Susquehanna Nuclear Drastically Reduces Costs and Duration of Outages with STO Execution

TALEN ENERGY®   PROMETHEUS GROUP

Company

🏢 Susquehanna
Nuclear, LLC

📍 Berwick, PA

🏭 Energy

Challenges

- Lack of access to real-time schedule data

- A desire to improve communications during their annual maintenance and refueling outages

- Time-consuming paper schedule updates

Results

- Reduction in duration and cost of outages

- Live schedules slashed turnover time and kept information up to date

- Eliminated the need to hold multiple meetings with stakeholders to review schedule

- Can proactively identify and solve issues in a timely manner before a problem is created

Susquehanna Nuclear Reduces Costs and Duration of Outages with STO Execution

ABOUT TALEN ENERGY

Talen Energy is one of the largest competitive power generation infrastructure companies in North America. The Company owns or controls approximately 14,000 megawatts of generating capacity in well-developed, structured wholesale U.S. power markets, principally in the Northeast, Mid-Atlantic and Texas. Susquehanna Nuclear, LLC, a subsidiary of Talen Energy, operates Susquehanna Steam Electric Station ("Susquehanna"), a 2-unit, 2,500 MW facility located outside of Berwick, PA, which generates enough carbon-free nuclear energy to power approximately 2 million homes.

CHALLENGES

Susquehanna reached out to Prometheus Group to help improve their work management process during their annual maintenance and refueling outage. Specifically, they were looking to improve:

1. Efficiency: Ensuring effective communication from their Outage Control Center ("OCC") to supervisors.

2. Communication: Improving communications around scheduled events.

3. Productivity: Concise monitoring and oversight of scheduled activities.

4. Transparency: Better visibility of scheduled activities; management by all vs. management by exception.

5. Accountability: Creating a culture of ownership of scheduled activities throughout all levels of the organization.

> To achieve their goal, they needed a solution that would solve three main challenges:
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> 1. Delays in data entry and loss of data integrity
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> 2. Lack of access to up-to-date information during outages
>
> 3. Time-consuming, paper-intensive scheduling updates

CHALLENGES

Jarrett Heitzman, Senior Project Manager with Susquehanna Nuclear, was tasked with training the outage management team on STO Execution, Prometheus Group's shutdown, turnaround, and outage management solution. Utilizing a solution like STO Execution and Maxavera (Prometheus Group's plug-and play integration solution) helped to address the following challenges in their outage management process:

- **Delays in data entry and loss of data integrity:** Susquehanna's outage team managed all critical and non-critical path activities from their OCC.

The time period in which schedules were updated challenged the organization's ability to provide a concise turnover. For example, the maintenance 'chair' was responsible for updating a multiple page schedule twice each day. Since they didn't have software that allowed workers to make updates to their work schedules in real time, outgoing shifts had to update—from memory—a new schedule with information on activities worked and completed at the end of their shift. This approach increased the risk of entering incorrect information, and the lack of real-time data impacted the scheduler's ability to make intelligent schedule adjustments Since contractors in the field were also unable to implement their updates in real time, other teams lacked access to up-to-date information.

- **Limited communication channels during outage:** The outage team lacked established channels of communication across the organization to share live status updates during the outage. Not having access to a digital schedule created information silos between outage teams. They often didn't know what activities other teams had completed from the field. If significant disruptions happened during the shift, the OCC wouldn't know about them until the review of the paper schedule, which was performed once per shift. For an outage with a staff of up to 2,500 internal staff and contractors, communication was a massive hurdle. Susquehanna needed to create and set up processes to ensure schedule inputs eliminated questions from the field, leading to quicker and improved decision-making during the outage.

- **Time-consuming, paper-intensive scheduling updates:** Schedule status updates were made on

paper and outage teams spent an astronomical amount of time making updates throughout an outage. Twice a shift, managers would review schedules with workers responsible for specific activities in Scheduled Review Meetings. From those meetings, the outage team would react to critical and non-critical path changes and make updates in the schedule. The entire process of reviewing and updating paper schedules took 1.5 hours to complete. The amount of time workers spent reviewing schedules and updates took away from valuable time solving issues that threatened to delay re-starting their unit.

SOLUTIONS

With 2,000 to 2,500 individuals working on an outage team, Susquehanna knew they needed a robust solution which could support their team in managing and completing 10,000 tasks each outage. This meant having a solution that could easily integrate with Primavera (P6), their outage scheduling tool. After seeing the successful outage of another Utilities Service Alliance (USA) facility using STO Execution and Maxavera, Susquehanna worked with Prometheus Group to implement both. They successfully rolled out both solutions across their organization in less than three months.

Both solutions provided the station with greater visibility and accountability, real-time schedule updates from the field, and a simplified user interface. Talen Energy developed simple, 15-minute sessions to help train the outage team on STO Execution and more in-depth training for their schedulers. The trainings were designed

> **"The communication aspect of the tool and having live data has made a huge difference from an awareness standpoint and being able to react to problems quickly."**
> — Jarrett Heitzman

to increase ownership with crew leaders and supervisors. Part of training included creating a bottom-up schedule/filter so each contractor and department could develop a schedule for each group, cumulating to an overall station schedule.

Maxavera and STO Execution provided Susquehanna with these advantages and features:

- Web-based, plug-and-play integration.
- Intelligent transfer of all necessary information between software applications.
- Improved communication and visibility.
- Real-time progress updates from the field.
- Increased user adoption with simplified user interface.
- Easy integration of schedules in P6 and data from STO Execution into their EAM system.

After implementing STO Execution to assist in managing their outages, Susquehanna saw immediate, positive changes, including:

- Real-time accessibility to data and information. Any updates made to activity status, critical path, or schedule was seen in real time from the field.

- **13% improvement in outage duration** (5 days) over previous outages, which also resulted in savings.

- A one-hour reduction in the amount of time needed to turn over every shift and team.

- Increased data accuracy and integrity.

- Easier prioritization of tasks. Completed tasks were automatically dropped off the schedule and allowed outage teams to manage by exception.

- Quick identification of scheduling conflicts in P6 which eliminated "snowballing" issues.

- Improved communication between teams and departments

- Improved worker accountability and schedule ownership over specific activities and schedules to capture full value during outage.

- **50% Reduction** in OCC/MOCC Meetings resulting in a savings of approximately 700 person hours of time.

- Improved visibility into pinch points or items that slipped through the cracks. Knowing what items were missed allows team to assess and minimize impact on outage.

- Burndown curve **execution could be monitored** throughout outage. Monitoring led to increased oversight on bulk work, allowed for deviations to be identified in real time.

- Improved schedule management

Jarrett explained that after implementing Maxavera and STO Execution, staying ahead of schedule and on budget became a much more manageable task.

> *"STO Execution brought a level of controlled change to our organization. It is something that's hard to quantify but it is vastly different. In the past, maintaining focus on critical activities created a level of stress, now the organization can calmly monitor and make informed decisions."*
>
> *"That ability to manage the schedule and stay ahead of it has been very beneficial to us. The ownership and the ability to drive the schedule has made a difference [for 'Susquehanna's stakeholders]."*

Learn more about how Prometheus Group can help your organization today

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About Prometheus Group

Prometheus Group is a leading global provider of comprehensive and intuitive enterprise asset management software solutions that work within ERP systems and span the full work management life cycle for both maintenance and operations. Developed jointly with end users, Prometheus software enhances the customer experience for planning, scheduling, and executing work for both routine maintenance and shutdowns and turnarounds, all while protecting the workforce with safety solutions and electronic permit to work. Our straight-forward functionality, graphical visualization, and simple processes enable customers to increase productivity, reduce costs, and improve reporting. For more information, please visit www.prometheusgroup.com.