Oscillation Mitigation Procedure

PJM may become aware of an oscillation condition through member notification or through PJM monitoring/alarming tools. Where available, PJM will use oscillation detection alarming as derived from synchrophasor or SCADA telemetered data.

The following guidance is provided to collaboratively enhance situational awareness during system oscillation events in order to ensure timely communications between PJM, transmission owners, and generation owners in an effort to assist system operators in taking the necessary actions to monitor and mitigate non-dampened oscillations.

PJM Actions:

- For unstable oscillations:
  a. Contact associated/nearby Generation Owner to verify the insecure generator/ area.
  b. Assess system conditions for high voltage, generator MW and MVAR operating points, light loads, and transmission outages.
  c. Review alarms in area to determine if any recent events may have triggered the oscillation(s).
  d. Where required to mitigate the oscillatory behavior, PJM will direct Transmission Owner and/or Generation Owner to take appropriate actions to alleviate the issue. Suggested actions include:
     i. Reversing any recently switched or outaged equipment which may have induced the oscillation;
     ii. Reducing power transfers across affected paths;
     iii. Increasing area generator MVAR output, with a focus on any units that may be operating in the lead.

- Once the oscillatory behavior is mitigated, PJM will continue to monitor the system to ensure the stability of the affected area(s) is maintained.
- Additional system adjustments may be required to maintain stability as system conditions changes.

Generation Owner Actions:

- Generation Owner should report any observed oscillations which do not damp out within an appropriate timeframe.
- When oscillations are reported by PJM, the Generation Owner should:
  - Verify the plant/unit real/reactive output, voltage, etc. to confirm whether or not an oscillation was observed;
  - Review any recent internal plant switching;
  - Check AVR setting, PSS status, etc. for the impacted unit to assist the effort of investigating the cause of the oscillation. (One consideration may be to toggle the status of the AVR/PSS.)

- PJM will work with the generator to determine appropriate and coordinated corrective action(s) to mitigate the oscillation.
- Generation Owner shall follow PJM's direction to adjust unit reactive and/or real output to assist with mitigating the issue, unless doing so would place the unit integrity at risk.

Transmission Owner Actions:

- Transmission Owner should work with PJM to confirm the topology of affected areas and investigate the cause of the oscillation. Looking for recent topology changes which may have induced the oscillatory behavior, such as:
    - Recently outaged transmission equipment;
    - Recently energized/closed facilities, including Normally Open facilities.
- Work with PJM to address/dampen the oscillatory behavior:
    - If equipment is monitored and reportable to PJM, this would be performed under PJM's direction.
    - If lower voltage/non-reportable, the TO would work in coordination with PJM to address.