



Sargent & Lundy



THE POWER OF PERSISTENCE: CLEANING UP THE PAST

Manny Zeringue, Vice President, Generation, Big Rivers Electric Corporation

Jason Burden, Managing Director, Generation, Big Rivers Electric Corporation

Holly Hills, Project Manager, Env. & Process Technologies, Sargent & Lundy

October 7, 2026



WHO IS BIG RIVERS?



- Big Rivers is a not-for-profit electric Generation and Transmission (G&T) cooperative, formed in 1961, that is owned by the three Member - Owners we serve. Combined, our Member - Owners provide electric service for **more than 120,000** homes, businesses and farms in **22** western Kentucky counties.
- Big Rivers supplies wholesale electric generation and transmission service to our three Member - Owner Distribution Cooperatives (Members) under all requirement contracts:
 - **Jackson Purchase Energy Corporation (JPEC) – Paducah, KY**
 - **Kenergy Corp (Kenergy) – Henderson, KY**
 - **Meade County Rural Electric Cooperative Corporation (Meade Co. RECC) – Brandenburg, KY**

Project History



Planning – **2010-2012**

- Wilson FGD identified as a key initiative in Big Rivers' Environmental Compliance Plan.

Regulatory – **2012**

- Regulatory filing submitted to the Kentucky PSC; major customer departure creates significant uncertainty and shifts capital priorities.

Recovery Plan – **2012-2014**

- Focus moves from environmental investments to system recovery and maintaining operation of Wilson Station through new power purchase agreements.

Preparing Future – **2017-2020**

- Long-term generation planning resumes as financial and operational stability improve.

Project History



Sargent & Lundy

Regulatory Filing and Approval

- Detailed engineering commences
- COVID – 19 hits North America
- Assembling bid packages and scope splits



2021

- Contractors mobilize.
- Schedule impacts materialize due to supply chain slow down and labor shortages.
- Successfully completed the November FGD tie-in outage without the forced oxidation system.

Mobilization



2023

Performance Testing

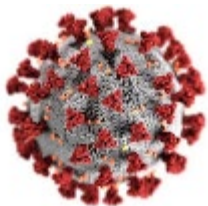
- Commissioning and Performance testing of WWT
- Identified operational constraints / Project Contractors Disengaged

2025/
2026



Contract Awards

2020



- Bid participation for BOP scope less than desired (2 options)
Pandemic impacting project (Procurement and Labor)
Wilson tie-in outage moved from Spring 22' to Fall 22'

2022



Balance of Project Commissioning

- Oxidation Blowers
- Dewatering – Horizontal belt filter
- SDA w/Baghouse

2024



Gap Identifications

- Operating range of WWT not wide enough for normal operating characteristics making maintaining chemistry and compliance a challenge.
- Prototype design change implemented in 30-day window that demonstrates successful operations.

D.B. Wilson Station

Dewatering

Wastewater Treatment

FGD

SDA



Project Scope & Approach

Unique Challenges:

- Equipment relocation vs. new installation evaluated.
- Dewatering system redesigned to separate solids and chloride management
- Scope expanded to include WWT and SDA for ZLD operation
- Significant scope growth managed while maintaining project objectives

Key Lessons Learned:

- Cost-saving decisions can increase execution risk when owner assumes GC responsibilities.
- Managing six major contractors within a single integrated schedule created substantial interface risk
- Strong risk awareness and early intervention were critical to project delivery



Procurement & Supply-Chain Constraints



- EPC approach, limited bid options for ideal ZLD configuration?
 - 3 bids for relocation
 - Only 2 bids for ZLD – 2nd option was a crystallizer
- COVID-19 drove significant increases in domestic steel pricing during the bid and execution period
- COVID-19 disrupted supply chains, resulting in extended procurement lead times, including domestically sourced materials
- COVID-19 created challenges in the external labor market, impacting contractor availability and labor costs
- Risk for steel 317LMN mill run seemed secure with index price for steel at the time, didn't consider port closures and tariffs

Sargent & Lundy

Powering progress through engineering, innovation and accountability

- Founded in 1891; 130+ years of experience
- Privately held, engineer-owned
- Headquarters in Chicago, with 40+ U.S. offices
- 5,000+ employees
- ISO 9001:2015 Certified Quality System
- Ranked among top-tier AEs by Engineering News-Record (ENR) and others



S&L's New HQ - 77 W. Wacker, Chicago IL

SARGENT & LUNDY

**ENR TOP
500 DESIGN FIRMS**

TOP 50 FROM 1965 – 2024

SARGENT & LUNDY

**ENR TOP
20 DESIGN FIRMS
IN POWER**

TOP 10 FROM LAUNCH TO 2024

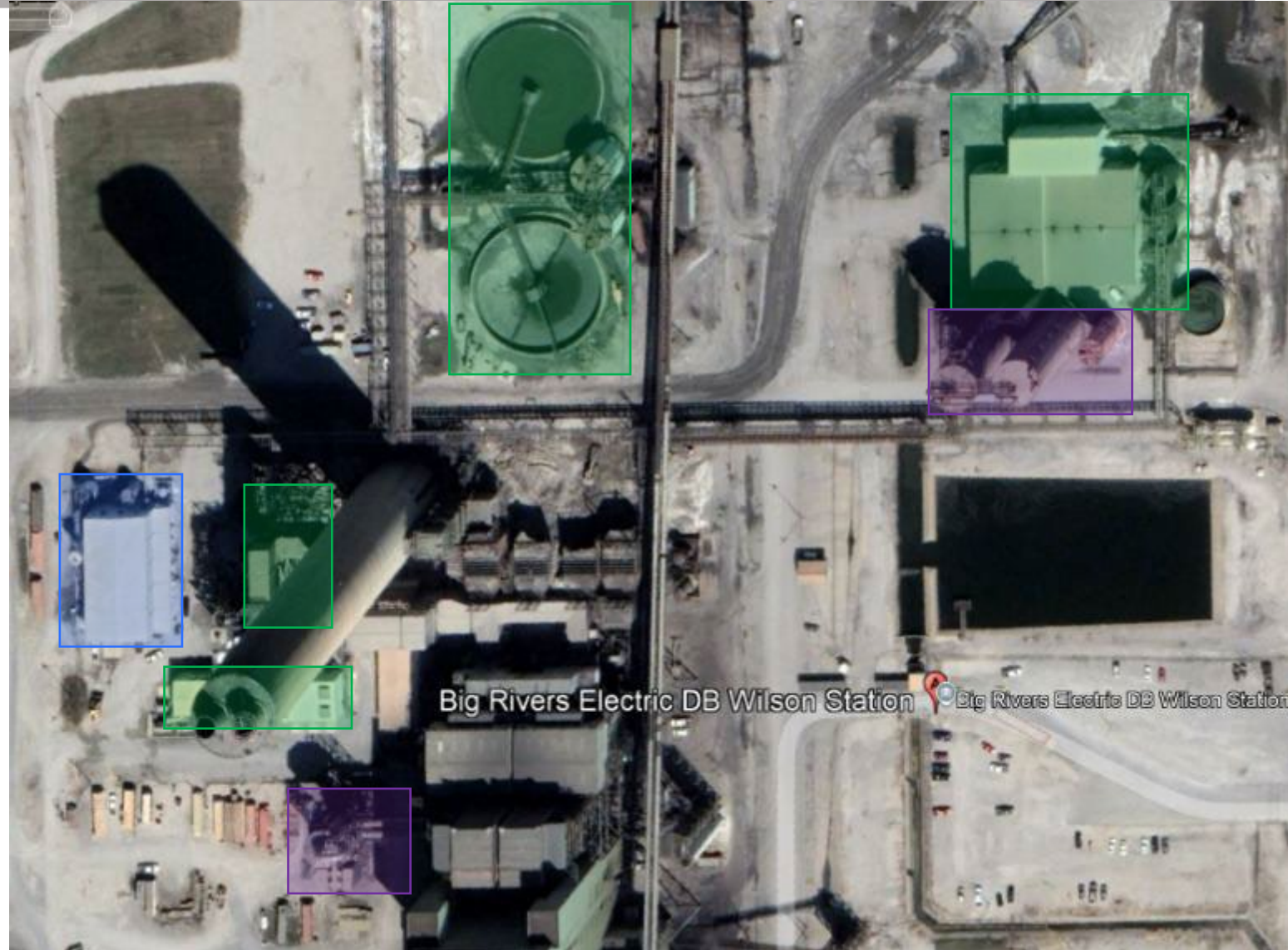
Finding a solution....



- S&L onboarded April 2026
- Evaluated new operational changes and entire WFGD & WWT process to identify additional scope and/or modifications for permanent solution
- Coordinated implementation of temporary rental WWT equipment in July 2026 to address existing WWT equipment needs to allow system to operate at full load until permanent solution installation.
- Project execution plan for breaking up permanent solution into smaller scopes to ensure OEM engagement

Project Execution & Scope Splits

- WFGD Island
- WWT System
- WWT SDA Material Handling System
- Balance of Project (BOP), Common Systems and Integration



Project Execution & Scope Splits



Sargent & Lundy

- **WFGD Island**

- Purge Hydroclone OEM Supply
- Interconnecting Piping and/or pumping
- Piperacks, Structural Steel, Infrastructure

- **WWT System**

- Process Equipment
- Interconnecting Piping and/or pumping
- Piperacks, Structural Steel, Infrastructure

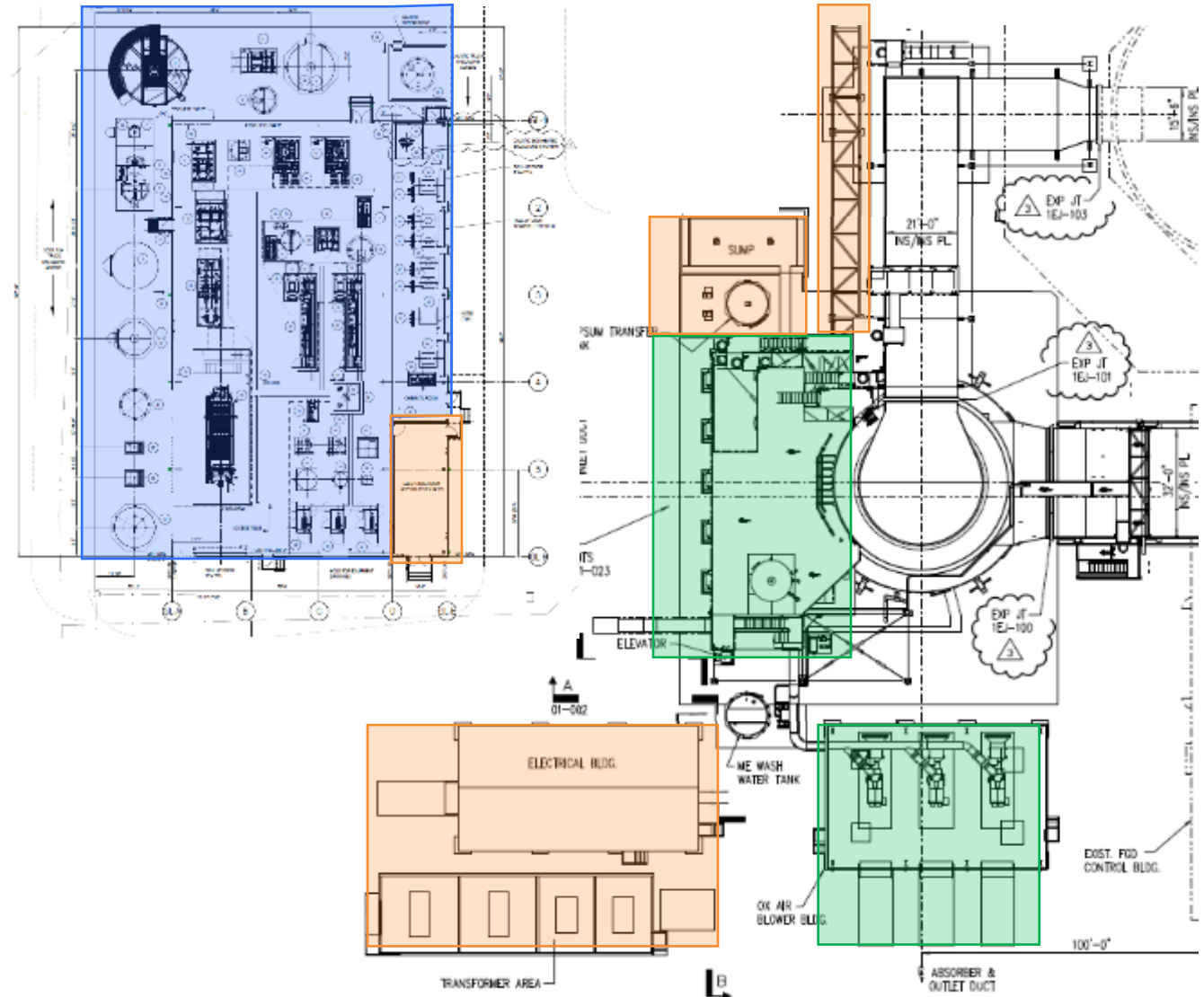
- **WWT SDA Material Handling System**

- Material Handling Collection System
- Fixation System
- Interconnecting Piping
- Piperacks, Structural Steel, Infrastructure



Project Execution & Scope Splits

- BOP, Common Systems and Integration
 - Tanks (Mix Tanks, Added Storage Capacity, etc.)
 - Electrical Infrastructure:
 - Transformers
 - Raceway, Ductbank, etc.
 - Integration:
 - Interconnecting Piping (WFGD Purge, etc.)
 - Piperacks (new/modifications)
 - Structural Steel
 - WWT SDA Solids Conveying System



Lessons Learned



- Key decisions and execution practices that influenced project cost, schedule, safety performance, and operational reliability.
- Variances between the original plan and actual execution, including early warning indicators, lessons learned, avoidable errors, and effective risk mitigation strategies.
- Develop procurement strategies that incorporate liquidated damages (LDs) and performance guarantees as core contractual requirements. Ensure they remain embedded throughout bid evaluations, contract negotiations, project execution, and final acceptance.

THANK YOU FOR THE OPPORTUNITY



Jason C. Burden
Managing Director - Generation
Big Rivers Electric Corporation
710 W. 2nd Street
Owensboro, KY 42301
(270) 844-6184 (direct)
(270) 577-6735 (cell)
jason.burden@bigrivers.com

Holly M. Hills, P.E. ChE

Environmental & Process Technologies Technical Supervisor & Project Manager

Sargent & Lundy

1-312-269-2576 (direct) | 1-901-828-0638 (mobile)

Licensed in IL

holly.m.hills@sargentlundy.com

www.sargentlundy.com

77 W. Wacker | Chicago, IL 60601