

# Operations Training Working Group (OTWG)

July 20th, 2017

ERCOT 800 Airport Drive, Taylor, Building TCC 1, Room 253

0900-1200

* Anti-trust Admonition

To avoid raising concerns about antitrust liability, participants in ERCOT activities should refrain from proposing any action or measure that would exceed ERCOT’s authority under federal or state law. For additional information, stakeholders should consult the Statement of Position on Antitrust Issues for Members of ERCOT Committees, Subcommittees, and Working Groups, which is posted on the ERCOT website.

* Disclaimer

All presentations and materials submitted by Market Participants or any other Entity to ERCOT staff for this meeting are received and posted with the acknowledgement that the information will be considered public in accordance with the ERCOT Websites Content Management Operating Procedure.

* Approval of Meeting Notes – June 2017
* Virtual Instructor Led Training Pilot
  + The course will be on the afternoon of first day of the Winter Storm Drill (Winter Storm Preparation).
  + Format
    - Introduction
    - Group Breakout (TOs, GOs)
      * 5 day hotline call
      * Discuss actions each company is taking
    - Review actions as one group
    - Group Breakout (TOs, GOs)
      * 3 day hotline call
      * Discuss actions each company is taking
    - Review actions as one group
    - Group Breakout (TOs, GOs)
      * Next day hotline call
      * Discuss actions each company is taking
    - Review actions as one group
    - Review
  + Will be a pilot
* Winter Storm Drill (Oct 18/19)
  + CEHs may be available from ERCOT if requirements met by participants
  + Initial Narrative
    - Freezing temperatures and icing in West
      * Natural Gas Well Heads icing
      * Natural Gas Pipeline pressure issues
      * Natural Gas Restrictions
    - High winds and icing in Panhandle
      * High Output from wind
      * Large number of wind units tripping
    - High winds and icing throughout the ERCOT region
      * Line trips due to icing and high winds
      * Unit trips due to low temperatures
  + Goal
    - Transmission events
    - Localized blackout and restoration (West only)
    - Capacity Emergency
  + Event Input Due June 15, 2017
    - Event Input Sheet
  + CEHs may be available
    - At least one event per hour
    - Facilitator present
    - Assessment would be provided
    - Presentation would be provided for the major objectives / timeline.
    - Presentation should be customized for Market Participant use. (Facilitator should add event and expected operator response)
    - To Receive CEHs the following would be required to be returned to ERCOT no later than November 17, 2017:
      * Learner(s) contract(s)
      * Facilitator Participation Form (Facilitator also receivs CEHs)
      * Feedback Form(s)
      * Sign in Sheet
      * Assessment(s)
      * Presentation with Market Participants customizations
* Grid Ex IV Registration (Nov 15/16)
  + CEHs may be available from ERCOT if requirements met by participants
  + Registration
    - Send your organization’s Lead Planner name and email address to [GridEx\_Registration@bah.com](mailto:GridEx_Registration@bah.com)
    - Once vetted, Lead Planner will receive credentials for the Grid Ex IV Portal
  + Will use the Winter Storm Drill events (lite), with different causes
  + Specific Grid Ex IV events due June 15, 2017
* Sync and Beyond (September 20th)
  + Initial Restoration Outage(s) and Island Scenario Input from Participants due
  + When to transition to CFC
  + Operating Principles for Multi-TOP CFC island
  + All Hazards Restoration Stages Framework
* 2018 Black Start Training
  + All Hazards Restoration Stages Framework
  + Extra Day of Black Start and Restoration Training (CEHs)
    - Generator Dynamics (Voltage and Frequency)
    - Transmission System Dynamics (Voltage)
    - Strongly Recommended for Operators with less than 5 years, Recommended refresher for everyone
    - 10 additional CEHs
    - Limited availability (50)
  + Black Start and Restoration Training Schedule
    - Pilot
      * Generator and Transmission System Dynamics (10 CEHs) January 8th 12 pm – 5 pm and January 9th 7 am to 12 pm
      * Black Start and Restoration Course (19 CEHs)

January 9th 1pm to 5pm, January 10th 7am – 5pm, January 11th 7 am – 12 pm.

* + - Session 1
      * Generator and Transmission System Dynamics (10 CEHs) January 29th 12 pm – 5 pm and January 30th 7 am to 12 pm
      * Black Start and Restoration Course (19 CEHs)

January 30th 1pm to 5pm, January 31st 7am – 5pm, February 1st 7 am – 12 pm.

* + - Session 2
      * Generator and Transmission System Dynamics (10 CEHs) February 5th 12 pm – 5 pm and Februatry 6th 7 am to 12 pm
      * Black Start and Restoration Course (19 CEHs)

February 6th 1pm to 5pm, February 7th 7am – 5pm, February 8th 7 am – 12 pm.

* + - Session 3
      * Generator and Transmission System Dynamics (10 CEHs) February 12th 12 pm – 5 pm and February 13th 7 am to 12 pm
      * Black Start and Restoration Course (19 CEHs)

February 13th 1pm to 5pm, February 14th 7am – 5pm, February 15th 7 am – 12 pm.

* + - Session 4
      * Generator and Transmission System Dynamics (10 CEHs) February 19th 12 pm – 5 pm and January 20th 7 am to 12 pm
      * Black Start and Restoration Course (19 CEHs)

February 20th 1pm to 5pm, February 21st 7am – 5pm, February 22nd 7 am – 12 pm.

* + - Session 5
      * Generator and Transmission System Dynamics (10 CEHs) February 26th 12 pm – 5 pm and February 27th 7am to 12 pm
      * Black Start and Restoration Course (19 CEHs)

February 27th 1pm to 5pm, February 28th 7am – 5pm, March 1st 7 am – 12 pm.

* + - Session 6
      * Generator and Transmission System Dynamics (10 CEHs) March 5th 12 pm – 5 pm and March 6th 7 am to 12 pm
      * Black Start and Restoration Course (19 CEHs)

March 6th 1pm to 5pm, March 7th 7am – 5pm, March 8th 7 am – 12 pm.

* + - Inclement Weather Session
      * Generator and Transmission System Dynamics (10 CEHs) March 12th 12 pm – 5 pm and March 13th 7 am to 12 pm
      * Black Start and Restoration Course (19 CEHs)

March 13th 1pm to 5pm, March 14th 7am – 5pm, March 15th 7 am – 12 pm.

* 2018 OTS
  + Theme

Generators, Markets and Transmission, Working Together to Ensure Reliability

* + Topic Suggestions (2017 Seminar Suggestions)(Need Presenters for items in red)
    - **CEO Introduction (Bill Magness / ERCOT)**
    - **Weather (Chris Coleman / ERCOT)**
    - **NERC Standards, Protocols, Guides and Procedures, How They are implemented! (1 CEH)** **(Kristi Hobbs / ERCOT)** Explain the Operating Guide and Protocol process and how that affects the Operators and their duties.
    - **Generator Dynamics Impacts to Transmission Operations (2 CEH) (????? / ?????)**

Generator VSS requirements, TSP managing static devices to maintain SOLs and keeping generator dynamic to respond to an event, voltage stability as it relates to dependence on imports rather than native generation, etc. Frequency control / Voltage control / Voltage Stability

* + - **Coordinated Voltage Control (Stephen Solis / ERCOT) (1 CEH)**

Voltage set point control

* + - **Wind, Solar and You! (1 CEH) (Paul Wattles)**

Discussion on how rooftop solar and potential PUC decisions and utilities could create growth in ERCOT depending on future decisions. Describe how this growth will impact Transmission and Generation operations in relation to real time.

* + - **Summer/Winter Preparation (1 CEH) (Dan Woodfin/Sandip Sharma / ERCOT)**
    - **Distributed Energy Resources (DER) / Demand Side Management (Clayton Stice / ERCOT)(1 CEH)**

DER and how each company is dealing with it. Demand side management, EEAs, tools.

* + - **Loss of SCADA, EMS, or LCC (1 CEH)** **(Mark Spinner / ERCOT)** Theory and Philosophy, Interface with ERCOT and neighboring TO’s, How do we operate without our tools? EOP 008, Loss of Situational Awareness (Panel discussion) **(Center Point /QSE/David Penney/Ray Manzilla)**
    - **Forecasting Wind / Solar (1 CEH)** **(Nitika Mago / ERCOT)** Weather forecasting with a focus on solar and wind forecasting
    - **Resource Adequacy (1 CEH)** (Delete?) (Usually covered in Bill Magness’ topic)
    - **Human Performance Improvement (1 CEH) (Brian Legg / ERCOT)**
    - **Markets and Reliability (1 CEH)** **(David Maggio / ERCOT)** How Market Results (DAM & RT / CRR auctions) pertain to system reliability. How AS is linked to system reliability. Where does system infrastructure fit into Reliability? Also reliability price adders.
    - **Asset Management (1 CEH) (??????)** Mothball, RMR, etc.
    - **Extreme Natural Events (1 CEH)** **(Kristi Hobbs / ERCOT)** Tornado, Flooding, Fire Restoration Lessons Learned, Focus on Disaster Management and Recovery
    - **Physical and Cyber Security (1 CEH)(Center Point)**
    - **RUC Process (2 CEH)(John Adams / ERCOT)**
  + Schedule (Austin Airport Hilton)
    - Pilot – January 23rd – 25th
    - Session 1 – March 27th – 29th
    - Session 2 – April 3rd – 5th
    - Session 3 – April 10th – 12th
    - Session 4 – April 17th – 19th
    - Session 5 April 24th – 26th
    - Session 6 May 1st – 3rd
  + Length / CEHs – 18 hours / 16 CEHs
* Outage Scheduler Training (Dennis Caufield)
* New Business
* Adjourn
* Next Meeting Dates

Aug 17 TCC 1 Room 253, WebEx

Sep 21 TCC 1 Room 253, Web Ex

Trainer Development – Sep 20 (1300), TCC 1 Room 253

Oct 5 TCC 1 Room 253, WebEx

Nov 9 TCC 1 Room 253, WebEx

Dec 14 TCC 1 Room 253, WebEx

* WebEx Info

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| **OTWG Meeting** |
| Thursday, July 20, 2017 |
| 8:45 am  |  Central Daylight Time (Chicago, GMT-05:00)  |  3 hrs 30 mins |

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| Meeting number (access code): 629 671 428 | |
| Meeting password: otwg0720 |

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| **Join by phone** |
| **1-877-668-4493** Call-in toll-free number (US/Canada) |
| **1-650-479-3208** Call-in toll number (US/Canada) |
| [Global call-in numbers](https://urldefense.proofpoint.com/v2/url?u=https-3A__ercot.webex.com_ercot_globalcallin.php-3FserviceType-3DMC-26ED-3D511259642-26tollFree-3D1&d=DwMGaQ&c=trp9rTvIdyEWh1VWB5x8_2JiPaB5oGZOtWPDws2_VoY&r=T0m5Jg90hX6QBKd0dyCgfRQSppFZ4x_43N_zqr-h2HU&m=iMBJ-asyK8vPXj93p9Vwhs3INc34CuC-KBII69DrAjU&s=P07Gxc8FFjeK34pRd1b8H0nSyEYm6chzZOioWqdZ3-w&e=)  |  [Toll-free calling restrictions](https://urldefense.proofpoint.com/v2/url?u=https-3A__www.webex.com_pdf_tollfree-5Frestrictions.pdf&d=DwMGaQ&c=trp9rTvIdyEWh1VWB5x8_2JiPaB5oGZOtWPDws2_VoY&r=T0m5Jg90hX6QBKd0dyCgfRQSppFZ4x_43N_zqr-h2HU&m=iMBJ-asyK8vPXj93p9Vwhs3INc34CuC-KBII69DrAjU&s=H4qQ6KUcgGf93iIIXi_2ZDjZuLie2nXZKLMPAVJtXKc&e=) |

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