



PSERC WEBINAR

Preparing for the extremes: Modeling and mitigating risk of wildfire and natural gas shortages

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Increasing frequency of severe weather poses a significant risk to electric grid operation. Risk can be modeled as the combination of the probability and the impact of an event and is a useful framework to analyze how utilities and system operators can best prepare for and adapt to different extreme events. In this talk, we discuss risk-based decision making for two different scenarios. First, we consider a scenario with extreme wildfire risk, and develop a model to optimize public safety power shut-offs. By accounting for both the achieved reduction in wildfire risk and the size of the resulting power outages, we are able to identify safer, less disruptive power shut-offs compared with methods in use today. Second, we discuss interdependencies between the natural gas and electric systems during cold weather events, and develop models for integrated scheduling under uncertain, stressed system conditions. Our results demonstrate how the inherent storage capacity of the natural gas system can serve as an important buffer and reduce the impact of natural gas shortages.

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[LINK TO WEBINAR](#)

2:00-3:00 P.M. EDT

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Line Roald is an Assistant Professor and Grainger Institute Fellow in the Department of Electrical and Computer Engineering in the University of Wisconsin-Madison. She received her Ph.D. degree in Electrical Engineering (2016) from ETH Zurich, Switzerland. Prior to joining UW Madison, she was a postdoctoral research fellow with the Center of Non-Linear Studies at Los Alamos National Laboratory. Her research interests center around modeling and optimization of energy systems, with a particular focus on managing uncertainty and risk from extreme weather and renewable energy variability.

