



TEXAS RE

Natural Gas & Power Industry Reliability Alliance

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Upcoming Texas RE Events



April 24, 2024

Spring Standards, Security, & Reliability Workshop



May 2, 2024

MOVEit Vulnerability



May 15, 2024

Quarterly MRC, AGR&F, and Board Meetings



Upcoming ERO Enterprise Events



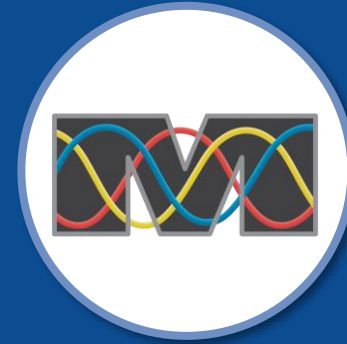
April 15, 2024

Technical Talk with RF



April 22-26, 2024

Electromagnetic Transient
(EMT) Training Course



May 15, 2024

MRO Reliability Conference



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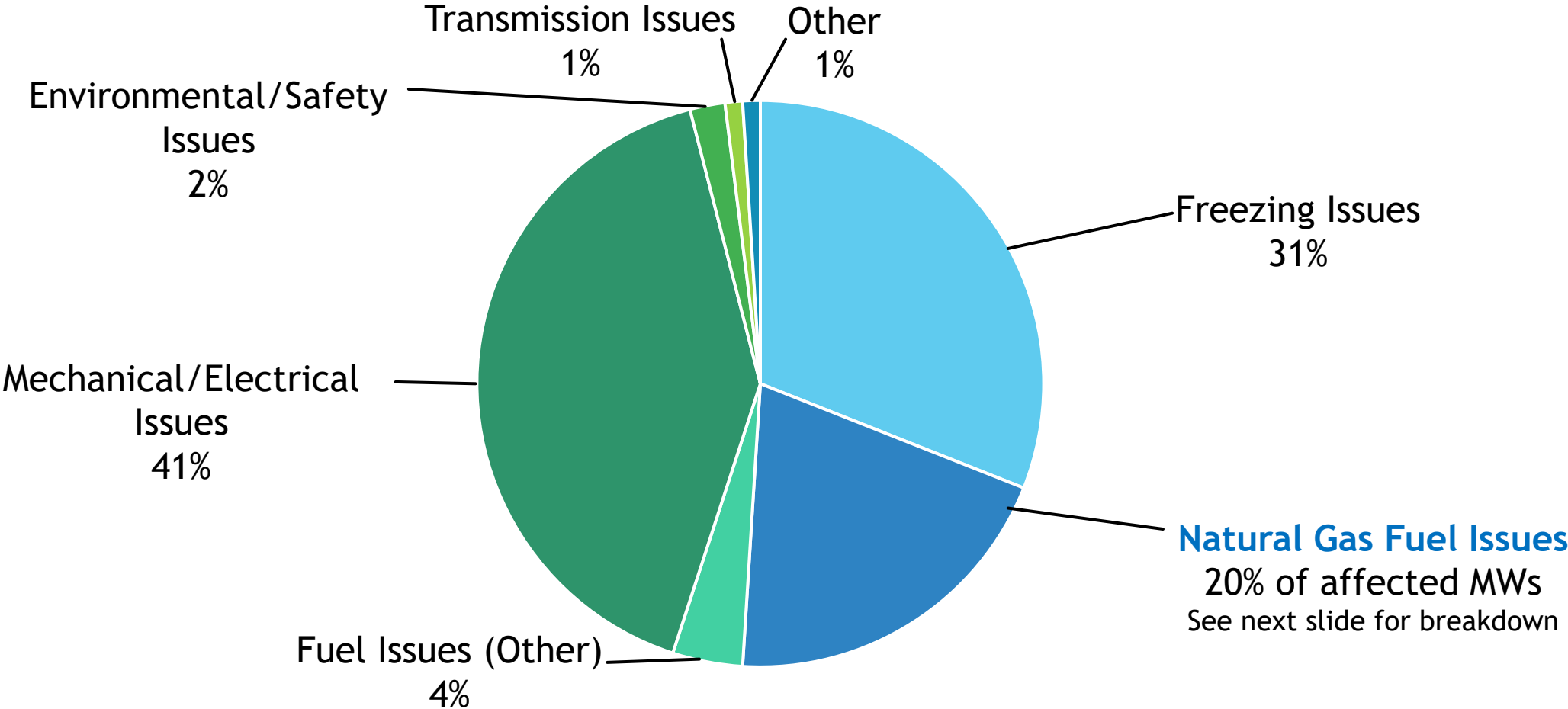
Reliability Alliance

EPSA, INGAA and NGSA Presentation

Reliability Alliance: Our Origin Story

- ▶ Gas generators, producers, and pipelines met in-person to dig deep into root causes of Winter Storm Elliott gas/electric coordination issues
 - ▶ Small group to enable frank discussion based on actual experiences
 - ▶ Developed key problem set before developing solution set
 - ▶ No “silver bullet,” but each proposal incrementally mitigates problem
- ▶ Key insights
 - ▶ Market functions exceedingly well most days of the year - for now
 - ▶ Most problems occur when generators called up without advance notice
 - ▶ PJM: 90% of gas generator outages attributed to gas availability occurred when called in Real-time
 - ▶ “Market issues” underpin substantial gas availability problems experienced in Elliott; exacerbated by gas market tightness

Causes of Unplanned Generating Unit Outages, Derates and Failures to Start During Elliott



Source: 2023 FERC-NERC Winter Storm Elliott Report, Figure 7

Follow the Numbers: FERC-NERC Findings on Elliott Gas Generator Fuel Issues

		DEC 23		DEC 24	
		MWs	% of Gas Fuel Issues	MWs	% of Gas Fuel Issues
NON-PHYSICAL / NON-OPERATIONAL FUEL ISSUES	Interruptible pipeline delivery interruptions	6,268	30%	5,485	26%
	Market issues	5,173	26%	9,913	46%
	Market price restriction	1,040	5%	0	0%
	NON-PHYSICAL		61%		72%
PHYSICAL / OPERATIONAL CAUSES FUEL ISSUES	Firm pipeline delivery curtailment	4,533	22%	700	3%
	Gas delivery pressure issues	1,532	8%	2,557	12%
	Failure to fulfill firm supply obligations	972	5%	2,852	13%
	Transportation scheduling constraints	716	4%	0	0%
	PHYSICAL/ OPERATIONAL		39%		28%
GRAND TOTAL		20,234 MW		21,507 MW	

Source: 2023 FERC-NERC Winter Storm Elliott Report, Figure 63

Reliability Alliance Identified 4 Key Problems

1. Advance fuel procurement and scheduling
 - ▶ No certainty of compensation
2. Real-time dispatch requirements conflict with:
 - ▶ NAESB Timeframes for Gas Flow
 - ▶ Ratable Takes During Critical Periods
3. Organized power markets do not support long-term commitments necessary to expand gas infrastructure
4. Infrastructure permitting delays

1. Advance Fuel Procurement and Scheduling - Without Certainty of Dispatch or Compensation

Problems:

- ▶ Uncertainty regarding how often and when the ISO/RTO will dispatch
- ▶ Uncertainty whether generator can recover fuel cost if not called to run



Potential Improvements to Encourage Advance Generator Purchases:

1. Improve pricing in power markets, especially the Real-time Market
2. Improve certainty in power markets
 - a) RTOs/ISOs should notify generators as early as possible of the need to run
 - b) Shift the start time of regional Power Days to better align with Gas Day
 - c) RTOs/ISOs to reconcile their forecasts and bids to reduce calls in Real-time

1. Advance Fuel Procurement and Scheduling - Without Certainty of Dispatch or Compensation (cont.)

Problems:

- ▶ Uncertainty regarding how often and when the ISO/RTO will dispatch
- ▶ Uncertainty whether generator can recover fuel cost if not called to run



Potential Improvements to Encourage Advance Generator Purchases:

3. Consider ways to facilitate gas purchases during intra-day periods, weekends and holidays
 - a) Advocate for standardized postings on ICE for single-day options
 - b) Promote daily indices for weekend days with index publishers
 - c) Encourage generators to expand their pool of suppliers
 - d) Incentivize posting excess capacity as soon as possible or enter into AMAs

2. Real-Time Dispatch Requirements

Problems:

- ▶ Conflict between Real-time dispatch requirements and NAESB gas flow timeframes
- ▶ Conflict with ratable takes enforced during critical periods

Potential Improvements to Address Conflicts with Real-Time Dispatch Requirements:

1. Allow Real-time updates to operating parameters that reflect gas system limitations
2. Consider enhanced pipeline notices and services addressing power system needs
 - a) Encourage more pipelines to accept nominations after ID3 on “best efforts” basis
 - b) Ensure pipeline notices such as OFOs are clear and provided as far in advance as possible
 - c) Encourage pipelines to design enhanced services to the extent possible using existing infrastructure
 - d) Pipelines should determine the incremental infrastructure required to offer more no-notice or non-ratable services and develop a rough estimate of the costs

3. Organized Power Markets Do Not Support the Long-Term Commitments Needed to Expand Gas Infrastructure

Problem:

- ▶ RTO/ISO market design often does not incentivize generators to make long-term commitments needed to develop additional pipeline capacity

Potential Improvements:

1. RTOs/ISOs should explore ways for wholesale electric market participants to anchor additional pipeline infrastructure
2. FERC should convene a technical workshop
3. Pipelines should consider if capacity increases are commercially viable when undertaking upgrades required to comply with new emissions mandates

4. Infrastructure Permitting Delays

Problem:

- ▶ Unduly burdensome permitting processes and protracted litigation increase investment risk and obstruct or delay natural gas infrastructure expansion

Potential Improvements:

1. Support legislation removing hurdles in pipeline permitting
2. Ask FERC to rescind pending draft policies that add uncertainty and investment risk
3. Encourage ISOs/RTOs and NERC to advocate for specific gas infrastructure projects, particularly storage, that enhance reliability of gas supply and provide increased flexibility
 - a) Coalition asking DOE to explore if sufficient natural gas infrastructure to support fuel availability for ramping would be helpful to pinpoint where needs exist

Questions?

