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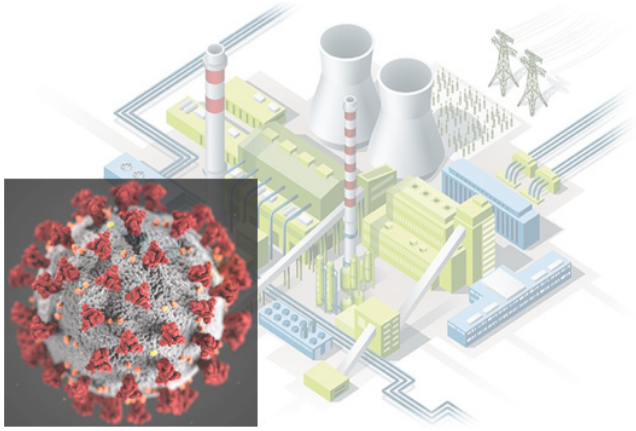
Pandemic Response Strategies for Generation Operations and Maintenance



- **Ensure employee safety:** Rapidly build pandemic-resilient workforce practices at thermal generation sites
- **Maintain operational excellence:** Evaluate and develop O&M strategies to meet performance and reliability expectations
- **Prepare for future demand impacts:** Review and revise fleet strategy in context of evolving economic circumstances
- **Prepare for future workforce needs:** Align technical capabilities of post-pandemic workforce with new corporate objectives

Background, Objectives, and New Learnings

The novel coronavirus (COVID-19) pandemic has substantially disrupted society across the world, including the utilities that generate the electricity vital to modern life. Thermal power plant owners, with EPRI guidance and support, have already faced a series of initial challenges focused on employee safety and business continuity. The longer-term strategic issues, and the paths to navigate those challenges, are still taking shape. Many existing operational, maintenance, and investment decisions are products of a disrupted economic and regulatory environment and may rest on forecasts that are no longer valid.

Throughout the pandemic, EPRI has driven global collaboration among generation owners and operators to identify best practices and implement lessons-learned in real time. This project intends to capture these crucial learnings as well as assessing longer term impacts that generation owners and operators will face.

While the pandemic and containment measures have driven reduced demand as well as put pressure on utility revenue, these issues coincide with several long-term trends facing the industry. The mission profile of the traditional generation fleet continues to evolve, with cycling becoming the norm as the grid speeds towards greater dynamism, all while customers are demanding more from their utility.

To ensure the continuing viability of thermal generation assets, as well as address the ongoing tactical challenges of executing life-cycle management activities during and after a pandemic, EPRI intends to conduct research into the impacts of COVID-19 on power generators globally and develop a series of strategies and implementation plans for future events.

Benefits

The COVID-19 pandemic presents an unprecedented challenge and requires technically rigorous investigation into new operations processes and technology applications that enable reliable, safe, affordable, and sustainable delivery of electricity under pandemic and non-pandemic circumstances. This project plan will help provide participants the technical framework for establishing company-specific pandemic response plans and strategies.

Equipping, training, and deploying a workforce will likely look very different, and these changing capabilities provide opportunities for different approaches which can be supported through participation in this project.

The project plans to integrate the operational requirements and best practices associated with pandemic preparedness with a long-term strategic roadmap, provide effective implementation of asset management decisions by teams who are protected from hazards and who will have different capabilities and requirements than pre-pandemic.

Project Approach and Summary

This project's research focus is to assess the impacts of COVID-19 on thermal asset life cycle management and comprehensively evaluate technologies, workforce strategies, and tools in the context of plausible future economic and regulatory scenarios.

Generally, for each of the research areas identified, evaluations will be conducted, and recommendations developed. Activities and results will be periodically communicated with participating members. Specific topics include:

Pandemic-Resilient Conduct of Operations and Maintenance

- Workforce management including modified shift schedules and sequestration plans
- Remote operations and support
- Disinfection of shared spaces, tools, and workstations
- Training modules for distancing in common plant scenarios
- Changes to plant layout to limit pandemic risk (distancing, entrances, common areas, cleaning)

Technology Deployment Support

- Accelerated development of tools, technologies, and training for pandemic resilience
- Remote inspection/subject matter expert support tools
- Tools and technologies to reduce need for proximity

Review of Asset Management Plans

- Utilize structured interview process to capture information from utilities focused on current and future fleet mission, challenges, and priorities
- Technical and economic review of current strategies and impacts of COVID-19 on their implementation
- Redefine asset management objectives in context of specific economic and regulatory environments
- Examine fleet mission now and under various plausible future scenarios

Pandemic Resiliency Roadmap: Principles and Practices

- Identify, evaluate, and prioritize potential opportunities and deliver technically defensible and economically viable action plan
- Rapidly deploy solutions that enable cost reductions while maintaining the required reliability of the fleet
- Preserve equipment condition, avoid high-cost failures, limit vulnerability of organization to future disruption
- Deferred outages and maintenance impacts:
  - Risk management and reliability impacts of deferred activities
- Flexible strategy with clear stage gates

Deliverables

- Formal lessons learned document collecting current best practices from utilities worldwide
- Customized action plans
- Technical reports for each of the respective tasks with evaluation results and recommendations
- Webcasts, presentations, templates, and training modules for communicating activities and results
- Final report summarizing findings at project close

Price

Price is $40,000 for funders with less than 5,000 Non-Nuclear MWs and $100,000 for funders with more than 5,000 Non-Nuclear MWs. Price is payable over 2 years. Project qualifies for Self-Directed and Tailored Collaboration Funding. Approximately $240,000 of commitments will allow project initiation, with specific focus, project plans, and deliverables developed and prioritized based on member engagement. Full scope is estimated at $1,000,000.

Project Status and Schedule

The project is expected to begin in 2020 and last for approximately 24 months, with results from prioritized tasks delivered as available with some potentially available within three months of project launch.

Who Should Join?

Thermal generation owners/operators who recognize the need for resiliency via development of technically rigorous pandemic response strategies.

Contact Information

For more information, contact the EPRI Customer Assistance Center at 800.313.3774 (askepri@epri.com).

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Product ID: 3002019577 Project ID: 1-113739 June 2020

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