

Report of Rotating Blackout Operations Task Force of the ERCOT Board – March 2011

The charter of this group is for Board Members selected by the Chair to work with the assigned ERCOT staff team to (1) conduct a review of the high-level operations approach used during the recent rotating blackout incident of early February, (2) help identify areas for improvement, if any, and (3) help identify appropriate means, mechanisms, and resources that will be part of ERCOT's extreme cold weather operations plan going forward. The team preparing this report is comprised of Michehl Gent, Dr. A. D. Patton, and Clifton Karnei. The ERCOT staff members assigned to assist the team are Bill Blevins and Chad Seely. The report is purposely compact without detailed explanations in hopes that the recommendations may be presented in March and can be adopted or rejected quickly. The team was also careful to not allow the investigation to interfere with the many other investigations underway.

Conclusion #1: Regarding Seasonal Assessments

Findings: Winter and Summer Seasonal Assessments are prepared to NERC specifications by the ERCOT Staff under the watchful eye of the TRE. After collaboration with the TRE, the assessment is sent to NERC for inclusion in the NERC Seasonal Assessment. Before the NERC Seasonal Assessment is published, the NERC Reliability Assessment Subcommittee reviews the submittals, very often interviewing personnel from the Regions being reviewed.

Recommendation 1A: Consider requiring the Regional Planning Group (RPG) to review the ERCOT seasonal assessment and make a presentation of their findings to the Board, preferably before the assessment goes to NERC. The seasonal assessments should be presented to the Board prior to the appropriate season.

Recommendation 1B: We recommend the winter assessment include scenario analysis estimating the impact of extended (>3 days) freezing (< 20°) weather on: (i) estimated load, (ii) the expected and worst case forced outage rate on generating units, (iii) the loss of gas generating units on interruptible gas transportation and supply agreements that do not have fuel oil back up, (iv) an estimate of fuel oil inventory and the projected run time based on the “on site” fuel oil inventory and (v) an estimate of the loss of gas supply due to freezing of the gas production and delivery system.

Conclusion #2: Regarding Operational Communications

Findings: ERCOT started taking steps to prepare for the storm on January 28, 2011, as soon as they got the major storm warning. The preparations included withdrawing or delaying transmission outages, committing several generation units to come online early, and sending operation notices that cold temperatures were approaching. The transcript of two calls held on Monday, January 31, 2011 was specific that ERCOT provided notice that temperatures were going to be in the low teens. The ERCOT person conducting the call requested everyone to stay on the call until it was over and “If you experience any transmission outage or a significant loss of load as a direct result of the weather event, immediately notify ERCOT.” The team believes that sufficient urgency was expressed and that market participants were adequately forewarned.

Recommendation 2A: Ensure that the entities on the operations calls are logged and that those entities remain on the calls until they are finished. Require those receiving the information to be able to reveal, when requested, what they did with the information. Also, add loss of generation to the list of what should be reported to ERCOT on the QSE Hotline Call.

Recommendation 2B: When sharing information during an emergency, ERCOT system operators should never withhold operational information from the operator community on the basis that the information may be competitively sensitive. Provide what is known, the actions taken, and the actions expected to be taken as the quality and substance of the communication is more important than the market sensitivity. Consider adding language to Protocol Section 1.3.6 to allow for an exemption to the restriction for protected information when under and Energy Emergency Alert. It was noted the FERC code of conduct rules for Transmission Operators provides for this exception.

Conclusion #3: Regarding Further Technical Investigation

Findings: The event is being investigated by the PUCT, FERC, NERC via the TRE, and ERCOT itself.

Recommendation: Ask TAC to review the actions taken by ERCOT (including market participants) surrounding the event and the ERCOT protocols and operating guides and make recommendations on appropriate changes that would make those actions, protocols and guides more efficient or appropriate. TAC should also consider the recommendations found in the report “ERCOT Emergency Operation, December 21-23, 1989” and determine if the recommendations are appropriate for today and should they be implemented if not already implemented.

Conclusion #4: Extreme Weather Preparedness

Findings: The PUC collects power plant weatherization plans and procedures. ERCOT collects fuel availability information and conducts annual preparedness drills, alternating between hurricane and cold weather events, and shares this information with the TRE. However, there is no sharing of weather preparedness data between the PUC and ERCOT, and no standards to determine the adequacy of weather preparedness are known to exist.

Recommendation: Collaborate with the PUC and the TRE to ensure the data needed for operational purposes is available to the ERCOT system dispatchers and the distribution entities and appropriately analyzed on a systematic basis. Sampling verification of appropriate weatherization for both hurricane and extreme cold and hot weather events should be part of the collection of needed data.

Conclusion #5: Regarding Load Shedding

Findings: The press was replete with instances of the rotating blackouts affecting critical care customers, some TDSPs have reported that in order to avoid critical care customers, outages were longer and more frequent than desirable on the “non-critical” customers.

Recommendation: The technical committee system should undertake to produce a generic list of the appropriate types of customers to curtail and the proper length of curtailment time during both manual and automatic under-frequency load shedding and identify the appropriate time intervals for when these criteria should be revisited, recognizing that this information may be security sensitive. TDSPs should maintain current lists of critical customers to the extent not done now. TDSPs should be required to estimate and report to ERCOT and the TRE, the amount of load available for load sheddings in EEA Level 3 after removal of critical care and under frequency circuits. Consideration should be given to the appropriate classification of gas compression loads in the load shed estimate.

Conclusion #6: Regarding Other Operational Issues

Findings: When ERCOT became a single control area, several specific steps during abnormal operating conditions that were to be taken by the individual control area, such as doubling spinning reserve, were eliminated, and ERCOT was saddled with the responsibility to make a judgment call in all situations. Bring on too much generation and the costs are too high. Lose too much generation and the system reliability is threatened. Another activity that was eliminated was the coordination of scheduled maintenance. Note that transmission maintenance is still coordinated. Also, it was noticed that some Black Start Resources failed to come on line when requested.

Recommendation 6A: Consider amending operating rules as necessary to give more discretion to the ERCOT system operators to call for more spinning reserve when approaching abnormal operating conditions.

Recommendation 6B: Reconsider having ERCOT coordinate generator scheduled maintenance.

Recommendation 6C: Periodically review responsive reserve distribution around the system to ensure that the reserve is useable for any event.

Recommendation 6D: Consider adding testing and rules for Black Start Resources.

Respectfully submitted to the ERCOT Board, March 15, 2011,

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