



PJM Load Management Test proposed changes

MIC

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Example PJM 1a Test Cycle

PJM notifies CSP of zones to be tested

I know test can only take place on 20 potential days

I also know there will be no tests in any other zones. Get maintenance done there

PJM notifies CSP by 10am that test will be tomorrow

I know test is tomorrow and I have at least 13 hours to prepare

Check that my generator can start

AUGUST

SEPTEMBER

	8/21/19	8/22/19	8/23/19	8/24/19	8/25/19	8/26/19	8/27/19	8/28/19	8/29/19	8/30/19	8/31/19	9/1/19	9/2/19	9/3/19	9/4/19	9/5/19	9/6/19	9/7/19	9/8/19	9/9/19	9/10/19	9/11/19	9/12/19	9/13/19	9/14/19	9/15/19	9/16/19	9/17/19	9/18/19	9/19/19	9/20/19	9/21/19	9/22/19	9/23/19	9/24/19	9/25/19	9/26/19	9/27/19	9/28/19	9/29/19	9/30/19					
Potential Test Days														X	X	X	X			X	X	X	X	X			X	X	X	X	X			X	X	X	X	X				X				
Actual Test Day																													X																	

PJM notifies CSP with normal lead time

I know test will occur only between 11a-6p and I will be given my lead time

Each zone tested one day per year for only 2 hours.

Test Score greater than 75%

- CSP scheduled retesting

Test Score 75% or lower

- PJM scheduled retest

Registrations that individually scored $< 100\%$ can be included in retest

Too Predictive

- 4 Tier Notification
- Test period only 6 months of year

Too Many Do-overs

- 2 tries to get 75%
- Then CSP scheduled retesting

Does not reflect LM event conditions and therefore performance will not likely reflect event performance

Better Simulate LM Event Conditions

- Avoid CSP “open book” test with unlimited Do-over’s

Tests throughout the Delivery Year

- CP DR is required to perform throughout the Delivery Year

Leverage Notification System Used in Actual Events

- Web service communication not currently tested

Significant modification to original proposal to address key CSP concerns of unnecessary testing and cost mitigation

Appendix



PJM Proposal 1a – PJM schedules test, CSP schedules retest(s) or PJM schedules retest based on test performance

- PJM managed test will better simulate event conditions and therefore actual DR load reduction capability
 - Avoid CSP “open book” test with unlimited Do-over’s
- Conduct test throughout the Delivery Year since DR is required to perform throughout the Delivery Year
- Leverage communication/notification mechanism used for real events.

High Impact / Low Frequency event – requires training/practice/testing to be ready.
DR only dispatched when we are in emergency conditions (expected to be short on reserves)

Modified proposal to address key CSP concerns: Minimize unnecessary testing and mitigate costs

- Testing only required when there is no event in the Delivery Year
- Only 1 test per year required when there is no event
 - ½ the zones tested in the summer and ½ tested in the winter
- Only test for 2 hours whereas typical events are ~ 5 hours
 - load reduction averaged over 2 hours, provides more flexibility in case load reduction starts late.
- Compensate for load reductions in the energy market as a price taker to help offset cost.

- Allow CSP to get prepared and schedule necessary maintenance activities
 - PJM will provide month ahead and day ahead notification of zones that will be tested
 - PJM will provide normal lead time advanced notification on the test day.
 - PJM will test when notified unless there is a reliability issue
 - CSP knows there will be a test and can get ready. For events, the CSP needs to get ready (more cost) but in most cases the event does not occur
 - Testing only done from HE12-18 which is in line with summer peak, winter second peak and normal workday
 - Avoid winter early morning test which would require personnel to be ready before typical work hours.
 - Narrow window allows CSP to better prepare for test
 - Testing only done on non-NERC holiday weekdays

Ability to retest (“do-over”) and/or improve score if CSP has unforeseen problem

- Performance aggregated to zone
 - customer over-performance can offset another customer’s underperformance
- Allow CSP to self direct zonal retest(s) if performance >75%.
 - More chances to test if performance was decent but had a few issues
 - Leverage status quo CSP directed retest provisions
 - minimize rule changes
 - provide retest flexibility (multiple retests, only registrations that had performance issue are retested)
- Allow CSP to have one time PJM directed retest if performance <=75%
 - CSP notifies PJM with list of registration to retest and PJM will retest with day ahead notification.
 - CSP not required to retest all registration together, only registrations that had performance issue are retested.

give CSPs plenty of time to adjust to new requirements

- PJM proposes to wait to implement new rules until 23/24 Delivery Year
 - New test requirements apply to new Capacity commitments (May 2020, BRA)
 - Allows CSPs to incorporate into contracts
 - Provides CSPs 3 years to get ready to implement the new test requirements
- PJM can run mock test dispatch in interim years where CSP schedule test under status quo but uses PJM test dispatch to practice.

PJM Proposal 3 – PJM schedules test, CSP schedules retest (more closely simulates events)

- PJM schedules tests with day ahead notice
 - PJM will provide normal lead time advanced notification on the test day
 - Leverage communication/notification mechanism used for real events
- Test duration is 5 hours
- Tests can occur on any day of year
- Tests can occur during any hour of day as defined by the product
 - Summer, 10AM-10PM
 - Winter, 6AM-9PM
- Test performance >75%, CSP can schedule retests
 - Score of 75% or less, result is final
- Compensate for load reductions in the energy market as a price taker to help offset cost

- PJM notifies CSPs on 8/21 that test will be conducted in September
 - CSP knows test will be on 1 of the 20 weekdays from 11am to 6pm
- PJM notifies CSP on 9/16 at 10am that test will be on 9/17 (11am to 6pm)
 - CSP knows test will occur tomorrow from 11am to 6pm and can prepare
- PJM notifies CSP on 9/17 at 1:30pm that load reduction must start at 2pm
 - Assumes 30 minute lead time for simplicity.
- CSP implements load reductions
- If CSP aggregate zonal performance is $>75\%$ (at least a “C+”) then CSP can schedule and direct the retest, otherwise CSP may have PJM retest if PJM is notified by 10/31.
- Retest scenarios (Optional but only need to test registrations where performance $<100\%$)
 - CSP may schedule as many retest as desired to improve score and eliminate penalty
 - CSP may request PJM to do a retest. PJM provides CSP day ahead notification by 10am that a test will occur. PJM provides same test day notification.

If CSP can not pass the test then the resource would likely not have performed during an actual event.



PJM Proposal 1a – Use Cases

Zone	Test Month	Season	MW	Event	Test Status	Test Result	Retest Scheduler*	Retest 1 with test result	Retest 2 with test result	Retest 3 with test result	Final test Performance	Penalty Volume (%)	Penalty Volume (MW)
Meted	7	summer	35	8/20/2019	Tested but subsequent event	no test needed							0
Peco	8	summer	25			78%	CSP	83%	95%	90%	95%	5%	1.25
PPL	9	summer	35			85%	CSP	102%			102%	0%	0
Dom	10	summer	50			0%	PJM	99%			99%	1%	0.5
JCPL	9	summer	40			74%	PJM	105%			105%	0%	0
AEP	11	winter	60			103%	no retest needed				103%	0%	0
DPL	12	winter	40	8/20/2019	No test, prior event	no test needed							0
DEOK	1	winter	35			101%	no retest needed				101%	0%	0
Comed	2	winter	50			85%	CSP	92%	104%		104%	0%	0
Total			370									Penalty	1.75
												Committed MW	370
* If Test Result is <= 75% there is only 1 retest scheduled by PJM upon request by CSP											Penalty/Committed MW	0.47%	
Zonal test results are based on aggregate performance for all customers in the zone.													

- CSP 1 and CSP 2 proposal does not address the following identified interests:
 - “Testing reflective of LM product availability requirements”
 - Too many months removed from test cycle
 - “Testing results consistent with expected performance during LM events under various conditions (time of day, time of year, etc.)”
 - Too many opportunities for “do over” – there are no “do overs” during an event
 - “Test notification process aligns with actual event process (i.e.: Emergency messages prior to LM event day)”
 - Too much notification and CSP scheduling which enables test to be choreographed (eliminates the element of surprise)
 - CSP does not schedule actual events
- IMM proposal and identified interest:
 - “Avoid unnecessary testing”
 - Amount of testing compared to potential gain in accuracy.