

## C-FARM REMOVAL: FEASIBILITY STUDY

### HIGHLIGHTS

1. Required by Milestone M-45-80.
2. Present C-Farm closure (M-45-83) is for June 30, 2019.
3. Complete removal of tanks will take 13 yrs beyond retrieval date, i.e. 2028.
4. Estimated cost is \$800,000,000 to remove tanks and soils to 5 feet below footings.
5. The minimum disposal volume is estimated at 800,000 cubic yards or almost one ERDF cell.
6. Concrete rubble will be dumped in ERDF with no containment.
7. Highly radioactive tank liners, tank residuals and piping will be encased in grout inside disposal containers prior to burial at ERDF. The disposal containers may have walls as thick as 3 inches of steel.
8. There is an estimated minimum dose to workers of 200,000 millirem.
9. Removal of soil to 5 feet below footings removes 30% of soil contaminants; 70% of soil contaminants remain in vadose zone at deeper depths.
10. Tank and soil removal DOES NOT MEET "clean closure" requirements because of the large volume of contaminated soil left.

## CONCERNS RAISED IN FEASIBILITY STUDY

1. Large unknowns in equipment condition, disassembly problems and dose rates are expected to increase both cost and schedule. Increased characterization will increase costs.
2. Certain waste may not meet criteria for Hanford disposal. Treatment facilities to wash contaminated steel or soil are not costed into this study.
3. C-Tank Farm is too large for a single structure to be built over the top, therefore, dome containment will be provided one section of the farm at a time.
4. Shoring walls will be installed to contain loose sand and gravel from caving in the sides of the excavation.
5. The schedule for closure is expanded from 4-5 yrs for landfill closure to 13 years for tank removal.
6. The worker dose is based on the dose model for AX Tank Removal. Not all parties are comfortable that AX data is applicable to C-Farm. Not all parties are comfortable with the extremely high radiation doses that will be encountered when soil is removed from the tank domes. Even higher doses will be associated with tearing apart the tanks and steel liner.
7. Reduction in long term impact to groundwater by moving tank farm concrete, steel and soil to ERDF will be offset in part or in whole by the increase in the groundwater impact from ERDF. In other words, the expenditure of \$800,000,000 dollars may not change the long term performance assessment of the 200 areas or the change will be insignificant.
8. The tank removal project will move 19,700 curies of Cs-137 associated with tanks and 25,100 curies of Cs-137 associated with the soil from C-Farm to ERDF, assuming that the ERDF waste acceptance criteria can be met. This leaves ~~84,000~~  
59,000 curies of Cs-137 in the vadose zone below the 42 foot level.
9. There is a question of spending \$800 million to remove C-Tank Farm without improving the long term performance assessment of Hanford.
10. There is another question of spending \$800 million to move approximately 45,000 curies of Cs-137 to ERDF while leaving approximately ~~84,000~~  
59,000 curies of Cs-137 uncontained in the vadose zone beneath C-Tank Farm.