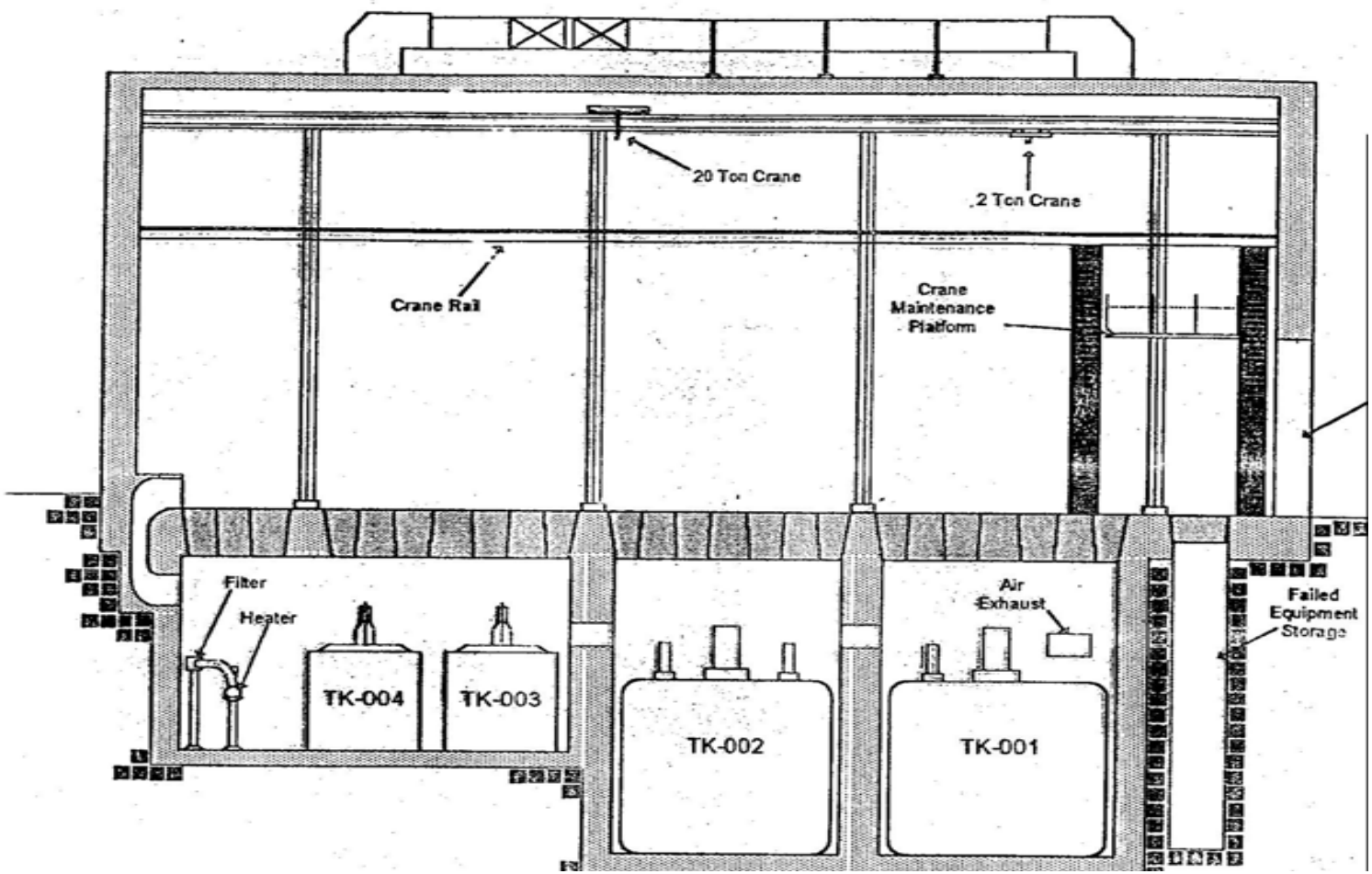
Preps for D&D of Building 244-AR

HANFORD'S 244-AR BUILDING



244-AR Problems

- Building was highly contaminated on floors and walls with loose contamination in millions of dpm
- Building HEPA vent system didn’t work
- Crane doesn’t work so the 5’ thick cover blocks covering the tanks can’t be removed.
- Holes will have to be core drilled through the cover blocks to get to the tanks

244-AR Problems

- There is very little space inside the building for a containment and it’s support equipment
- All material brought into the building has to pass through a 4’ wide airlock door
- There are only a few workers assigned to the team and installing a large tent will be difficult

244-AR Problems

- If a portable vent system is installed to vent the canyon, it will need to provide a minimum flow of 7 air changes in the canyon per hour. This means having a portable vent system rated at least 5,000 CFM to obtain the required flow rate.

Brain-Storming Questions

- What new tools or equipment would make this job easier?
- Are there lessons learned from other sites for similar jobs?
- How do we cut holes through the 5’ thick concrete blocks?
- How do we cut holes in the top of the stainless steel tanks?

Brain-Storming Questions

- What actions are needed to confine the high levels of contamination on the canyon floor and walls?
- Should we ventilate the canyon or accomplish the job without air flow in the canyon?

What's Been Working at Hanford?

- Aerosol fogging of Tank Farms pits
- Application of polyurea after fogging seals contamination
- Workers are experienced at installing containments and portable HEPA filtered vent systems

Lessons Learned?

- Job was recently completed at Chernobyl where a tent was installed next to a highly contaminated wall and workers took samples of the wall from inside the tent
- A positive vent system was used inside the tent so that contamination, on the outside, would not get into the tent

Initial Plan

- “Fix” the contamination in the canyon
- Install a containment in the canyon and ventilate it, not the canyon
- Instead of one large containment, install a tent over each tank and connect them with a passageway
- Inflate each tent section as it’s installed and put scaffolding inside the tent

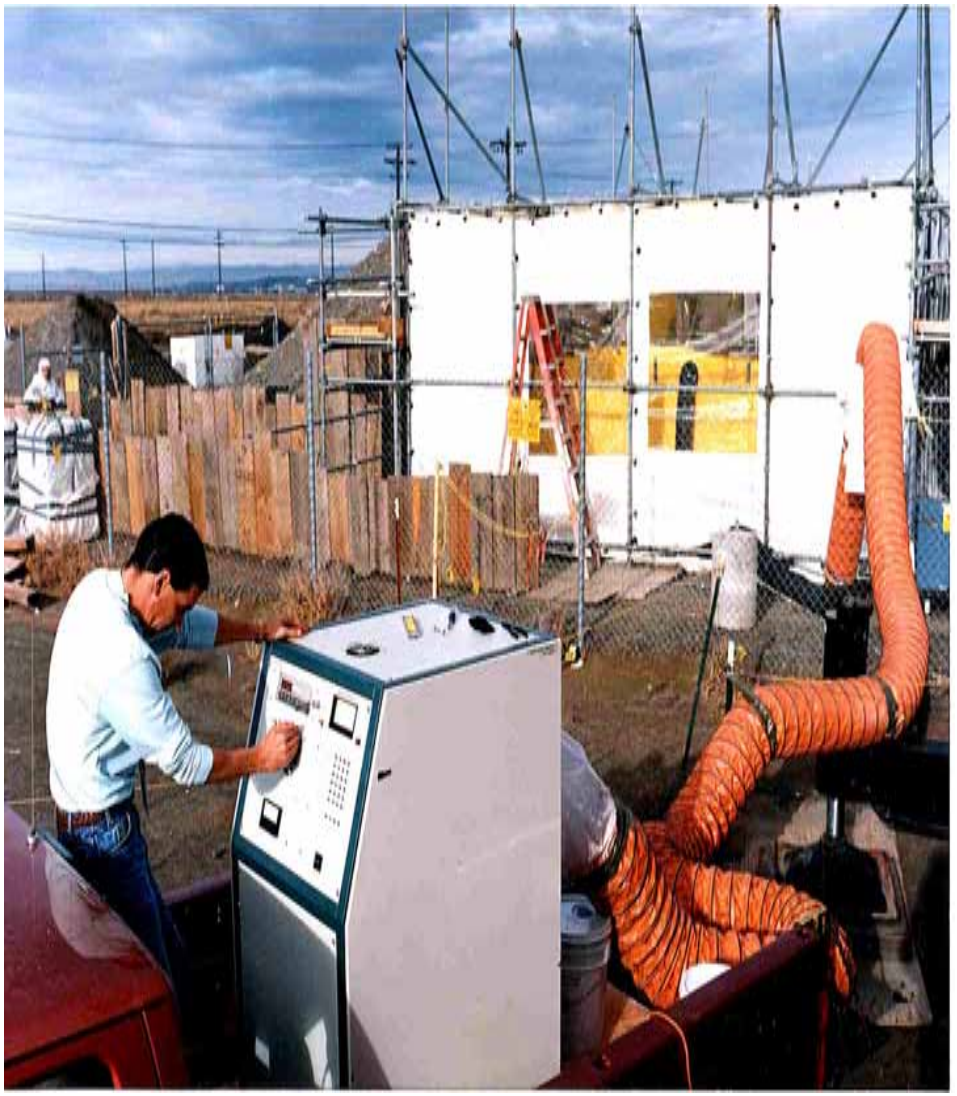
Initial Plan

- Core drill two holes through the cover blocks over each tank (6” and 10” dia)
- Lower a torch through one of the holes and burn an opening in the top of each tank
- Lower submersible pump into the tank and pump the liquid up, and through the canyon to an underground tank located outside the building

244-AR Canyon

Application of Fixatives

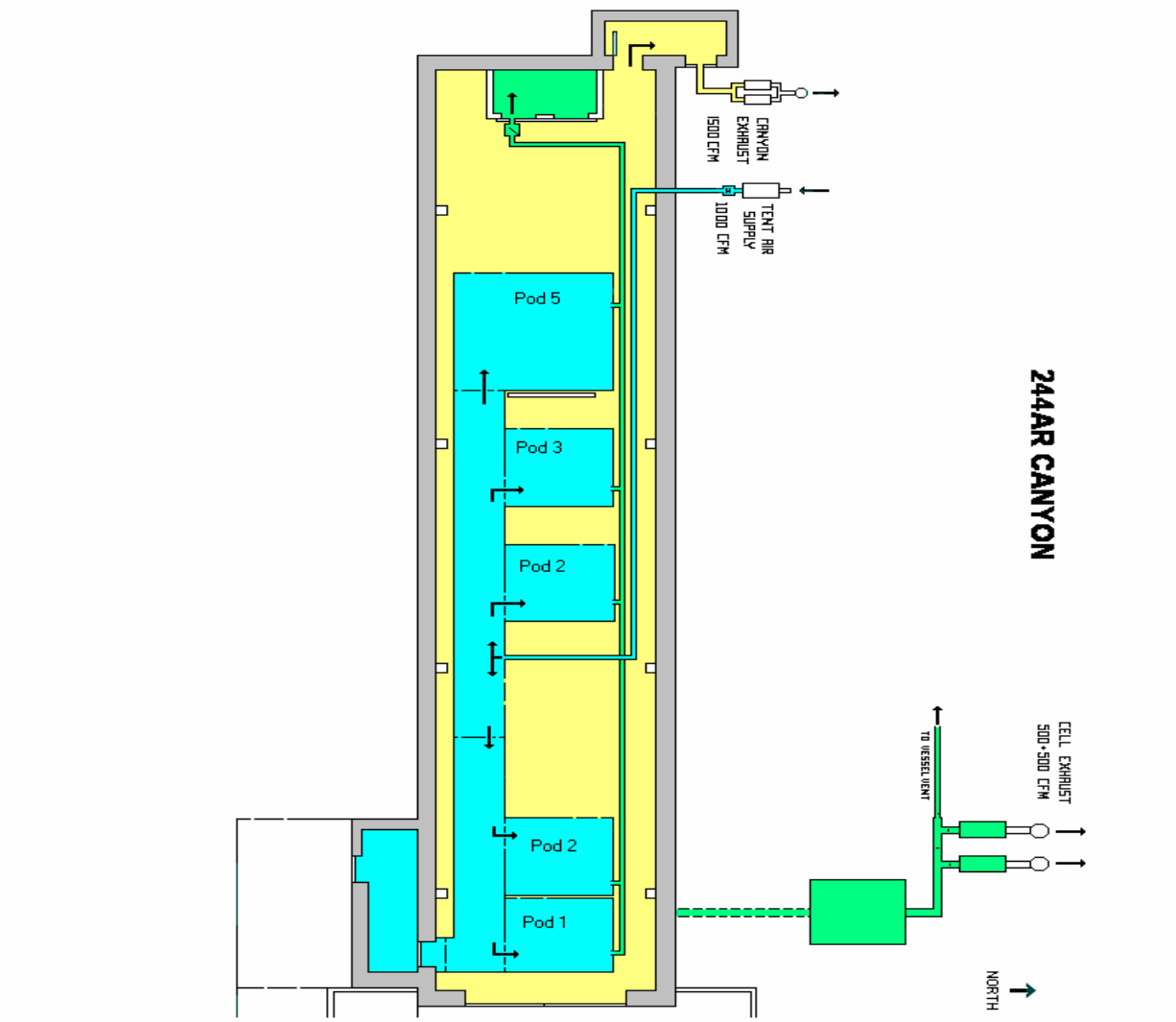
- Aerosol fogging permits a fixative to be applied without entering the space
- Sound waves striking the liquid create an aerosol that fills the room or glove box leaving a “tacky” glycerin coating



Fixatives

- Polyurea coatings seal the surface and trap contamination
- Polyurea is similar to polyurethane coatings sprayed in pickup beds, only stronger

Tent Layout


CANYON EXHAUST 1500 CFM
TENT AIR SUPPLY 1000 CFM
Pod 5
Pod 3
Pod 2
Pod 2
Pod 1
244AR CANYON
TO VESSEL VENT
CELL EXHAUST 500-500 CFM
NORTH

Tent Vent Equipment Located Outside

- CORE DRILL

Core Drilling

Core Drilling

Core Drilling

Plasma Arc Cutting at Mockup