



2021 PJM DRAFT Training Plan

Task to Training Matrix – PJM Online Training

Course Title (<i>LMS Code</i>)	CEH	Stand	Sim	EOP	Transmission Task Associations						Market Cert Hour
					Task 02	Task 07	Task 08	Task 10	Task 11	EOP-005 R8	
OL Annual System Restoration Training (<i>ONLEOPR13</i>)	1	1	0	1	--	--	--	--	--	--	--
OL DOE Reporting Requirements (<i>ONLMSCDE4</i>)	1	1	0	1	--	--	--	--	--	--	--
OL Wind Generation Operating Considerations (<i>ONLMSCWG4</i>)	1	0	0	--	--	--	--	--	--	--	--
2020 Summer Emergency Procedures Refresh (<i>DRLEPS20P</i>)	1	1	0	1	--	Yes	--	--	--	--	--
2020 Fall System Restoration Refresh (<i>DRLSRF20P</i>)	1	1	0	1	--	--	--	--	Yes	Yes	--
2020 Winter Emergency Procedures Refresh (<i>DRLEPF20P</i>)	1.5	1.5	0	1.5	--	Yes	Yes	--	--	--	--
OL NERC Standards (<i>ONLNERC17</i>)	8	8	0	8	--	--	--	--	--	--	--
OL Electrical Theory (<i>ONLFUNET1</i>)	3	0	0	--	--	--	--	--	--	--	--
OL NUC-001 (<i>JITOPS143</i>)	1	1	0	--	--	--	--	--	--	--	--
Transmission ITP	OL Intro to PJM & Comm, Op Para 1 (T) (<i>ONLTRN17A</i>)	3	0.5	0	--	--	--	--	--	--	--
	OL Ops Parameters 2 & 3 (T) (<i>ONLTRN17B</i>)	1.5	0.5	0	1.5	--	--	--	--	--	--
	OL Ops Parameters 4 & 5 (T) (<i>ONLTRN17C</i>)	1	0.5	0	0.5	--	--	--	--	--	--
	OL Stability, BES & Outages (T) (<i>ONLTRN17D</i>)	2	0	0	--	Yes	--	--	--	--	--
	OL Emergency Procedures (T) (<i>ONLTRN17E</i>)	2.5	0.5	0	2.5	--	Yes	Yes	Yes	--	--
	OL System Restoration (T) (<i>ONLTRN17F</i>)	2.5	0.5	0	2.5	--	--	--	--	Yes	Yes
Generation ITP	OL Intro to PJM & Communications (G) (<i>ONLGEN16A</i>)	2	0.5	0	--	--	--	--	--	--	--
	OL PJM Markets & Real-Time Ops (G) (<i>ONLGEN16B</i>)	2	0	0.5	--	--	--	--	--	--	0.5
	OL Outage Scheduling (G) (<i>ONLGEN16C</i>)	1.5	0.5	0	--	--	--	--	--	--	--
	OL Emergency Procedures (G) (<i>ONLGEN16D</i>)	3.5	1	0.5	3.5	--	--	--	--	--	--
	OL System Restoration (G) (<i>ONLGEN16E</i>)	1.5	1	0	1.5	--	--	--	--	--	--
2020 Seminar – Lessons Learned (<i>SEM20SV01</i>)	1	1	0	1	Yes	--	--	--	--	--	--
2020 Seminar – EP for Transmission (<i>SEM20SV02</i>)	1	1	0	1	--	--	--	--	--	--	--
2020 Seminar – EP & Updates for Generation (<i>SEM20SV03</i>)	1	1	0	1	--	--	--	--	--	--	1.0
2020 Seminar – New Technologies (<i>SEM20SV04</i>)	1.5	0	0	--	--	--	--	--	--	--	--
Governor Control and ACG (<i>ONLMSCGC</i>)	1	0	0	--	--	--	--	--	--	--	--
HEMP/GMD (<i>ONLMSCHMP</i>)	1	0.5	0	1	--	--	--	--	--	--	--
Unit Dispatch-Normal & Off-SCED (<i>JITOPS201</i>)	1	0	0	1	--	--	--	--	--	--	1.0
Blackout Lessons Learned (<i>PJMVTSO12</i>)	2	0	0	2	--	--	--	--	Yes	--	--



2021 PJM DRAFT Training Plan

DRAFT – Online Training to be added to the PJM LMS in 2021

Please note this is for planning purposes only and may be subject to change

Course Title	CEH	Stand	Sim	EOP	Market Cert Hour
2021 Q1					
Stability	Yes	Yes		Yes	
Emergency Procedures Overview	Yes	Yes		Yes	
LMP	Yes				Yes
Generator Energy Schedules & Parameters	Yes				Yes
Voltage Control*	Yes		Yes		
Operational Concepts*	Yes		Yes		
2021 Spring Restoration Refresh	Yes	Yes		Yes	
2021 Q2					
ARR/FTR Basics					Yes
Generation BLIs	Yes				Yes
Impedance & Power Flow	Yes				
Ops-X Scenario*	Yes		Yes		
2021 Summer Emergency Procedures Refresh	Yes	Yes		Yes	
Seminar – Summer Readiness	Yes			Yes	
Seminar – Operational Updates	Yes				
Seminar – Market Updates	Yes				Yes
2021 Q3					
Flow Devices	Yes				
IROLs	Yes		Yes		
Ops-X Scenario*	Yes		Yes		
Markets Scenario*	Yes		Yes		Yes
2021 Q4					
2021 Fall Restoration Refresh	Yes			Yes	
2021 Winter Emergency Procedures Refresh	Yes			Yes	

*Available for self-study, pre-registration required



2021 PJM DRAFT Training Plan

Task to Training Matrix – PJM Virtual Training Sessions

See Calendar for **DRAFT** Dates (schedule subject to change)

Course Title	CEH	Stand	Sim	EOP	Transmission Task Associations						Market Cert Hour
					Task 02	Task 07	Task 08	Task 10	Task 11	EOP-005 R8	
Locational Marginal Pricing (LMP)	1.5	0	0	--	--	--	--	--	--	--	1.5
Operating Reserve Settlements Part 1	1.5	0	0	--	--	--	--	--	--	--	1.5
Operating Reserve Settlements Part 2	1.5	0	0	--	--	--	--	--	--	--	1.5
Generation BLIs	1.5	0	0	--	--	--	--	--	--	--	1.5
Generator Energy Schedules & Parameters	1.5	0	0	--	--	--	--	--	--	--	1.5
ARR/FTR Basics	--	--	--	--	--	--	--	--	--	--	1.5
ARR/FTR Advanced	--	--	--	--	--	--	--	--	--	--	2.0
Regulation Market Overview	1.5	0	0	--	--	--	--	--	--	--	1.5
Reserve Market Overview	1.5	0	0	--	--	--	--	--	--	--	1.5
Load BLIs Part 1	--	--	--	--	--	--	--	--	--	--	1.5
Load BLIs Part 2	--	--	--	--	--	--	--	--	--	--	1.5
PJM Settlement Tools	--	--	--	--	--	--	--	--	--	--	1.5
Load Parameters	--	--	--	--	--	--	--	--	--	--	1.0
Objective Function and Production Cost	--	--	--	--	--	--	--	--	--	--	1.5
Day Ahead Market Simulation	1.5	0	1.5	--	--	--	--	--	--	--	1.5
Real-Time Market Simulation	1.5	0	1.5	--	--	--	--	--	--	--	1.5
Transmission Line Protection	2	2	1.5	--	--	--	--	--	--	--	--
Voltage Control with Generators & LTCs	2	0	1.5	--	--	--	--	--	--	--	--
Capacitors, Ferranti Rise & Surge Impedance Loading	2	0	1.5	--	--	--	--	--	--	--	--
Synching Islands	2	2	1.5	2	--	--	--	--	Yes	--	--
Dynamic Reserves	2	2	1	2	--	--	--	--	Yes	--	--
Impedance & Power Flow on AC Transmission Lines	2	0	0	--	--	--	--	--	--	--	--
Communications	1.5	1.5	0	1.5	--	--	--	--	--	--	--
Stability	2	2	0	2	--	--	--	--	--	--	--
Overview of Emergency Procedures	1.5	1.5	0	1.5	--	Yes	Yes	--	--	--	--
Reporting Transmission Outages via eDART	1.5	1.5	0	--	Yes	--	--	--	--	--	--
System Restoration Overview	2	2	0	2	--	--	--	--	Yes	--	--
Blackout Lessons Learned	2	0	0	2	--	--	--	--	Yes	--	--

DRAFT Training Calendar

2021

January

Su	Mo	Tu	We	Th	Fr	Sa
					1	2
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28	29	30
31						

- 1/7 Transmission Line Protection
- 1/11 Day Ahead Market Simulation
- 1/13 Dynamic Reserves
- 1/21 Locational Marginal Pricing
- 1/21 Voltage Control with Generators and LTCs
- 1/25 Overview of PJM Emergency Procedures
- 1/27 Generator Energy Schedules & Parameters

February

Su	Mo	Tu	We	Th	Fr	Sa
	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28						

- 2/2 ARR/FTR Basics
- 2/4 ARR/FTR Advanced
- 2/4 Blackout Lessons Learned
- 2/8 Real-Time Market Simulation
- 2/10 Capac, Ferranti Rise & Surge Imped Lndg
- 2/11 DR Load Management Registration Process
- 2/16 Synching Islands
- 2/18 Day Ahead Market Simulation
- 2/22 Elec Theory Impedance & Power Flow on AC Lines
- 2/24 Generation BLIs

March

Su	Mo	Tu	We	Th	Fr	Sa
	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30	31			

- 3/2 Communication
- 3/4 Load BLIs Part 1
- 3/8 Load BLIs Part 2
- 3/9 DR Overview
- 3/10 Reporting Transmission Outages via eDART
- 3/16 Load Parameters
- 3/18 Stability
- 3/22 System Restoration
- 3/24 Operating Reserve Settlements Part 1
- 3/30 Operating Reserve Settlements Part 2

April

Su	Mo	Tu	We	Th	Fr	Sa
				1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	

- 4/1 Transmission Line Protection
- 4/5 Objective Function and Production Cost
- 4/7 Dynamic Reserves
- 4/13 Voltage Control with Generators and LTCs
- 4/15 Regulation Market Overview
- 4/19 Overview of PJM Emergency Procedures
- 4/21 Reserve Market Overview
- 4/27 Settlement Tools
- 4/29 Blackout Lessons Learned

May

Su	Mo	Tu	We	Th	Fr	Sa
						1
2	3	4	5	6	7	8
9	10	11	12	13	14	15
16	17	18	19	20	21	22
23	24	25	26	27	28	29
30	31					

- 5/3 Day Ahead Market Simulation
- 5/5 Capac, Ferranti Rise & Surge Imped Lndg
- 5/11 Locational Marginal Pricing
- 5/12 DR Economic DR In Energy Markets
- 5/13 Synching Islands
- 5/17 Elec Theory Impedance & Power Flow on AC Lines
- 5/19 Generator Energy Schedules & Parameters
- 5/25 Communication
- 5/27 Real-Time Market Simulation

June

Su	Mo	Tu	We	Th	Fr	Sa
		1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30			

- 6/2 ARR/FTR Basics
- 6/3 DR Economic Offers in Markets Gateway
- 6/8 Reporting Transmission Outages via eDART
- 6/10 Generation BLIs
- 6/14 Stability
- 6/16 Load BLIs Part 1
- 6/22 Load BLIs Part 2
- 6/24 System Restoration
- 6/29 DR Load Mgmt Events/Settlements/Cmpl
- 6/30 Transmission Line Protection

July

Su	Mo	Tu	We	Th	Fr	Sa
				1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	31

- 7/12-16 Gen ITP - CTC
- 7/20-22 Market Optimization Wrkshp - CTC
- 7/20-22 Power System Elements - CTC
- 7/27-8/4 Trans ITP - CTC

August

Su	Mo	Tu	We	Th	Fr	Sa
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30	31				

- 8/10 Market Settlements 101 - CTC
- 8/11-13 Market Settlements Advanced - CTC
- 8/23 Load Mgt Reg & Events w/Tool demo
- 8/24 Load Mgt M&V/Cmpl/Testing/Setmnt w/Tool demo

September

Su	Mo	Tu	We	Th	Fr	Sa
			1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29	30		

- 9/1 Econ Enrgy - Reg/Events/M&V/Stlmt w/Tool (DR Hub/MG)
- 9/2 Econ AS - Reg/Events/M&V/Stlmt w/Tool (DR Hub/MG)
- 9/13-17 Seminar - Ohio
- 9/21-23 LSE - CTC
- 9/27-10/1 Seminar - CTC

October

Su	Mo	Tu	We	Th	Fr	Sa
					1	2
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28	29	30
31						

- 10/4-8 Seminar - CTC
- 10/11-15 Seminar - CTC
- 10/18 DR Overview
- 10/21 Economic DR in Ancillary Services
- 10/25-29 Seminar - MD

November

Su	Mo	Tu	We	Th	Fr	Sa
	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30				

- 11/1-5 Seminar - MD
- 11/8-12 Seminar - MD
- 11/15-19 Gen ITP - OH
- 11/16-18 Market Optimization Wrkshp - OH
- 11/29-12/3 Trans ITP - OH
- 11/30 Market Settlements 101 - OH
- 12/1-3 Market Settlements Advanced - OH

December

Su	Mo	Tu	We	Th	Fr	Sa
			1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29	30	31	

- 12/6-10 Seminar - Ohio
- 12/8 DR Load Management Registration Process
- 12/13-17 Seminar - Ohio

LEGEND	
Virtual Training	Tentative: CTC
abc Curriculum	Tentative: Hilton Columbus Downtown
abc Seminar	Confirmed: Four Seasons Baltimore
	Tentative: Hilton Polaris