



Sodium-Bearing Waste Treatment Update

Presented at the Citizens Advisory Board Meeting,
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Keith Lockie

Department of Energy-Idaho



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September 10

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Acquisition

- Idaho Cleanup Project contract contains the Sodium Bearing Waste Treatment Project Scope
 - Design, Construct, and Commission a new treatment facility
 - Total Line Item Project Cost - \$570.9 M
- Contract also includes operational campaign to treat the tank waste
 - Estimated Operations Costs ~ \$30M - \$40M



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Artist Rendition – SBW Treatment Facility Location at INTEC



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Sodium Bearing Waste Treatment

Mission

- New Facility to Treat 900,000 Gallons of Radioactive Liquid Waste currently stored in underground tanks at the INTEC Tank Farm
- Tank Waste Referred to as Sodium Bearing Waste (SBW):
 - A mixture of: Decontamination solutions from cleanup of equipment and facilities, laboratory wastes, Tank heels with solids
 - Highly acidic, radioactive liquid
 - Relatively high in sodium salts from decontamination solutions
- Idaho Settlement Agreement Requires Treatment of Tank Waste by December 2012
- Consent Order requires the remaining INTEC Tank Farm tanks to be emptied by December 2012
 - Tank Farm tanks secondary containments non-compliant with RCRA



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Tank Farm Closure Progress



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Sodium Bearing Waste Treatment Project Description

- Steam Reforming technology converts acidic radioactive liquid waste to solid carbonate particles
- New facility - includes Process Building with reinforced concrete process cells inside a structural steel building, along with a Product Storage Building
- Produces ~ 650 – 700 remote-handled waste canisters
- Product Storage Building provides interim storage for entire product volume
- Project at times referred to as the Integrated Waste Treatment Unit (IWTU)

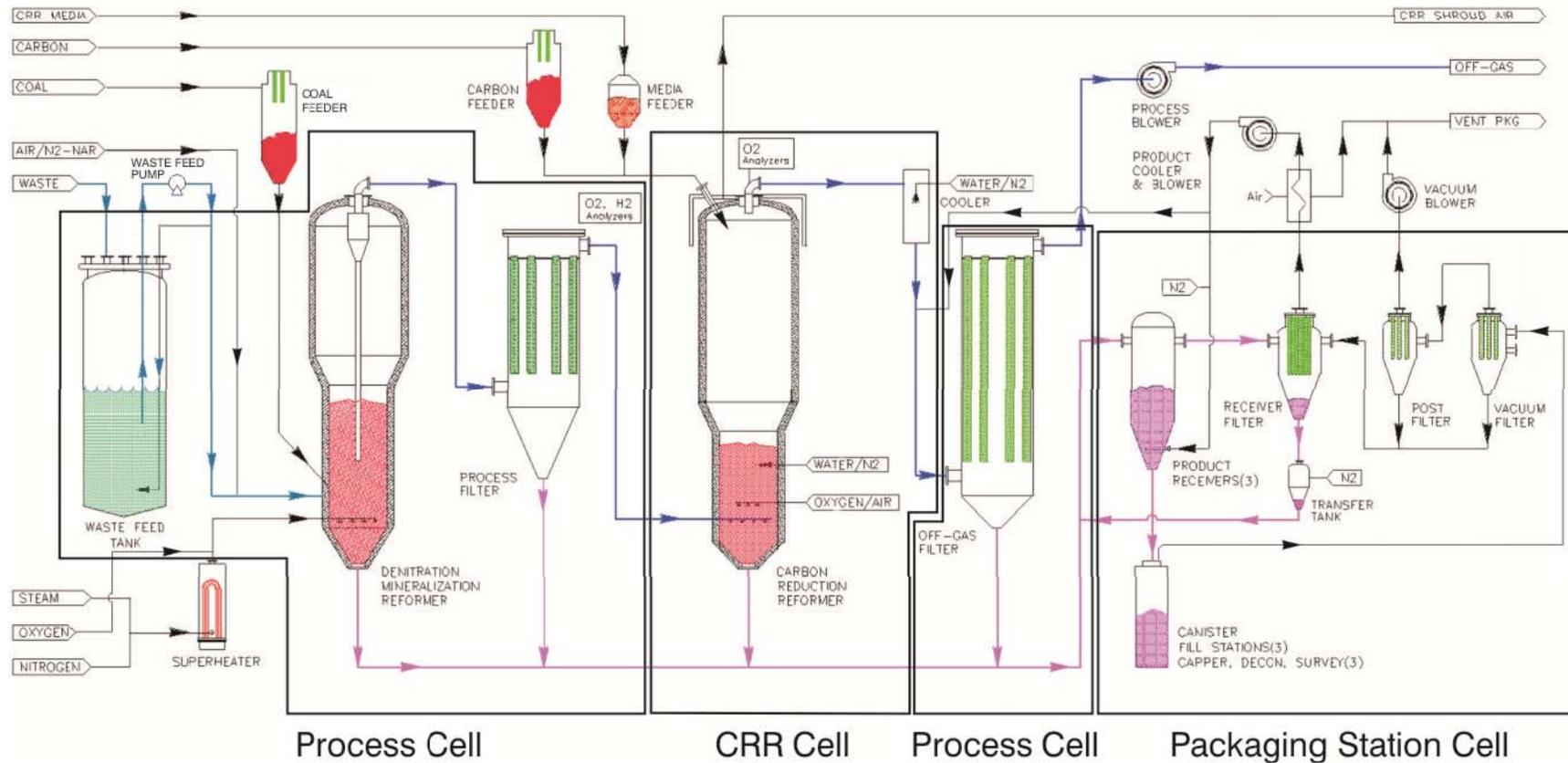


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Sodium Bearing Waste Treatment Project

Flowsheet



G07-1956-01



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Sodium Bearing Waste Treatment Project Progress

- Construction efforts nearing completion
 - Construction complete on several individual systems - turned over from construction group to test organization
 - Construction Substantially Complete milestone – 10/31/10
 - Systems necessary to demonstrate mission capability turned over to test group
 - DOE Deputy Secretary/Stakeholders celebration planned in November
 - Remaining construction complete - 12/31/10
- System test program commencing
 - Testing phase to run through February 2011
- Forecasted Readiness Review dates
 - Contractor Management Self-Assessment (MSA) – late February 2011
 - Contractor Operational Readiness Review – May 2011
 - Federal Operational Readiness Review – July 2011
- Waste Treatment Campaign to begin late August 2011, and estimated to complete as early as July/August 2012



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Installation of Insulation on Mercury Adsorber Vessel



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Off-gas Blowers and Piping Installation



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Vault Loading Hatch Installation



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Electrical Cable Installation at Power Distribution Center



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Product Storage Building Progress



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Electrical Switchgear Work at Power Distribution Center



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Implementing a More Efficient Startup Sequence

- **Original approach**

- Integrated system testing with water and waste feed simulant to show functionality/mission capability and fine tune systems prior to final Operational Readiness Reviews (ORRs)
- Tests with water/waste feed simulant require controls in place for hydrogen generation hazards, mercury release hazards, and nitrous oxide release hazards - required additional up-front reviews/approvals to introduce hazards prior to ORRs
- Comprehensive Performance Test (required as part of regulatory permit) planned to be performed during readiness review activities
- Waste treatment campaign would begin by August 2011

- **New approach**

- Uses less hazardous heated nitrogen gas for integrated system testing to show functionality/mission capability prior to ORRs
- Defers potential of hydrogen generation hazards, mercury release hazards, and nitrous oxide release hazards until after final ORRs
- Uses a Transition to Operations period after final ORRs to fine tune systems using water and waste simulant prior to actual waste treatment
- Permit-required Comprehensive Performance Test performed during Transition to Operations period
- Waste treatment campaign would begin by August 2011, following Transition to Operations period

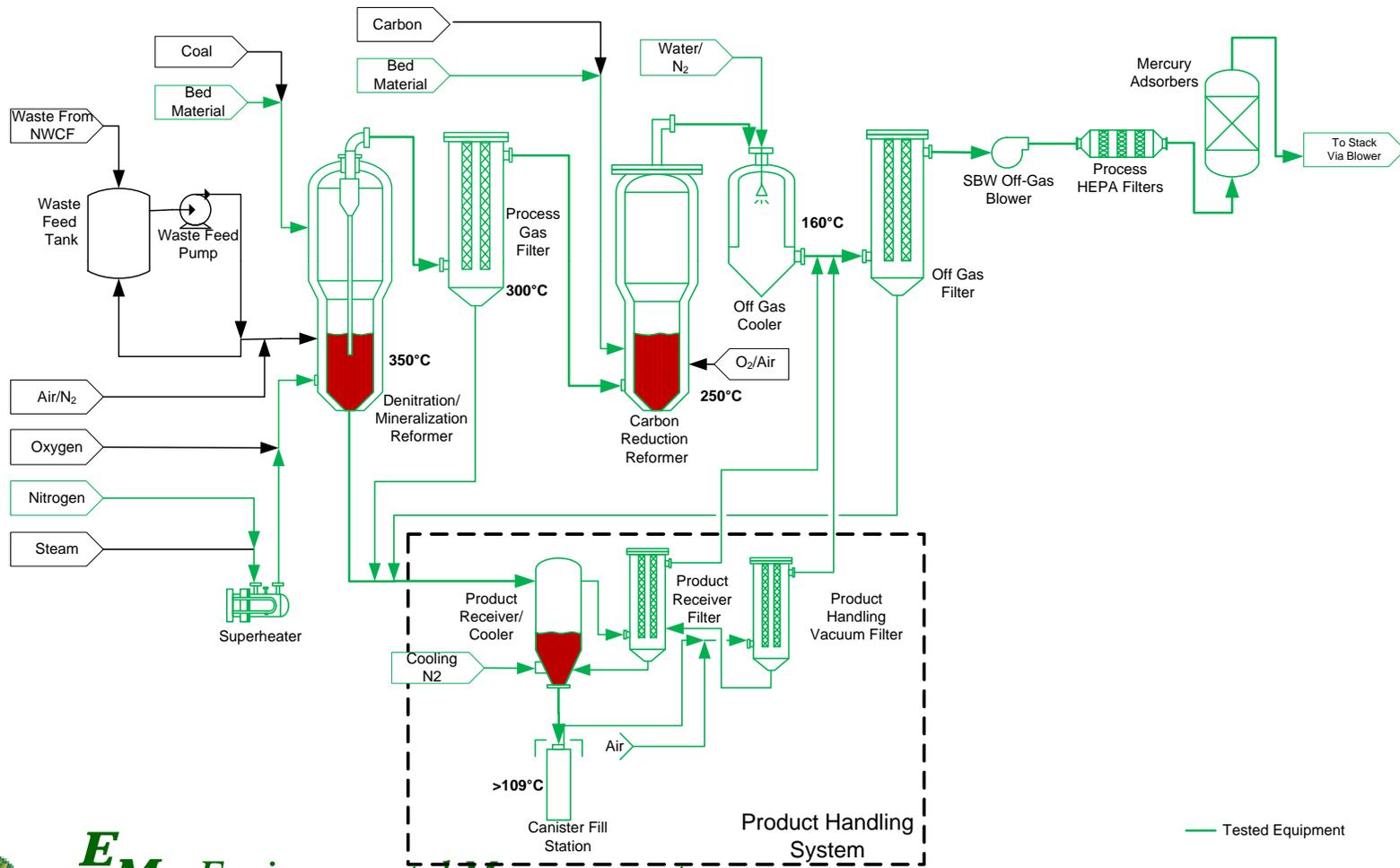


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Core Systems Startup Demonstration Flowsheet

MSA Demonstration Flowsheet



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Air Pallet Discussion

- Animation/Discussion- [Aerogo](#) website



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Air Pallet Construction



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Air Pallet Construction/Testing



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Air Pallet Tug Vehicle



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Summary Points

- Wrapping up construction activities this calendar year
- Sequence of construction turnover of individual facility systems for testing/verification is in progress
- Testing Program and Readiness Review Activities will occur over the next eleven months
- Full Operations Planned to commence in August 2011
- Waste Treatment Campaign to complete by December 2012 Settlement Agreement Milestone



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