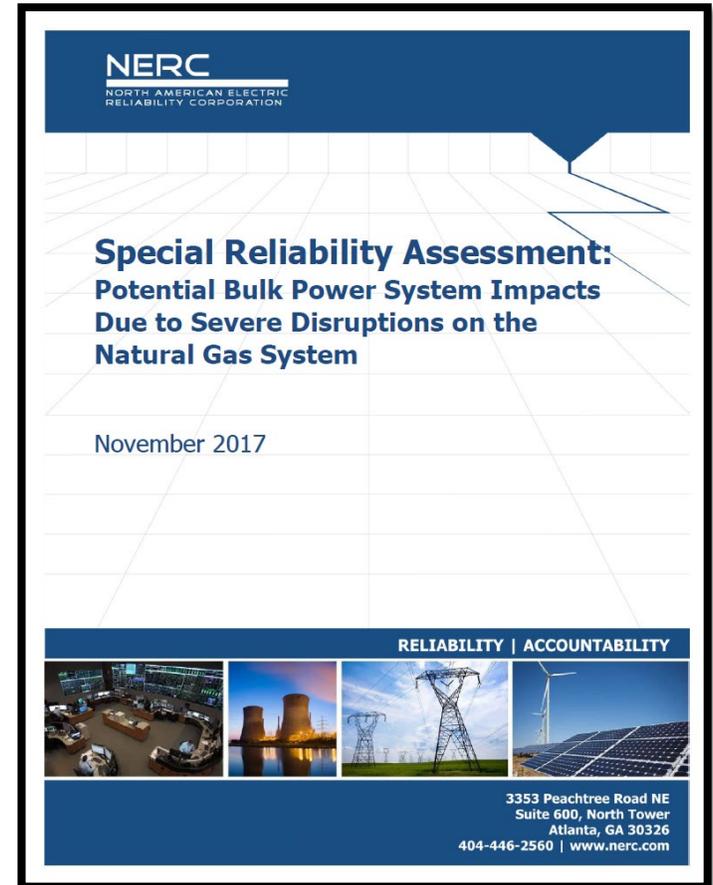




NERC Electric Gas Working Group Update

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November 22, 2019

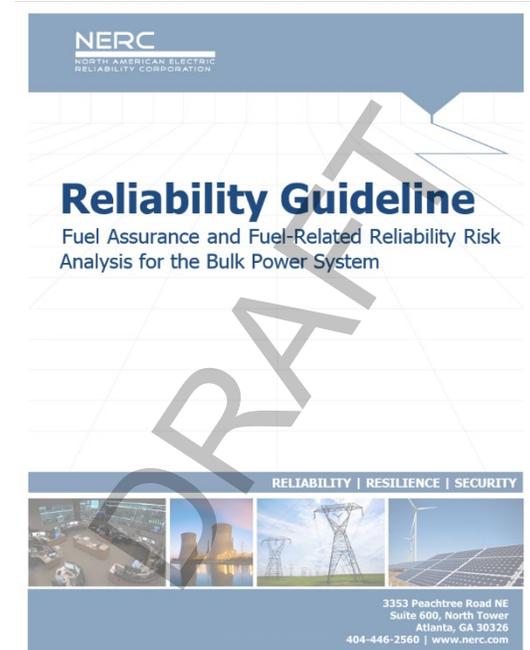
- NERC Planning Committee formed the Electric Gas Working Group (“EGWG”) in response to recommendations made in the *Special Reliability Assessment: Potential Bulk Power System Impacts Due to Severe Disruptions on the Natural Gas System* (published November 2017)
- https://www.nerc.com/pa/RAPA/ra/Reliability%20Assessments%20DL/NERC_SPOD_11142017_Final.pdf



- Reports to the NERC Planning Committee
- Stakeholder forum open to all types of organizations representing a cross-section of fuel supply/delivery chains and the interrelated electric sectors
- With focus on gas-electric or fuel related matters:
 - Author guidelines, white papers, compliance guidance, etc...
 - Develop educational materials
 - Provide technical assistance
 - Provide assistance to NERC Event Analysis
 - Support data collection for reliability assessments
 - Support development of metrics

- Primary task for EGWG was to develop the Reliability Guideline
- EGWG worked on the Guideline from April – October 2019.
- Guideline submitted for review to the NERC Planning Committee mid-October 2019
- NERC PC reviewed Guideline and authorized posting for industry comment.
- Public Comment Period: November 4 – December 18, 2019
 - Link to Draft Guideline:
https://www.nerc.com/comm/PC_Reliability_Guidelines_DL/Reliability_Guideline-Fuel_Assurance_and_Fuel-Related_Reliability_Risk_Draft.pdf
 - Link to Comment Form:
https://www.nerc.com/comm/PC_Reliability_Guidelines_DL/Comment_Matrix_EGWG_Guideline.xlsx
- EGWG to reconvene after the public comment period to review draft comments

- Intention is to provide planners with guidance on how to evaluate fuel related risk factors to address potential impacts on the BPS without prescribing or preventing specific norms or a Reliability Standard
- Within the RG are examples from existing studies
 - Give a starting point for a study
 - Prompt to include items that may have been overlooked



- Chapter 1: Fuel Assurance
- Chapter 2: Electric Generation Fuel Supply Primer
- Chapter 3: Fuel Risk Analysis Considerations
- Chapter 4: Fuel-Related Reliability Risk Analysis Framework
- Appendix A: Checklist/Summary of Chapter 4
- Appendix B: Surveys

- Fuel Assurance Definition: *“Proactively taking steps to identify fuel arrangements or other alternatives that would provide confidence such that fuel interruptions are minimized to ensure reliable Bulk Power System performance during both normal operations and credible disruptive events”*
- Principles
 - Markets: Using market mechanisms to strengthen fuel supply arrangements
 - Generator Owners/Operators: various fuel procurement options
 - Transmission Planners: contingency consideration for fuel supplies

- High level description of supply chains for major generator fuels
 - Natural Gas, Oil, Coal, Nuclear, Hydro, Solar, Wind, and Other
 - Natural Gas
 - Production and Processing, Transmission and Storage, Distribution
 - FERC, PHMSA, and State Regulation
 - Commodity + Transportation
 - Physical considerations: Looping, line pack, re-routing
 - Interdependence on electric system (e.g. electric compressors)
 - Risks: interruption and curtailment

- Supply chain considerations for each generator fuel supply type
 - Natural Gas, Oil, Coal, Nuclear, Hydro
- Natural Gas considerations
 - Planners should fully examine credible reliability risks
 - Seek to understand supply strategies utilized by generators, including on-site and off-site storage, non-firm supply, and environmental constraints
 - Physical access to fuel and potential curtailments to key supply points
 - Public data sources: EBBs, EIA, operational reports to FERC
 - Possible availability of excess capacity

- Multi step approach for performing a fuel-related reliability risk analysis for application in a wide array of studies
 1. Defining problem and study prerequisites
 2. Data Gathering
 3. Input Assumptions and Initial Conditions
 4. Contingency Selection
 5. Selection of Tool(s) for Analysis
 6. Perform Analysis and Assess Results
 7. Develop Solution Framework

- **Appendix A** is a checklist version of Chapter 4, summarized and simplified to be a quick reference
- **Appendix B** is a bulleted list of recommended survey questions to be posed to generators in the interest of gathering the appropriate information, based on surveys conducted in the electric industry today.