



# eDART March 2018 Release Enhancements

eDART Users Group Meeting  
02/26/2018

- Production release of March enhancements scheduled for Wednesday, March 21st.
  - eDART will be unavailable from 19:00 to 02:00 on Thursday, March 22<sup>nd</sup>.
- Sandbox release scheduled for today, February 26<sup>th</sup>.

- General Updates
- Generation Related Enhancements
  - March 21<sup>st</sup> Release
  - Future Enhancements
- Transmission Related Enhancements
  - March 21<sup>st</sup> Release
  - Future Enhancements
- Question & Answer Resolution Session

- Fixed an issue with the D-Curve reports returning CSV file with only headers.
- User Experience Analysis for the eDART Refresh is ongoing.
  - Users of the eDART web UI and browserless interface interested in providing feedback should contact Chidi Ofoegbu.

- General Updates
- **Generation Related Enhancements**
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- Per PJM Manual 14D, Attachment E.4.1, telemetered unit MW and MVAR data must be verified for MVAR Tests.
- Currently, PJM engineer enters telemetry verification data in PJM Comment field on ticket.
  - Users required to review Comment Log to find verification timestamp.
- New fields for telemetry verification dates added to MVAR Test Tickets to indicate timestamp and user information for when telemetry was most recently verified for the ticket.

- Telemetry verification fields only visible when data is available.

### Generator Ticket (Review/Revise)

User ID: [REDACTED] Ticket Number: [REDACTED] Company: [REDACTED]  
Generation Type: [REDACTED] Unit Name: [REDACTED] Est./Ramp Start: 02/23/2018 02:00  
Ticket Status: [REDACTED] Timestamp: 02/21/2018 11:39 Est. End: 02/28/2018 01:00  
Company Ticket ID: [REDACTED] Actual Start:  
Actual End:

**Telemetry Verified: 02/21/2018 11:43 User: USERNAME**

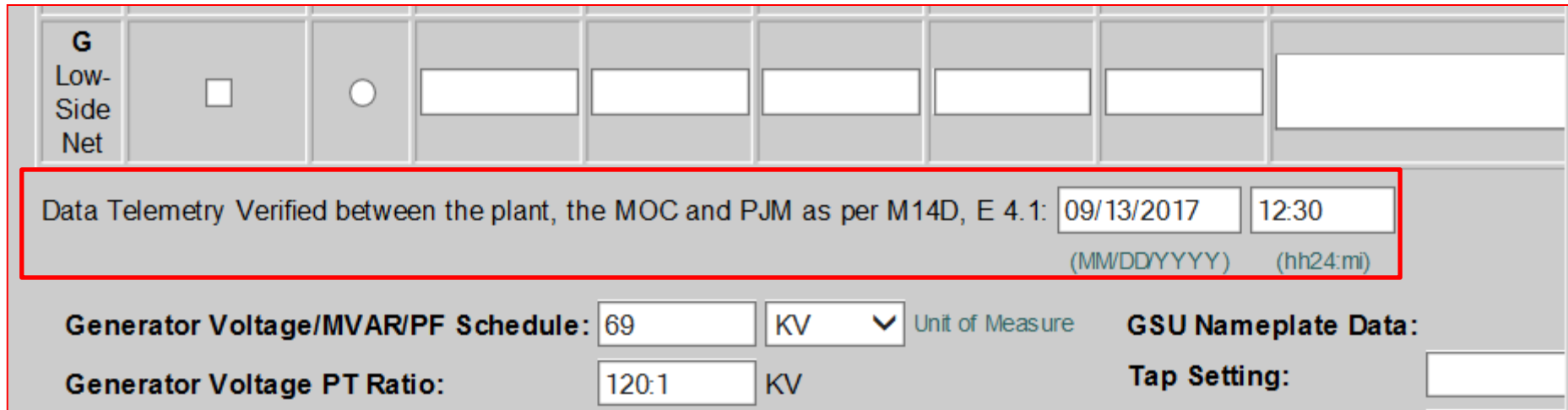
Description	PJM Comments
test ticket for MVAR Test/Telemetry verification testing	

**Current eDART D-Curve**  
Operational Data: No

EMS Equipment Name	MVAR Limit	MW Points	Min	Max

[Cancel Ticket](#) [Add New Revision](#) [Submit](#) [Refresh](#) [Comments Log](#) [History Log](#) [Main Menu](#)

- Telemetry verification fields removed from Reactive Capability Testing Form.
  - Per discussion with PJM Reactive Testing SMEs.



The screenshot shows a web form with a red box highlighting the 'Data Telemetry Verified' section. The form includes the following fields:

<b>G</b> Low-Side Net	<input type="checkbox"/>	<input type="radio"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
Data Telemetry Verified between the plant, the MOC and PJM as per M14D, E 4.1:						<input type="text" value="09/13/2017"/>	<input type="text" value="12:30"/>	
						(MM/DD/YYYY)	(hh24:mi)	
Generator Voltage/MVAR/PF Schedule:			<input type="text" value="69"/>	<input type="text" value="KV"/>	<input type="text" value="v"/>	Unit of Measure		GSU Nameplate Data:
Generator Voltage PT Ratio:			<input type="text" value="120:1"/>	<input type="text" value="KV"/>			Tap Setting:	<input type="text"/>



- Company Name added to download list of units.
  - Company name may be different from user's company in the case of joint owned units (Owners Report access granted) and approved transmission viewers.

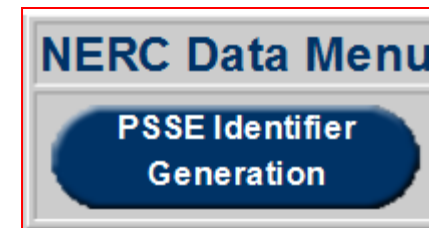
```

<?xml version="1.0" encoding="UTF-8"?>
- <edart>
  - <generators>
    - <generator_list>
      - <gen_unit>
        <generator_id>1234</generator_id>
        <generator_name>GEN UNIT 1</generator_name>
        <generator_type>Nug</generator_type>
        <capacity>141</capacity>
        <company_name>Gen Company 1</company_name>
        <mvar_ratings> </mvar_ratings>
        <voltageControlPhilosophy>TBD</voltageControlPhilosophy>
        <meteredMVARValue>TBD</meteredMVARValue>
      </gen_unit>
    </generator_list>
    - <generator_list>
      - <gen_unit>
        <generator_id>4321</generator_id>
        <generator_name>NUKE 1</generator_name>
        <generator_type>Nuclear</generator_type>
        <capacity>800</capacity>
        <company_name>Nuke Company</company_name>
      - <mvar_ratings>
        - <rating>
          <ta_id>12222</ta_id>
          <ems equip_name>NUKE UNIT11 GEN UNIT</ems equip_name>
          <mw_point>0</mw_point>
          <mvar_max>20</mvar_max>
          <mvar_min>-8</mvar_min>
        </rating>
      </mvar_ratings>
    </generator_list>
  </generators>
</edart>

```

- Gen Checkout now checks for completed Generator Outage Tickets.
  - Users were seeing Gen Checkout violations even though outage tickets were in eDART covering reductions.
  - eDART previously only analyzed Approved and Active tickets leading to false violations.

- **Global Include Historical flag:**
  - By default, downloads will return current information; user can use flag to specifically request historical information (tickets completed or cancelled more than 40 days in the past.)
  - Will help reduce size of files transferred and improve performance.
  - Currently being implemented for Transmission outage downloads.
- **Generation PSSE Identifier entry fields to be disabled;**  
functionality will be made read only.



- Voltage Schedule Tool: New eDART web-based tool to aid compliance monitoring of Voltage Schedule communication between PJM, TOs and GOPs (per VAR-001 R5.1 <http://www.nerc.com/pa/Stand/Reliability%20Standards/VAR-001-4.2.pdf>).
  - Voltage Schedules (kV, Power Factor, Reactive) will be stored and updated in eDART along with their Bandwidth/Tolerances.

- Generation Related Enhancements
  - March 21<sup>st</sup> Release
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- New Include Historical filter:
  - By default, reports will return current tickets; user can use filter to specifically request historical information.
  - Will help reduce size of data returned and improve performance.
- Historical tickets: completed or cancelled more than 40 days in the past.

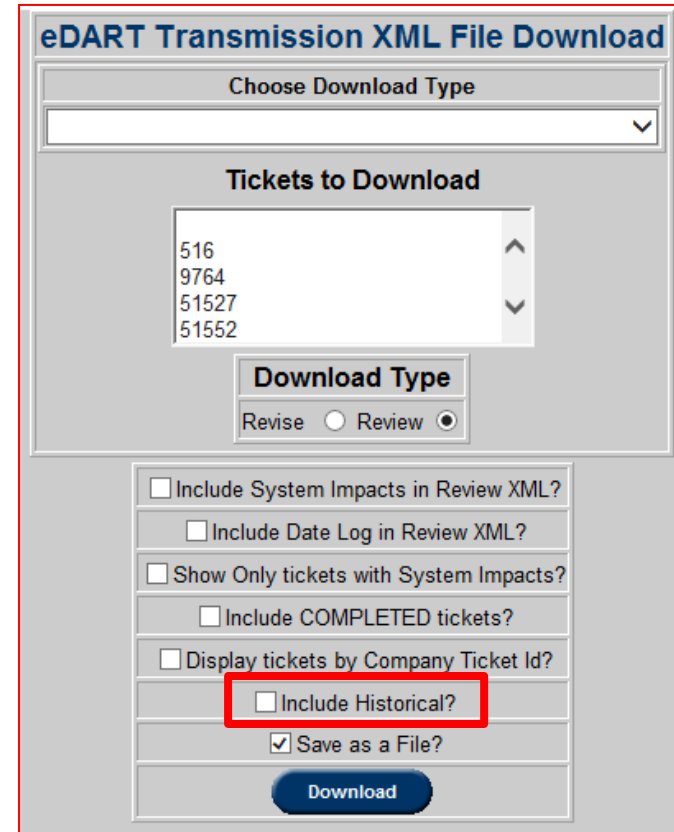
- Include Historical filter added for the following Transmission Filters/Reports:
  - View/Revise Outage Ticket
  - EMS Trip Update
  - RTEP Queue # Update
  - Trans Outage Tickets Report

**Ticket Selection Form**

Company: XXXXXXXXXX

Ticket ID <input type="text"/>	Company Ticket ID <input type="text"/>	RTEP Queue # <input type="text"/>
Outage Type <div style="border: 1px solid blue; padding: 2px;">           Continuous            Continuous - No Weekends            Daily - Including Weekends            Daily - No Weekends            Daily - Weekends Only            EMS Tripped         </div>	Availability <div style="border: 1px solid blue; padding: 2px;">           Immediate            30 min.            1 hr.            2 hr.            4 hr.            8 hr.            Duration         </div>	
Direct Billing <input type="radio"/> Yes <input type="radio"/> No <input checked="" type="radio"/> Both Direct Billing Decline <input type="radio"/> Yes <input type="radio"/> No <input checked="" type="radio"/> Both Submit on Time <input type="radio"/> Yes <input type="radio"/> No <input checked="" type="radio"/> Both Congestion Expected <input type="radio"/> Yes <input type="radio"/> No <input checked="" type="radio"/> Both At Risk Only <input type="radio"/> Yes <input checked="" type="radio"/> No	<b>Tickets / Notifications</b> <input checked="" type="radio"/> Tickets Only <input type="radio"/> Notifications Only <input type="checkbox"/> Restoration Plan Review Issued <div style="border: 2px solid red; padding: 2px;"><input type="checkbox"/> <b>Include Historical</b></div>	<b>Emergency / Informational / Cut-in / Potentially Incomplete</b> <input type="checkbox"/> Emergency Only <input type="checkbox"/> Info Only <input type="checkbox"/> Cut-in Only <input type="checkbox"/> Potentially Incomplete Only
Ticket Status <input type="text"/>	Type <input type="text"/> Station <input type="text"/> Voltage <input type="text"/> Equipment <input type="text"/>	
Ticket Start (MM/DD/YYYY) From: <input type="text"/> To: <input type="text"/>	Ticket End (MM/DD/YYYY) From: <input type="text"/> To: <input type="text"/>	Occurring During (MM/DD/YYYY) From: <input type="text"/> To: <input type="text"/>

- Include Historical filter also added for the following Transmission Downloads:
  - Transmission Tickets
  - Transmission Tickets by Date
  - EMS Tripped
  - EMS Tripped by Date



**eDART Transmission XML File Download**

Choose Download Type

Tickets to Download

516  
9764  
51527  
51552

**Download Type**

Revise  Review

Include System Impacts in Review XML?

Include Date Log in Review XML?

Show Only tickets with System Impacts?

Include COMPLETED tickets?

Display tickets by Company Ticket Id?

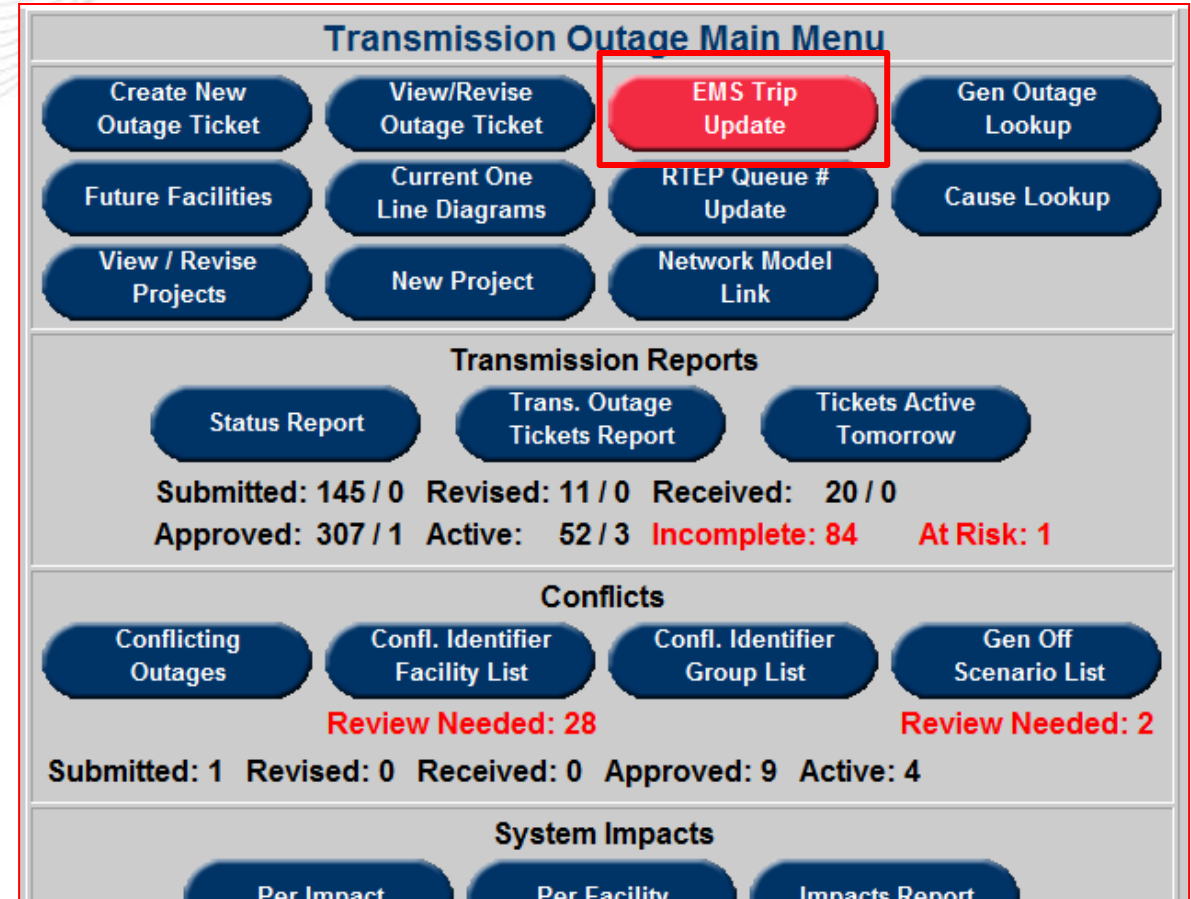
**Include Historical?**

Save as a File?

**Download**



- EMS Trip Update button previously only displayed when there are EMS Tripped tickets to update.
- Button will now be displayed at all times.
  - Buttons turns red when there are current EMS Trip Tickets to update.



**Transmission Outage Main Menu**

Create New Outage Ticket	View/Revise Outage Ticket	<b>EMS Trip Update</b>	Gen Outage Lookup
Future Facilities	Current One Line Diagrams	RTEP Queue # Update	Cause Lookup
View / Revise Projects	New Project	Network Model Link	

**Transmission Reports**

Status Report	Trans. Outage Tickets Report	Tickets Active Tomorrow
---------------	------------------------------	-------------------------

Submitted: 145 / 0 Revised: 11 / 0 Received: 20 / 0  
 Approved: 307 / 1 Active: 52 / 3 **Incomplete: 84** **At Risk: 1**

**Conflicts**

Conflicting Outages	Conf. Identifier Facility List	Conf. Identifier Group List	Gen Off Scenario List
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**Review Needed: 28** **Review Needed: 2**

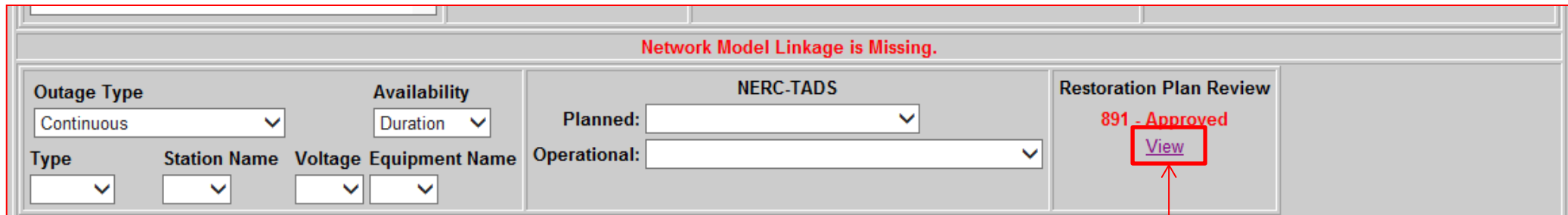
Submitted: 1 Revised: 0 Received: 0 Approved: 9 Active: 4

**System Impacts**

Per Impact	Per Facility	Impacts Report
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- Restoration Plan Review Issued filter added to View/Revise Outage Ticket and Trans Outage Tickets Report filters.
  - Checking the filter will return all tickets requiring review of restoration plan.
- Restoration Plan Review Needed Field removed from New Transmission Ticket and read only on revision of ticket.
  - Users no longer required to edit this field.
  - eDART will automatically create an entry in the Pending Restoration Plan update queue for cut-in tickets.
  - Restoration Plan Review no longer needed for non-cut-in tickets.

- Restoration Plan Review Needed Field renamed to Restoration Plan Review Needed.
  - Field format changed from drop down list to string.
  - String format: [Update ID] – [Update Status]



Network Model Linkage is Missing.

Outage Type	Availability	NERC-TADS		Restoration Plan Review
Continuous	Duration	Planned:		891 - Approved
Type	Station Name	Voltage	Equipment Name	<a href="#">View</a>

Click view to open update in Black Start application: Pending or Approved Restoration Plans.

- Cut-In Flag and Restoration Plan Review columns added to Transmission Projects.

Transmission Project												
Company: <b>Electric Company</b>				Description:								
Project Name: <input type="text" value="test"/>				<code>Automatically created transmission project by ticket upload.</code>								
Active / Inactive: <input checked="" type="radio"/> Active <input type="radio"/> Inactive												
Tickets in the Project												
Remove	Ticket ID	Company Ticket ID	Ticket Status	Company	Start Date	End Date	Cut-In Flag	Restoration Plan Review	Type	Station	Voltage	Equipment
<input type="checkbox"/>	<a href="#">68602</a>	Test113020164	Submitted	Electric Company	07/03/2018 22:00	07/04/2018 22:00	Yes	1596 - Update Required	CAP		13 KV	
<input type="checkbox"/>	<a href="#">68603</a>	Test113020165	Submitted	Electric Company	07/03/2018 22:00	07/04/2018 22:00	Yes	1597 - Update Required	CAP		13 KV	
<input type="checkbox"/>	<a href="#">68604</a>	Test113020166	Submitted	Electric	07/03/2018	07/04/2018	Yes	1598 - Update	CAP		13 KV	

- Column headers revised for Units/Condensers:
  - “Unit Status” to “SE Unit Status”
  - “AVR Status” to “SE AVR Status”
  - “Max MVAR” to “SE Max MVAR”
  - “Min MVAR” to “SE Min MVAR”

Capacitors  
  Reactors  
  SVCs/Statcom  
  Units/Condensers

Name:   
 Min KV:   
 Max KV:

SE Unit Status:   
 SE AVR Status:   
 Discrepancies Only:

Units/Condensers										
Name	Zone	KV	eDART Availability	eDART AVR Auto	SE Unit Status	SE AVR Status	SE MW	SE MVAR	SE Max MVAR	SE Min MVAR
		3								

- On Self-Check report:
  - Additional search fields included.
  - Equipment columns in totals section now highlighted blue when selected.

Capacitors
  Reactors
  SVCs/Statcom
  Units/Condensers

Name:  Min KV:  Max KV:

SE Unit Status:  SE AVR Status:  Discrepancies Only:

**Units/Condensers**

Name	Zone	KV	eDART Availability	eDART AVR Auto	SE Unit Status	SE AVR Status	SE MW	SE MVAR	SE Max MVAR	SE Min MVAR
		3								

**Peak MVAR Reserves Self-Check**

Request Timestamp: 02/20/2018 14:23  
Data Updated: 11/06/2017 11:45

Peak (Current)
  Valley

Zone	Capacitors	Reactors	SVCs/Statcom	Units/Condensers
	1000.00	0.00	0.00	10.00
	1000.00	0.00	0.00	150.00
	1500.00	0.00	0.00	150.00
	0.00	0.00	0.00	0.00
	1500.00	0.00	0.00	10.00
<b>Company Total</b>	<b>5000.00</b>	<b>0.00</b>	<b>0.00</b>	<b>320.00</b>
<b>Discrepancies Count</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>30</b>

Capacitors
  Reactors
  SVCs/Statcom
  Units/Condensers

Name:  Min KV:  Max KV:

- FERC approved sharing GO info with TO for restoration planning purposes; Unit Detailed and Unit Modeling Data now available to transmission users.

Previous View

### BlackStart Official Report

TO Zone: PJM1 PJM2

Restoration Zone: PJM1 PJM2 PJM3

GO Company: Gen Company 1 Gen Company 2 Gen Company 3

TO Company: Trans Company A Trans Company B Trans Company C

Restoration Type: Black Start Critical Load (EGC)

From Date:

To Date:

Restoration Zone	Black Start Unit Count	Black Start MW	Critical Load Count	Critical Load Actual MW	Critical Load Req. MW	Balance MW
PJM2	2	300	1	10	11	289

Apply Filter Help Main Menu

GO Company	Name	Unit Type	TO Zone	Record Type	Total Start-Up (MWs)	Total Start-Up (MVAR)	Current / Future	Restoration Type	Restoration Zone	TO Company	Allocated Restoration MW	Effective Date	Terminate Date
Gen Company 1	UNIT ABC	Combustion Turbine	PJM1	Unit			Current	Black Start	PJM1	Trans Company A	200	11/01/2017	
							Current	Black Start	PJM2	Trans Company B	150	12/01/2017	
Gen Company 2	UNIT 123	Hydro	PJM2	Unit			Current	Black Start	PJM2	Trans Company B	150	12/12/2017	
Gen Company 3	UNIT 001			Load	10	5	Current	Critical Load (EGC)	PJM2	Trans Company B	10	08/29/2017	
							Future	Critical Load (EGC)	PJM3	Trans Company C	10	03/18/2018	

Apply Filter Help CSV Export Main Menu

New View with Unit Detailed Data

### Black Start Official Report

TO Zone:  Restoration Zone:  GO Company:  TO Company:  Restoration Type:  From Date:  To Date:

Critical Load vs. Black Start Balance						
Restoration Zone	Black Start Unit Count	Black Start MW	Critical Load Count	Critical Load Actual MW	Critical Load Req. MW	Balance MW
PJM2	0	0	1	13	15	-15

Display:  Unit Detailed Data  Unit Modeling Data  Restoration Data

[Apply Filter](#) [Help](#) [Main Menu](#)

GO Company	Name	Unit Type	TO Zone	Record Type	Total Start-Up (MWs)	Total Start-Up (MVAR)	ICAP	Unit Effective Date	Unit Terminate Date	Prim. Fuel	Sec. Fuel	Hot Start Time (Hours)	Cold Start Time (Hours)	Ramp Rate (MWs/Minute)
Gen Company	UNIT ABC	Nuclear	PJM1	Unit	10.0	50	1000	03/06/2007		Synthesis Gas from Petroleum Code	DualFuel:Natural Gas + Other Gases			

[Apply Filter](#) [Help](#) [CSV Export](#) [Main Menu](#)



## New View with Unit Modeling Data

### Black Start Official Report

TO Zone: PJM1 Restoration Zone: PJM2 GO Company: Gen Company TO Company: Trans Company Restoration Type: Critical Load (Nuclear) From Date: 02/23/2018 To Date: 02/24/2018

Critical Load vs. Black Start Balance

Restoration Zone	Black Start Unit Count	Black Start MW	Critical Load Count	Critical Load Actual MW	Critical Load Req. MW	Balance MW
PJM2	0	0	1	13	15	-15

Display:  Unit Detailed Data  Unit Modeling Data  Restoration Data

Apply Filter Help Main Menu

GO Company	Name	Unit Type	TO Zone	Record Type	Total Start-Up (MWs)	Total Start-Up (MVAR)	Unit will black start solely on primary or secondary fuel	Unit MIN Stable Load (MWs)	Required time to reach MIN stable load (Minutnes)	Largest Motor (MWs)	Largest Motor Power Factor	Largest Motor Transformer Z%	Largest Motor Transformer R%	Largest Motor Transformer X%	Largest Motor Transformer High Side Voltage (kV)	Largest Motor Transformer Low Side Voltage (kV)	Largest Motor Transformer Base (MVA)	2nd Largest Motor (MWs)	2nd Largest Motor Power Factor	3rd Largest Motor (MWs)	3rd Largest Motor Power Factor	Nuclear Unit One-Line
Gen Company	UNIT ABC	Nuclear	PJM1	Unit	10.0	50																<a href="#">Download</a>

Apply Filter Help CSV Export Main Menu

- Error Message displayed on submission of hotline ticket with equipment status different from default status updated.
  - Current message:  
*Equipment should be in its normal state (closed/open) for Information/Hotline tickets. (ta\_id: 12345)*
  - New message:  
*Equipment should be in its normal state (closed/open) for Information/Hotline tickets. ta\_id: 12345 (Type, B1, B2, B3\_Text)  
normal state: open*

- Voltage Schedule Tool: New eDART web-based tool to aid compliance monitoring of Voltage Schedule communication between PJM, TOs and GOPs (per VAR-001 R5.1 <http://www.nerc.com/pa/Stand/Reliability%20Standards/VAR-001-4.2.pdf>).
  - Voltage Schedules (kV, Power Factor, Reactive) will be stored and updated in eDART along with their Bandwidth/Tolerances.
  - Voltage Schedule exemptions will be recorded in eDART.

- Transmission PSSE Identifier entry fields to be disabled; functionality will be made read only.
- Transmission PSSE Identifier report will be updated to include 3 Winding Transformer mapping information.

- Request to receive email notification of Generator outage tickets from eDART.
- Generator outage tickets currently available via the web UI and XML downloads.
  - This will be an additional option for TOs to receive the information.
  - TO will be required to set up group email address and manage which units notification will be sent for.
  - Outage information will need to be encrypted.
  - Need to decide when the emails should be sent (all status changes? on submission of revisions?)

- Phase 1a (9/28 release):
  - Availability of RRC Self-Check report.
- Phase 1b (Q4 2016):
  - Availability of RRC Self-Check data; updated every 5 minutes.
- Phase 2 – 2017 (7/26 release):
  - Ability for PJM to issue new RRC.
  - Functionality to retrieve/submit real time reserve values.
  - Parallel Operations with current RRC; issued concurrently.
  - Anticipated to remain in Parallel Ops until ICCP implementation, **~Q3 2018 (to be confirmed in 3/1 SOS-T meeting).**

- New RRC issued in eDART Sandbox every other hour and open for an hour; Self-Check available for an hour.
- New RRC issued and posted in eDART Production whenever current RRC is issued and posted.
  - Users required to respond to current RRC first and if desired, respond to New RRC.
- Issues and requests for updates should be sent to [RRCHelp@pjm.com](mailto:RRCHelp@pjm.com).

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