Generation Deactivation Education

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Agenda

- Deactivation Process and Timeline
- Analytical Studies
- Mitigation – Current Process
- Notification timeline to Generator Owner
- Identify Reliability-Must-Run (RMR) Unit
- Current Limitations

Deactivation Process and Timeline

Current Deactivation Process – Overview

PJM will study four times per year (quarterly) for all notices received in the quarter prior to the study commencement date:

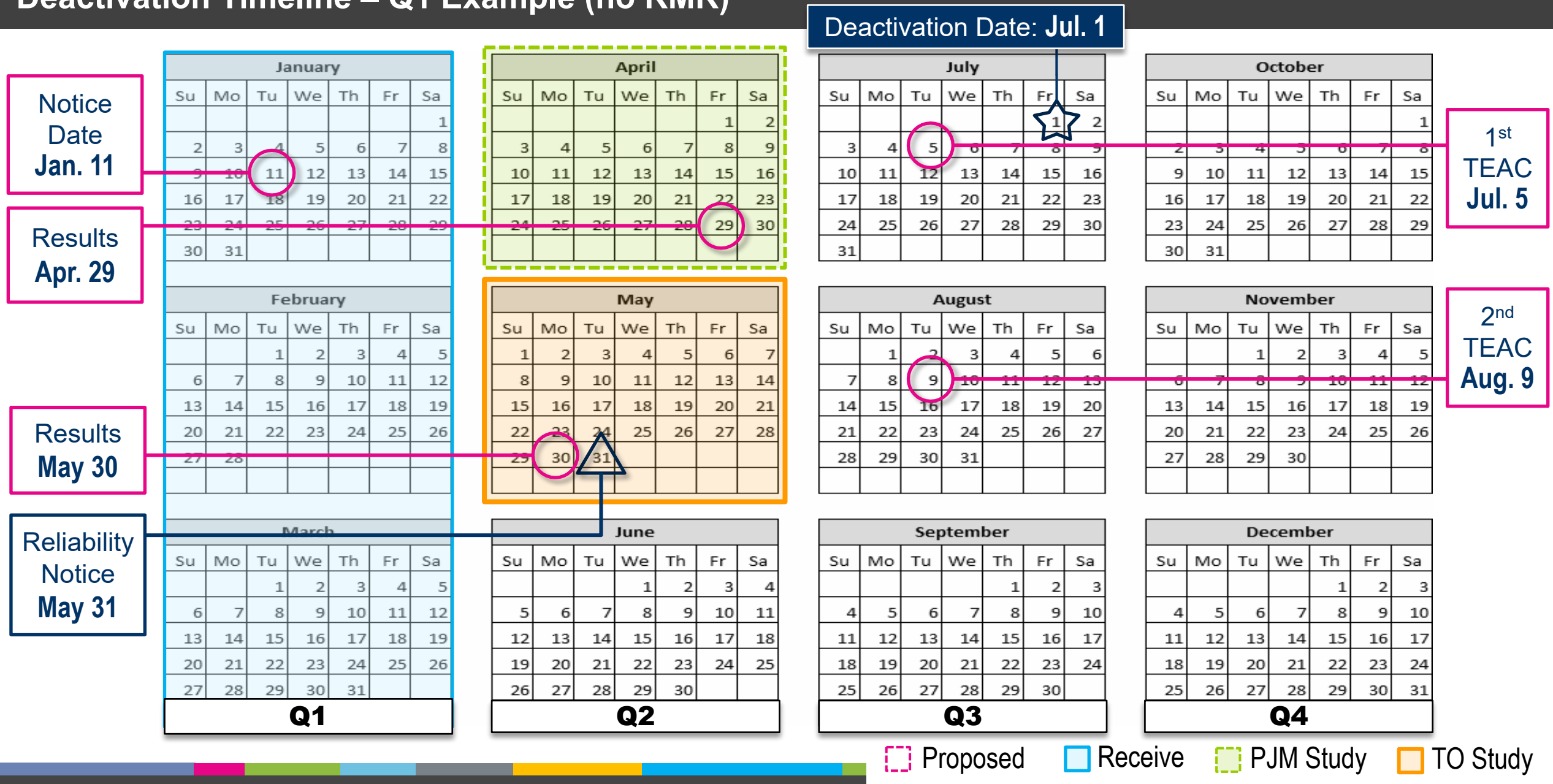
- Currently governed by OATT, Part V
- PJM observes notification period each quarter.
- PJM study period commencements: January 1st, April 1st, July 1st, and October 1st, for the pervious quarter
- PJM studies as a batch (holistic);
- Reliability Notifications will be made by end of February, May, August, and November respectively.
- PJM and TOs use the study period to build cases, run analyses, identify violations and upgrades, review construction schedule, look for operational measures.
- Analysis results, any recommended transmission upgrades, their associated construction schedule and estimated cost, as well as whether or not a generator should be considered Reliability-Must-Run (RMR) unit, are communicated in subsequent TEAC meeting(s)

Notification Timeline

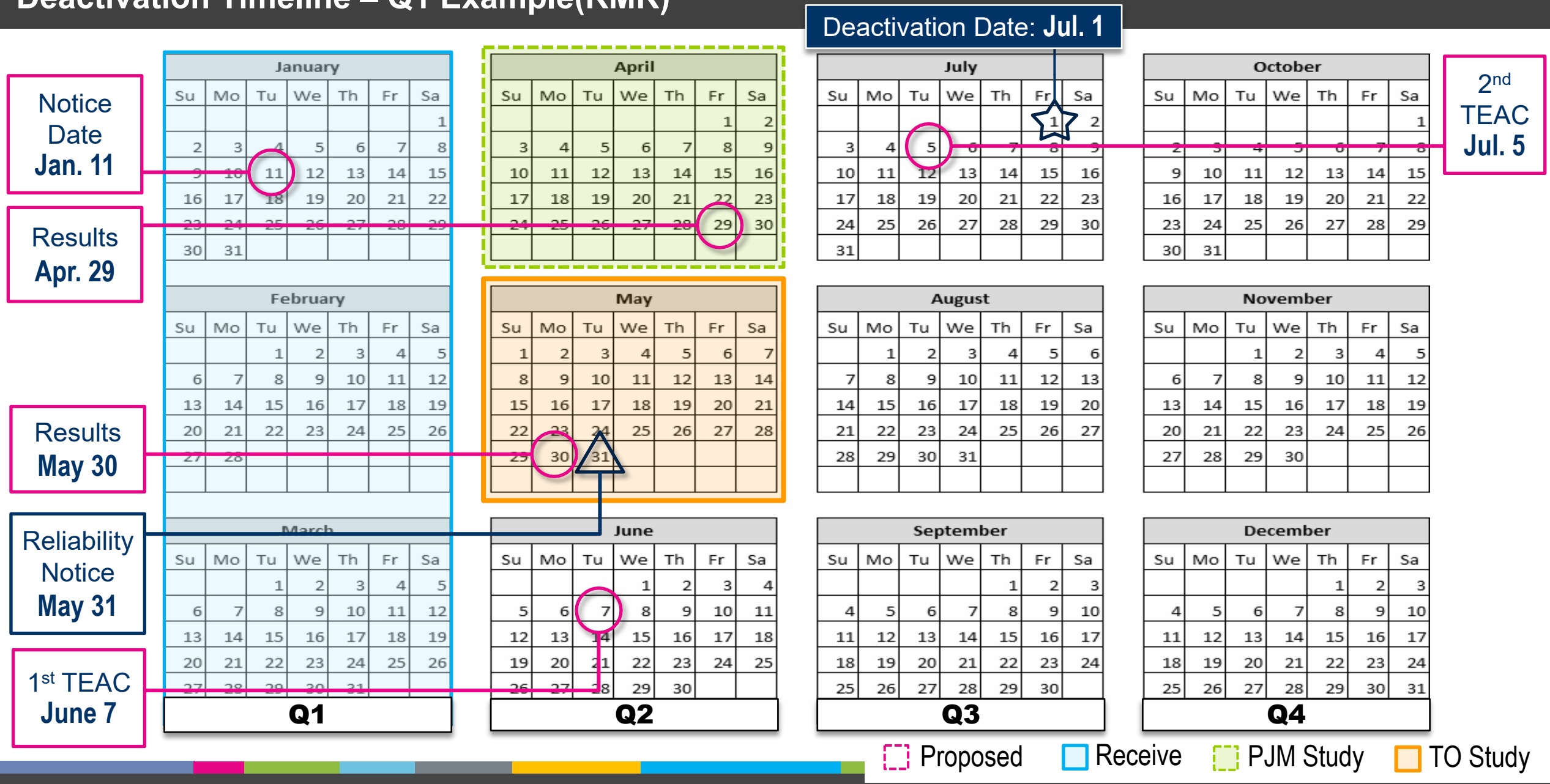
To request a deactivation, a Generation Owner, or designated agent, must submit notice:

	A	B	C	D
Between:	January 1 and March 31	April 1 and June 30	July 1 and September 30	October 1 and December 31
To Deactivate:	July 1 or later	October 1 or later	January 1 of the subsequent year or later; or	April 1 of the subsequent year or later.

Deactivation Timeline – Q1 Example (no RMR)



Deactivation Timeline – Q1 Example(RMR)



Analytical Studies

PJM will study the holistic impact of announced deactivation each quarter by comparing reliability performance on selected base case(s), with and without the contribution of announced deactivations units.

Reliability tests includes but not limited to:

- N-1-1 (Thermal)
- N-1-1 (Voltage deviation + Voltage Magnitude)
- Generation deliverability
- Load deliverability
- N-1 (Thermal, Voltage)

Reliability performance criteria is the same with Manual 14B and Manual 3

Non-wire alternatives available to consideration:

- Proposed-ISA projects up to the requested deactivation date is modelled in the starting power flow case, even if they are not in service yet.
- PJM will determine whether interim operational measures exists and practical
- Load shedding beyond Demand Response not considered an acceptable interim operation measure.

Mitigation – Current Process

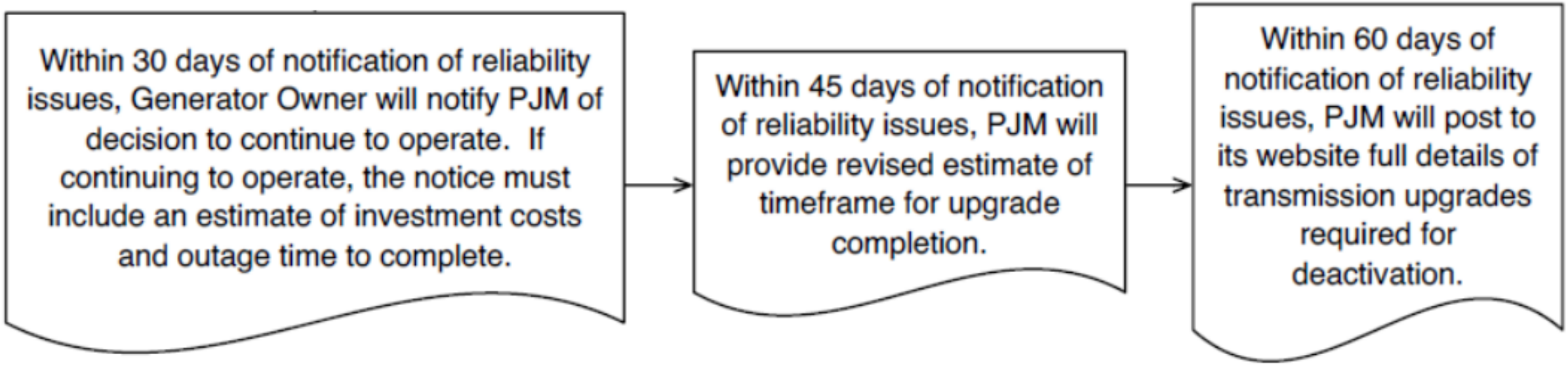
PJM will notify impacted TO members of the study results and provided associated analytical files for their review/confirmation of the identified violations.

TO members has 1 month to work with PJM to derive mitigation / solution, provide schedule and a cost estimate of mitigation

Proposals are provide to PJM for performance evaluation

PJM will work with TO to refine solution and cost

Notification Timeline to Generator Owner



Tariff requires Reliability Notifications by end of 2nd month of each quarter (Feb., May, Aug., Nov.) respectively to Generation Owner (or designee)

From initial result notification, PJM and TOs have an additional 45 days to optimize solutions and schedule.

Identifying Reliability-Must-Run(RMR) Units

- PJM does not approve deactivations, but rather identifies whether the requested deactivation date could lead to reliability impacts on the system.
- When PJM has determined a proposed deactivation(s) would adversely affect the reliability of the Transmission System, and upgrades cannot be completed by proposed deactivation date, and no operational measures are available, PJM requests the Generation Owner to extend operations of the deactivating unit(s) until necessary upgrades are completed.
- The Generation Owner may elect to support system reliability by operating until necessary network upgrades are completed.

The Generation Owner has two options for continued operations:

1. file its proposed Cost of Service Recovery Rate (CSRR) at FERC; or
2. receive the Deactivation Avoidable Cost Credit (DACC) as provided in the Tariff.

- At the TEAC Deactivation Notice second read, PJM will identify PJM requested extended operations.
- PJM will announce at subsequent TEAC(s) after the FERC accepted the filing from the Generation Owner (CSRR or DACC).

Current Challenges/Limitations

Current minimum retirement notification of 92 days, regardless of size of unit, leads to limited study and mitigation period

In 2022, PJM stakeholders lengthened the study and mitigation period, however the following challenges still remain:

- mitigation timeline (new transmission solutions or accelerate approved RTEP projects, or to develop operating measures)
- Timeline to finalize RMR arrangements, if retirements is imminent.

Link to Tariff and Manual

PJM OATT, Part V	https://agreements.pjm.com/oatt/4241
PJM Manual Library	https://www.pjm.com/library/manuals

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V1 - 10/10/23 – Editorial updates posted.