



2020



# 2020 TECHNOLOGY TRANSFER AWARDS

These awards recognize the leaders and the innovators who have applied EPRI research to produce significant results.

The award winners have shown exceptional application of EPRI research and technology in solving a problem of size and significance, championing a technology both within their companies and across the industry, driving progress in the electricity sector, and providing meaningful benefits for their companies' stakeholders and for society.

The EPRI Technology Transfer Awards spotlight the value of collaborative research to the electricity sector and its customers. EPRI recognizes and applauds the hard work, commitment, and leadership demonstrated by these award winners to help make electricity more reliable, efficient, affordable, safe, and environmentally responsible.





## ALABAMA POWER COMPANY

- 🔧 UAS for Storm Response  
*Robert Cheney, Robert Hawthorne, Wayne Hodges*

## AMERICAN ELECTRIC POWER

- 🌿 Accurate Assessment of NO<sub>2</sub> and NO<sub>x</sub> at Fossil Fuel Power Plants  
*David Long*

## AXPO POWER AG

- ⚙️ Deployed Steam Generator Dissimilar Metal Weld Examination Technology at Kernkraftwerk Beznau Nuclear Power Plant  
*Alan Guy*

## BALTIMORE GAS AND ELECTRIC

- 🔧 DER Integration Requirements, Practices, and Opportunities  
*Luke Hasemeier, James A. Mirabile, Alan M. Pressman*
- 🔧 Installed Avian Diverters Using Unmanned Aircraft Systems (UAS)  
*John Edwards, Gregory J. Kappler, Andrew McCauley, Nathan Reim, Gabriel Rivolta*
- 🔧 Vehicle Grounding and Personal Protection of Distribution System Mobile Equipment Practices  
*Christien D. Bellamy, Larry W. Burley Jr.*

## BONNEVILLE POWER ADMINISTRATION

- 🔧 Risk Based Assessment of Climate Conditions for Improved Seasonal, Regional, and Dynamic Transmission Line Ratings  
*Tyler Ashburn, Brett Bowers, Natasha Gentry*

## CENTERPOINT ENERGY

- 🔧 Electric Vehicle and Infrastructure Modeling for Deployment Programs  
*David Owen*
- 🔧 Risk Based Assessment of Climate Conditions for Improved Seasonal, Regional, and Dynamic Transmission Line Ratings  
*Adam Ali, Cristal Jimenez*

## CEZ, A.S.

- 🌿 Innovative Weld Repair Solution for a CrMoV High Energy Piping Mixing Piece  
*Petr Hrdina, Karel Kaleta, Frantisek Krajca, Frantisek Leistner, Ondrej Nemec, Radovan Stastny, Jiri Valasek*

## CHINA NATIONAL NUCLEAR POWER COMPANY, LTD.

- ⚙️ Applied EPRI's Modular Accident Analysis Program (MAAP) and Enhanced EPRI's Severe Accident Management Guidance (SAMG) for Advanced, Passive LWR Designs Around the World  
*YU Shizhe, WEI Wei, WANG Wensheng, WEI Xin, TAO Yingyong, GU Yunfeng*
- ⚙️ Reduced Radiation Exposure and Exam Time Through First-Ever Phased Array Ultrasonic Examination Implementation  
*HUANG Chao, XIE Hang, CAI Jiafa, ZHANG Yicheng, NIE Young, TU Zhixiong*
- ⚙️ Used Predictive Maintenance Guidelines to Develop Standardized Approach to Condition Based Maintenance (CBM) in New Build AP1000  
*FAN Fuping, TAO Jialin, XIAO Ju, XU Ling, CHEN Lunshou, LI Xin, GUAN Yihao, YU Yijun, LYU Yuanliang, WANG Zihu*

## COMMONWEALTH EDISON COMPANY

- 🔧 DER Integration Requirements, Practices, and Opportunities  
*Nicholas Burica, Sean Carr*
- 🔧 Installed Avian Diverters Using Unmanned Aircraft Systems (UAS)  
*Sara A. Race*
- 🔧 Vehicle Grounding and Personal Protection of Distribution System Mobile Equipment Practices  
*G. Michael Martin, Eduardo F. Suarez*

## CONSUMERS ENERGY

- 🔧 DER Integration Requirements, Practices, and Opportunities  
*Rosanna Kallio, Dennis Woycehoski*

## DAIRYLAND POWER COOPERATIVE

- 🌿 Informed Effluent Guidelines: Bottom Ash Transport Water Management  
*Leif Tolokken*

## DOMINION ENERGY, INC.

- ⚙️ Led Establishment of Technical Bases for Long-Term Operations (LTO) Guidance Through Application of Subsequent License Renewal Applications (SLRA) Research  
*Paul Aitken*
- 🔧 Priority Sustainability Issue Assessment Methodology  
*Hannah Casey, Morgan Hyatt, Zarin Mitchell, Blake O'Brien*
- 🔧 State-of-the-art Line Monitoring Devices Provided Situational Awareness on Galloping, Blowout, and Vibration  
*Mike Lamb, Brandon Patterson*



#### DOMINION ENERGY SOUTH CAROLINA, INC.

- ✳ Informed Effluent Guidelines: Bottom Ash Transport Water Management  
*Mike Mosley, Andrew Walker*

#### DTE ENERGY

- ✳ Accurate Assessment of NO<sub>2</sub> and NO<sub>x</sub> at Fossil Fuel Power Plants  
*Thomas Durham, Michael Lebeis*
- ✳ DC Arc Flash Hazard Assessment for Large-Scale Solar Photovoltaic (PV) Plants  
*Anthony Morabito*

- ✳ Grid Modernization Roadmap Developed and Assessed  
*Richard Mueller, Yujia Zhou*

#### DUKE ENERGY

- ✳ Accurate Assessment of NO<sub>2</sub> and NO<sub>x</sub> at Fossil Fuel Power Plants  
*Kris Knudsen, Erin Wallace, Randy Wooten*
- ✳ Informed Effluent Guidelines: Bottom Ash Transport Water Management  
*Morgan Beveridge, Nathan Craig, Michael Smallwood, Jared Troyer*
- ✳ Process Compensated Resonance Testing  
*Paul Keener*

#### EMIRATES NUCLEAR ENERGY CORPORATION

- ✳ Applied EPRI Research to Support Construction and Operation of New Plant  
*Hank Berry*

#### ENEL SPA

- ✳ Novel Inspection and Repair of Single Crystal GT Blades  
*Tomas Alvarez Tejedor*
- ✳ Real-Time Deposition Monitoring  
*Daniela Galla, Andrea Morandi*

#### ENTERGY SERVICES

- ✳ Flow-Accelerated Corrosion (FAC) Program for High Energy Piping  
*Robert Breedlove, Curtis Halverson, Glenn Hamilton, Mekonnen Sisay*

#### EXELON CORPORATION

- ✳ Led Establishment of Technical Bases for Long-Term Operations (LTO) Guidance Through Application of Subsequent License Renewal Applications (SLRA) Research  
*Michael Gallagher*
- ✳ Process Compensated Resonance Testing  
*Mark Lozier*

#### EXELON GENERATION

- ✳ Installed Avian Diverters Using Unmanned Aircraft Systems (UAS)  
*Paul V. Adair, Cheri Peifer*

#### FIRST NATIONAL OPERATION & MAINTENANCE COMPANY

- ✳ Failure Mode Effects Analysis  
*Lana El Chaar, Hammad Masood, Stefan Verlee*

#### FIRSTENERGY

- ✳ Priority Sustainability Issue Assessment Methodology  
*April Marx, Kimberly Pickford, Kristin Susick, Mary Treptow*

#### FLORIDA POWER & LIGHT

- ✳ Led Establishment of Technical Bases for Long-Term Operations (LTO) Guidance Through Application of Subsequent License Renewal Applications (SLRA) Research  
*William Maher*

#### GEORGIA POWER

- ✳ DER Integration Requirements, Practices, and Opportunities  
*Patrick Harris, Ben Morris*

#### GREAT RIVER ENERGY

- ✳ Accurate Assessment of NO<sub>2</sub> and NO<sub>x</sub> at Fossil Fuel Power Plants  
*Adam Salzer*
- ✳ CO<sub>2</sub> Emission Rate Metrics Calculator  
*Mark Strohfus*
- ✳ Risk Based Assessment of Climate Conditions for Improved Seasonal, Regional, and Dynamic Transmission Line Ratings  
*Rick Jeanson, Jim McGuire*





#### HAWAIIAN ELECTRIC COMPANY

- ✿ Accurate Assessment of NO<sub>2</sub> and NO<sub>x</sub> at Fossil Fuel Power Plants  
*Karin Kimura*
- 🔧 Applied Advanced Tools and Methods for Integrating Renewables and DER  
*Henry Lee, Michelle Sakata, Troy Uyehara*
- 🔧 Electric Vehicle and Infrastructure Modeling for Deployment Programs  
*Jimmy Yao*
- 🔧 Probabilistic Hosting Capacity  
*Alan Hirayama, Alan Lee*

#### HYDRO ONE

- 🔧 DER Integration Requirements, Practices, and Opportunities  
*Adnan Akhtar, Ryan Boudreau*

#### HYDRO-QUÉBEC

- 🔧 Grid Modernization Roadmap Developed and Assessed  
*Mylene Labadie*

#### KOREA ELECTRIC POWER CORPORATION

- ✿ Study of PM<sub>2.5</sub> in Korea  
*Sungnam Chun, Suji Kang*

#### KOREA HYDRO & NUCLEAR POWER CO., LTD.

- ✿ Gained Approval for Decommissioning Plan and Formed First Basis in Korea for Implementation  
*Kwang-Ho Jo, Hye-Jin Jung, Hyun Min Kim, Young-Gook Kim, Jae Young Oh, Taesik Yun*

#### LG&E AND KU ENERGY LLC

- ✿ Accurate Assessment of NO<sub>2</sub> and NO<sub>x</sub> at Fossil Fuel Power Plants  
*Adam Flowers, Cindy Whitaker*
- ✿ Determined Maximum Chloride Concentration for FGD at a Power Plant  
*Mahyar Ghorbanian, Nathan Huster, Haley Turner, Logan Waller*
- ✿ Informed Effluent Guidelines: Bottom Ash Transport Water Management  
*Roger Medina*

#### LINCOLN ELECTRIC

- 🔧 Electric Vehicle and Infrastructure Modeling for Deployment Programs  
*Marc Shkolnick*

#### LOS ANGELES DEPARTMENT OF WATER AND POWER

- 🔧 California Electrification Assessment  
*Tejasree Ganapa, Bang Phung, Katherine Rubin, Mark Sedlacek*
- 🔧 Strategic Landholding Analysis for LADWP  
*Mario Acevedo, Helen Olivares, Graham Peace, Mark Sedlacek, Maria Sison-Roces, Nancy Sutley*

#### NATIONAL GRID UK, LTD.

- ✿ DC Arc Flash Hazard Assessment for Large-Scale Solar Photovoltaic (PV) Plants  
*Justin Woodard*

#### NAWAH ENERGY COMPANY

- ✿ Applied EPRI Research to Support Construction and Operation of New Plant  
*Abdullah Omar Abdullah Al Yafei*

#### NEBRASKA PUBLIC POWER DISTRICT

- 🔧 CO<sub>2</sub> Emission Rate Metrics Calculator  
*Jason Vanek*
- 🔧 Electric Vehicle and Infrastructure Modeling for Deployment Programs  
*Alan Dostal*

#### NEW YORK POWER AUTHORITY

- ✿ Accurate Assessment of NO<sub>2</sub> and NO<sub>x</sub> at Fossil Fuel Power Plants  
*Mesa Perry, Joshua Ramos, Walter Soto*
- 🔧 Algorithms for Utility Infrared Inspection and Monitoring in Substations  
*Atena Darvishi, Ramadan Elmoudi, Alan Ettlinger, Gregory Pedrick*
- 🔧 Electric Vehicle and Infrastructure Modeling for Deployment Programs  
*John Markowitz*
- 🔧 Resilient Communications Demonstration Project  
*Vic Costanza, Randy Crissman, J.T. Flick, Jaiah Gottor, Corey Peters*
- 🔧 Wide Area Oscillations Damping Control  
*Atena Darvishi, Alan Ettlinger, George Stefopoulos*

#### NISOURCE

- ✿ Informed Effluent Guidelines: Bottom Ash Transport Water Management  
*Ernie Hasselbring, Bert Valenkamph*

#### NUSCALE POWER, LLC

- ✿ Advanced Assessment of Small Modular Reactor (SMR) Design, Safety and Cost-Effectiveness Through Integrated PWR (iPWR) Containment Aerosol Deposition and Emergency Planning Zone (EPZ) Evaluation  
*Steven Mirsk*



#### OGLETHORPE POWER CORPORATION

- 🌟 Accurate Assessment of NO<sub>2</sub> and NO<sub>x</sub> at Fossil Fuel Power Plants  
*Oglethorpe Power Corporation (company award)*
- 🏠 Fatigue Management in the Electric Utility Industry: Characterization and Mitigation Approaches  
*Mike Pitts*
- 🌟 Process Compensated Resonance Testing  
*Jeff Wilson*

#### OKLAHOMA GAS & ELECTRIC

- 🏠 Grid Modernization Roadmap Developed and Assessed  
*Zac Gladhill, Kandace Smith*

#### ONTARIO POWER GENERATION, INC

- 🌐 Used EPRI Seismic Probabilistic Risk Assessment (PRA) and Seismic Fragility Research to Address Change Impacts in Seismic Hazard at Darlington  
*Nasser Aly, Sevana Bedrossian, Katherine Gromek, Lambert Li*

#### PECO ENERGY COMPANY

- 🏠 DER Integration Requirements, Practices, and Opportunities  
*Valerie Carter, George W. Sey Jr.*
- 🏠 Installed Avian Diverters Using Unmanned Aircraft Systems (UAS)  
*Jesse Goldberg, Keith Kowalski*
- 🏠 Vehicle Grounding and Personal Protection of Distribution System Mobile Equipment Practices  
*Kimberly Keegan, Edward M. Morson*

#### PEPCO HOLDINGS INC.

- 🏠 DER Integration Requirements, Practices, and Opportunities  
*Valerie R. Carter, Bee Z. Morton, Steven J. Steffel*
- 🏠 Installed Avian Diverters Using Unmanned Aircraft Systems (UAS)  
*Cristina Frank*
- 🏠 Vehicle Grounding and Personal Protection of Distribution System Mobile Equipment Practices  
*Joe Cunningham, Anthony D. Harmon*

#### PJM INTERCONNECTION

- 🏠 Resilient Communications Demonstration Project  
*Paul Bickel, John Ippolito, Thomas O'Brien*

#### POWERLINK QUEENSLAND

- 🏠 Risk Based Assessment of Climate Conditions for Improved Seasonal, Regional, and Dynamic Transmission Line Ratings  
*David Sharp, Glenn Stapleton*

#### SACRAMENTO MUNICIPAL UTILITY DISTRICT

- 🏠 Deployed Customer Oriented Energy Storage  
*Deepak Aswani, Jeanne Duvall, James Frasher, Gabriel Leggett, Jennifer Starrh*
- 🏠 Electric Vehicle and Infrastructure Modeling for Deployment Programs  
*Dwight MacCurdy*

#### SALT RIVER PROJECT

- 🏠 Electric Vehicle and Infrastructure Modeling for Deployment Programs  
*Catherine O'Brien*
- 🏠 Grid Modernization Roadmap Developed and Assessed  
*Chris Campbell, Juan Cardona*

#### SAUDI ELECTRICITY COMPANY

- 🏠 Electric Vehicle and Infrastructure Modeling for Deployment Programs  
*Eng. Hatim Gandayh*

#### SOUTHERN CALIFORNIA EDISON

- 🏠 California Electrification Assessment  
*Maya Alunkal, Erica Bowman, Lindsay Dattels, Daniel Hopper*
- 🏠 Deployed Customer Oriented Energy Storage  
*Mark Martinez, Navniel Pillay, David Rivers*

#### SOUTHERN COMPANY

- 🌟 Accurate Assessment of NO<sub>2</sub> and NO<sub>x</sub> at Fossil Fuel Power Plants  
*Ryan Fogg, Justin Walters*
- 🌟 Applied Root Cause Findings to Optimize HRSG Operation  
*J. Scott Davis, David Downs, Andy Kilgore, Nathan Ladner, Randy Miller, Jr., Hagen Scarborough*
- 🏠 CO<sub>2</sub> Emission Rate Metrics Calculator  
*Justin Walters*
- 🏠 DER Integration Requirements, Practices, and Opportunities  
*Andrew Ingram, Beth Senkbeil*
- 🏠 Grid Modernization Roadmap Developed and Assessed  
*Jason Autrey, Tracy West*





✿ **Informed Effluent Guidelines: Bottom Ash Transport Water Management**

*Donna Hill*

✿ **Resilient Communications Demonstration Project**

*Tyler Amberson, Donald Roberts*

✿ **UAS for Storm Response**

*Glenn Wilson*

**STATE NUCLEAR POWER TECHNOLOGY CORPORATION**

✿ **Improved Risk Insights with Successful Application of EPRI Human Reliability Analysis (HRA) Guidance**

*Zaiwei Fu, Jiandong He, Juntao Hu, Ge Shao, Jiaqiang Wang, Yafeng Xia, Jinquan Yan, Qinfang Zhan, Wenhui Zhan, Yucheng Zhuo*

**TAIWAN POWER COMPANY**

✿ **Applied EPRI Technology to Repair Leakage in Fuel Transfer Pool Wall at Kuo Sheng Nuclear Power Station**

*Po-Ching Chen*

**TENNESSEE VALLEY AUTHORITY**

✿ **Accurate Assessment of NO<sub>2</sub> and NO<sub>x</sub> at Fossil Fuel Power Plants**

*Randall Hirsch*

✿ **Advanced Assessment of Small Modular Reactor (SMR) Design, Safety and Cost-Effectiveness Through Integrated PWR (iPWR) Containment Aerosol Deposition and Emergency Planning Zone (EPZ) Evaluation**

*Archie Manohara, Alex Young*

✿ **Electric Vehicle and Infrastructure Modeling for Deployment Programs**

*Drew Frye*

✿ **Field Porewater vs Laboratory Leach Test Comparison**

*Anne Aiken, Ken Dunay, Margaret Gilliland, Nicholas A. McClung*

✿ **Implemented Radiation Protection Standardized Task Evaluation (STE) Program**

*Jason Valtos*

✿ **Informed Effluent Guidelines: Bottom Ash Transport Water Management**

*Lindy Johnson*

✿ **Process Compensated Resonance Testing**

*Benjamin A. Holt*

**TERNA SPA**

✿ **Wide Area Oscillations Damping Control**

*Giorgio Giannuzzi, Cosimo Pisani, Roberto Zaottini*

**TRANSGRID**

✿ **Risk Based Assessment of Climate Conditions for Improved Seasonal, Regional, and Dynamic Transmission Line Ratings**

*Hoang Tong*

**TRI-STATE GENERATION AND TRANSMISSION ASSOCIATION**

✿ **Accurate Assessment of NO<sub>2</sub> and NO<sub>x</sub> at Fossil Fuel Power Plants**

*Dan Casiraro*

✿ **CO<sub>2</sub> Emission Rate Metrics Calculator**

*Lyle Witham*

✿ **Fatigue Management in the Electric Utility Industry: Characterization and Mitigation Approaches**

*Kent Mahanna*

**TUCSON ELECTRIC POWER**

✿ **Real-Time Deposition Monitoring**

*Elyse Redford*

**WEC ENERGY GROUP**

✿ **Accurate Assessment of NO<sub>2</sub> and NO<sub>x</sub> at Fossil Fuel Power Plants**

*Donna Danihel, Shelly Heston*

✿ **Electric Vehicle and Infrastructure Modeling for Deployment Programs**

*Pat Keily*

✿ **Informed Effluent Guidelines: Bottom Ash Transport Water Management**

*Alison Castronovo, Elizabeth Hellman*

✿ **Priority Sustainability Issue Assessment Methodology**

*Joan Bedinger, Donna Danihel, Kellie Hamilton, Leah Thomas*

**XM**

✿ **Applied Advanced Tools and Methods for Integrating Renewables and DER**

*Carlos Eduardo Borda, Neby Castrillon Gutierrez, Carlos Mario Correa Posada, Juan Carlos Morales Ruiz, Lina Ramirez Arbelez*

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