Ensuring reliability for something as complex as the bulk power system (BPS) requires a great deal of coordination. In 2018, Texas RE worked closely with the PUCT, FERC, NERC, other Regional Entities, and stakeholders to ensure the reliability of the grid.

This Annual Report is a brief summary of some of our most important accomplishments from the prior year, with data from each of our NERC program areas – Registration, Reliability Standards, Compliance Assessments, Enforcement, and Reliability Services. The report also describes improvements in our outreach efforts and the achievements of our Reliability Monitor group, which monitors compliance with state reliability regulations.

As detailed in this report, in 2018:

- Texas RE continued to make improvements to our Compliance monitoring processes and successfully completed 32 compliance engagements.
- We improved Risk Assessments by incorporating new Risk Elements, updating Reliability Standards relationships, and promoting better alignment with other Regional Entities.
- In the ERO at large, our staff coordinated with other Regions to develop the Compliance Oversight Plan process and technical task force templates and procedures.
- We successfully managed a 34 percent increase in our Enforcement caseload, due in part to new CIP Standards and increasingly complex casework.
- Our Reliability Services group completed its annual Assessment of Reliability Performance, which indicated solid operation of the grid while identifying future focus areas.
• Our Reliability Standards group worked with stakeholders to finalize the retirement of IRO-006-TRE-1 and began revision of BAL-001-TRE-1.

• Our Reliability Monitor group initiated new compliance engagements, including investigations of generator voltage control using new telemetered voltage set point data.

The success of any operation is dependent on its people. In 2018, we welcomed a range of new and talented individuals, including our newest Independent Director, Milton B. Lee. We also saw several staff members promoted to management positions, which I view as an indicator of a healthy organization; when personnel are able to grow into leadership roles, it allows a company to evolve its vision while maintaining a consistent regulatory philosophy.

In closing, I want to say thank you to everyone who makes electric reliability in North America—and more importantly in the ERCOT Interconnection—not only possible, but a continued reality. On behalf of our Board of Directors and our diligent staff, Texas RE appreciates your hard work to ensure reliability and we look forward to another successful year in 2019.

Lane Lanford
President & CEO
Texas is a leader in the energy industry, generating more electricity than any other state. The Texas resource profile of conventional and renewable energy is extremely diverse, and poised to grow more so in the near future. It has been a privilege to serve as the Board Chair for the Regional Entity responsible for overseeing the Texas Interconnection.

Just as Texas acts as a leader in the development of new energy resources, Texas RE helps lead the ERO by having its staff serve in key roles on task forces, steering committees, and working groups. Texas RE also serves as the lead Region in many Coordinated Oversight engagements and is helping lead the way in developing NERC’s new CMEP tool.

Last summer, Texas’s expertise and diligence was on full display. With tightening reserve margins and record-setting demand, the Texas Interconnection made it through peak demand season without a major disruption. This feat was accomplished thanks to many hard working individuals across the energy sector. Texas RE did its part by raising awareness months in advance, publishing support materials to encourage best practices for coping with summer efforts, and hosting outreach events to help inform and coordinate stakeholders.

Texas RE has been an invaluable asset to reliability in Texas and the ERO at large. The other members of the Board of Directors and I are grateful for the hard work the Texas RE staff does every day to ensure continued reliability of the BPS. I look forward to working with them to improve electric reliability and hope you do as well.

John Coughlin
2018 Chair, Texas RE Board of Directors
Texas RE Mission

To assure effective and efficient reduction of risks to the reliability and security of the bulk power system within the ERCOT Interconnection.

KEY FACTS

The Texas Interconnection is not synchronously connected with any other interconnection.

Texas RE is the only Regional Entity that serves both a single state and a single Interconnection and monitors both NERC and State Reliability Standards.

The work Texas RE does costs only about 50 cents per year to the average residential customer.
Reliability Standards

Reliability Standards are the foundation for all that Texas RE does. The Reliability Standards department supports the development and review of NERC Reliability Standards, as well as regional standards and variances unique to Texas.

In 2018, the Texas RE Board approved the retirement of Regional Standard IRO-006-TRE-1 and the MRC approved a project to revise Regional Standard BAL-001-TRE-1.

Registration and Certification

All users, owners, and operators of the bulk power system must be registered with NERC; the Registration and Certification department manages this activity. In 2018, there were 24 registrations, 13 de-registrations, and two certification reviews.
The Compliance Assessments department evaluates each registered entity’s risk to the BPS and their compliance with NERC Reliability Standards. The Compliance Assessments department encompasses a range of activities including Inherent Risk Assessments (IRA), Internal Control Evaluations (ICE), Compliance Oversight Plans (COP), and various focused compliance monitoring processes such as Compliance Audits. Each compliance engagement requires collaboration between Texas RE, an entity, and—for Coordinated Oversight participants—other Regional Entities. In 2018, Texas RE completed 32 separate compliance monitoring engagements, including six Coordinated Oversight engagements.

To support compliance monitoring activities, Texas RE updated Inherent Risk Assessments, engagement templates, internal processes, and the existing CMEP Engage tool.
The Enforcement department investigates possible non-compliance issues and determines the mitigation activities and the appropriate penalties (if any) for the registered entity.

Enforcement activity ramped up in 2018 due in part to new CIP standards and increasing degrees of complexity in the cases coming before Enforcement staff. Total caseload increased by 34 percent, with many of the cases involving dozens of internal controls evaluations and a diverse set of standards requirements.

In addition to its usual enforcement activity, Texas RE is also working to implement Mitigation Verification Sampling Guidance in an effort to reduce the administrative burden associated with minimal risk issues that have a limited impact on the BPS.
Reliability Services

The Reliability Services group monitors the grid, reviews system disturbances, analyzes grid performance, contributes to future assessments of the BPS, and provides outreach on its findings.

Understanding how the grid operates is vital to ensuring its reliable operation. This year, Texas RE’s Reliability Services group published an Assessment of Reliability Performance report and collaborated with NERC and other REs in compiling similar reports for the ERO Enterprise. These reports indicated solid operation of the grid and highlighted areas to focus on in the future, including continued study and adaptation around the changing resource mix.

Each season had challenges. Despite lower reserve margins, the Texas Interconnection navigated the peak summer and winter demand without emergency declarations. Record penetration of wind and solar during spring and fall raised concerns over future impacts to system inertia and ramping capability. Monitoring will continue to focus on performance as conventional generation retires and increasing numbers of inverter-based resources come online.

An event is an unintended change in the state of facilities, systems, or components that leads to undesired consequences for the electric system.

*There were no Category 2, 3, 4, or 5 events in 2018.*
In addition to serving as the Reliability Entity for NERC, Texas RE also contracts with the Public Utility Commission of Texas (PUCT) to serve as the state Reliability Monitor.

In 2018, the Reliability Monitor group submitted 35 Compliance Reports to the PUCT. The group focused on Real-Time operational issues like Ancillary Services performance, as well as recurring requirements such as participation in ERCOT severe weather drills. The Reliability Monitor also initiated new compliance engagements, including an investigation into generator voltage control using new telemetered voltage set point data.

<table>
<thead>
<tr>
<th>Compliance Review Area</th>
<th>2018 Q1</th>
<th>2018 Q2</th>
<th>2018 Q3</th>
<th>2018 Q4</th>
<th>Total</th>
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<tbody>
<tr>
<td>Compliance Investigations Initiated</td>
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<td>7</td>
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<td>Compliance Reports Sent to PUCT</td>
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<td>10</td>
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<tr>
<td>Compliance Matters Concluded</td>
<td>5</td>
<td>28</td>
<td>5</td>
<td>2</td>
<td>40</td>
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</tbody>
</table>

2018 Cases by Compliance Review Area

- Real-Time Operations 44%
- Recurring Requirements 39%
- Events 6%
- Other 11%
- Total 100%
Texas RE Outreach

Texas RE publishes a monthly newsletter to keep stakeholders up-to-date on reliability news.

The Texas RE Conference Center hosts a range of functions from Texas RE’s bi-annual Standards and Compliance workshops and Compliance 101 workshop, to seminars, training programs, technical committees and working groups, and other industry-related activities.

In 2018, the Texas RE Conference Center hosted **31** separate external functions with **thousands** of participants attending in person or via webinar.
Texas RE gave back to Texans this year by volunteering at the Central Texas Food Bank in Austin. Texas RE staff assembled 837 meals that were distributed to after-school programs for children in need of nutritious food. The Central Texas Food Bank’s goal is to help the hungry in the community and the Texas RE team was proud to support this noble mission.
<table>
<thead>
<tr>
<th>Name</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>John T. Coughlin</td>
<td>Chair (Independent)</td>
</tr>
<tr>
<td>Fred N. Day, IV</td>
<td>Vice Chair (Independent)</td>
</tr>
<tr>
<td>Dr. Delores M. Etter</td>
<td>(Independent)</td>
</tr>
<tr>
<td>Milton B. Lee</td>
<td>(Independent)</td>
</tr>
<tr>
<td>W. Lane Lanford</td>
<td>President &amp; Chief Executive Officer</td>
</tr>
<tr>
<td>Brenda Hampton</td>
<td>MRC Chair (Affiliated)</td>
</tr>
<tr>
<td>Liz Jones</td>
<td>MRC Vice Chair (Affiliated)</td>
</tr>
<tr>
<td>DeAnn Walker</td>
<td>Chairman, Public Utility Commission of Texas (Ex officio, non-voting)</td>
</tr>
<tr>
<td>Tonya Baer</td>
<td>Public Counsel, Office of Public Utility Counsel (Ex officio, non-voting)</td>
</tr>
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