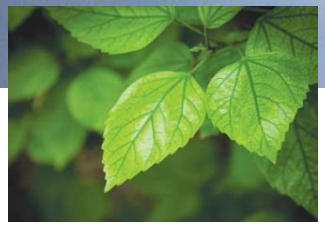
U.S. DEPARTMENT OF ENERGY

PARSONS

Path to EM Success in 2016 and Beyond:
Savannah River Site's Salt Waste Processing Facility



Jack Craig
DOE-SR Manager

Frank Sheppard
Parsons Senior Vice President & SWPF Project Manager

DOE-EM National Cleanup Workshop
September 14, 2016

srs

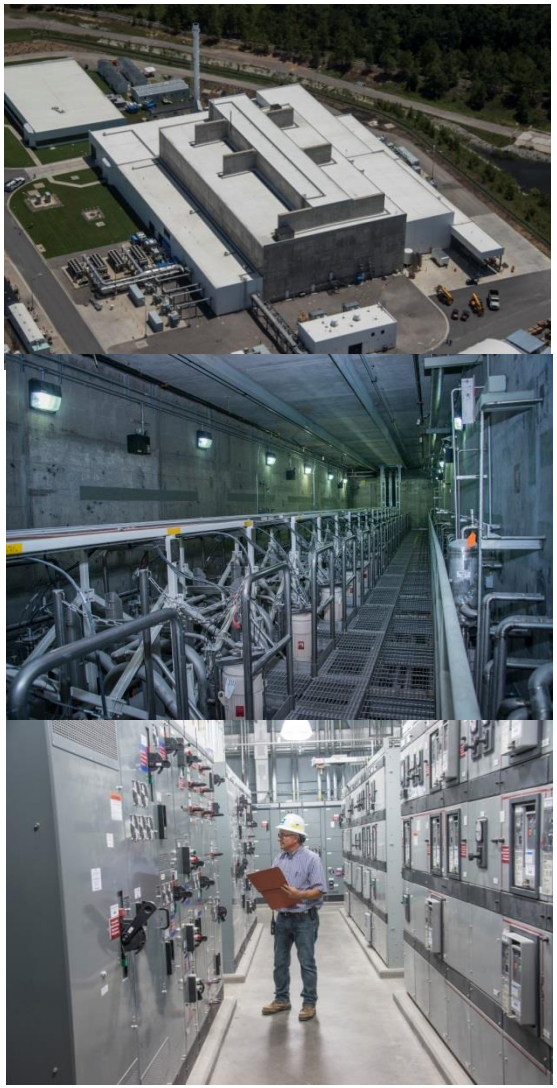
SWPF: Key Component in LW Risk Reduction

Removing salt waste, which comprises approximately 90 percent of the tank space in the SRS tank farms, is a major part of emptying the Site's waste tanks, currently at a volume of approximately 36 million gallons

Salt Waste Processing Facility is the key facility designed to process the vast inventory of salt waste stored in SRS tanks. Ultimate operations of the facility is among DOE's highest environmental cleanup priorities and a main component of its commitment to reducing risk at SRS.

Why is it needed? Once operational, SWPF will significantly increase processing rates for the SRS radioactive liquid waste system and support emptying and closing the Site's remaining 43 high-level waste tanks

What will it do? SWPF's key mission is to separate and concentrate the highly radioactive waste—mostly cesium, strontium, and actinides—from the less radioactive salt solution. After initial separation, the concentrated high-activity waste will be sent to the nearby Defense Waste Processing Facility where it will be immobilized in a glass matrix and stored in canisters onsite until it can be placed in a geological repository. The decontaminated salt solution will be mixed with cement-like grout at the nearby Saltstone Facility for disposal onsite.



SWPF: Demonstrated Project Management

Background:

- SWPF Project experienced significant delays due to failure of a Nuclear Quality Assurance (NQA-1) vendor to supply critical tanks required for project completion

Path to Success:

- New, innovative acquisition strategy developed with direct involvement by SRS and DOE-HQ senior leadership
- Contract changes renegotiated, including construction cost cap
- Fed and contractor team partnered to improve project relations and enhanced metrics
- Overall communications improved through monthly reporting
- Increased senior leadership engagement

SWPF Project Team Receives DOE Award for Project Management Improvement

(March 2016)

SWPF: Construction Complete – Key Milestone on Path to Cleanup

SWPF TIMELINE

- **2002:** SWPF Design Contract Awarded to Parsons
- **2009:** Basemat Installed
- **2011:** First Story Under Construction
- **2012:** Vessels Installed
- ✓ **2016: Construction Completed with DOE Validation** (April)
  - 8 mos. ahead of schedule
  - >$60M under contract target cost
- **2018:** Operations set to Begin

Ribbon-Cutting Celebration *June 2016*

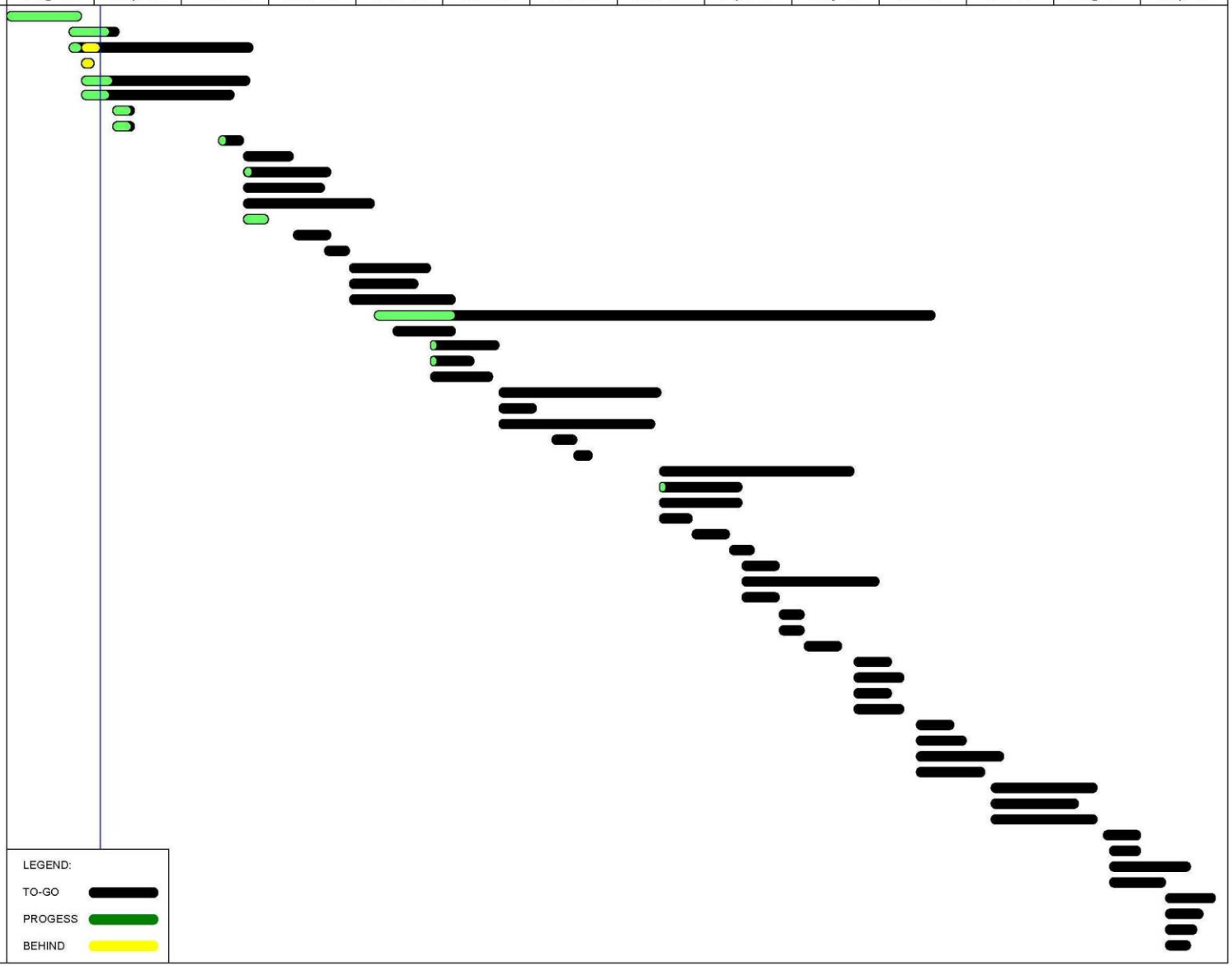
SWPF FAST FACTS:

- Miles of Piping: 27
- Tons of Concrete: 91,000
- Tons of Rebar: 5,000
- Design Capacity: 9.4 million gal/year

SWPF: June 2016

System Operability Testing Status

System ID	System Description
ICP-001	INSTRUMENT CONTROL PANELS
DOM-001	DOMESTIC WATER
PSL-001	SEAL FLUSH SYSTEM
AIR-001	PLANT AIR SYSTEM
DIW-001	DEIONIZED WATER PACKAGE
FLS-001	FLUSH WATER
FDS-001	FIRE DETECTION SYSTEM
FSS-001	FIRE SUPPRESSION SYSTEM
CWCR-001	CONTROL ROOM CHILLED WATER
VCR-001	CONTROL ROOM VENTILATION
CAU-001	CAUSTIC SYSTEM
MSTT-001	MST & SLUDGE TRANSFER TANK
SES-001	STRIP EFFLUENT SYSTEM
VCB-001	COMPRESSOR BUILDING VENTILATION
CWBV-001	CHILLED WATER – BUILDING VENTILATION
COM-001	RADIO & PUBLIC ADDRESS SYSTEM
CWT-001	CAUSTIC WASH TANK
DSS-001	DECON SALT SOLUTION HOLD TANK
SFD-001	SOLVENT STRIP FEED TANK
VPB-001	PROCESS BUILDING VENTILATION
VMS-001	VIBRATION MONITORING SYSTEM
LC-001	LAB COLLECTION SYSTEM
LLD-001	LOW LEVEL DRAINS
SIS-001	SAFETY INSTRUMENTED SYSTEM
AFP-001	ALPHA FINISHING PROCESS
LD-001	LAB DRAINS
SSR-001	SLUDGE/SOLIDS RECEIPT & WASH WATER
CWP-001	CHILLED WATER - PRIMARY
ACC-001	ACCESS CONTROL SYSTEM
ASP-001	ALPHA STRIKE PROCESS
CWAS-001	CHILLED WATER SECONDARY - ASP
NIT-001	NITRIC ACIC
VAF-001	ALPHA FINISHING FACILITY VENTILATION
VCC-001	COLD CHEMICAL AREA VENTILATION
HRS-001	HEAT RECOVERY SYSTEM
AFD-001	ALPHA FINISHING DRAINS
ASD-001	ALPHA SORPTION DRAINS
CTW-001	CSSX TEMPERED WATER
PMS-001	POWER MONITORING SYSTEM
SDG-001	STANDBY DIESEL GENERATOR
MHD-001	MATERIAL HANDLING
APP-001	APA AEROLIZATION TEST
CWAF-001	CHILLED WATER SECONDARY - AFF
SMU-001	SOLVENT MAKEUP
IST-001	INTERMEDIATE STORAGE TANKS
BA-001	BARIUM DECAY
CDS-001	CSSX DRAINS
LAB-001	HOT CELLS, GLOVE BOXES, RADIO HOODS
PVV-001	PROCESS BUILDING VENTILATION
CON-001	CONTACTORS
LAB-002	SAMPLE PUMPS
SSF-001	SALT SOLUTION FEED
CTV-001	CCTV SYSTEM
MST-001	MST SYSTEM
PMV-001	PULSE MIXER VENT
SHT-001	SOLVENT HOLD TANK
ADS-001	AIR DILUTION SYSTEM
NEU-001	NEUTRALIZATION
OAS-001	FILTER CLEANING SYSTEM
RMS-001	RADIATION MONITORING SYSTEM



SWPF: Milestone Dates

• Start of Management Self-Assessment (MSA) -2	27-Nov-2017
• Testing Complete	26-Dec-2017
• Start of Cold Commissioning	26-Feb-2018
• Start of MSA-3	26-Jul-2018
• Start of Contractor Operational Readiness Review (ORR)	25-Aug-2018
• Start of DOE ORR	24-Oct-2018
• Critical Decision (CD) -4	25-Dec-2018
• **TARGET CD-4**	**3-Dec-2018**

SWPF: Critical Testing and Commissioning Documents

- Commissioning Plan
- Plan of Action (Contractor, DOE and SRS)
- Startup Plan
- Transition to Ops Plan
- Startup Notification Reports
- Readiness Implementation Plan
- Safety Management Plans
- MSA-2/3 Plans
- Integrated Safety Management System Phase 1/2 verifications
- System operability tests, procedures all at rev 0 proceeding to rev 1

SWPF: Conclusion

- Focus on safety first
- The Basic Process Control System will be the key to successful testing
- Continue to grow and mature the Testing and Commissioning organization
- Hit all interim milestones
- Focus on critical path and maintain schedule discipline
- Ensure readiness and operational proficiency for SWPF