Savannah River
NUCLEAR SOLUTIONS℠
FLUOR DANIEL • NORTHROP GRUMMAN • HONEYWELL

H-Canyon Overview

Matt Arnold, SRNS

H-Area

Location

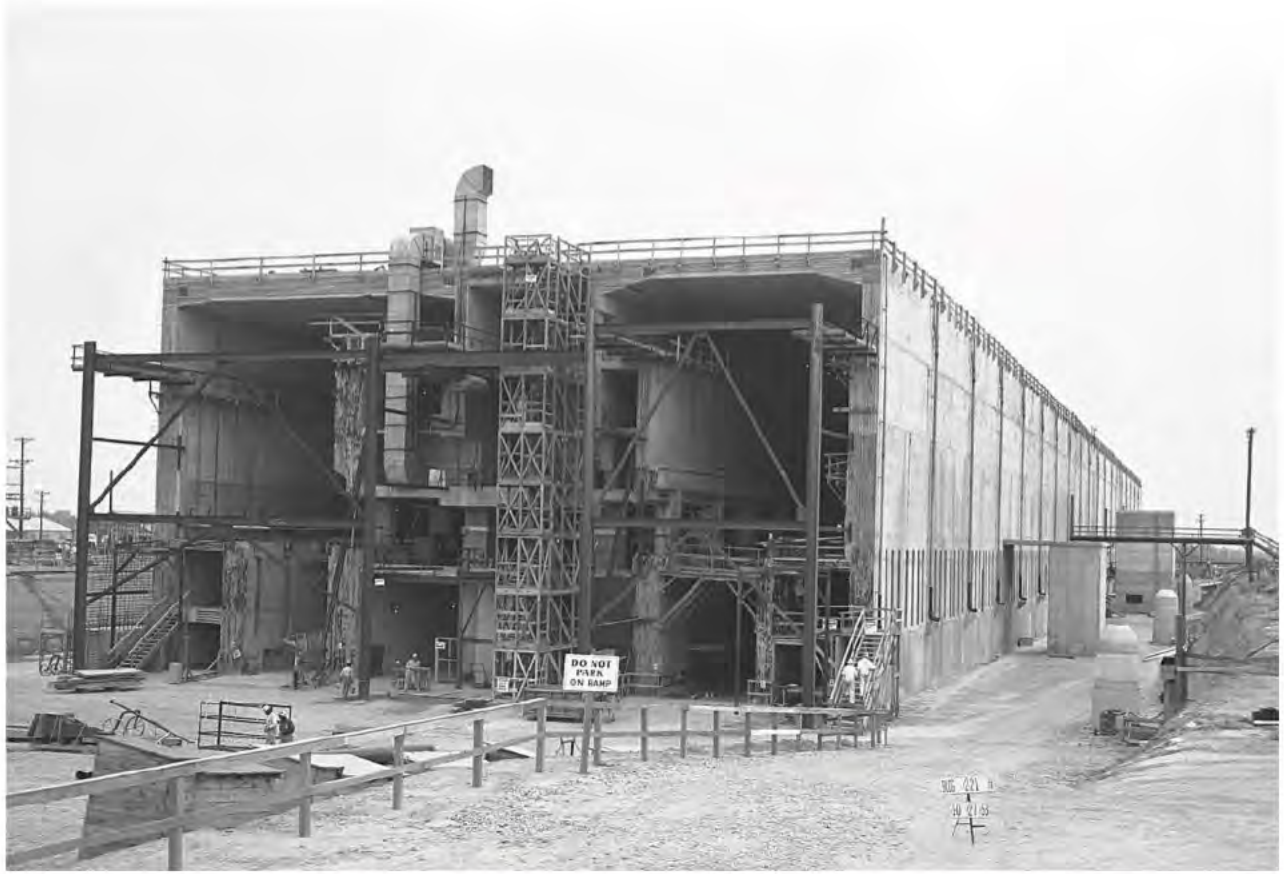
- **Located in central area of Savannah River Site**

H-Canyon – Overview

- Large-scale, radiochemical separations facility that dissolves Spent Nuclear Fuel and other U, Pu, & Np isotopes
- Demonstrated technology with flexible capabilities, low risks & excellent safety performance
- Experienced work force with approx. 450 people run or support the facility (24/7 operations)

History

- **Facility built in 1950s**



Key Dates and Process Missions

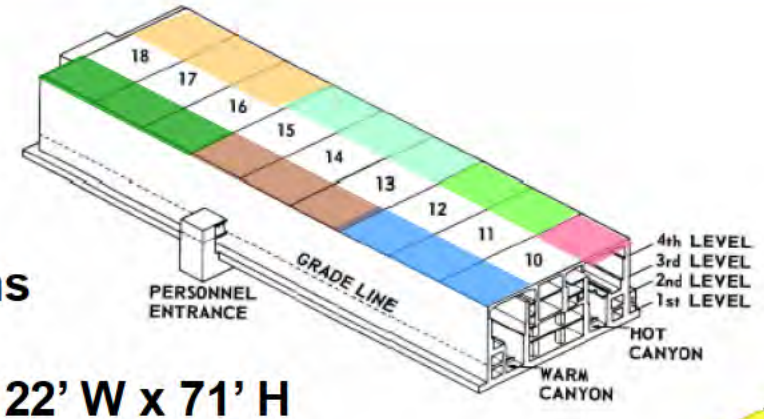
- **1955-1964**
  Recovered Pu-239/240
- **1961-1984**
  Produced Pu-235 for Space Missions
- **1964-1969**
  Recovered U-233 (THOREX)
- **1972-1990**
  Recovered U/Pu from 55 clad LEU fuels
- **1992-1995**
  Produced Pu-238 for Cassini mission
- **1997-2003**
  Recovered U-235 from Spent Nuclear Fuel

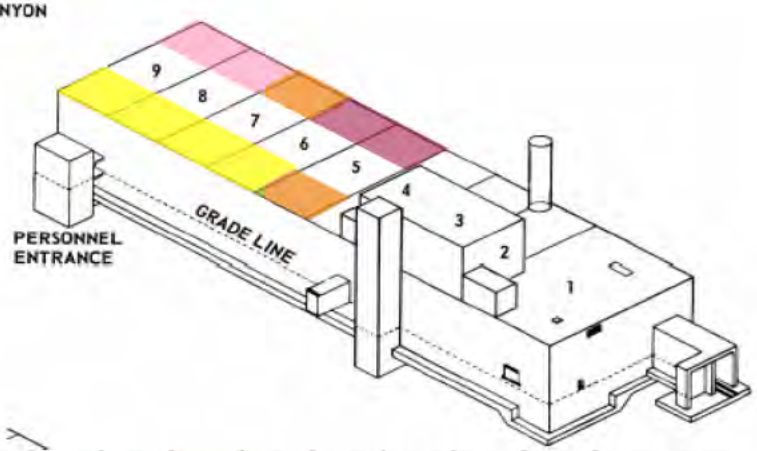
Key Dates and Process Missions Cont.

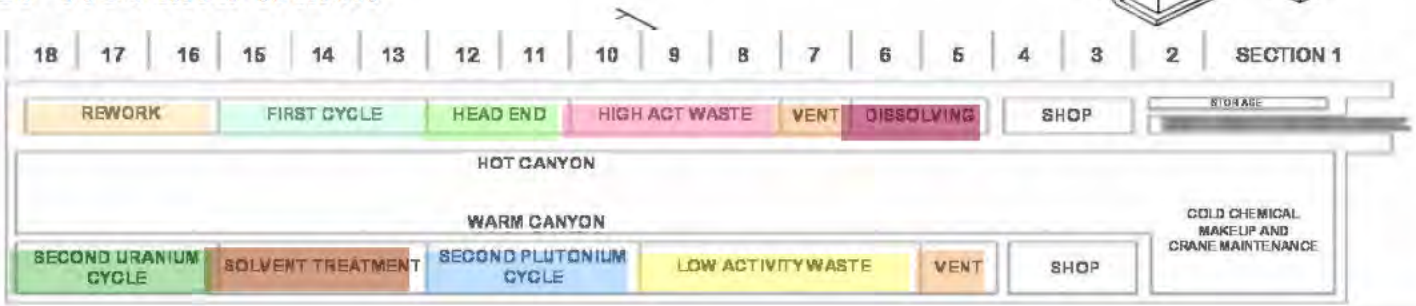
- **2003**
  High Enriched Uranium (HEU) blending operations began
- **2004-2008**
  Purified, precipitated and calcined neptunium
- **2008**
  Completed disposition of all SRS reactor fuel
- **2008-2010**
  Processed NNSA HEU material
- **2010**
  Began processing spent HEU research reactor fuel
- **2017-2019**
  Processed Target Residue Material
- **2022**
  ABD Mission approved

H-Canyon Facts

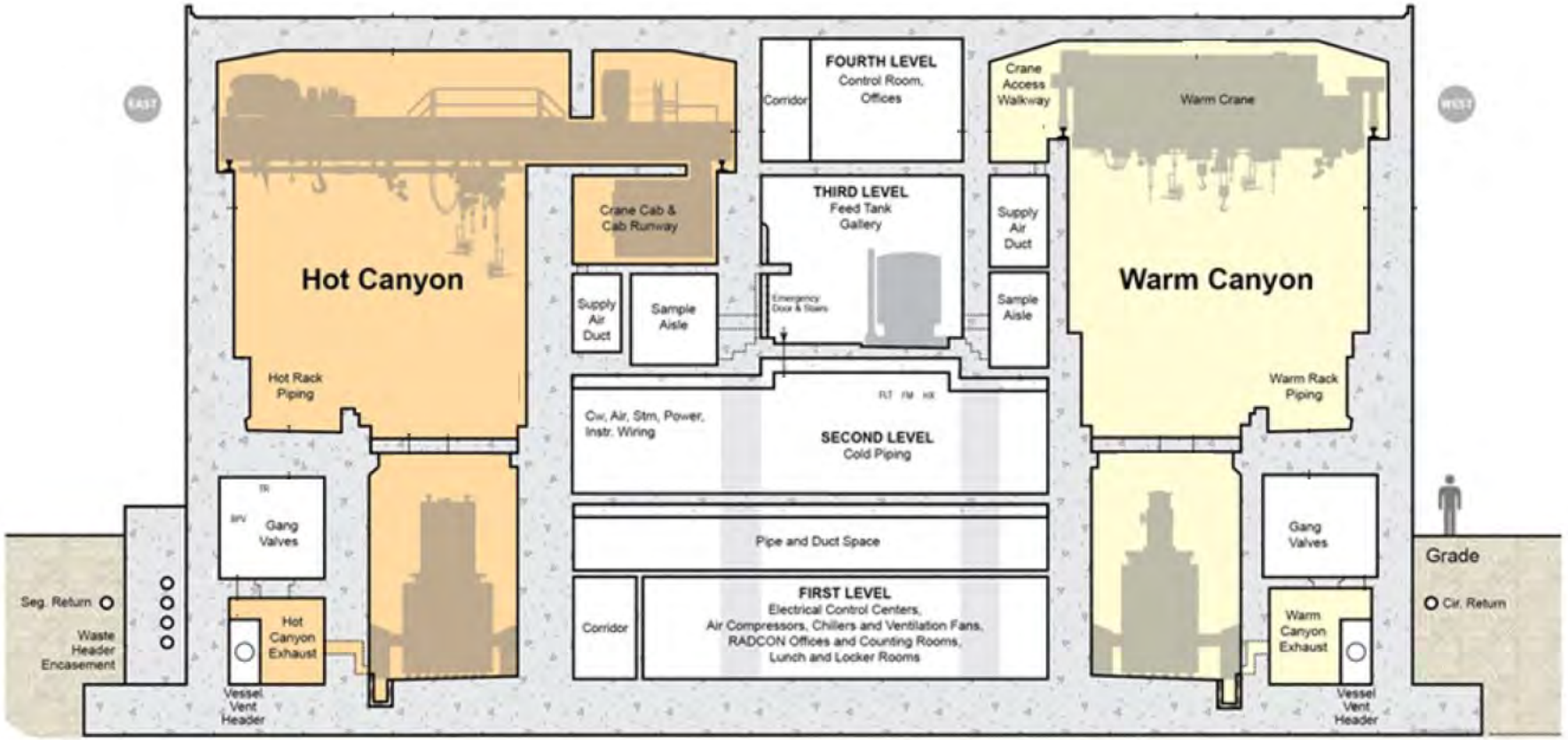
- 18 Sections
- 1028’ L x 122’ W x 71’ H
- ~ 175,000 sq. ft
- Four levels
- Two canyons: Hot and warm



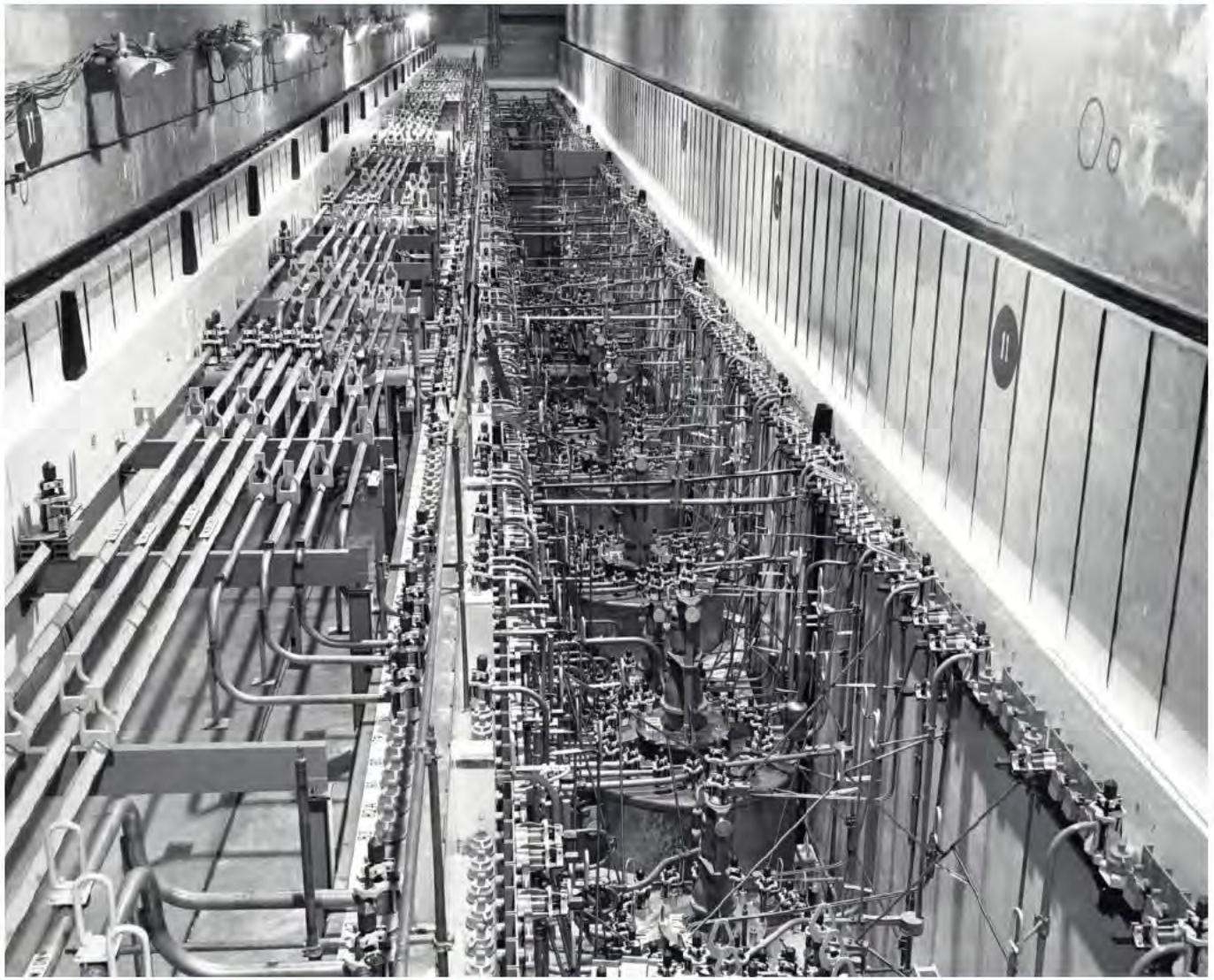




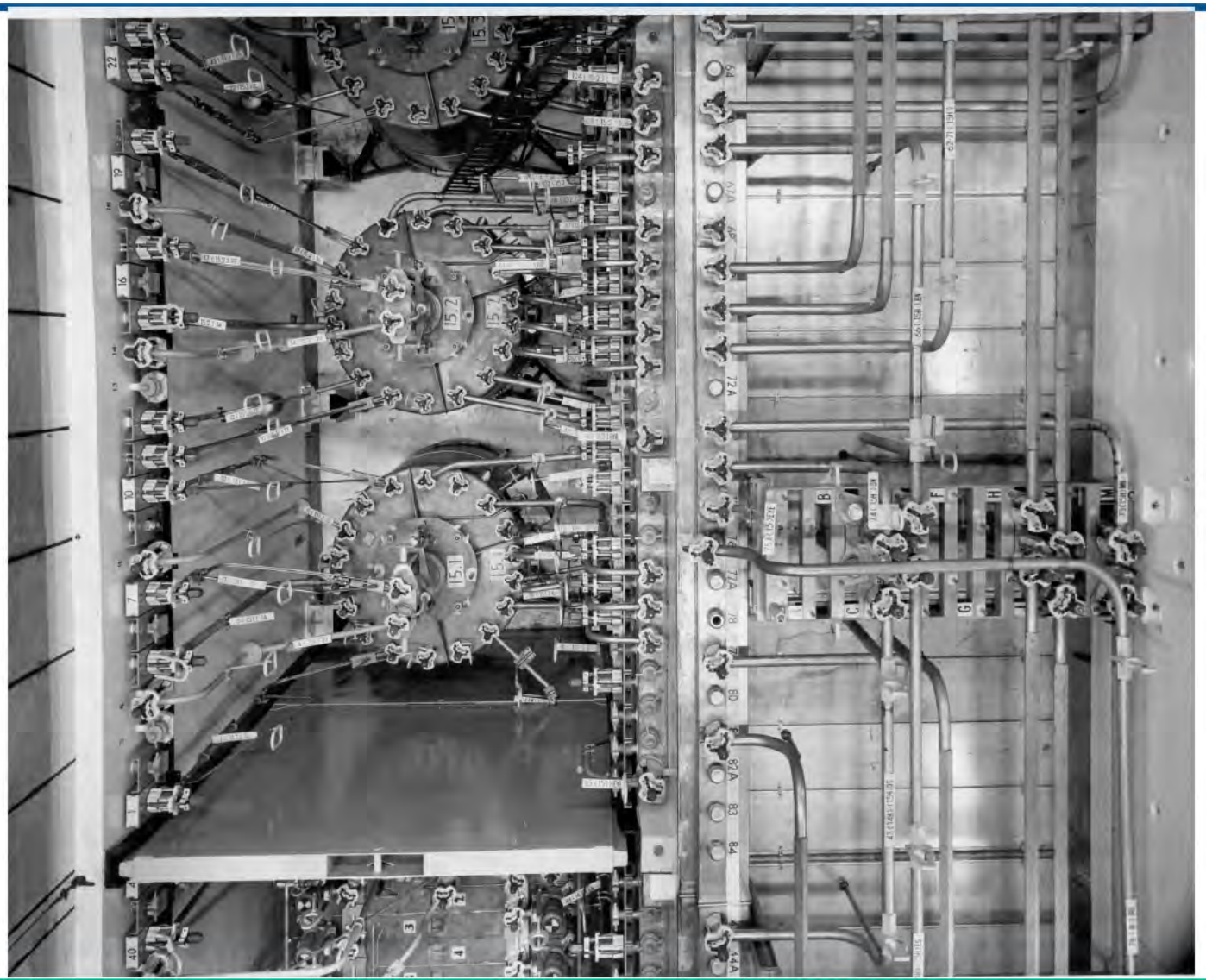
H-Canyon Cross-section



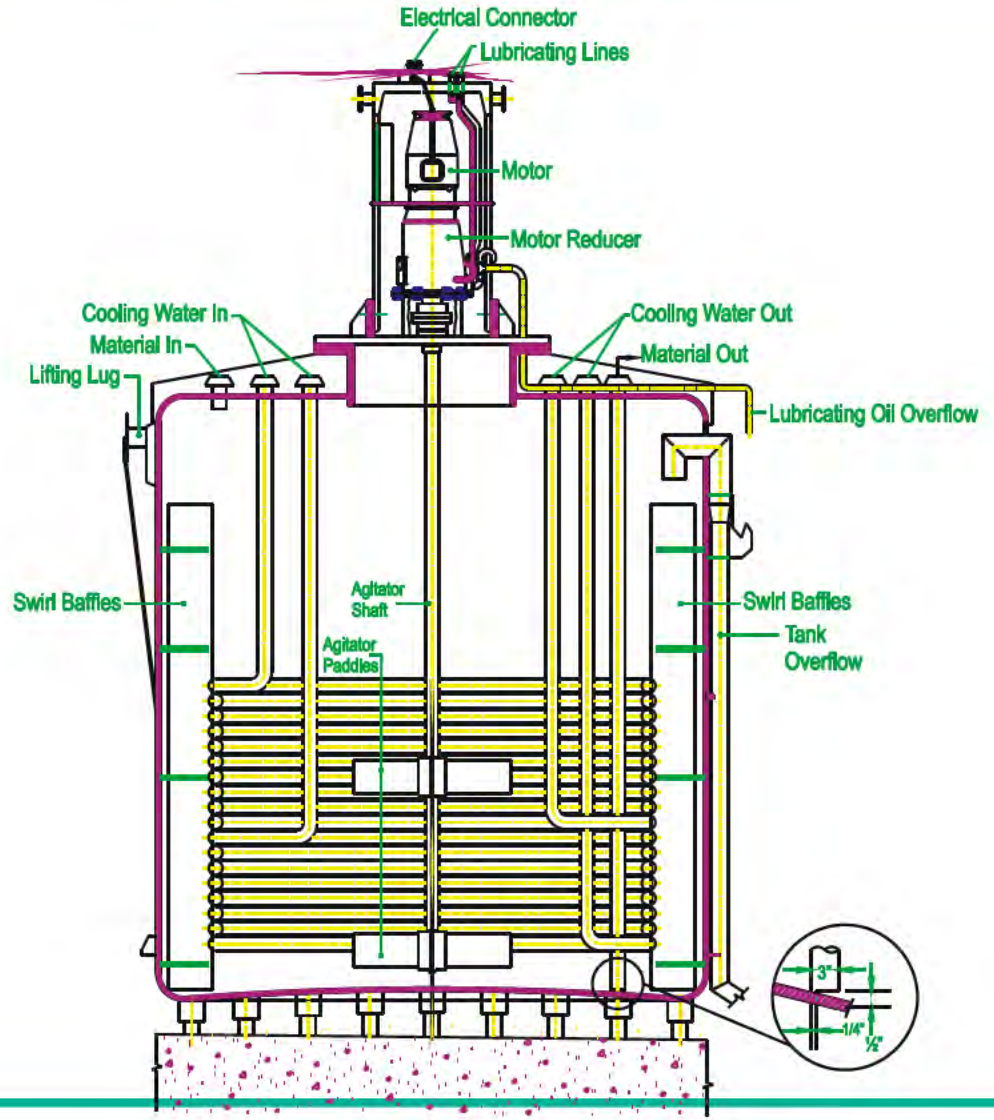
Warm Canyon with Cell Covers Removed



Canyon Cell Arrangement (Typical)



Standard Canyon Process Tank



STANDARD 10' x 11' CANYON TANK

10-23-01
01E03053-06

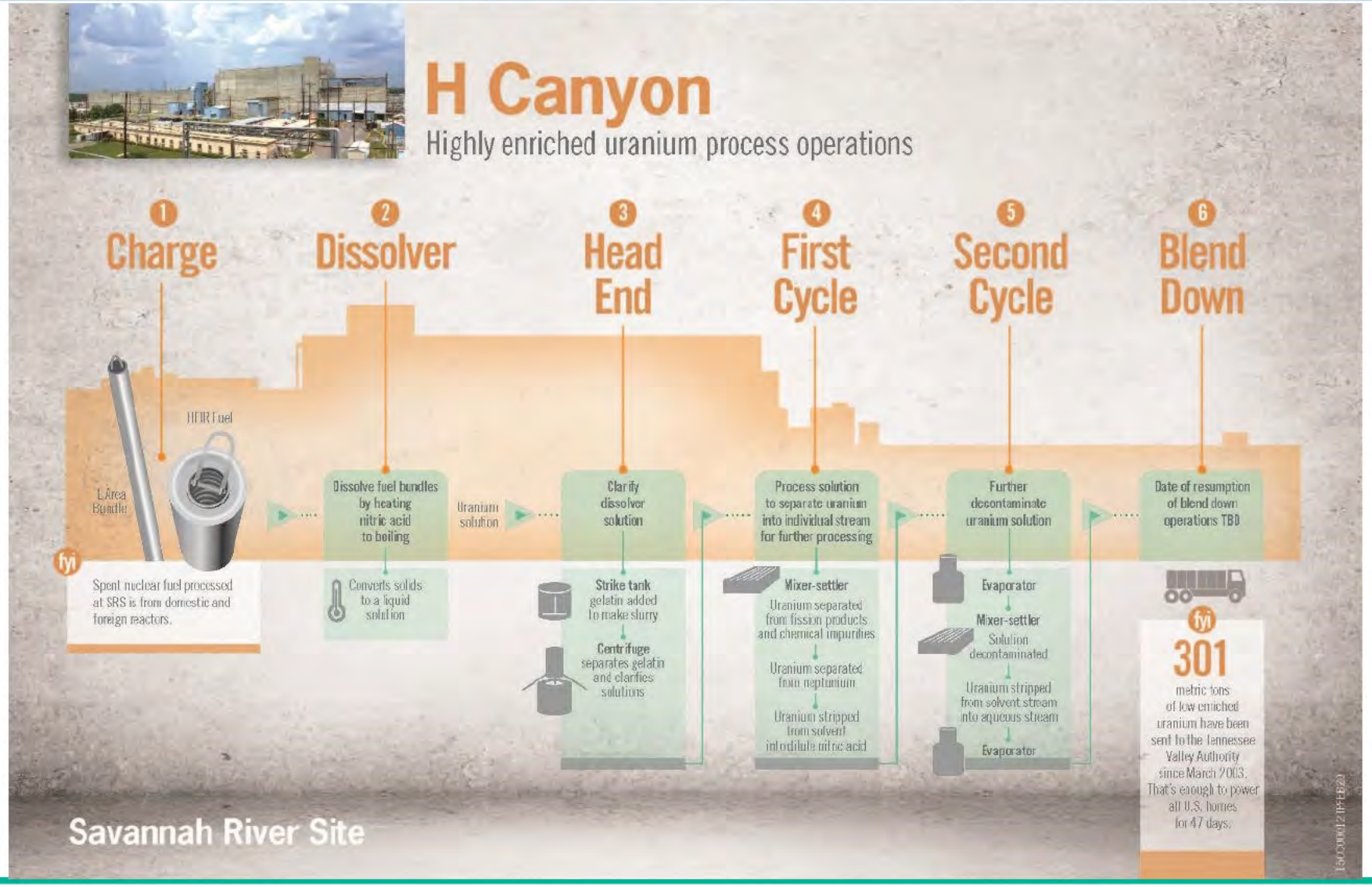
Crane Control Room

View into Warm Canyon

View of Hot Crane

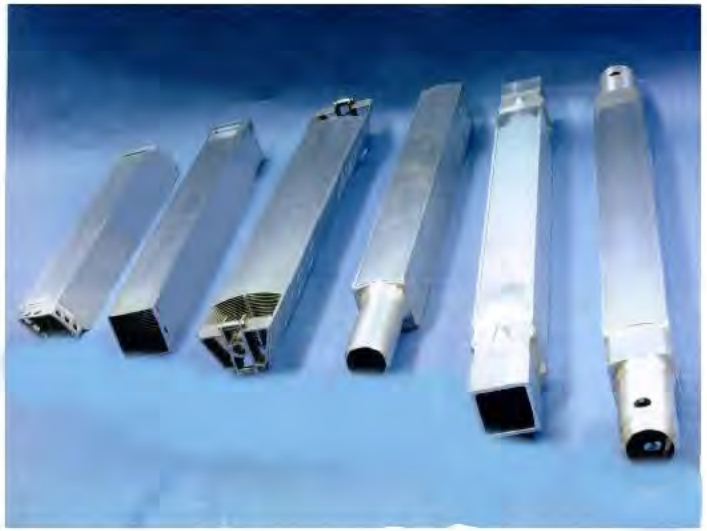
View of 2nd Level

H Modified PUREX Process



Current Dissolving Missions

- **Used Nuclear Fuel (UNF) processing from L-Area basin**
  - Disposition Material Test Reactor (MTR)
  - High Flux Isotope Reactor (HFIR) Cores



Different types of MTR Fuel stored in L Basin

HFIR Core

Domestic Spent Nuclear Fuel Receipts

Fast Critical Assembly (FCA) Project

- Installed a new electrolytic dissolver for stainless steel-clad fuel
- Start up process in 2023

Ventilation System

Inspection Camera Photo – looking at pitot tubes

Inspection Camera Photo – duct inside air tunnel

Sand filters and Stack

Questions