eDART June Enhancements Release

eDART Users Group – Transmission Meeting
June 6, 2013
• Sandbox release implemented June 4th.
• Production release scheduled for June 19th.
- Restoration Plan & Cranking Path Transmission Ticket Enhancements
  - Fault Clearing Times Functionality
  - Other Enhancements in the June Release
  - Future Enhancements
• Restoration plans and plan review process to be incorporated into eDART in support of EOP-005-2 R2, R3 and R4.1, EOP-006-2 R5 and R5.1.
  – New eDART application is called “Black Start”.
• Review process can be sometimes triggered from transmission tickets especially for tickets including member identified cranking path facilities.
• Need for better communication and coordination of restoration plan updates.
• Keep the Restoration Plans up to date
  – Annual Review process
  – Cranking Paths Facility model updates
  – General maintenance
New Black Start Application

- New Blackstart application with ability to update Cranking Path facilities and Restoration Plans.
  - Restoration Dashboard used to post updated plans and participate in plan review process.
  - Cranking Path Update form used by TO to identify cranking path facilities.
• Cranking Path Update form used to designate transmission facilities as part of a cranking path.

Select facility and Submit Form to add facility to list.

Check ‘Remove’ and Submit Form to remove facility.
Transmission Ticket – Review Needed

- New drop down list, Restoration Plan Review Needed, added to transmission ticket.
  - Drop-Down: N/A (Default), Yes, No or TBD.
  - Can be selected for any ticket; whether ticket is for cranking path facility or not.
- If Restoration Plan Review Needed = Yes, user can select Impacted Plans and Neighboring TO’s.

![Diagram of Transmission Ticket](image-url)
Business Rules

• Transmission tickets with cranking path facilities can only have Review Needed = N/A if:
  – Emergency = FALSE & Cut-In = FALSE & Outage Duration ≤ 30 days.

• Ticket status can’t be changed to Completed if:
  – Review Needed = TBD.
  – Review Needed = Yes and no restoration plan selected as impacted.

• Review Needed field can be updated even if ticket is completed or locked.
  – Review Needed can’t be changed to TBD if ticket status is Completed.

• Review Needed can’t be updated for tickets in Denied or Cancelled status.

• Review Needed = NO by default for EMS Tripped tickets where there is a cranking path facility.
• If Review Needed = Yes user selects applicable plans and identifies any neighboring TOs impacted.
  – Restoration Plan Review button highlighted on revision ticket.
• Plan can be downloaded by clicking Plan Name.

Can still be changed.
• Click on Plan Review button to change the review needed value.
• If Review Needed = Yes, Restoration Plan Review button turns yellow on revision ticket.
List of current official plans in production.

Report of the changes made to Restoration Plans.

Used for the coordination of the plan review process.
• The users will see their company’s currently approved Restoration Plans
  – Retired plans excluded.

Download the latest Restoration Plan
Submit an Update to a Restoration Plan and Attachment G
Retire a Restoration Plan

Download a blank Attachment G form

<table>
<thead>
<tr>
<th>Plan ID</th>
<th>Plan Name</th>
<th>Restoration Plan Updated</th>
<th>History</th>
<th>Restoration Plan/Attachment G</th>
<th>Retire</th>
</tr>
</thead>
<tbody>
<tr>
<td>14</td>
<td>Plan Number 1</td>
<td>05/23/2013 14:17</td>
<td>View</td>
<td>Submit Update</td>
<td>Retire</td>
</tr>
<tr>
<td>3</td>
<td>Plan Number 2</td>
<td>04/30/2013 11:30</td>
<td>View</td>
<td>Submit Update</td>
<td>Retire</td>
</tr>
<tr>
<td>12</td>
<td>Plan Number 3</td>
<td>05/30/2013 11:50</td>
<td>View</td>
<td>Submit Update</td>
<td>Retire</td>
</tr>
<tr>
<td>13</td>
<td>Plan Number 4</td>
<td>05/23/2013 13:31</td>
<td>View</td>
<td>Submit Update</td>
<td>Retire</td>
</tr>
<tr>
<td>29</td>
<td>Plan Number 5</td>
<td>05/30/2013 11:51</td>
<td>View</td>
<td>Submit Update</td>
<td>Retire</td>
</tr>
</tbody>
</table>
• **View**: A log of the changes for the Restoration Plan.

• **Annual Deadlines**: Displays the agreed upon plan annual review dates where applicable.

• **Plan Name**: Hyperlink to download the latest approved plan and the associated Attachment G.

• To retire a plan or submit an update outside of the normal review request process, click **Submit Update**.
  – user will be required to submit both the updated plan and the Attachment G.
  – A blank attachment G form available by clicking ‘Attachment G Form’.

![Submit Update](image)
Approved Restoration Plans – Annual Deadline

- Date updates made by PJM based on calculation of date provided for TO Restoration Plan Effective Date (T) by members.
  - TO Submission Plan Deadline (T-30).
  - PJM Review Deadline (T-15).
  - TO Publishes Approved Plan Deadline (T-1).

- TO Submission Plan Deadline is date used on dashboard.
Pending Restoration Plans

- Form displays latest versions of restoration plans that are being reviewed.
- Update Reasons can be:
  - Company Request: Plan submitted from Approved Plans form.
  - Annual: Part of an annual review.
  - Ticket: Result of a change from a transmission ticket (click on Ticket ID to open print version of ticket).
  - PJM Request: Manual override or PJM request.
Pending Restoration Plans – Additional Details

- **Color Legend:**
  - Red: Plan update is late.
  - Yellow: Plan update is due in the next 7 days.

- **Update Status:** status of the current review for the plan.
  - Update Required, Pending Approval, Approved, No Update Pending Approval, Cancelled by Company, Cancelled by PJM.

- Plan Name is not a hyperlink until files are uploaded for that request.
Pending Restoration Plans – Additional Details

- **Plan Status**: Official status of plan itself outside of update process.
  - Pending Approval, Approved, Pending Retirement, Retired.
- **Restoration Plan Updated**: time of last plan update.
- **Next Update Request**: deadline for when the plan has to be updated for the given update reason.
- **Submit Update**: submit the Restoration Plan update and related Attachment G.
- If no update is needed the TO can click on No Update Needed but an Attachment G is required to explain the reason.
- **Queue**: number of upcoming plan reviews.
Log of changes made to each update can be viewed via the View hyperlink under History.
- Logs any changes made (ex. Status, Files) for this update.
• Users can view log instances plan went through update process with final plans and Attachment G.
• Full detail log of interaction per instance available via History column View hyperlink.
Queue and Restoration Plan Update History

- **Queue**: number of reviews currently upcoming for the plan.
  - Updates can only be made one at a time.
  - If information supplied for current update applies to other updates in the queue, TO can upload plan and Attachment G via No Update Needed form to say so.

- Log of changes made to each update can be viewed via the View hyperlink under History.
• Users can view report of the changes made to Restoration Plans.

Filter by Update Status.

Download Plan and Attachment G.

View History Log of Plan update.
• Email notifications sent to SOS-T rep by default.
  – If emails should be sent to additional recipients, please communicate to Jordan Checkman (checkj@pjm.com), Ron Lavan (lavanr@pjm.com) or Ron DeLoach (deloar@pjm.com).
• Daily emails sent when cranking path facility is added or removed.
• Daily email of transmission tickets Submitted or Revised on that day where:
  – Cut-In = TRUE & cranking path equipment is included.
  – Cut-In = TRUE & Outage Duration > 30 days.
  – Restoration Plan Review Needed = YES.
Email Notifications

• Emails sent when:
  – Update Status changes.
  – Restoration plan review deadline is in 30 days or any day in the next week (next 7 days).
  – Installed Capacity of Critical Load or Blackstart unit is changed to 0 (unit is in Transmission Zone or cranks critical load in TZ).
  – Critical Load or Blackstart unit is added or removed.

• Whenever PJM completes quarterly model build, email sent listing:
  – Cranking path facilities removed from model
  – LINEs and XMFRs added to stations that are currently part of a cranking path.
Remaining Timeline

June 4th
- Implemented in Sandbox
- Final initial set of cranking path facilities sent to SOS-T

June 6th
- eDART Users Group Meeting
- PJM sends email listing Tickets where Review Needed to be set to TBD

June 18th
- Review Needed ticket feedback due from members

June 19th
- Implemented in Production

Additional details:
- Implemented in Sandbox
- Final initial set of cranking path facilities sent to SOS-T
• Restoration Plan & Cranking Path Transmission Ticket Enhancements
  ➢ Fault Clearing Times Functionality
• Other Enhancements in the June Release
• Future Enhancements
• New eDART application called “Facility Data” to allow TOs to update facility fault clearing time data.
  – Data will then be used in TSA for dynamic studies.
  – Fault Time Update form used to input cycles taken to clear faults on defined facilities.
  – Data can also be entered at the voltage level to be used as default values.
• Fault clearing times can be made at the equipment level as well as the voltage level.
  – Cycles required to clear fault would be required for primary equipment and associated Tier 1 breakers.
• Data to be validated annually.
Equipment & Voltage Level Clearing Times

Station Fault Time Update

<table>
<thead>
<tr>
<th>Zone</th>
<th>Type</th>
<th>Station</th>
<th>Voltage</th>
<th>Equipment</th>
<th>End</th>
<th>Type of Clearing</th>
<th>TFCT in</th>
<th>Remarks / Explanation</th>
</tr>
</thead>
<tbody>
<tr>
<td>AA</td>
<td>LINE</td>
<td>TEST</td>
<td>230 KV</td>
<td>TEST-EQUIP 1</td>
<td>END A</td>
<td>NORMAL</td>
<td>5</td>
<td>BIG TEST</td>
</tr>
<tr>
<td>AA</td>
<td>LINE</td>
<td>TEST</td>
<td>230 KV</td>
<td>TEST-EQUIP 2</td>
<td>END B</td>
<td>NORMAL</td>
<td>5</td>
<td>VERY BIG TEST</td>
</tr>
<tr>
<td>AA</td>
<td>LINE</td>
<td>TEST</td>
<td>230 KV</td>
<td>TEST-EQUIP 3</td>
<td>END A</td>
<td>CB FAIL</td>
<td>17.6</td>
<td></td>
</tr>
<tr>
<td>AA</td>
<td>LINE</td>
<td>TEST</td>
<td>230 KV</td>
<td>TEST-EQUIP 4</td>
<td>END B</td>
<td>CB FAIL</td>
<td>17.5</td>
<td></td>
</tr>
</tbody>
</table>

Voltage Level Clearing Times

<table>
<thead>
<tr>
<th>Zone</th>
<th>Voltage</th>
<th>Primary</th>
<th>Backup</th>
<th>HSR</th>
<th>Zone 2</th>
<th>Remarks / Explanation</th>
<th>Latest Update</th>
</tr>
</thead>
<tbody>
<tr>
<td>AA</td>
<td>115 KV</td>
<td>5.12</td>
<td>17.5</td>
<td>17.5</td>
<td>25</td>
<td></td>
<td>03/15/2013 14:39</td>
</tr>
<tr>
<td>AA</td>
<td>230 KV</td>
<td>5</td>
<td>17.51</td>
<td>17.51</td>
<td>25</td>
<td></td>
<td>03/15/2013 14:39</td>
</tr>
<tr>
<td>AA</td>
<td>500 KV</td>
<td>5.1</td>
<td>17.52</td>
<td>17.52</td>
<td>25</td>
<td></td>
<td>03/15/2013 16:42</td>
</tr>
</tbody>
</table>
• The fault clearing data will need to be reviewed on a yearly basis.
  – A 30-day period will be designated as the review period for the data to be reviewed.
  – Fault Time Update button will turn red during review period if there are facilities that need to be reviewed.
  – New data can be submitted and existing data can be acknowledged.
  – Reminder e-mails will go out when review is past due.
• Restoration Plan & Cranking Path Transmission Ticket Enhancements
• Fault Clearing Times Functionality
  ➢ Other Enhancements in the June Release
• Future Enhancements
A new posting will be added to the OASIS System Information page for temporary rating changes.

The format will be identical to the existing ratings posting but only for existing temporary tickets as well as future temporary tickets.

This report will also include the estimated start/end dates and reason for change.

Market sensitive facilities will be excluded.
• Station names in Station Equip. dropdown now sorted in alphabetical order.
• Restoration Plan & Cranking Path Transmission Ticket Enhancements
• Fault Clearing Times Functionality
• Other Enhancements in the June Release
  ➢ Future Enhancements
• Submit On Time logic enhancements for transmission ticket revisions where outage duration changes.

• Submit On Time log.
  – Log of Submit On Time status with every Start and/or End Date changes.
• Conflict Analyzer Phase 3
  – Inclusion of external outages in conflict analyzer logic.
  – External outages reported via NERC SDX downloads.

• Reason for Date Change
• New functionality to tie transmission tickets to projects.
  – Tickets can be tied to multiple projects.
• Opportunity windows for suggestions on dates tickets can be rescheduled to.
• Active Start/End Date submission by members.
• Library functionality for setup of repeatable transmission tickets.
• Date change submissions allowance while tickets still locked.
• Long station names.
• Station B Names.