

CASE STUDY

# Navigating Regulatory Challenges in Coal Power:

## *Talen Energy's Colstrip Power Plant*

### Background

Talen Energy manages the Colstrip Power Plant, a large coal-fired facility in Montana with a current capacity of 1000 MW (downscaled from its original 2000 MW). As coal power faces increasing regulatory scrutiny and environmental restrictions, Colstrip operates under complex and shifting conditions. Potential future scenarios, such as coal-to-gas conversions and new compliance requirements, present both challenges and opportunities for Talen Energy. The need for efficient scheduling, compliance flexibility, and readiness for potential transitions drives Talen's operational strategy at Colstrip.

### Challenge

The Colstrip Power Plant's multi-participant model and regulatory landscape require a comprehensive management approach. Talen Energy needed a solution to:

- Manage complex scheduling and power allocations for multiple plant owners, each with unique operating shares and requirements.
- Adapt to evolving regulatory requirements, including emissions tracking, reporting standards, and potential environmental restrictions.
- Optimize plant operations to remain competitive in an increasingly difficult market for coal power.
- Prepare for potential future conversions from coal to alternative fuels, such as gas, while maintaining operational continuity.

## Solution

To meet these needs, Talen Energy implemented our Gen Scheduler software, specially configured for coal operations to address the unique challenges of the Colstrip Power Plant. Key solution features included:

- **Efficient Multi-Owner Scheduling and Power Allocation:** Gen Scheduler automates and streamlines scheduling across multiple participants, ensuring that each owner's share is accurately managed and allocated in line with Colstrip's total output.
- **Regulatory Adaptability:** The software's flexible configuration allows Talen to quickly update processes and data tracking to stay compliant with evolving regulations.
- **Coal-Specific Configuration for Precise Fuel Management:** Gen Scheduler is tailored to handle coal-related parameters, such as fuel type, burn rates, and emissions tracking, supporting detailed management of Colstrip's coal-fired operations.
- **Scalability for Future Transitions:** Gen Scheduler is scalable and can be reconfigured for potential future fuel source changes, such as a conversion from coal to natural gas, leveraging configurations similar to those used for other power plants like the Magnolia Power Project.

## Implementation

The Gen Scheduler software was deployed at Colstrip in a phased approach to ensure compatibility with the plant's multi-owner structure:

- 1. Initial Deployment of Coal-Configured Gen Scheduler:** The first phase included deploying Gen Scheduler with specific configurations for managing coal inputs and emissions tracking.
- 2. Customization for Multi-Owner Operations:** Tailored workflows and participant-specific views were implemented to support Talen's multi-participant requirements, allowing each owner to access data relevant to their share of the plant.
- 3. Ongoing Support and Regulatory Updates:** Continuous support and software updates ensure that Gen Scheduler evolves alongside regulatory changes, keeping Colstrip compliant with the latest standards and minimizing administrative burdens.

## Key Features

- Participant-Specific Views and Scheduling:** Each plant owner can access detailed scheduling and performance data specific to their share of Colstrip's output, fostering transparency and accountability.
- Integration with Transmission Approval Processes:** Gen Scheduler integrates with systems like Northwestern Energy for seamless transmission approvals, ensuring smooth delivery of power from Colstrip to the grid.
- Adaptability for Potential Fuel Source Changes:** The software's modular design supports transitions to alternative fuels, providing Talen with a flexible platform that can evolve with Colstrip's future operational needs.

# Results

Talen Energy's implementation of Gen Scheduler delivered significant benefits, allowing Colstrip to maintain operational resilience amid uncertain market conditions:

- **Improved Efficiency:** By automating power allocations and fuel management, Gen Scheduler reduced manual processes, helping Colstrip operate more efficiently and maintain competitiveness.
- **Enhanced Compliance:** The software's flexibility enables Talen to quickly adapt to new regulations and reporting requirements, supporting Colstrip's adherence to stringent environmental standards.
- **Transparent Multi-Owner Management:** Gen Scheduler's participant-specific views enable each owner to monitor their portion of the plant's output, while providing full visibility into overall plant performance.
- **Long-term Partnership:** The multi-year contract between Talen and SoftSmiths underscores the stability and reliability of Gen Scheduler in navigating the complexities of coal power management.
- **Future-Proofing for Fuel Source Transitions:** Gen Scheduler's scalable framework is prepared for a potential fuel conversion at Colstrip, making it adaptable to alternative configurations, such as gas, based on proven software applications at other facilities.

Through this partnership with SoftSmiths, Talen Energy has gained the operational efficiency and flexibility needed to manage the challenges facing coal power, while positioning Colstrip for potential future transformations.

## About SoftSmiths

### *Empowering the Future of Energy Management*

Founded in 1997, SoftSmiths combines deep industry knowledge and technical expertise to deliver cloud-based solutions for power, gas, and renewable markets. Our flexible platform helps energy companies excel in today's competitive landscape.

### Why Choose SoftSmiths?

- **Proven Reliability**
- **Flexible, Modular Solutions**
- **Future-Focused Innovation**

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