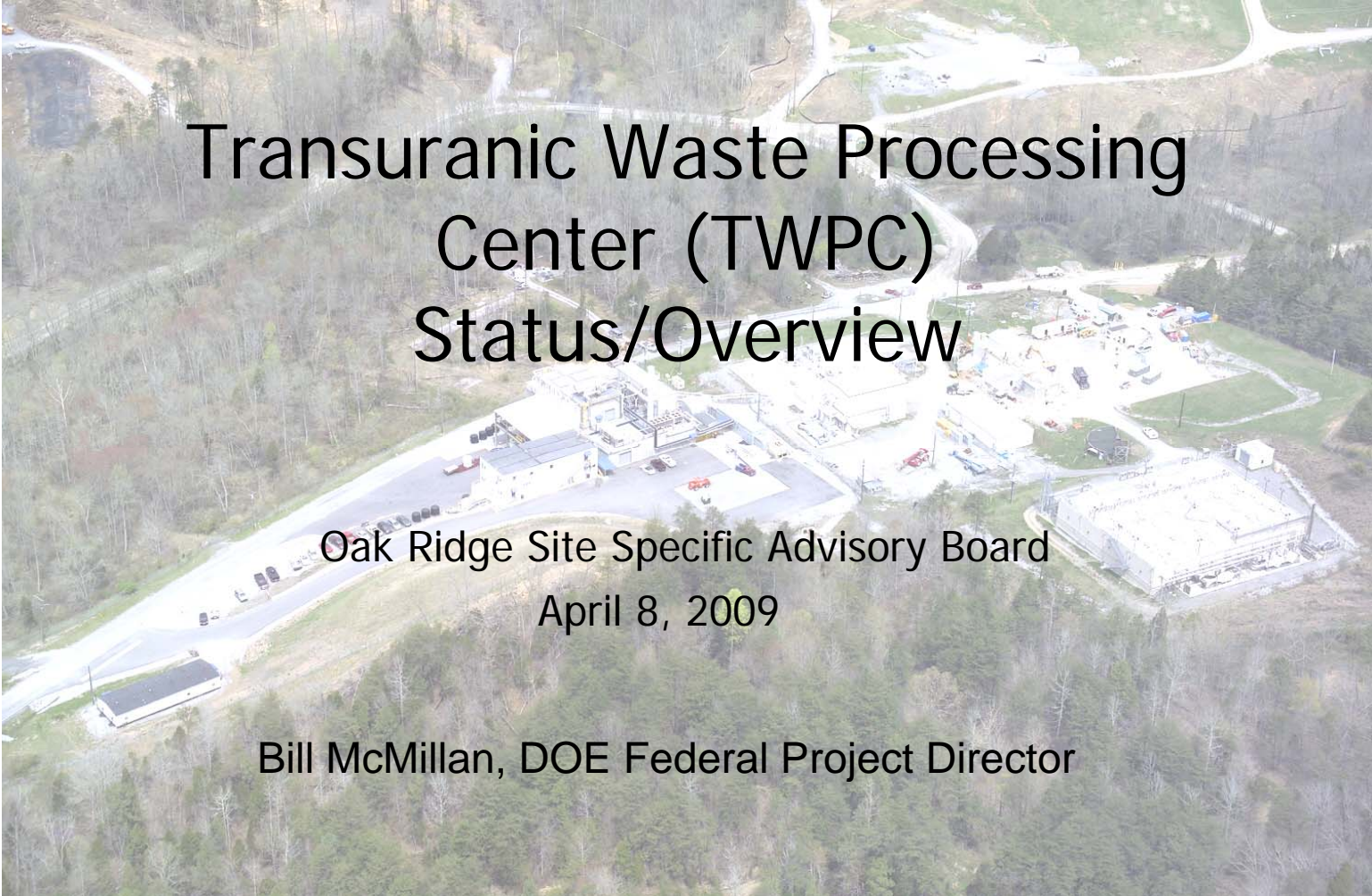


TRU Waste Processing Center



Transuranic Waste Processing Center (TWPC) Status/Overview

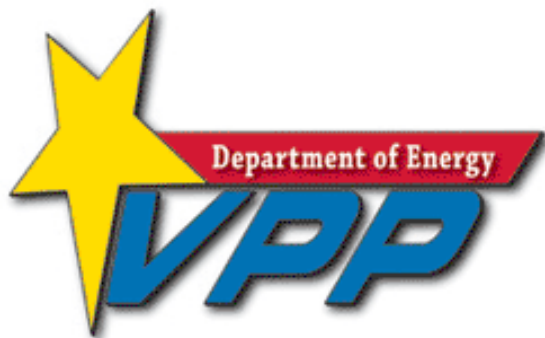
Oak Ridge Site Specific Advisory Board
April 8, 2009

Bill McMillan, DOE Federal Project Director



Continually Improving Safety Culture

- Maintaining perfect safety record
 - Six consecutive years without Lost Workday Case
 - National Safety Council “Perfect Safety Award” From 2003-2008
- Limited annual total workforce dose rate to <5 REM for 2008
 - Committed to lower in 2009
- Achieved DOE VPP Merit Status at initial review
 - HQ assessment for Star Status planned in May 2009
- Achieved ISO 14001 Certification at initial review with no findings



TWPC Project Work Scope Waste Quantities

- ORNL Supernate – 1600 m³ (completed September 2004)
- CH Debris & Soils Waste – 1500 m³
- RH Debris & Soils Waste – 600 m³
- RH Sludge – 2000 m³ (current processing strategy will create LLW to be disposed at NTS)
- Possible additional waste from other D&D projects



TRU Waste Processing Center

TWPC Major Milestone Schedule

TWPC Major Milestone Schedule
02/27/09

Activity Area	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
CH Debris												
Processing CH Debris Inventory Reduction	9/30/08	187m ³ (307m ³ Cum.)	280m ³ (587m ³ Cum.)	375m ³ (962m ³ Cum.)	375m ³ (1337m ³ Cum.)	163m ³ (1500m ³ Cum.)						
Enhancements	04/08	Commission CH Storage Building										
RH Debris												
Buildout	04/08	RH Debris Buildout Complete										
Hot Ops	05/08	Hot Ops										
Processing RH Debris Inventory Reduction	03/15/09	35m ³ (35m ³ Cum.)	96m ³ (131m ³ Cum.)	192m ³ (323m ³ Cum.)	192m ³ (515m ³ Cum.)	85m ³ (600m ³ Cum.)						
Sludge												
Buildout					5/1/12	RH Sludge Buildout Physical Modifications Complete						
Hot Ops						2/1/13	RH Sludge Hot Ops					
Sludge Processing RH Sludge Inventory Reduction							145m ³ (145m ³ Cum.)	436m ³ (582m ³ Cum.)	436m ³ (1018m ³ Cum.)	436m ³ (1455m ³ Cum.)	436m ³ (1891m ³ Cum.)	109m ³ (2000m ³ Cum.)
Supernate												
Supernate Processing Supernate Inventory Reduction												1345m ³ (1345m ³ Cum.)

Note: Production targets represent STP milestones.



CH Waste Operations

- **Processed 345 m³ of CH waste (Cumulative)**
- **Processed 45 m³ of waste FY YTD**
- **First Oak Ridge CH waste shipment to WIPP (September 2008)**
- **CHMB storage building commissioned**
- **Liquids (in debris waste) treatment initiated**
- **600+ drums of soils waste processed and ready to ship to WIPP (WIPP certification pending)**



CH Debris Processing Challenges

- **AK and Isotopic Distribution Memo development process**
 - Impacts TWPC feedstock/production needs
 - Additional resources committed by CBFO
- **NDA equipment reliability/capability**
 - Down time impacts production
 - Current gamma system sensitivity not adequate to characterize all waste drums
 - Additional NDA capability planned (IQ3 unit currently in use at Savannah River)
- **Drum Venting System readiness**
 - Approximately 600 over-packed, unvented drums to process
 - July start-up planned



CH Waste Processing Strategy

- **Developed AK development strategy and coordinated with CCP/CBFO**
- **Sequence waste processing in accordance with completed AK process**
- **Conduct remediation of waste boxes and drums to make ready for CCP certification**
- **Complete certification of soils waste to support shipping to WIPP**



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CH GLOVEBOX OPERATIONS



TRU Waste Processing Center

BOX BREAKDOWN AREA OPERATIONS



TRU Waste Processing Center

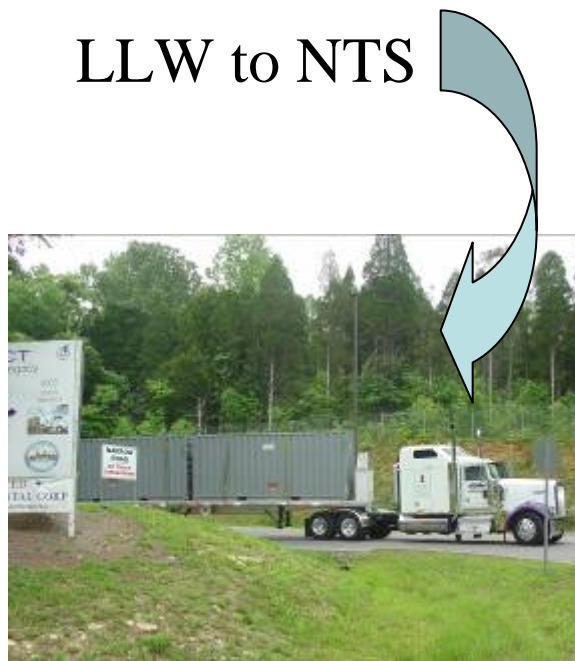
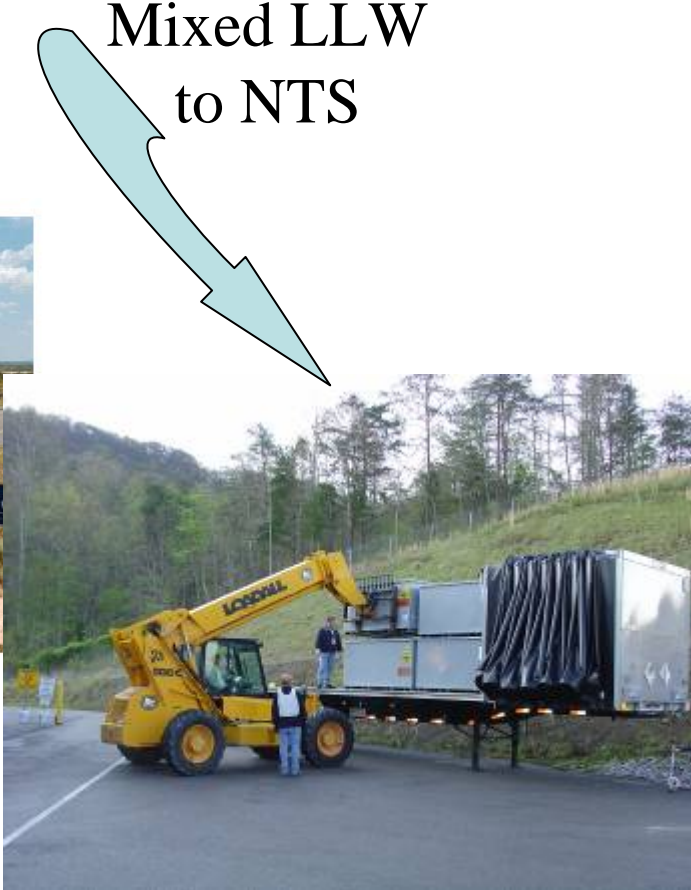
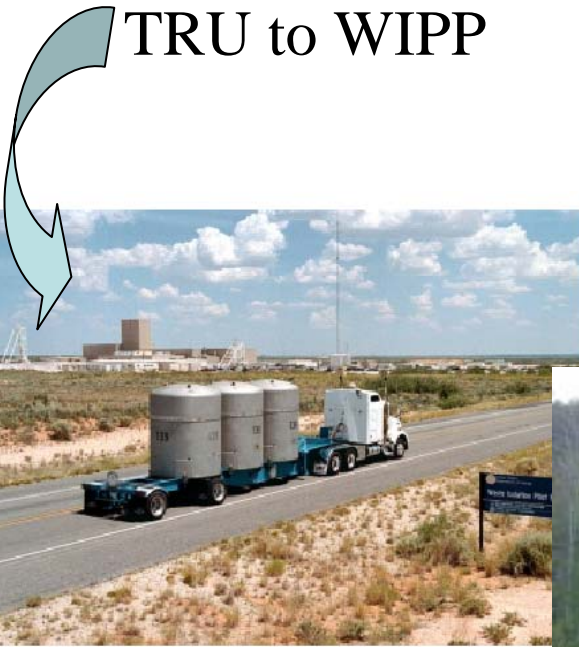


New CH Waste Storage Building



TRU Waste Processing Center

FINAL CH WASTE DISPOSITION



RH Waste Operations

- **Hot cell operations began May 2008**
- **Completed 72-B Cask loading and shipping RA**
- **Designed and installed process system for removing bulk liquids from hot cell**
- **Received EPA/WIPP certification for RH waste**
- **Completed first RH waste shipment to WIPP (February 2009)**



RH Debris Processing Challenges

- **RH AK/Dose-to Curie model development**
 - Distinct difference in nuclide distribution based on mission
 - Dose-to curie model difficult
 - Additional data collection and resources applied
- **High neutron dose from some RH waste exceeds transportation limits**
 - CBFO designing shielded canister configuration for 72B Cask
- **Excessive ground water infiltration encountered in buried RH casks**
 - 30 to 350 gallons in casks (reduced RH processing rate)
 - Water collection and sampling methods established
 - TDEC approved “no longer contains” strategy
- **STP milestone accomplishment**
 - Milestone renegotiation with TDEC planned



RH Waste Processing Strategy

- **Incorporate Pre-79 and 79-91 groups into approved AK waste stream**
- **Sequence processing schedule to delay high neutron wastes consistent with NRC approval of new 72B Cask shielded packaging configuration**
- **Focus processing on waste streams with high probability of maintaining RH designation when processed to maintain RH flow into WIPP**
- **Plan for processing decayed RH casks in Box Breakdown Area**



TRU Waste Processing Center



**RH Waste Cask Preparation for
Insertion Into Hot Cell**



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RH Waste Visual Examination



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**RH Waste Visual Examination
(Melted Poly w/Debris Waste in Paint Can)**



TRU Waste Processing Center



Bulked groundwater collected from RH Casks



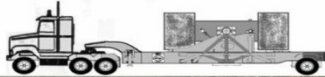
TRU Waste Processing Center



First Remote Handled (RH) Waste Shipment to WIPP



February 2009



RH Sludge Waste Status

- **Sludge disposition path determined**
 - Solidified LLW to NTS
 - Processing start scheduled for Mid-2013
- **Sludge process methodology**
 - Process methodology independently confirmed
 - Conceptual design study completed
 - Bench scale testing
 - Solidification mix designs confirmed
 - Containment of RCRA heavy metals confirmed
 - Sludge mobilization methodology in preliminary design phase



ARRA Stimulus Planning

- **Accelerate CH and RH debris processing to complete approximately 1 year early**
- **Results in capability to move sludge processing forward by 1 year**
- **TWPC schedule change under ARRA funding**
 - **Begin 2nd CH and RH production shift in July 2009**
 - **Two 4-day, 12-Hour production shifts, Monday – Thursday**
 - **Begin 3rd logistics/support shift in January 2010**
 - **Friday – Sunday, 12-Hours w/overlap**
 - **Design activities and procurement will be accelerated for RH sludge processing**

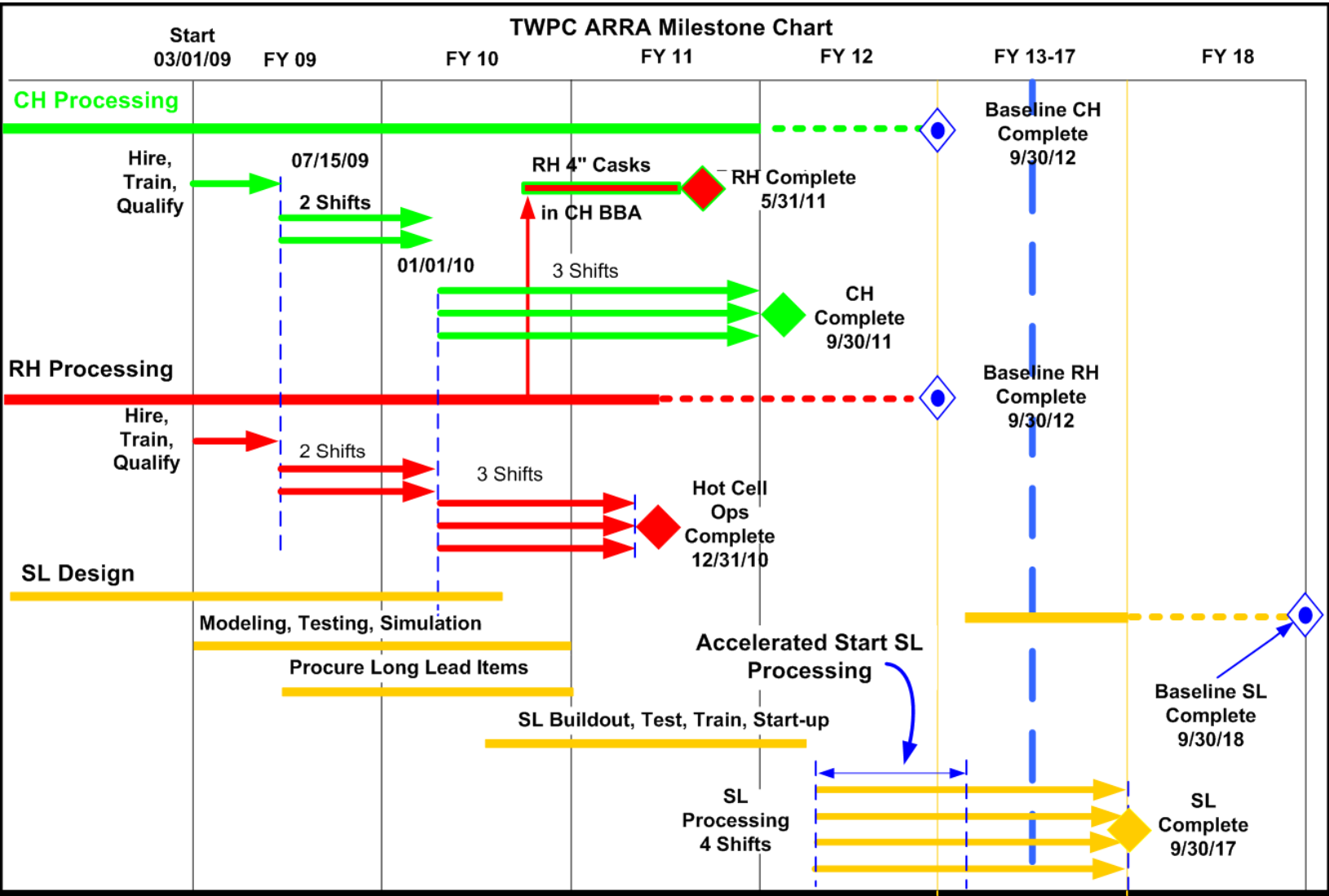


ARRA Stimulus Planning

- **Safe and controlled ramp-up**
 - Commercial nuclear power “Training Center” approach
 - Safety culture
 - TWPC SSC’s
 - Position training and qualification
 - Classroom and OJT
 - New hires located at off site training center
 - On site
 - Walk downs
 - Observations
 - OJT



TRU Waste Processing Center



ORR Transuranic STP Milestone Status

- **CH Waste**

- Completed FY 2007 processing milestones on schedule
- Completed FY 2008 processing milestones on schedule
- Completed FY 2008 initial shipment of CH waste milestone on schedule
- FY 2009 processing milestone projecting to be complete on schedule

- **RH Waste**

- Completed FY 2009 initial shipment on schedule
- FY 2009 processing milestones will need to be renegotiated



Gamma Shielded Container Design

- **Strategy**
 - Design shielded drum to allow management of some RH waste as CH at WIPP
 - Requires NRC TRUPACT packaging configuration approval
 - Potentially recovers lost RH disposal space at WIPP
 - Will be evaluated for implementation at Oak Ridge

