David Ortiz, Director, Office of Electric Reliability

David is Director of the Office of Electric Reliability (OER) at the Federal Energy Regulatory Commission. OER helps the Commission to oversee the reliability and security of the electric grid. OER's responsibilities include oversight of the North American Electric Reliability Corporation in its development and enforcement of mandatory reliability and cybersecurity standards. David leads over 90 staff, including electrical engineers, statisticians, attorneys and analysts. OER's recent accomplishments include: a standard ensuring that the grid can operate through extreme cold weather; standards for securing the supply chain for grid-related cyber systems and protecting the integrity and availability of grid communications; a standard requiring increased grid cybersecurity incident reporting; a rule requiring new generators to be able to provide frequency response, ensuring reliability of the grid as it incorporates more renewable resources; a standard protecting the grid from solar storms; a series of reports documenting utility best practices in grid restoration and recovery; and a series of best practice reports in utility cybersecurity.

From 2013 to 2016, David was a Deputy Assistant Secretary for Energy Infrastructure Modeling and Analysis (EIMA) in the Office of Electricity Delivery and Energy Reliability at the Department of Energy. From 1998 through 2013, David worked at the RAND Corporation, where he built a program of energy policy research and analysis.

David earned his doctorate in Electrical Engineering from the University of Michigan. He graduated from Princeton University.

David lives in Falls Church, Virginia with his wife, Nicole, and two children. He is an avid tennis player, cyclist, home cook, and musician.

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David S. Ortiz, Ph.D.

Professional Experience

Federal Energy Regulatory Commission (FERC) — Washington, DC
Director, Office of Electric Reliability — July 2022-Present
Deputy Director, Office of Electric Reliability — April 2016-July 2022
Acting Director, Office of Electric Reliability — Sept. 2021-Jul. 2022; Feb. 2018-Oct. 2018

- Direct a management team leading over 90 staff overseeing the development and enforcement of 93 mandatory reliability and security standards for the U.S. grid.
- Maintain and improve the reliability of the grid as the resource mix changes and to account for climate change. Completed rulemakings requiring utilities to act, including:
  - Planning their electric transmission systems to ensure their systems can perform reliably during heat waves and cold snaps.
  - Requiring that wind, solar, and battery energy systems connecting to the grid have the technical capability to support reliability.
  - Requiring that wind, solar, and battery energy systems are required to comply with applicable reliability standards.
- Maintain and improve the cyber and physical security of the grid. Completed rulemakings requiring utilities to act, including:
  - Securing their cyber supply chains to prevent cyberattacks.
  - Ensuring the integrity and availability of their communication systems.
  - Internal network security monitoring of critical assets of the electric grid to detect malicious activity.
- Conducted inquiries of extreme cold events in January 2018 and Winter Storm Uri in 2021. As a result, there are now mandatory nationwide cold-weather reliability standards requiring utilities and system operators to winterize facilities and coordinate during extreme cold events to prevent blackouts and loss of life. A further inquiry into grid performance during Winter Storm Elliott in December 2022 is ongoing.
- Initiated an ongoing cybersecurity audit program in 2016 completing 24 audits to date of utilities, finding 128 instances of noncompliance with cybersecurity standards, and making 92 recommendations. Scaled the lessons learned from the audits in a series of annual reports to industry.
- Executed a memorandum of understanding with the Institute for Electrical and Electronics Engineers to coordinate on grid technologies and technical standards, enabling targeted training for staff regarding energy storage, renewable resource integration, and distribution-level standards.
- Allocated dedicated resources to engage with utilities, standards bodies, trade organizations, and the public resulting in the office being able to efficiently gather and share information from over 40 active committees, working groups, and standards development teams.
- Reorganized the office to focus resources in grid planning and operations, cybersecurity, and electric engineering aligning leadership responsibilities with customer needs.

U.S. Department of Energy — Washington, DC
Deputy Assistant Secretary — September 2013-April 2016
Energy Infrastructure Modeling and Analysis

- Led the Clean Energy Transmission and Reliability competitively awarded research and development (R&D) program with annual budget ranging from $30-40 million.
- Enabled nationwide real-time visibility of the grid by high-resolution grid sensors, scaling the number of sensors from 1,600 in 2013 to over 2,500 in 2016.
- Developed and deployed key applications using high-resolution grid data. Key applications included:
  - A tool to allow power plant owners to validate their power plant models while the plant is operating, saving money for plant owners, and improving model accuracy for grid operators thus improving reliability and dispatch efficiency.
  - An online tool allowing grid operators to derive the actual operating condition of their system rather than having to use an offline estimate, improving reliability and dispatch.
  - A tool allowing grid operators to analyze frequency deviations, facilitating compliance with reliability standards.
- Developed advanced grid computational tools that accelerated critical energy management system software components by an order of magnitude.
- Established the State Energy Risk Assessment Initiative with state energy offices and public utility commissions advancing risk management methods at the state level.
- Co-chaired a multi-agency, White House-designated committee that developed a R&D plan for critical infrastructure security and resilience.

RAND Corporation — Pittsburgh, PA; Arlington, VA; Santa Monica, CA
Senior Engineer — 1998-2013

- Built and managed RAND's $6 million energy research and analysis program for clients including DOE's National Energy Technology Laboratory (NETL), the Bipartisan Policy Center, and the Federal Aviation Administration.
- Led data-driven analyses to support strategic planning, and research program investments on energy, natural resources, transportation, technology development, and regulation including:
  - Strategic and economic implications to the United States of increased exports of liquefied natural gas, refined petroleum products, and coal.
  - The ability of the U.S. industrial base to support CO_2 transportation, enhanced oil recovery by CO_2-flooding, and geologic storage of CO_2.
- Developed the business plan, assembled research partners from five universities and NETL, and secured funding to establish two energy research collaborations: the Shale Energy Resources Alliance and the Grid Technologies Collaborative.
- Led the development of a predictive flood-risk model to estimate and visualize assets at risk from hurricanes for Louisiana, which was a key component of the *Master Plan for a Sustainable Coast.*

Public Service and Community Engagement

Falls Church City School Board — Falls Church, VA
Elected Member — 2022–Present

Creative Cauldron — Falls Church, VA
Board Member — 2020–2022

Boy Scout Troop 681 — Falls Church, VA
Assistant Scoutmaster — 2016–2022

Sprout Fund — Pittsburgh, PA
Seed and Spark Programs Advisory Committee — 2010–2013

Leadership Pittsburgh, Leadership Development Initiative — Pittsburgh PA
Pop-up Pittsburgh on the Hilltop, Chair — 2009-2010

Education

University of Michigan — Ann Arbor, MI
Ph.D. Electrical Engineering and Computer Science – Control Systems — 1998
M.S.E. Mechanical Engineering and Aerospace Engineering — 1994

Princeton University — Princeton, NJ
B.S.E. Mechanical and Aerospace Engineering, *Cum laude* — 1992

Professional Affiliations

Member, IEEE and the IEEE Power and Energy Society

Computing Skills

Analytical Software	Python, Tableau, Mathematica
Computing Environments	Unix/Linux, Windows, Apple OS X
Business Computing	Microsoft Office 365, Adobe Acrobat

Additional Information

Fluent in English and Spanish
Active Top Secret-SCI security clearance

Peer-Reviewed Publications

Gabriella C. Gonzalez, Sean Robson, Andrea Phillips, Gerald Hunter, David S. Ortiz, "Energy-Sector Workforce Development in West Virginia: Aligning Community College Education and Training with Needed Skills," RAND RR-812-NETL, May 2015

Paul Sorensen, Thomas Light, Constantine Samaras, Liisa Ecola, Endy M. Daehner, David S. Ortiz, Martin Wachs, Evan Enarson-Hering, Steven Pickrell, "Preparing State Transportation Agencies for an Uncertain Energy Future," NCHRP Report 750: Strategic Issues Facing Transportation, Washington, D.C.: Transportation Research Board, 2014

David R. Johnson, Jordan R. Fischbach, David S. Ortiz, "Estimating Surge-Based Flood Risk with the Coastal Louisiana Risk Assessment Model," *Journal of Coastal Research*, Special Issue 67 - Louisiana's 2012 Coastal Master Plan Technical Analysis, Summer 2013, p. 109-126

David S. Ortiz, Constantine Samaras, and Edmundo Molina-Perez, "The Industrial Base for Carbon Dioxide Utilization and Storage: Status and Prospects," RAND TR-1300-NETL, February 2013.

Morral, Andrew R., Carter C. Price, David S. Ortiz, Bradley Wilson, Tom LaTourrette, Blake W. Mobley, Shawn McKay, Henry H. Willis, "Modeling Terrorism Risk to the Air Transportation System: An Independent Assessment of TSA's Risk Management Analysis Tool and Associated Methods," RAND MG-1241-TSA, December 2012

Fischbach, Jordan R., David R. Johnson, David S. Ortiz, Benjamin Bryant, Matthew Hoover, and Jordan Ostwald, "Coastal Louisiana Risk Assessment Model: Summary and Technical Description," RAND TR-1259-LOCP, October 2012.

Fischbach, Jordan R., David R. Johnson, David S. Ortiz, Benjamin Bryant, Matthew Hoover, and Jordan Ostwald, "Coastal Louisiana Risk Assessment (CLARA) Model," Appendix D-25 of *Louisiana's Comprehensive Master Plan for a Sustainable Coast*, Baton Rouge, LA, 2012.

Nidhi, Kalra, David S. Ortiz, et al. "Recommended Research Priorities for the Qatar Foundation's Environment and Energy Research Institute," RAND MG-1106, 2011.

David S. Ortiz, Aimee E. Curtright, Constantine Samaras, Aviva Litovitz, and Nicholas Burger. "Near-term Opportunities for Integrating Biomass into the U.S. Energy Supply." RAND TR-984-DOE, July 2011.

LaTourrette, Tom, David S. Ortiz, Eileen Hlavka, Nicholas Burger, and Gary Cecchine. "Supplying Biomass to Power Plants: A Model of the Costs of Utilizing Agricultural Biomass in Cofired Power Plants." RAND TR-876-DOE, March 2011.

Crane, Keith, David S. Ortiz, Aimee E. Curtright, and Constantine Samaras. "The economic costs of reducing greenhouse gas emissions under a U.S. national renewable electricity mandate." *Energy Policy* (39), 2011, pp. 2730–2739.

Silberglitt, Richard, Philip S. Anton, Steven Berner, Paul Deluca, Mark D. Happel, David Howell, Eric Landree, David Ortiz, Tim Webb and Shara Williams. "Analyzing Emerging Technologies for Technology Security Concerns," RAND DB(L)-586-OSD, July 2010.

Curtright, Aimee E., Henry H. Willis, David R. Johnson, David S. Ortiz, Nicholas Burger, and Constantine Samaras. 2010. "Documentation for the Calculating Uncertainty in Biomass Emissions Model, Version 1.0 (CUBE 1.0): Contents and Use." Pittsburgh, PA: U.S. Department of Energy, National Energy Technology Laboratory. January 2010

Ortiz, David S., Liisa Ecola, and Henry H. Willis, "Adding Resilience to the Freight System in Statewide and Metropolitan Transportation Plans: Developing a Conceptual Approach," NCHRP Project 8-36, Task 73, Washington, DC: Transportation Research Board, 2009. Available online at http://onlinepubs.trb.org/onlinepubs/nchrp/docs/NCHRP08-36(73)_FR.pdf (as of October 1, 2010).

Hileman, James, David S. Ortiz, James T. Bartis, Hsin Min Wong, Pearl Donohoo, Malcolm Weiss, and Ian Waitz. "Alternative Aviation Fuels." RAND Corporation. TR-554-FAA. 2009.

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Toman, Michael A., Aimee Curtright, David S. Ortiz, Joel Darmstadter, and Brian Shannon. "Unconventional Fossil-Based Fuels: Economic and Environmental Tradeoffs." RAND Corporation. TR-580-NCEP. 2008. Available online at http://www.rand.org/pubs/technical_reports/TR580/

Bartis, James T., Frank Camm, and David S. Ortiz. "Producing Liquid Fuels from Coal: Prospects and Policy Issues." RAND Corporation. MG-754-AF/NETL. 2008. Available online at http://www.rand.org/pubs/monographs/MG754/

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Ortiz, David S., Brian Weatherford, Henry H. Willis, Myles Collins, Naveen Mandava, Chris Ordowich. "Increasing the Capacity of Freight Transportation: U.S. Canadian Perspectives." RAND Corporation. CF-228-ISE. 2007. Available online at http://www.rand.org/pubs/conf_proceedings/CF228/

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