



Welcome to Kingston Steam Plant

Community Action Group

January 14, 2020

- Safety Message; Todd Butler



- Site Tour – 30 min
 - Conference room to turbine floor overlook
 - Will pass boiler and coal bunkers on route to overlook
 - Overlook to unit 1/2 control room
 - Back to the Assembly room





Kingston – Plant Overview

- 9 coal fired units producing 1260 MW's
 - U1-4 135 MW, single CE furnace, Westinghouse turbo generator units
 - U5-9 180 MW, twin CE furnace, General Electric turbo generator units
- 217 employees (originally 329)
 - Operations, Maintenance, Engineering, Fuel Handling.....
- Construction started 1951; Completed 1955
 - Unit 1 commercial operation on February 8, 1954
 - Unit 9 commercial operation on December 2, 1955
 - Largest coal burning plant in the world at that time
 - Energy to 700,000 homes
- Fuel:
 - 50/50 blend of PRB (powder river basin) & ILB (Illinois basin)
 - 13,500 tons per day
 - Delivery by rail only



Kingston – Over \$1B in environmental upgrades

- Precipitator: Removes the initial heavy ash from the flue gas path – \$60M
- SCR: To control nitrogen oxide emissions that contribute to summertime ozone formation – \$500M
- Dry Fly Ash: DFA is transported and stored in dry state; Sold as concrete additive eliminating the need for wet pond – \$275M
- Scrubber: Reduce sulfur dioxide emissions that contribute to acid rain – \$500M
- Gypsum Dewatering: Gypsum can be sold to industrial companies rather than land-filled – \$45M
- Bottom Ash Dewatering: Bottom ash is sold to industrial companies rather than land-filled – \$50M

TVA Kingston – Electric Generators

U1-4: **Westinghouse** (little end)

- 135,000 kW Rated Capacity
- 3,600 RPM
- 18,000 Generating Voltage
- 44 Stages

U5-9: **General Electric** (big end)

- 180,000 kW Rated Capacity
- 3,600 RPM
- 20,000 Generating Voltage
- 24 Stages



KINGSTON CCR FACT SHEET



KIF CCR RULE FACILITIES:

Inactive Impoundments:

- Sluice Trench & Area East of Sluice Trench (Closed)
- Stilling Pond (Closed)

Active/New Landfill:

- Peninsula Disposal Area
 - Segregate CCR material for stability and marketing
 - Phase 1 - ~5-6 years capacity remaining
 - Phase 2 – Cell 1 construction June 2019
 - (~ 5 years capacity)

INSTRUMENTATION MONITORING:

Monitors in real time, the health and stability of CCP facilities.

- 62 Piezometers – monitor water level for stability
- 15 Inclinometers – monitor movement for stability

GROUNDWATER MONITORING:

- 36 total wells
- 10 wells at the Recovery

2019-2020

- Phase 2 Landfill Expansion Cell 1
- EIP completion date – 2021

Summer 2021 and Beyond

- FGD Wastewater Treatment Plant Construction
- ELG - Bottom Ash "no discharge" 2023
- Phase 2 Landfill Expansion Cells 2-4

KIF CCR PRODUCTION			
	Fly Ash (Tons)	Bottom Ash (Tons)	Gypsum (Tons)
Average	140,000	16,000	204,000
Marketing	65%	0%	40%

