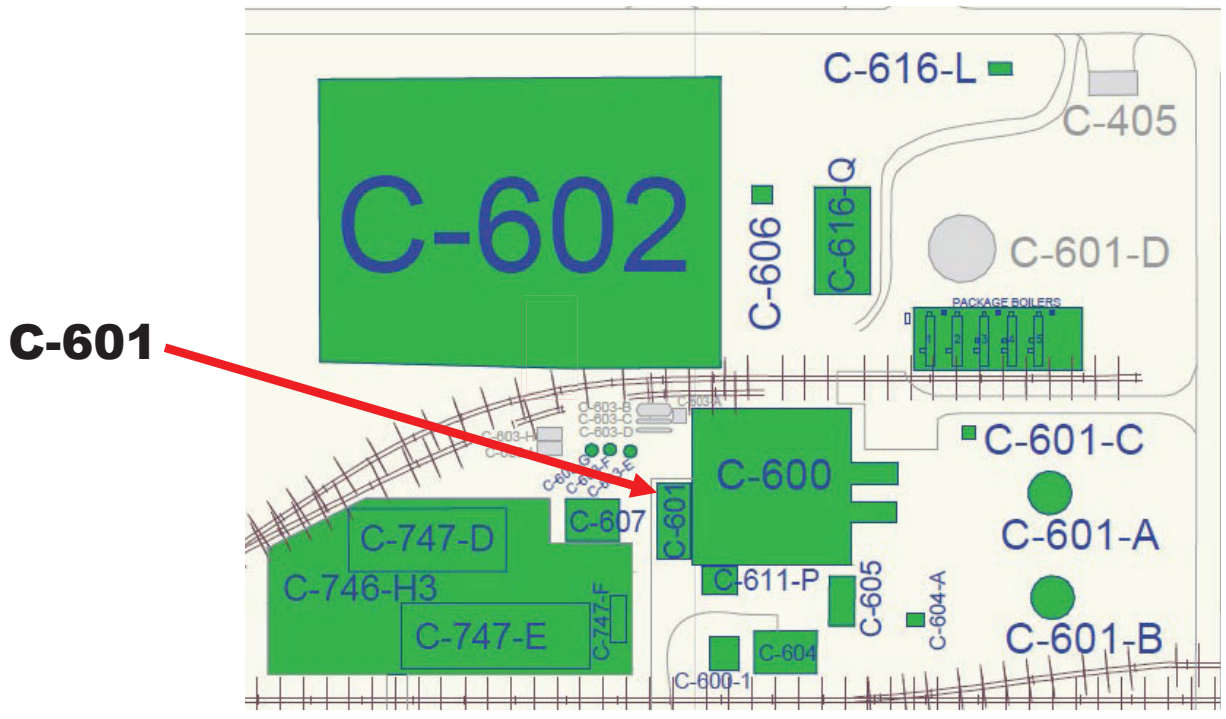
# C-601 Engineering Drawings



E-S-10474-C, Rev 0



# C-601 Facility Map View

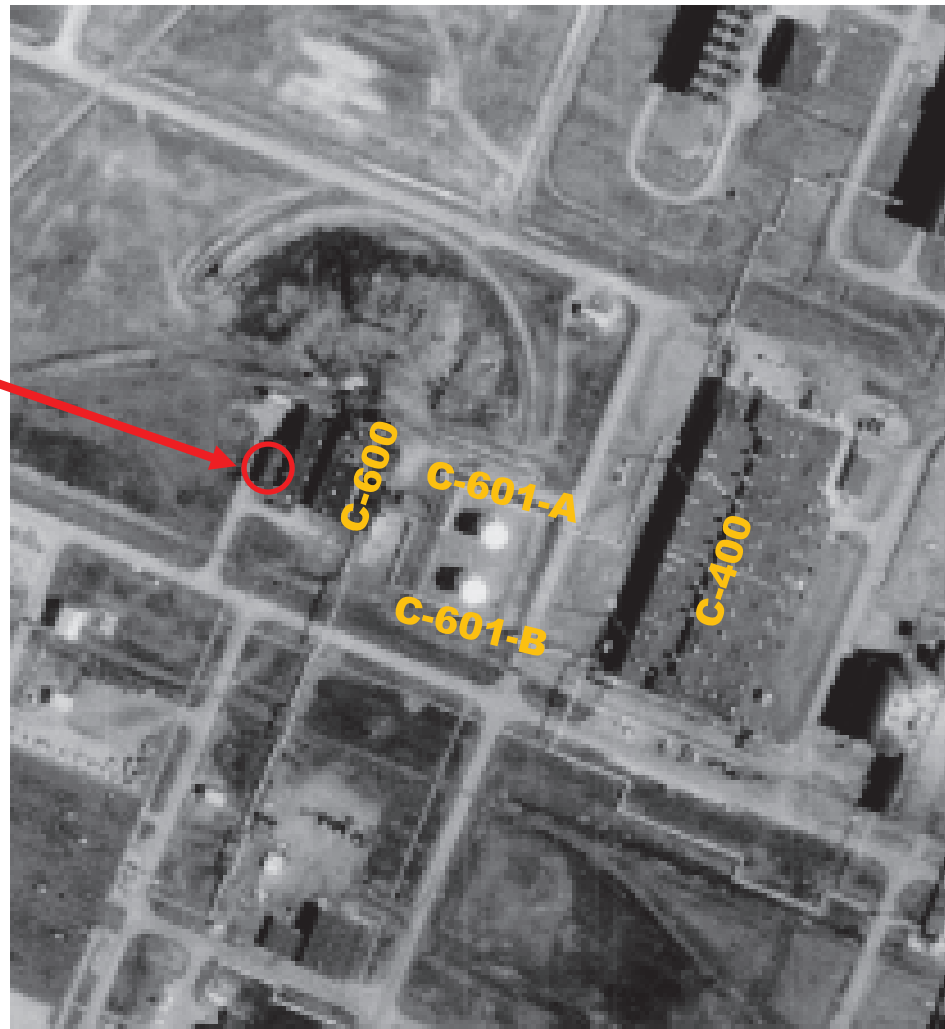


Modified from Facility Map (PAD-P2S-15-GIS-0001-DOE PGDP Site Map-R16)



# C-601 Aerial Photograph

**C-601**



Modified from Aerial Photo: July 3, 1971 (ADZ-4LL-52)

# C-601 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:
  - Facility Manager (42 years plant expertise)
  - Utility Operations Subject Matter Expert (45 years plant expertise; operator/manager/supervisor)
  - Compliance Subject Matter Expert (45 years plant expertise; trained on system)
- 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 Environmental Impact Assessment of the Paducah Gaseous Diffusion Plant Site, Paducah, Kentucky, DOE/EA-0155, August 1982
  - Fluor Federal Services, Inc., Paducah Deactivation Project Comprehensive Environmental Compliance Due Diligence Review, CP5-ES-0101
  - Paducah Asbestos Survey Executive Summary (Lee Wan Report), October 1990