FRONTIERS OF POWER CONFERENCE

CONFERENCE PROGRAM

53rd Annual

Frontiers of Power Conference

DATE
Monday, October 26, 2026

VENUE
Student Union, Oklahoma State University

TIME
8:00 AM – 6:00 PM

Day at a Glance

8:00 – 8:30	Breakfast	
8:30 – 9:00	**Keynote: Andrea Dennis** Vice President, Transmission and Distribution Operations, Oklahoma Gas and Electric Company	p. 2
9:00 – 10:00	**Plenary Panel** Industry Trends and Needs and Potential for Academia Contribution	p. 2
10:00 – 10:15	**Break** · Poster setup and judges' meeting	
10:15 – 12:00	**Short Paper Session**	p. 3
12:00 – 1:00	**Lunch**	
1:00 – 2:15	**Extended Abstract Session I**	p. 3
2:15 – 2:30	**Break**	
2:30 – 3:45	**Extended Abstract Session II**	p. 4
4:00 – 5:00	**Undergraduate Poster Session**	p. 4
5:30 – 6:00	**Closing and Awards**	p. 4

Keynote Speaker

8:30 – 9:00 AM



Andrea Dennis

Vice President, Transmission and Distribution Operations, Oklahoma Gas and Electric Company

Andrea Dennis serves as Vice President of Transmission and Distribution Operations for OG&E. Dennis earned a Bachelor of Science in Engineering Management from Missouri University of Science and Technology and a Master of Science in Engineering and Global Operations Management from Clarkson University. Dennis serves as a member of the Southeastern Electric Exchange Board and the Association of Edison Illuminating Companies Board. She also serves on the National Response Executive Committee. Dennis is active in various community organizations, serving on the board of the Boy Scouts of America Last Frontier Council, and serving on the board of the Dale Rogers Training Center.

Plenary Panel

9:00 – 10:00 AM

Industry Trends and Needs and Potential for Academia Contribution

MODERATOR

Chris Marts

Manager, Grants Office, Oklahoma Gas and Electric Company

PANELISTS

Dr. Charles Bunting
Associate Dean of Research and Sponsored Programs, Oklahoma State University

Jim McAvoy
Director of Engineering Services, Oklahoma Municipal Power Authority

Bryn Wilson
Director, Grid Operations, Oklahoma Gas and Electric Company

10:00 – 10:15 **Break** · Poster setup and judges' meeting

Short Paper Session

10:15 AM – 12:00 PM

10:15 – 10:30	**Improved Post-Fault Voltage–Frequency Restoration Time of an Islanded Microgrid System With BESS Support** Md Nasib Ul Haq · University of Knoxville
10:30 – 10:45	**Power System Resilience Under Wildfires: Operational Challenges and Optimization-Based Solutions** Arastoo H Salimi · Oklahoma State University
10:45 – 11:00	**Energy Management for Islanded Microgrids under Renewable Uncertainty** Anping Zhou · Oklahoma State University
11:00 – 11:15	**Transient Stability Control of a Hybrid Diesel–Grid-Forming Inverter Microgrid Under Fault Conditions** Md Shamsujjaman Ridoy · University of Oklahoma
11:15 – 11:30	**A Study of Fault Transients in Microgrids Consisting of Diesel-IBR Hybrid Energy Resources** Md Shamsujjaman Ridoy, Mhd Malek Alsoufi, John N. Jiang · University of Oklahoma
11:30 – 11:45	**An Impact-Based Revenue Allocation Framework for Transmission Owners Supporting Large Load Integration** Koushik Sarkar · Wichita State University

12:00 – 1:00	**Lunch**

Extended Abstract Session I

1:00 – 2:15 PM

1:00 – 1:15	**Adaptive Ramp-Rate Control with BESS in AI Data Center for Improved Frequency Response** Himani Mattoo · Kansas State University
1:15 – 1:30	**PMU Based Generator Inertia Estimation with Composite Data Center Loads** Lakshika Karunaratne · Wichita State University
1:30 – 1:45	**Frequency-Response Assessment of the WSCC 9-Bus System With and Without 10% Wind Penetration Using PSS/E** Nabil Reza · Wichita State University
1:45 – 2:00	**Synchronization Dynamics of Grid-Forming and Grid-Following Inverters Across Short-Circuit Ratios** Mhd Malek Alsoufi · University of Oklahoma
2:00 – 2:15	**Hyperbolic Ancillary-Dimension Solution of Diffusion Transients with PWM-Patterned Initial Conditions: A Preliminary Verification** Dr. Reza Saeed Kandezy · University of Oklahoma

2:15 – 2:30 **Break**

Extended Abstract Session II

2:30 – 3:45 PM

2:30 – 2:45 **A Stochastic Decision Support Framework for Gas Storage Investment in Electric Power Systems**
Adwaitha Pradeep · Kansas State University

2:45 – 3:00 **Topology Based Grid Tessellation for Valuing Localized Transmission Benefits**
Sarangan Rajendran · Wichita State University

3:00 – 3:15 **Quantifying the Economic Value of Resilience Investments Through Tail-Risk Mitigation**
Demy Alexander · Wichita State University

3:15 – 3:30 **An LSTM Learning-Based Data-Driven Perspective on Power Grid Resilience Using Distance Protection During Extreme Weather**
Kolade Oke · Wichita State University

Undergraduate Poster Session

4:00 – 5:00 PM

1 **Analytical Modeling and Independent Implementation of a Halbach Array PMSM**
Aidan Miller · University of Central Oklahoma

2 **Chiral Magnetic Field Generation Using Modified Halbach Arrays for Scalable Functional Materials Design**
Levi Cosgrove · University of Central Oklahoma

3 **Finding the Breaking Point: Locational Ramp-Rate Limits for AI Data Center Loads**
Hector Garcia · Wichita State University

4 **Explainable AI for High-Impedance Fault Detection and Analysis**
Audrey Rasmussen · Oklahoma State University

5 **Development of a Control and Monitoring System for the PowerFire Lab**
Kaden Rhodes · Oklahoma State University

6 **Regime-Adaptive Weighted Ensemble Learning for Computing-Driven Dynamic Load Forecasting in AI Data Centers**
Ziying Wang · Oklahoma State University

7 **A Modular Agentic AI Framework for Power-System Resilience Analysis Using Weather and Outage Data**
Dominick Choate · Oklahoma State University

8 **Multi-Horizon Electric Load Forecasting Using LSTM-based Neural Networks: A Multi-City Comparative Study**
Brayden Galbreath · Oklahoma State University

Closing and Awards

5:30 – 6:00 PM

GRADUATE STUDENTS · 1ST AND 2ND PLACE

Most Influential Industry-Relevant Research Presentation

Recognizes graduate research that is relevant to the power industry and has the potential to influence practice.

UNDERGRADUATES · 1ST AND 2ND PLACE

Most Influential Undergraduate Research Poster

Recognizes technically rigorous undergraduate research on current power system trends, clearly explained to practicing engineers.