Order 1000 Lessons Learned
Voltage Threshold and Administrative Items

Suzanne Glatz

Planning Committee

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Topics for Discussion

1. Voltage Floor for Solicitation Process (Proposal window)
2. Process administration items
    1. Prequalification
    2. Notification of designation

Proposed Voltage Floor for Window Process Historical Data

- 2014 Window 1:
  - 64 Flowgates were posted
    - 32 competing proposals were submitted
      - < 200kV – 25 proposals
      - ≥ 200kV – 7 proposals
    - 32 non-competitive (proposals submitted by zonal TO only)
      - < 200kV – 24 proposals
      - ≥ 200kV – 8 proposals

Proposed Voltage Floor for Window Process Historical Data

- 2014 Window 2:
  - 311 Flowgates were posted
    - 160 competing proposals were submitted
      - < 200kV – 115 proposals
      - ≥ 200kV – 45 proposals
    - 151 non-competitive (proposals submitted by zonal TO only)
      - < 200kV – 143 proposals
      - ≥ 200kV – 8 proposals

Proposed Voltage Floor for Window Process Historical Data

Data from 2014 Proposal Windows:

- Window 1 – Of 22 proposals selected, all were upgrades, one of which was a 230 kV reconductor project at $26M

- Window 2 – Of 33 projects selected, 4 were greenfield, and only 1 was allocated to more than one zone which was a line and substation project at $51M

Proposed Voltage Floor for Window Process Historical Data

Data from 2014 Proposal Windows:

- Questions were raised about how often a lower voltage violation might still lead to a high voltage solution that is more likely to be a greenfield project
- Only 2 projects between 2014 Windows 1 and 2 were identified where the solution was above 200kV for a violation that was below 200kV
- Both projects were upgrades estimated at less than $10M

Proposed Voltage Floor for Window Process Historical Data

Previous RTEP data supports that there are few competitive opportunities for cases where the violations are below 200kV - Of 1523 Board approved projects, 104 (7%) were greenfield, of which only 13 (<1%) allocated to more than one zone

Voltage	QTY	Percent of total	Greenfield	Greenfield Cost allocated to >1 zone	Greenfield Cost allocated to >1 zone(1)
765kV	25	1.0%	1	1	4%
500kV	155	5.9%	16	16	10%
345kV	145	5.6%	26	10	7%
230kV	742	28.6%	52	15	2%
< 200kV	1523	58.8%	104	13	<1%

(1)Based on total number of approved projects in the voltage category.

Proposed Voltage Floor for Window Process Historical Data

Factors to consider when reviewing previous RTEP data

- The analysis is based on “classifying” RTEP baseline projects that were approved prior to Order 1000 process
- Projects include some portion of work that would be upgrade work (terminal work, reconductoring, etc.)

Data for projects that were *below 200 kV*, greenfield and cost allocated to more than one zone and therefore *eligible for designation to entity other than a TO* –

Project cost estimate:

Average -$31.5 million (includes upgrade work)

Range - $6.8 – $89.3 million (includes upgrade work)

Proposed Guide for Voltage Floor

Description	Include in Window
Facility is identified with a history of congestion that may be solved by a market efficiency project	Y
Violation is for a facility rated at 200kV or above.	Y
Violations are for multiple facilities rated below 200kV and are in similar proximity	Y
Violations are for multiple facilities rated below 200kV and are impacted by a common contingent element (regardless of voltage)	Y
Violation is for a transformer that the low side is rated 200kV or above	Y
Violation is for a transformer that the low side is rated below 200kV	N
Violation is for a facility that is rated below 200kV and the limit is terminal equipment	N
Violation is for a facility that is rated below 200kV and the contingent element is rated below 200kV	N

Proposed Guide for Voltage Floor – Above 200kV or Below 100kV

Description	Include in Window
Facility is identified with a history of congestion that may be solved by a market efficiency project.	Y
Violation is for a facility rated at 200 kV or above.	Y
Violation is for a transformer that the low side is rated 200kV or above	Y
Violations is for a facility rated below 100 kV or below.	N
Violation is for a transformer that the low side is rated below 100kV	N

Proposed Guide for Voltage Floor – Above 100kV and Less than 200kV

Description	Include in Window
Violations are for multiple facilities rated between 100kV and 200kV and are in similar proximity	Y
Violations are for multiple facilities rated between 100kV and 200kV and are impacted by a common contingent element	Y
Violation is for a transformer that the low side is rated between 100kV and 200kV	N
Violation is for a facility that is rated between 100kV and 200kV and the limit is terminal equipment	N
Violation is for a facility that is rated between 100kV and 200kV and the contingent element is rated below 200kV	N

Benefits of Proposed Voltage Floor for Window Process

Focus resources on projects more applicable to the competitive process and minimize added cost of competition where likely solution is a lower cost transmission owner upgrade

- Below 200kV projects are almost always allocated to one zone and are only located within that zone and therefore, per the OA, are reserved for the Transmission Owner
- A voltage threshold would not apply to market efficiency windows; transmission owners are not obligated to build market efficiency projects
- Provide transparency in posting of all violations, regardless of voltage
- Provide flexibility for PJM to identify cases when a violation or group of violations may be included in a window for competition

- Proposed OA change 1.5.8 (c)

address the violation or system condition. The Office of the Interconnection may lengthen a proposal window that already is opened based on or more of the following criteria: (i) changes in assumptions or conditions relating to the underlying need for the project, such as load growth or Reliability Pricing Model auction results; (ii) availability of new or changed information regarding the nature of the violations and the facilities involved; and (iii) time remaining in the relevant proposal window. In the event that the Office of the Interconnection determines to lengthen or shorten a proposal window, it will post on the PJM website the new proposal window period and an explanation as to the reasons for the change in the proposal window period. During these windows, the Office of the Interconnection will accept proposals from existing Transmission Owners and Nonincumbent Developers for potential enhancements or expansions to address the posted violations, system conditions, economic constraints, as well as Public Policy Requirements. The Office of the Interconnection may exclude reliability violations rated below 200 kV from a proposal window based on the expectation that the most cost effective solution will be a transmission facility rated below 200 kV and reserved for the Transmission Owner pursuant 1.5.8(l). The Office of Interconnection may include a group of reliability violations rated below 200 kV in a proposal window based on the potential that the solution may be a greenfield transmission facility rated above 200 kV.

Process Administration Items

- Pre-qualification updates -
  - Currently PJM process does not require periodic renewal or confirmation to maintain prequalified status
  - If over time, entities choose to not participate in PJM's competitive process, PJM would have no basis to remove inactive entities from being pre-qualified under the current OA language
  - PJM is proposing changes to ensure regularly updated information is required for entities that wish to be eligible to be designated (OA 1.5.8(a)(3))

Implementation

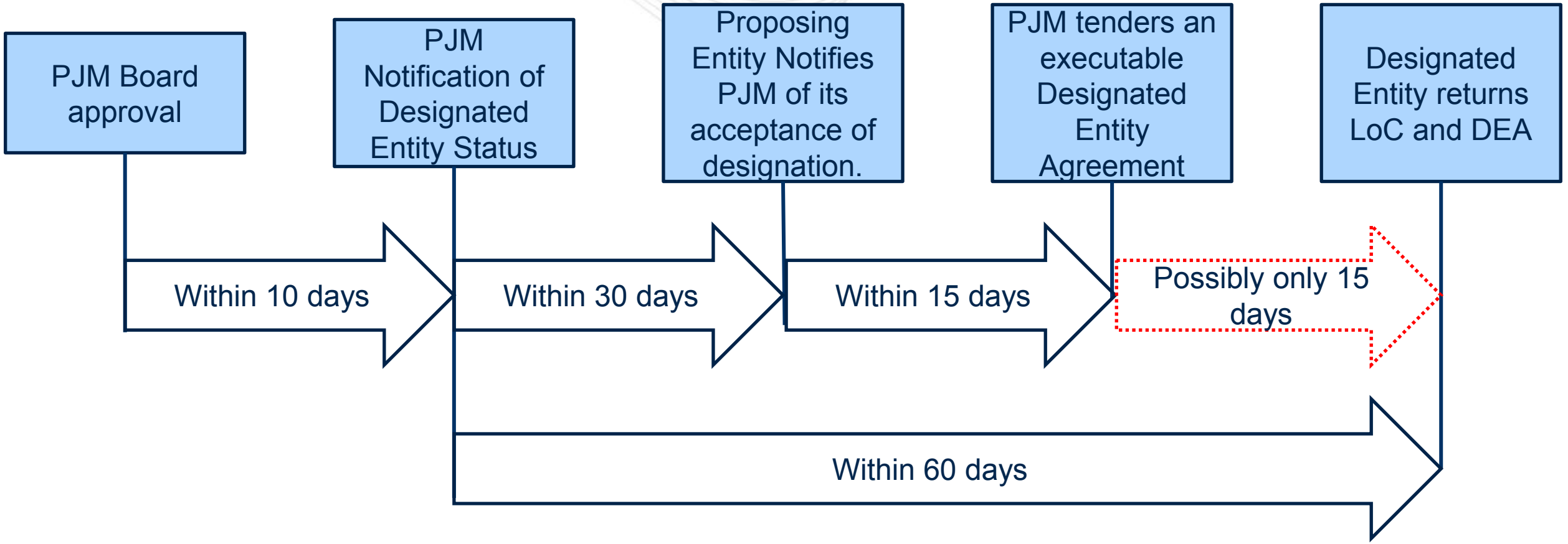
- **Proposed changes to OA 1.5.8(a)(3)**

(a)(3)) In order to continue to pre-qualify as eligible to be a Designated Entity, such entity must confirm its information with the Office of the Interconnection no later than three years following its last submission or sooner if necessary as required below. ~~If an entity was pre-qualified as eligible to be a Designated Entity in the previous year, such entity is not required to re-submit information to pre-qualify with respect to the upcoming year.~~ In the event the information on which the entity's pre-qualification is based changes with respect to the upcoming year, such entity must submit to the Office of the Interconnection all updated information during the annual thirty-day pre-qualification window and the timeframes for notification in Section 1.5.8(a)(2) of this Schedule 6 shall apply. In the event the information on which the entity's pre-qualification is based changes with respect to the current year, such entity must submit to the Office of the Interconnection all updated information at the time the information changes and the Office of the Interconnection shall use reasonable efforts to evaluate the updated information and notify the entity of its determination as soon as practicable.

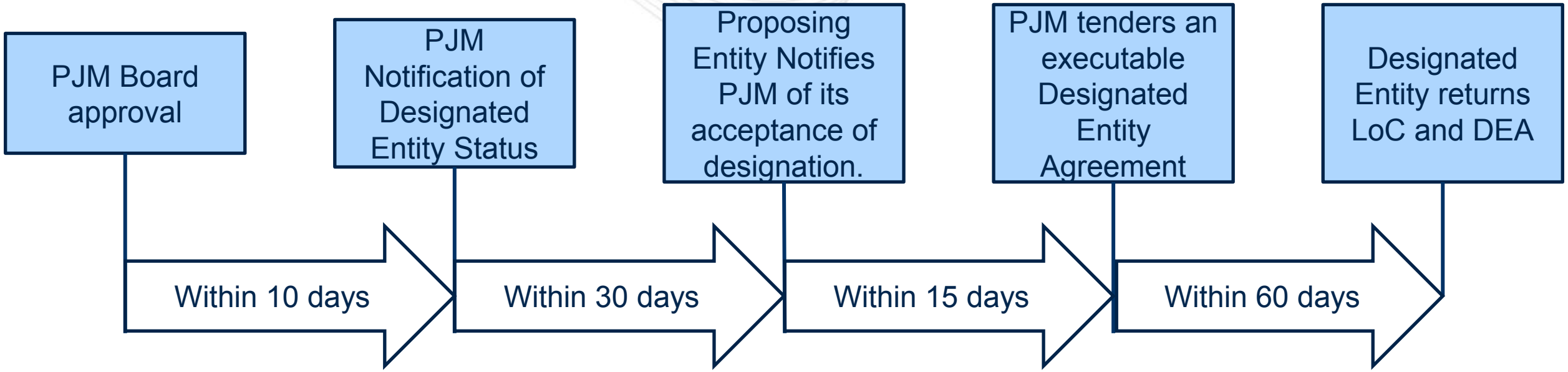
Process Administration Items

- Notifications and posting requirements –
  - The OA language is unclear that RTEP baseline projects that are upgrades reserved for the Transmission Owner under 1.5.8(l) do not require a DEA and related process steps (OA 1.5.8(j))
  - Ensure alignment with CTOA requirements for requirements for Transmission Owner response to notification of designation (OA 1.5.8(j))
  - Address timing between sequential steps in designation process (OA 1.5.8(i))

Current Designation Timeline



Proposed Designation Timeline



Implementation

- **Proposed changes to OA 1.5.8(i)**

(i) Notification of Designated Entity. Within 15~~10~~ business days of PJM Board approval of the Regional Transmission Expansion Plan, the Office of the Interconnection shall notify the entities that have been designated as the Designated Entities for projects included in the Regional Transmission Expansion Plan of such designations. In such notices, the Office of the Interconnection shall provide: (i) the needed in-service date of the project; and (ii) a date by which all necessary state approvals should be obtained to timely meet the needed in-service date of the project. The Office of the Interconnection shall use these dates as part of its on-going monitoring of the progress of the project to ensure that the project is completed by its needed inservice date.

Implementation

- **Proposed changes to OA 1.5.8(j)**

(j) Acceptance of Designation. Except for projects designated under Section 1.5.8(l), ~~W~~within 30 days of receiving notification of its designation as a Designated Entity, the existing Transmission Owner or Nonincumbent Developer shall notify the Office of the Interconnection of its acceptance of such designation and submit to the Office of the Interconnection a development schedule, which shall include, but not be limited to, milestones necessary to develop and construct the project to achieve the required in-service date, including milestone dates for obtaining all necessary authorizations and approvals, including but not limited to, state approvals. For good cause shown, the Office of the Interconnection may extend the deadline for submitting the development schedule. The Office of the Interconnection then shall review the development schedule and within 15 days or other reasonable time as required by the Office of the Interconnection: (i) notify the Designated Entity of any issues regarding the development schedule identified by the Office of the Interconnection that may need to be addressed to ensure that the project meets its needed in-service date; and (ii) tender to the Designated Entity an executable Designated Entity Agreement setting forth the rights and obligations of the parties.

Designated Entity Agreement containing a mutually agreed upon development schedule. In the alternative, the Designated Entity may request dispute resolution pursuant to Schedule 5 of this Agreement, or request that the Designated Entity Agreement be filed unexecuted with the Commission. For projects designated under Section 1.5.8(l), the Designated Entity shall provide acknowledgement of designation within 90 days consistent with Section 4.2.2 of the Consolidated Transmission Owners Agreement.

- **Proposed changes to OA 1.5.8(j)** *continued*

Interconnection may extend the deadline for submitting the development schedule. The Office of the Interconnection then shall review the development schedule and within 15 days or other reasonable time as required by the Office of the Interconnection: (i) notify the Designated Entity of any issues regarding the development schedule identified by the Office of the Interconnection that may need to be addressed to ensure that the project meets its needed in-service date; and (ii) tender to the Designated Entity an executable Designated Entity Agreement setting forth the rights and obligations of the parties. To retain its status as a Designated Entity, within 60 days of receiving an executable Designated Entity Agreement ~~notification of its designation~~ (or other such period as mutually agreed upon by the Office of the Interconnection and the Designated Entity), the Designated Entity (both existing Transmission Owners and Nonincumbent Developers) shall submit to the Office of the Interconnection a letter of credit as determined by the Office of Interconnection to cover the incremental costs of construction resulting from reassignment of the project, and return to the Office of the Interconnection an executed Designated Entity Agreement containing a mutually agreed upon development schedule. In the

Revision History

- Revision History
  - Original version distributed to the PJM TEAC 9/8/2015
  - 9/9/2015
    - Added slides 10 and 11