



U.S. DEPARTMENT OF
ENERGY



Transuranic (TRU) Waste Overview and Status

Aaron White

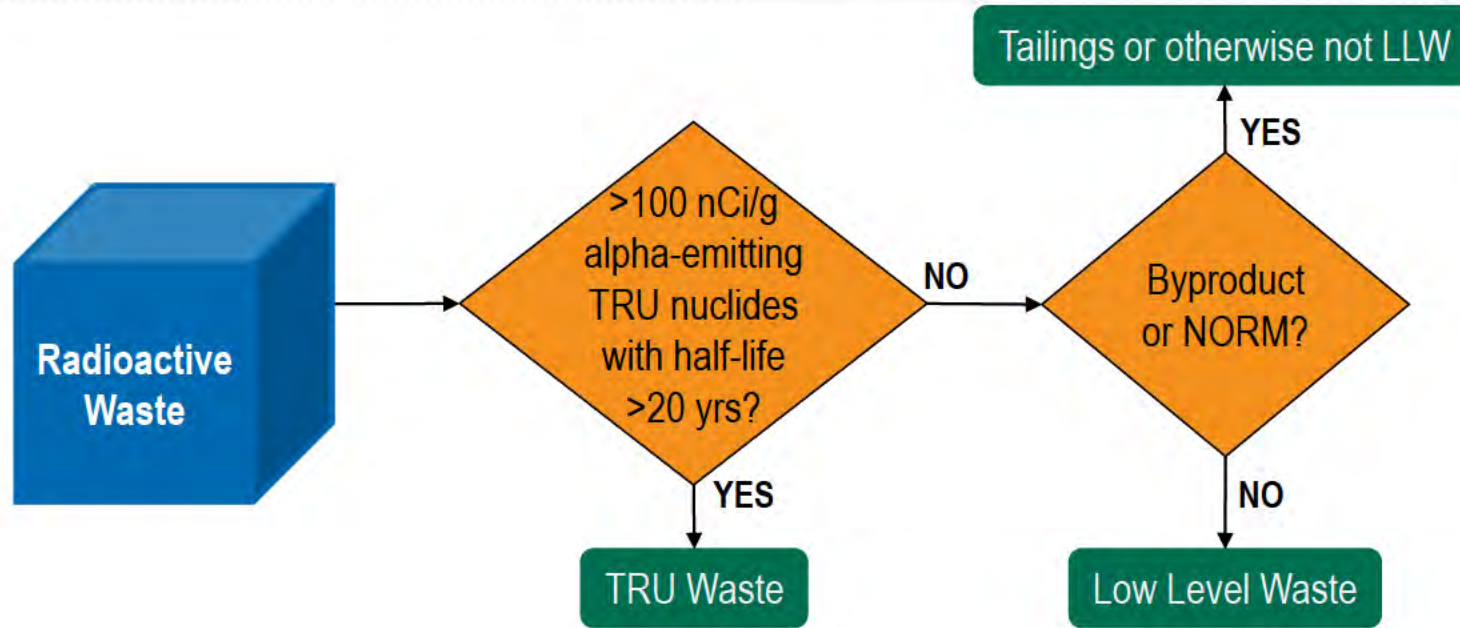
Senior Technical Program Manager for Waste Disposition
And Tank Closure

*SRS Citizens Advisory Board (CAB) Meeting
November 19, 2019*

Kerri C. Crawford

SRNS Solid Waste Programs Manager

Transuranic Radioactive Waste Management per DOE Order 435.1



TRU: transuranic
 NORM: naturally occurring radioactive material
 LLW: low-level waste

58 Ce Cerium 140.12	59 Pr Praseodymium 140.91	60 Nd Neodymium 144.24	61 Pm Promethium (145)	62 Sm Samarium 150.36	63 Eu Europium 151.96	64 Gd Gadolinium 157.25	65 Tb Terbium 158.93	66 Dy Dysprosium 162.50	67 Ho Holmium 164.93	68 Er Erbium 167.26	69 Tm Thulium 168.93	70 Yb Ytterbium 173.04	71 Lu Lutetium 174.97
90 Th Thorium 232.04	91 Pa Protactinium 231.04	92 U Uranium 238.03	93 Np Neptunium (237)	94 Pu Plutonium (244)	95 Am Americium (243)	96 Cm Curium (247)	97 Bk Berkelium (247)	98 Cf Californium (251)	99 Es Einsteinium (252)	100 Fm Fermium (257)	101 Md Mendelevium (258)	102 No Nobelium (259)	103 Lr Lawrencium (262)

Transuranic Waste Disposal

- **National Transuranic Program**

- DOE Headquarters and Field Sites
- Waste Isolation Pilot Plant (WIPP)
- DOE Carlsbad Field Office (CBFO)

- **DOE-SR Interactions**

Program Level

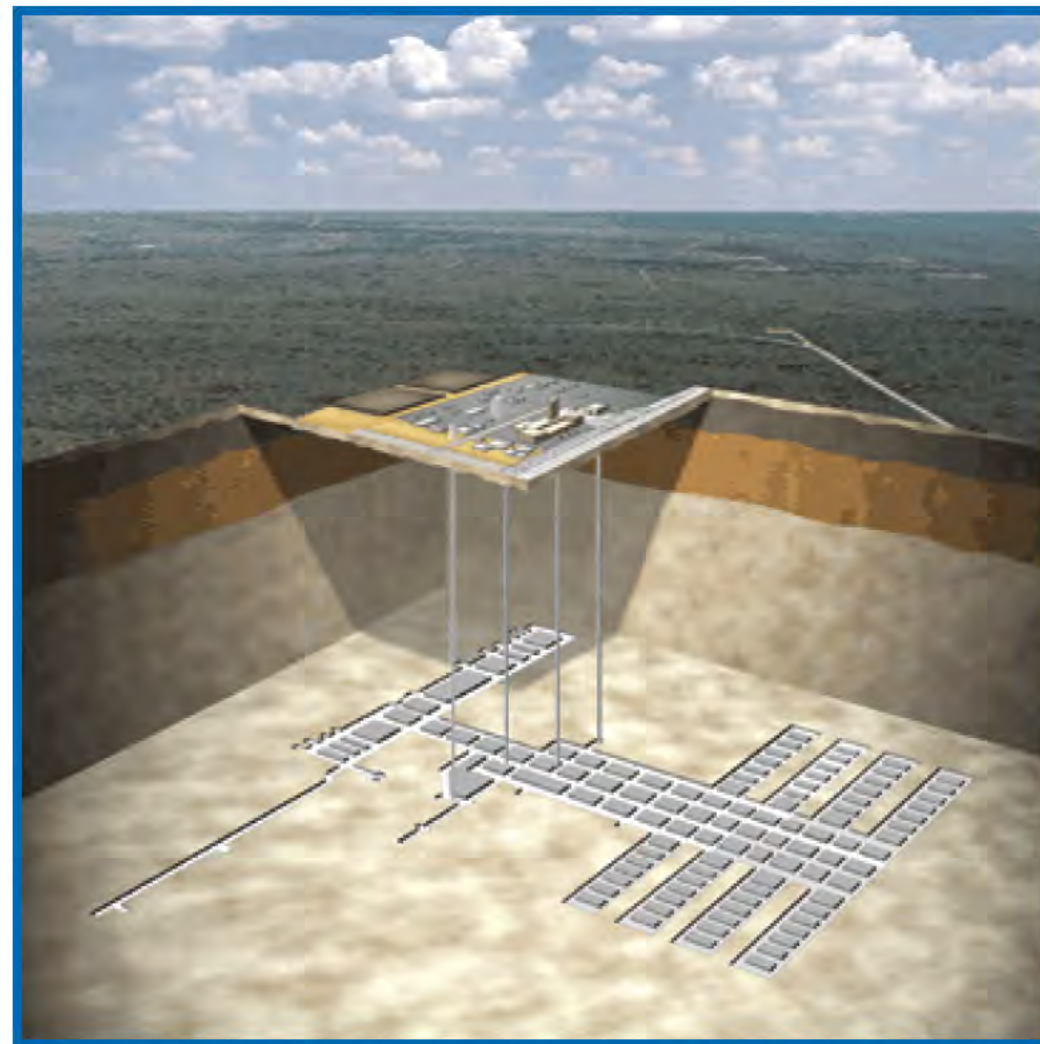
- Weekly site specific and complex wide conference calls
- Generator Site Technical Reviews

Site level

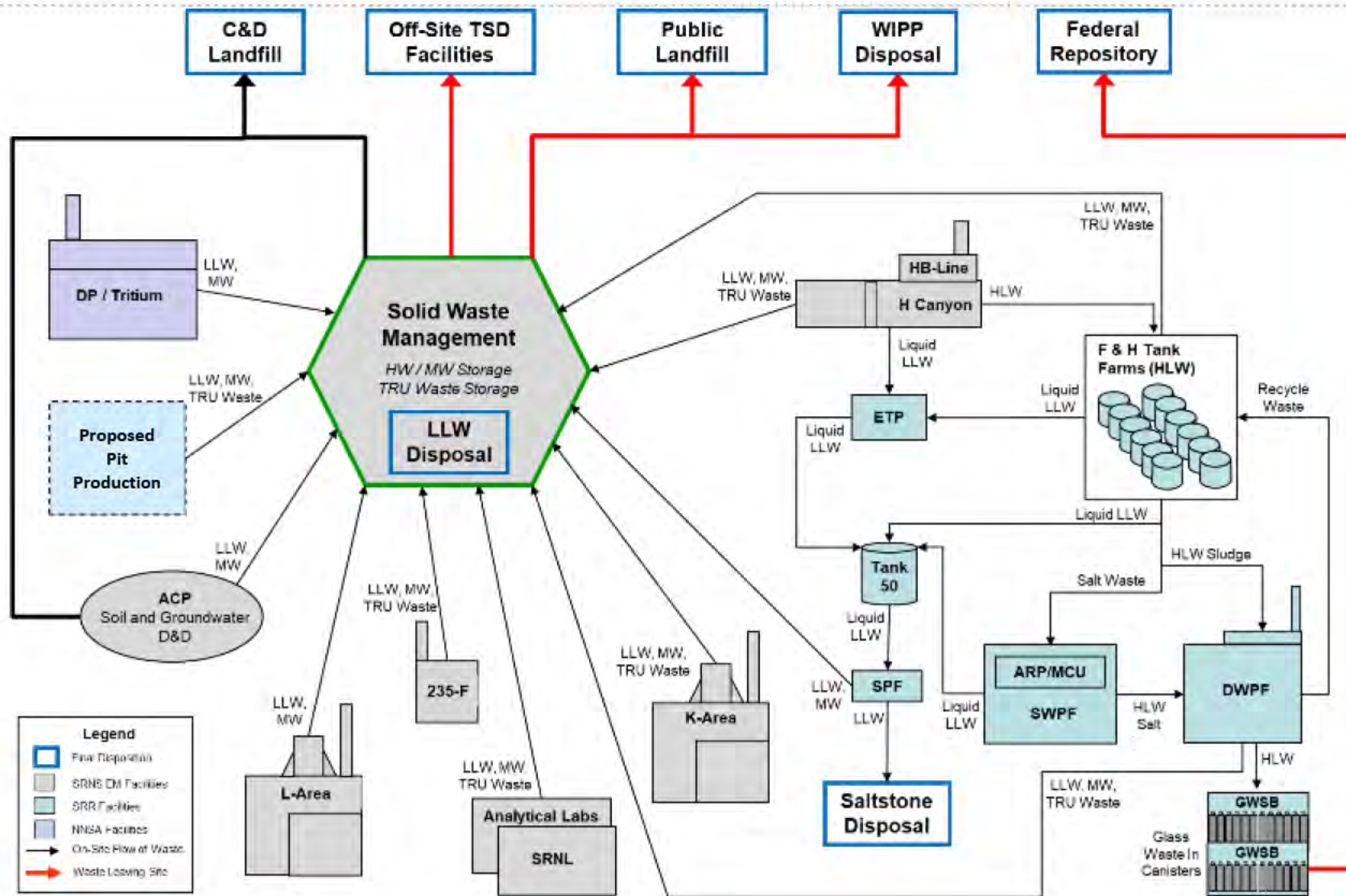
- CBFO characterization contractors
- CBFO loading and shipping contractors
- Central Procurement Program

WIPP

- Coordinating shipments based on priority
- Technical reviews



SRS Radioactive Waste Generators



Solid Waste Management Facility



Transuranic (TRU) Waste Management Overview



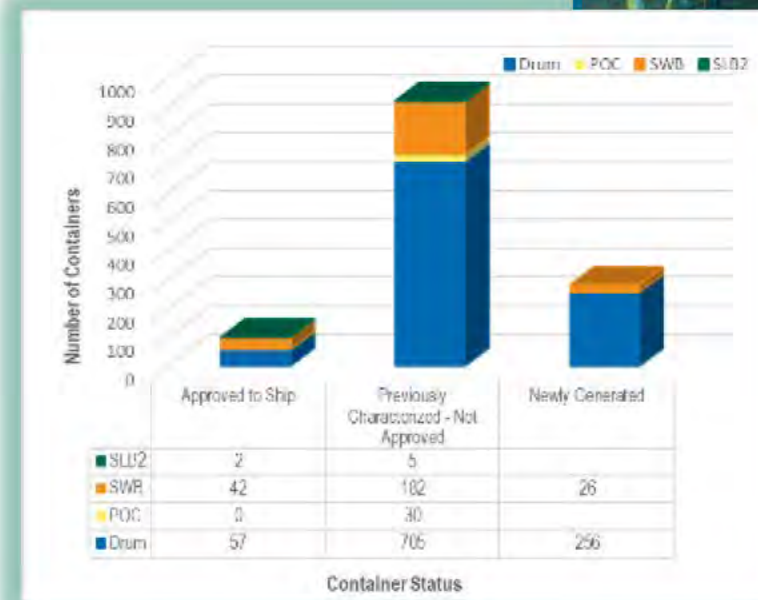
Transuranic (TRU) Waste Status

- Annual waste generation rate: approx. 30 cubic meters per year
- FY19: approx. 720 cubic meters in storage at Solid Waste Management Facility (E-Area)
- TRU waste meets current WIPP waste acceptance criteria
- Shipments to WIPP resumed in 2017
 - FY17: 9 shipments (55 cubic meters)
 - FY18: 1 shipment (9 cubic meters)
 - FY19: 2 shipments (22 cubic meters)



Transuranic (TRU) Waste Focus Area: Waste Shipments

- **TRUPACT-III (TP-III) Shipments**
 - 7 remaining Standard Large Boxes (SLB2s)
 - All previously characterized
 - 2 certified for shipment; 5 in progress (complete by Dec 2019)
 - Expect to start shipments in Winter 2019
- **TRUPACT-II (TP-II) Shipments**
 - Approx. 100 containers certified
 - 9+ shipments
 - Over 900 containers remaining
 - 40+ shipments
- **RH-TRU Waste Shipments**
 - Approx. 151 drums
 - All previously characterized
 - Shielded Container Assemblies (future)
 - Potential use for approx. 100 drums
 - 15+ shipments



Transuranic (TRU) Waste Focus Area: E-Area Characterization

- **Goal: Re-establish Characterization Capabilities by 3QFY21**
- **Newly Generated TRU Waste Containers**
 - 4 waste streams
- **Equipment procurement in progress**
 - Real-time Radiography (RTR)
 - Non-Destructive Assay (NDA)
 - Flammable Gas Analysis (FGA)
- **E-Area Facility Modifications and Procedure Updates in progress**
- **DOE-Carlsbad Field Office (CBFO) Audit & EPA Inspection required**



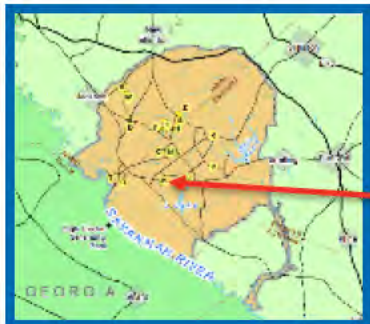
E-Area

Transuranic (TRU) Waste Focus Area: Loading and Shipping Facilities in E-Area



Transuranic (TRU) Waste Focus Area: Plutonium Oxide Downblend (K-Area)

- **Goal: Ready to Ship Criticality Control Overpacks (CCOs) by 3QFY22**
- **NEPA Approval for 6 Metric Tons (MT)**
- **Equipment procurement in progress**
 - Real-time Radiography (RTR)
 - *To be transferred from E-Area after Newly Generated TRU waste is characterized*
 - Non-Destructive Assay (NDA)
- **CCO Storage Pad design in progress**
- **DOE-Carlsbad Field Office (CBFO) Audit & EPA Tier I Inspection required**



K-Area

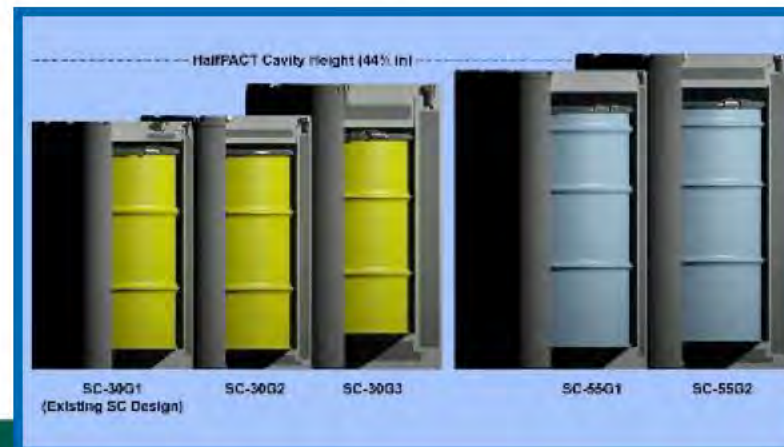


Transuranic (TRU) Waste Focus Area: DWPF RH-TRU Waste (S-Area)

- **DWPF contaminated equipment to be packaged into 30-gal drums**
 - Approx. 25 drums to be generated
 - Potential future generation (approx. 5/year)
- **Procedures in progress**
- **Characterization & Certification Planning in progress**
 - Remotely Monitored Visual Examination (VE)
 - Dose-to-Curie with Qualified Distribution
- **Overpack into SC-30G1 SCAs**
- **DOE-Carlsbad Field Office (CBFO) Audit & EPA Tier I Inspection required**
- **Ship in HalfPACTs from E-Area**



S-Area



Questions?

