



This paper describes objective technical results and analysis. Any subjective views or opinions that might be expressed in the paper do not necessarily represent the views of the U.S. Department of Energy or the United States Government.

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Extreme Engineering at Sandia

Carol L. Adkins - *Director, Secure Energy
& Earth Systems Program*

University of New Mexico - November 14, 2018

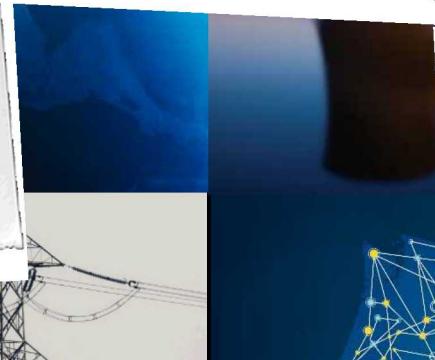
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Energy is Integral to National Security

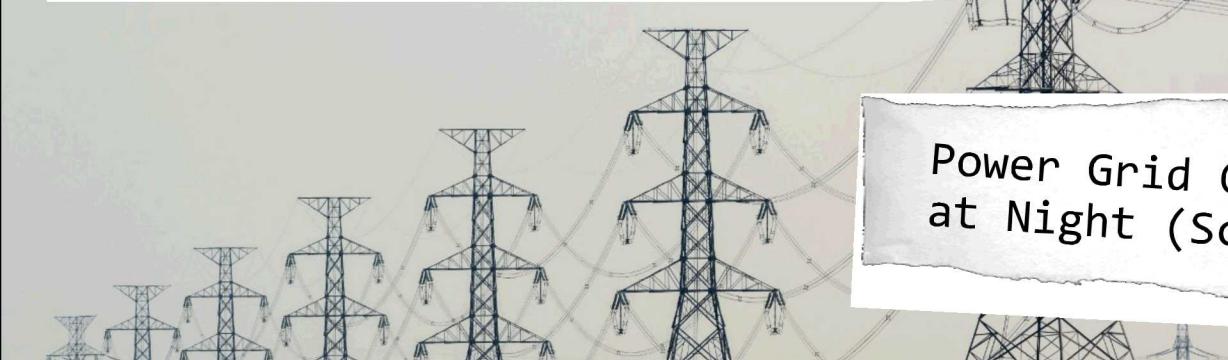


Russian Hackers Are Attacking the U.S. Energy Grid
(Time, March 2018)

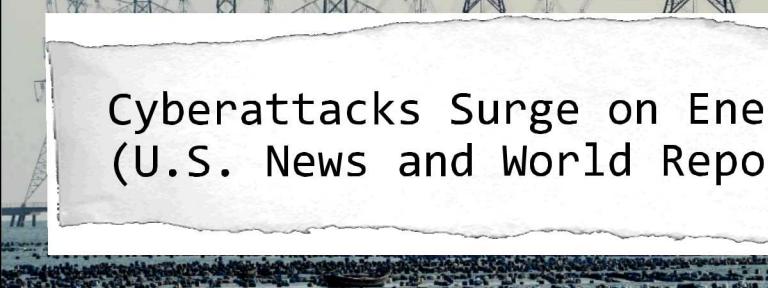
After Hurricane Maria, Puerto Rico's Grid Needs a Complete Overhaul
(Science, September 2017)



North Korea Blamed for Nuclear-Power Plant Hack (WSJ, March 2015)

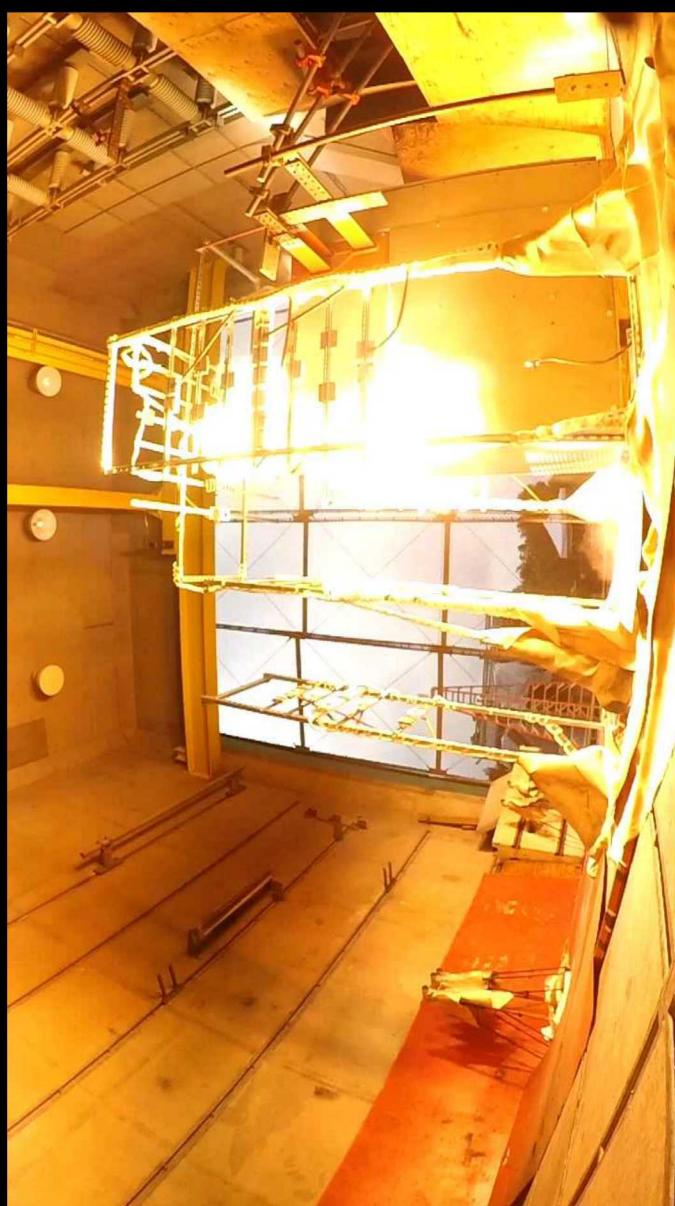


Power Grid Cyber Attacks Keep the Pentagon Up at Night (Scientific American, June 2015)



Cyberattacks Surge on Energy Companies, Electric Grid
(U.S. News and World Report, April 2016)



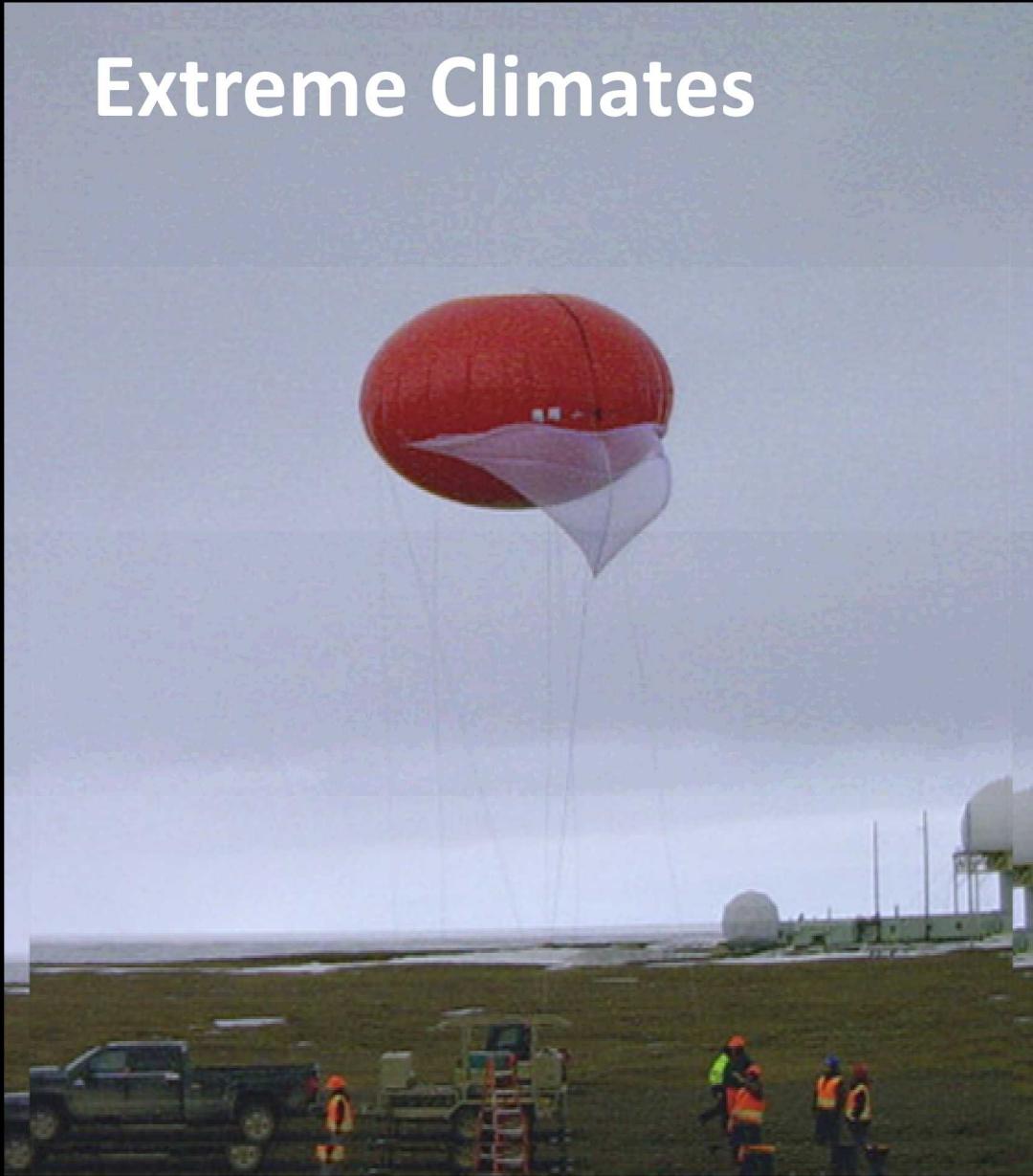




Nuclear Reactor Safety

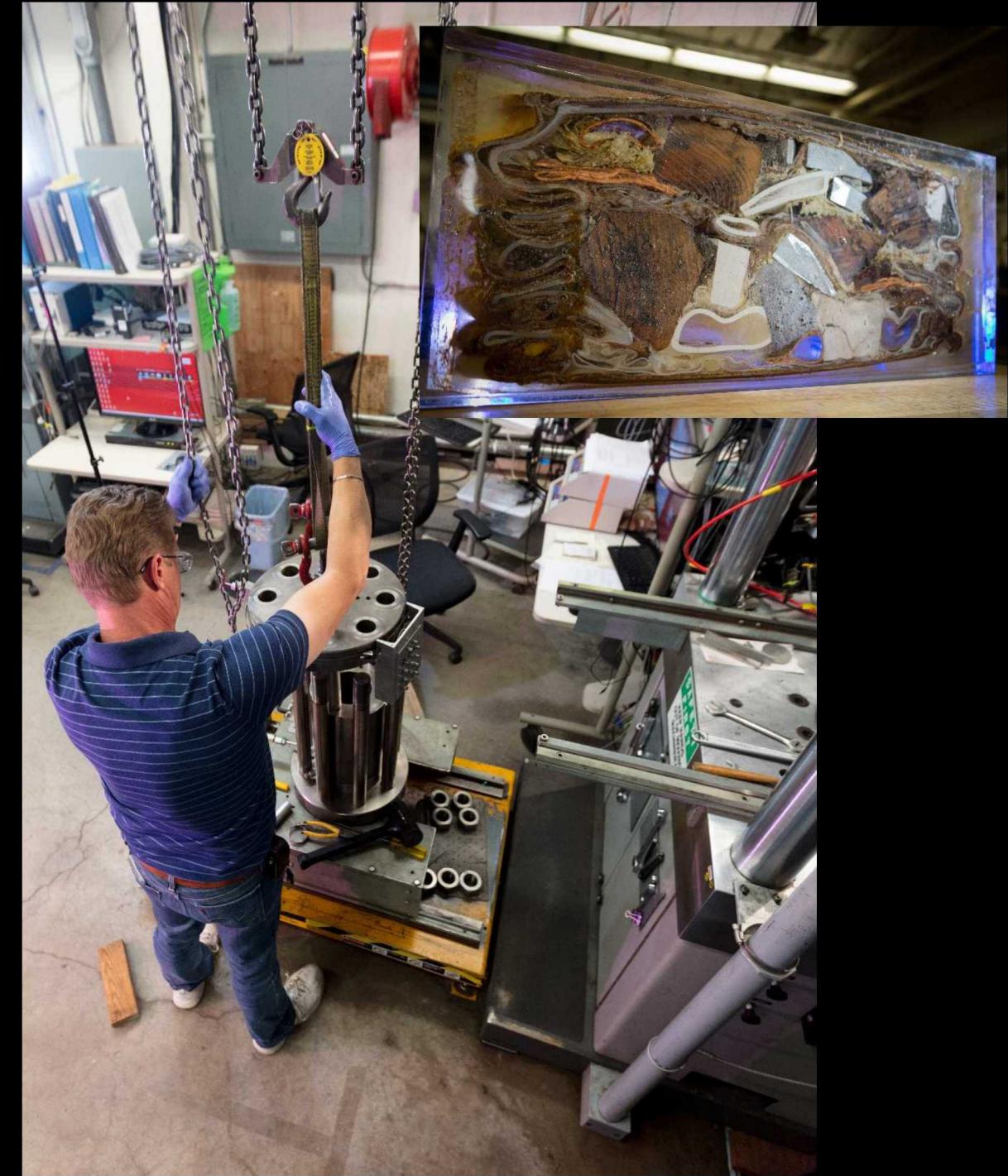


Extreme Climates





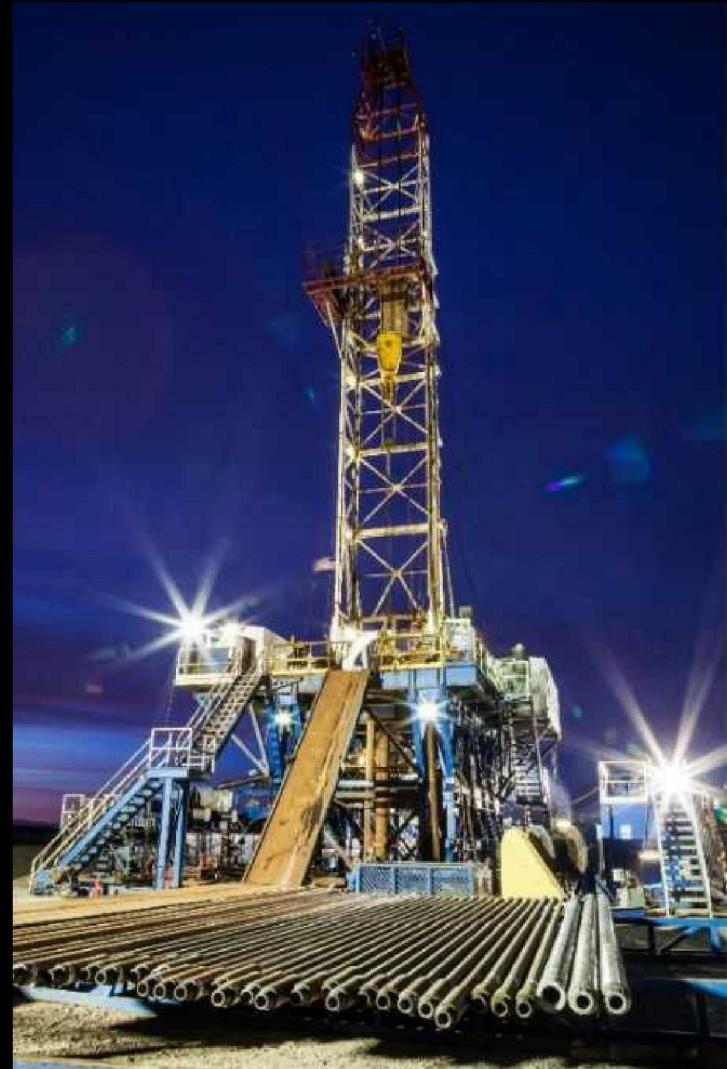
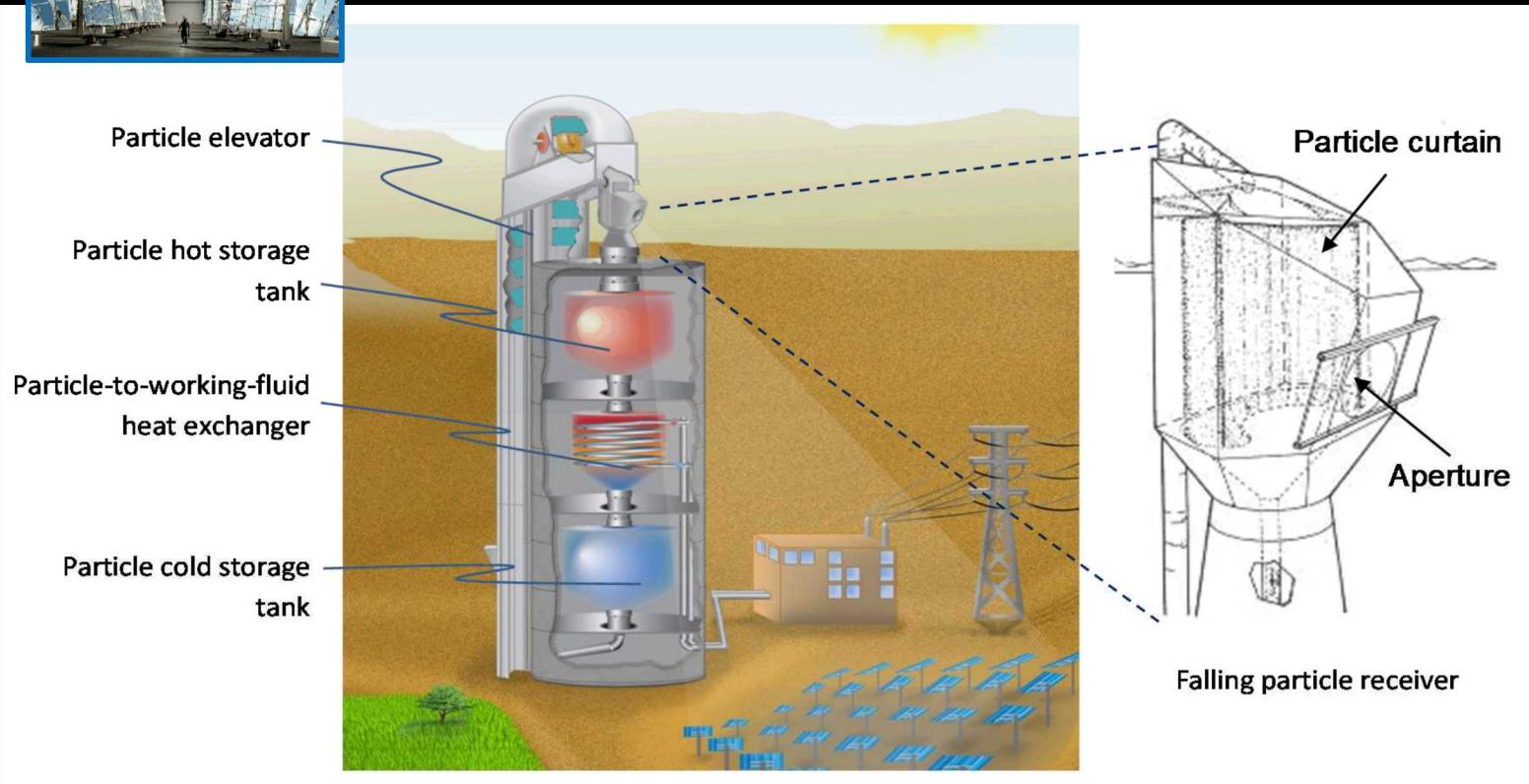
Transportation and Liquid Natural Gas Safety



Extreme Pressures and Temperatures



Falling Particle Receiver for Concentrated Solar Power



Extreme Engineering for Renewable Energy