



# 2020 PJM Restoration Drills Summary East and West

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- RTO-wide Spring Restoration Drill normally held ~mid-May
- Individual TO Restoration Drills normally held ~Sept-Oct-Nov
- COVID-19 impacted scheduling
- Need a new plan that meets NERC compliance obligations (two drills, invite applicable GOPs: EOP-006-3)
- West and East Restoration Drills were born
  - West: Oct. 6 & 7
  - East: Oct. 28 & 29

- Provides an opportunity for members to:
  - Validate their individual restoration plan
  - Identify any issues that may need to be addressed
- “Practice makes perfect”
- PJM coordinates the drill via the SRCS and the DTS
- PJM awards NERC CEH’s for drill participants

- 3<sup>rd</sup> Control Room/Milford Dispatch Training Simulator room
  - Dual function
  - Swapping no small task
- Simulator work stations were set up in the Valley Forge CTC
- 4 PJM Dispatchers at each location + some on site support staff
- Simulator, SOT and SMT support staff worked from home
- PJM Dispatchers utilized the Dispatch Training Simulator to model each TO's progress and provide a wide area overview
- Dispatch Training Simulator DIMA was available\* for both drills

- West Drill
  - 136 Participants
  - 1396 CEHs awarded
- East Drill
  - 188 Participants
  - 1877 CEHs awarded
- On-line Refresh (both drills)
  - 344 CEHs awarded



# Overall Satisfaction Rating: 4.16/5.0

Participant Company	K&S Level BEFORE	K&S Level AFTER	Confidence Level Restoration	Confidence Level Explain Philo	Importance of Exercise	Effectiveness of Exercise	Overall Rating
-- not provided -- Average	3.43	3.93	4.00	3.93	4.71	4.43	4.07
ACE Average	4.33	4.67	4.33	4.67	4.83	4.50	4.67
AE Average	4.00	4.00	4.00	4.00	4.00	4.00	4.00
AEP Average	3.00	3.75	3.67	3.50	5.00	4.33	4.00
AEP Transmisison Average	4.00	4.00	4.00	4.00	4.00	4.00	4.00
Atlantic City Electric Average	3.00	4.00	4.00	4.00	5.00	4.50	4.50
Brandywine Power Average	1.00	4.00	3.00	4.00	5.00	3.00	5.00
Com Ed Average	4.00	4.00	4.00	4.00	4.00	4.00	4.00
ComEd Average	3.60	4.20	4.40	4.40	5.00	4.60	4.60
CPP Average	5.00	5.00	5.00	5.00	5.00	5.00	5.00
Dayton Power & Light Average	5.00	5.00	5.00	5.00	5.00	5.00	5.00
DEOK Average	3.00	3.00	3.00	4.00	4.00	4.00	4.00
Dominion Energy - TO Average	5.00	5.00	5.00	5.00	5.00	5.00	5.00
Duke Energy Average	3.50	3.75	3.50	3.25	4.25	3.75	3.75
Duke Energy (2nd day) Average	4.00	4.00	4.00	4.00	4.00	4.00	4.00
Duke Energy Kentucky Average	4.17	4.58	4.67	4.67	4.67	4.67	4.67
Duke Energy OH-KY (DEOK) Average	4.00	4.00	3.00	3.00	4.00	5.00	3.00
Duquesne Light Average	3.00	4.00	4.00	4.00	4.00	4.00	4.00
FE SOUTH Average	4.00	4.00	4.00	4.00	5.00	4.00	4.00
FE West Average	4.00	4.67	5.00	5.00	4.67	5.00	3.33
FE West - ATSI Average	4.00	4.00	5.00	5.00	5.00	4.00	3.00
First Energy West Average	3.00	4.00	4.00	3.00	5.00	4.00	2.00
FirstEnergy (South) Average	5.00	5.00	5.00	5.00	5.00	5.00	4.00
FirstEnergy East Average	5.00	5.00	5.00	5.00	5.00	5.00	4.00
FirstEnergy West Average	3.00	3.00	3.00	3.00	1.00	1.00	1.00
Gridforce Energy Management Average	4.00	4.00	5.00	5.00	5.00	3.00	4.00
Gridforce Energy Management LLC Average	3.00	4.00	5.00	5.00	5.00	5.00	4.00
Linden VFT Average	2.00	4.00	5.00	5.00	4.00	5.00	4.00
Pepco Average	2.67	3.67	3.67	3.67	5.00	5.00	4.33
PHI Average	4.00	4.00	4.00	4.00	5.00	5.00	5.00
RECO Average	4.00	4.50	5.00	4.00	5.00	4.00	4.00
SilverRun Electric Average	5.00	5.00	5.00	5.00	5.00	4.00	5.00
SMECO Average	4.00	4.00	5.00	5.00	5.00	3.00	3.00
TGX LLC Average	3.00	4.00	3.00	4.00	5.00	4.00	4.00
UGI Utilities, Inc Average	5.00	5.00	5.00	5.00	5.00	5.00	5.00
<b>Grand Average</b>	<b>3.73</b>	<b>4.20</b>	<b>4.24</b>	<b>4.25</b>	<b>4.69</b>	<b>4.38</b>	<b>4.16</b>

- PJM provided a WebEx based meeting to review drill expectations, logistics, and answer any outstanding questions
- PJM performed communication checks with each participant to verify inbound/outgoing calls were received
- PJM requested, if possible, no real-time numbers to be utilized for the drill
  - All TO's were able to comply
  - Various GOP's limitations led to many using real-time numbers



- Minor SharePoint issues on Day 1 of West; quickly resolved
- Overall feedback (Both drills)
  - Great way to keep track of information
  - Enabled (companies) to submit our forms in a timely manner
  - Good way to keep up with restoration
  - Much cleaner than using paper or fax
  - Requested an online training presentation available prior to the drill
  - Majority of feedback was very positive



- WebEx issues for the West Drill
  - Available muting features were not sufficient
  - Poor identification, COVID related
  - Led to no TO reports during conf. call updates
- Corrected for East Drill
  - Working with Cisco
  - Different WebEx environment
  - Requiring Registration\*

- Two drills, similar design as 2020, held in the Spring
  - West Drill: March 31 & April 1
  - East Drill: April 21 & 22
  - Format:
    - Wednesday and Thursday Drill
    - Phone checks the Tuesday prior
- This is the current plan, subject to change



# A Look Ahead: 2021 Restoration Drills

- Provided COVID issues are resolved, individual TO/classic Fall Drills will take place between Sept. 28 & Oct. 22
- This is the current plan, subject to change

Date	Day	Company	Time
Sept. 29&30	Wed/Thur.	<u><i>Dominion</i></u>	1130-1530
Sept 30	Thur.	<u><i>PEPCO-BG&amp;E-SMECO</i></u>	0800-1600
October 5	Tue..	<u><i>AE – CPP -EKPC</i></u>	0800-1600
October 6	Wed.	<u><i>X PPL – UGI</i></u>	0800-1600
October 6 &7	Wed &Thurs	<u><i>FE X East/West/South</i></u>	0800-1600
October 12/13	Tues/Wed.	<u><i>AEP/DEOK/ITC/OVEC</i></u>	1130-1530 0730-1130
October 14	Thur.	<u><i>XDELMARVA-SRE-PS-ORU- XPECO</i></u>	0800-1600
October 19/20	Tue./Wed.	<u><i>ComEd</i></u>	0700-1500
October 21	Thur.	<u><i>Duquesne/Dayton</i></u>	0800-1600
<i>X=Cross Zonal</i>			