



eDART May 2020 Enhancements

eDART Forum Meeting
05/06/2020

- General Discussion Topics
- May 2020 Enhancements
- Future Enhancements
- Question and Answer Resolution

General Discussion Topics

Browserless

- Phase 1: PJMCLI Integration
- Phase 2: New browserless functionality (Q1 & Q2 2021)
 - Refreshed endpoints and new functionality will be delivered incrementally
- Parallel Production/Training (Nov 2020 thru Q4 2021)
- Production “Go-Live” (Q4 2021)
 - Retire filetransfer jar file

With the eDART refresh, management of eDART accounts will be migrated to Account Manager.

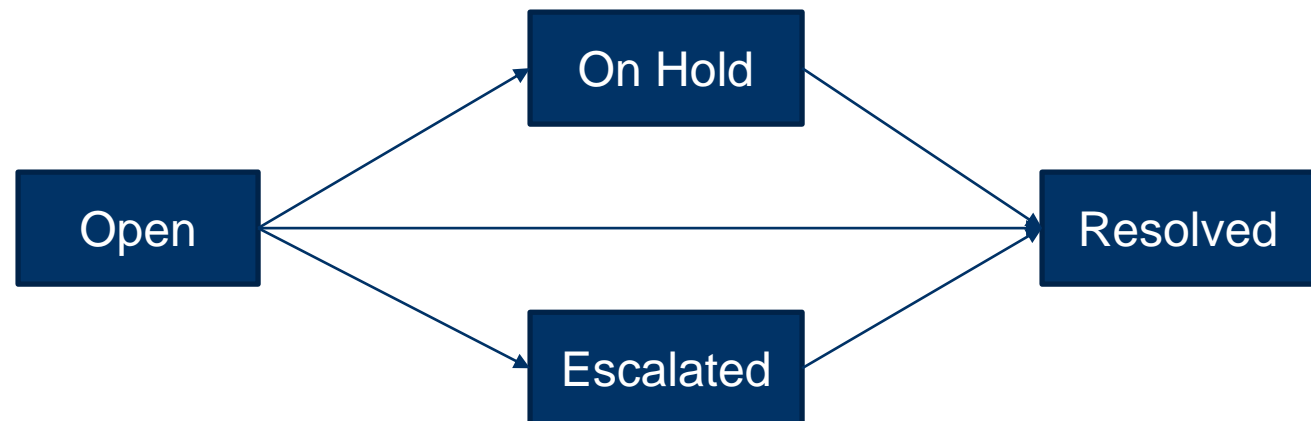
In preparation for that:

- Use Account Manager User ID for new eDART account requests.
- Update email addresses for existing accounts.
- Clean up dormant and invalid accounts.

Emails to edarthelp@pjm.com and eDART team members now used to create Salesforce cases.

- Enables better tracking of open eDART help requests.
- Email responses and status updates will be sent via Salesforce (from e2cp... .salesforce.com).
- More information available in the [Member Community](#).

Salesforce Case Status Flow



Model Build Date: Wednesday, May 27th

eDART Advance Model Build Date: Wednesday, May 13th

- Download updated equipment lists in eDART
- Download updated Equipment List/Complete Descriptions file:
<https://edart.pjm.com/reports/equiplist.csv> (also updated on Model Build Date)
- Transmission Tickets can be created or updated for future equipment



May 2020 Enhancements

Production release of May enhancements scheduled for Thursday, May 28th.

- eDART unavailability will be announced at least 3 business days prior.

Sandbox release scheduled for May 14th.

New option to 'Include RTO' for comparison per monthly stats.

IRC Monthly Statistics Report																		
Date Range Selection																		
From: Month 5 Year 2019 To: Month 5 Year 2019 Company Change Request																		
Include RTO: <input checked="" type="checkbox"/>																		
Apply Filter Download Main Menu																		
1	Month Start Date	Company	IRC Count	IRC Count Responded	IRC Partial Response	IRC No Response	Average Response Time (Minutes)	Max Response Time (Minutes)	Available Capacity MW	Available Capacity Responded MW	Units Count	Units Responded	Quick Start Delta MW	Secondary Reserve Delta MW	Synchronized Reserve Delta MW	Total Reserves MW	Total Reserves Responded MW	Score
	01-MAY-19		3	1	0	2	246.5	246.5	89730	15	195	2	0	4	2	48	16	33%
		RTO	3	9	1	119	45056.8	63462.1	842913	45353	5397	172	29	385	2202	43524	2250	5%

As discussed during the March 2020 eDART Forum meeting, the GO Survey XML functionality is being retired.

- XML functionality is rarely used
- No valid XML responses since 2017; few uploads with mixed quality.

The .TXT upload functionality remains available to respond to surveys for multiple units at a time.

If you have any questions, concerns, or feedback please contact EdartGOSurvey@pjm.com.

Voltage Control Philosophy column in the D-Curve report, which was populated and updated based on GO feedback, is no longer the primary method for communicating the nature of a unit's Voltage Schedule to PJM.

As a result, the column will be removed from the XML unit download, D-Curve Report and the corresponding CSV download.

Text & CSV files auto-generated by eDART are not opening up properly in Notepad.

- Carriage returns not being handled properly leading to a block of text.

Files have been fixed to properly handle carriage returns and display line breaks.

Before

```

equiulist_prechange.csv - Notepad
File Edit Format View Help
TIMESTAMP:03-26-2020,13:36:34TYPE,COMPANY,ZONE,STATION,VOLTAGE,NAME,LONG NAMEBRKR,AE,AE,ABSECON,69 KV,CAR
ABRKR,AE,AE,ATCO,69 KV,OCB B,ATCO OCB BBRKR,AE,AE,ATCO,69 KV,OCB P,ATCO OCB PBRKR,AE,AE,BARNEGAT,69 KV,C
BRKR,AE,AE,BRIDGEPO,22 KV,DUM GEN,BRIDGEPO DUM GEN DISBRKR,AE,AE,BRIDGEPO,22 KV,LOGANDIS,BRIDGEPO LOG
BUTLER VCLP DUM,MYBRKR,AE,AE,BUTLER,69 KV,VINELAND,BUTLER VINELAND DISBRKR,AE,AE,CAPEMAY,69 KV,C,CAPEM
NFRDM DISBRKR,AE,AE,CARDIFF,230 KV,Q CB,CARDIFF 230 KV Q CBBRKR,AE,AE,CARDIFF,230 KV,R DIS,CARDIFF 230 KV R DIS
E,AE,CARLLS,69 KV,BUSDISJK,CARLLS BUS DIS JKBRKR,AE,AE,CARLLS,69 KV,BUSDISVW,CARLLS BUS DIS VWBRKR,AE,AE,
E,AE,CEDAR,230 KV,MJ,CEDAR MJ CBBRKR,AE,AE,CEDAR,230 KV,MM,CEDAR MM DISBRKR,AE,AE,CEDAR,230 KV,RR,CEDAR R
CBBRKR,AE,AE,CEDAR,69 KV,GCB IO,CEDAR GCB IO CBBRKR,AE,AE,CEDAR,69 KV,GCB J,CEDAR GCB J CBBRKR,AE
30 KV,GENDUM2,CHAMBERS GENDUM2 DISBRKR,AE,AE,CHESTNAE,69 KV,85-51,CHESTNAE 85-51 DISBRKR,AE,AE,CHESTNA
RKR,AE,AE,CHURCHTO,230 KV,S,CHURCHTO S DISBRKR,AE,AE,CHURCHTO,230 KV,U,CHURCHTO U CBBRKR,AE,AE,CHURCHTO
AE,AE,CHURCHTO,69 KV,XFMRGCB,CHURCHTO XFMR GCB DBRKR,AE,AE,CHURCHTO,69 KV,Y,CHURCHTO Y CBBRKR,AE,AE,
N,69 KV,OCB M,CORSON OCB MBRKR,AE,AE,CORSON,69 KV,OCB N,CORSON OCB NBRKR,AE,AE,CORSON,69 KV,PQ,CORSON P
NT HVB03 CBBRKR,AE,AE,CROWNPN,230 KV,HVB04,CROWNPN HVB04 CBBRKR,AE,AE,CUMB AE,13.8 KV,DUMAUXL
BUSGCBR CBBRKR,AE,AE,CUMB AE,230 KV,BUSGCBU,CUMB AE BUSGCBU CBBRKR,AE,AE,CUMB AE,230 KV,DIS K,CUM
RKR,AE,AE,DENNIS,230 KV,GCB D,DENNIS GCB D CBBRKR,AE,AE,DENNIS,230 KV,GCB E,DENNIS GCB E CBBRKR,AE,
EGGHARBO,69 KV,AA,EGGHARBO AA DISBRKR,AE,AE,EGGHARBO,69 KV,B CB,EGGHARBO B CB CBBRKR,AE,AE,EGG
NGLAND,138 KV,452-L,ENGLAND 452-L CBBRKR,AE,AE,ENGLAND,138 KV,452-N,ENGLAND 452-N CBBRKR,AE,AE,ENGLAND,
RTON OCB ABRKR,AE,AE,FAIRTON,69 KV,OCB G,FAIRTON OCB BRKR,AE,AE,FAIRTON,69 KV,OCB J,FAIRTON OCB J CBBR
B1 CBBRKR,AE,AE,HIGBEE,23 KV,B2,HIGBEE B2 CBBRKR,AE,AE,HIGBEE,23 KV,B3,HIGBEE B3 CBBRKR,AE,AE,
DISBRKR,AE,AE,HIGBEE,69 KV,BUSOCB C,HIGBEE BUSOCB CBRKR,AE,AE,HIGBEE,69 KV,BUSOCB D,HIGBEE BUSOCB DBRKR,A
BRKR,AE,AE,HURON,69 KV,B CB,CBBRKR,AE,AE,HURON,69 KV,BB,HURON BB DISBRKR,AE,AE,HUR
KV,BUSSECB C,DISBRKR,AE,AE,LAKEAVEN,69 KV,CS1,LAKEAVEN CS1 DISBRKR,AE,AE,LAKEAVEN,69 KV,CS2,LAKEAVEN
D CBBRKR,AE,AE,LANDIS,138 KV,ES,LANDIS ES DISBRKR,AE,AE,LANDIS,138 KV,J,LANDIS J CBBRKR,AE,AE,LANDIS,138 KV,L DI
CB,LENOX AE N CB CBBRKR,AE,AE,LENOX AE,69 KV,OCB D,LENOX AE OCB D CBBRKR,AE,AE,LENOX AE,69 KV,OCB L,LE
,CAPGCB,LEWIS CAP GCB A,WRKR,AE,AE,LEWIS,69 KV,CAPOCB,LEWIS CAP OCB W,WRKR,AE,AE,LEWIS,69 KV,CU CB,I
OCB SBRKR,AE,AE,LEWIS,69 KV,R,LEWIS R CBBRKR,AE,AE,LEWIS,69 KV,XFMR,OCB,LEWIS XFMR OCB DBRKR,AE,AE,LEWIS
ENWO,69 KV,CAPOCB,C,LINDENWO CAP OCB CBRKR,AE,AE,LINDENWO,69 KV,DUM15372,LINDENWO DUM15372BRKR,AE,AE,LI
DISBRKR,AE,AE,MERION,138 KV,DS D,MERION DS D DISBRKR,AE,AE,MERION,138 KV,DS E,MERION DS E DISBRKR,
E,MICKLETO,230 KV,EE,MICKLETO EE CBBRKR,AE,AE,MICKLETO,230 KV,ES,MICKLETO 230 KV ES CBBRKR,AE,AE,MICKLETO,
ETO,69 KV,AT,MICKLETO AT DISBRKR,AE,AE,MICKLETO,69 KV,AU,MICKLETO AU DISBRKR,AE,AE,MICKLETO,69 KV,BD,MICKLE
9 KV,PP,MICKLETO PP CBBRKR,AE,AE,MICKLETO,69 KV,QQ,MICKLETO QQ CBBRKR,AE,AE,MICKLETO,69 KV,RR,MICKLETO RR
CBBRKR,AE,AE,MIDD AE,69 KV,OCB F,MIDD AE OCB F CBBRKR,AE,AE,MIDD AE,69 KV,OCB N,MIDD AE 69 KV OCB N CBBRKR,
MILL P DISBRKR,AE,AE,MILL,138 KV,Q,MILL Q CBBRKR,AE,AE,MILL,138 KV,R,MILL R DISBRKR,AE,AE,MILL,138 KV,S,MILL S CBI

```

After

```

equiulist_postchange.csv - Notepad
File Edit Format View Help
TIMESTAMP:05-04-2020,18:47:54
TYPE,COMPANY,ZONE,STATION,VOLTAGE,NAME,LONG NAME
BRKR,AE,AE,ABSECON,69 KV,BC,ABSECON BC DIS
BRKR,AE,AE,ABSECON,69 KV,CARDFDUM,ABSECON CARDFDUM DIS
BRKR,AE,AE,ABSECON,69 KV,CHESTNUT,ABSECON CHESTNUT DIS
BRKR,AE,AE,ABSECON,69 KV,DUM14146,ABSECON DUM14146
BRKR,AE,AE,ABSECON,69 KV,DUMLEWIS,ABSECON DUMLEWIS DIS
BRKR,AE,AE,ABSECON,69 KV,I,ABSECON I DIS
BRKR,AE,AE,ABSECON,69 KV,K,ABSECON K CB
BRKR,AE,AE,ABSECON,69 KV,L,ABSECON L CB
BRKR,AE,AE,ABSECON,69 KV,LEWIS,ABSECON LEWIS DIS
BRKR,AE,AE,ABSECON,69 KV,M,ABSECON M CB
BRKR,AE,AE,ABSECON,69 KV,R,ABSECON R DIS
BRKR,AE,AE,ATCO,69 KV,BUSABSST,ATCO BUS ABS ST
BRKR,AE,AE,ATCO,69 KV,BUSDISVW,ATCO BUS DIS VW
BRKR,AE,AE,ATCO,69 KV,BUSDISWS,ATCO BUS DIS WS
BRKR,AE,AE,ATCO,69 KV,CAPGCBG,ATCO CAP GCB G
BRKR,AE,AE,ATCO,69 KV,DUM14198,ATCO DUM14198
BRKR,AE,AE,ATCO,69 KV,DUM14199,ATCO DUM14199
BRKR,AE,AE,ATCO,69 KV,OCB A,ATCO OCB A
BRKR,AE,AE,ATCO,69 KV,OCB B,ATCO OCB B
BRKR,AE,AE,ATCO,69 KV,OCB P,ATCO OCB P
BRKR,AE,AE,BARNEGAT,69 KV,CB A,BARNEGAT CB A CB
BRKR,AE,AE,BARNEGAT,69 KV,DUMC1,BARNEGAT DUMC1 DIS
BRKR,AE,AE,BARNEGAT,69 KV,DUMC1,BARNEGAT DUMC1 DIS
BRKR,AE,AE,BARNEGAT,69 KV,DUMC2,BARNEGAT DUMC2 DIS
BRKR,AE,AE,BARNEGAT,69 KV,DUMC2,BARNEGAT DUMC2 DIS
BRKR,AE,AE,BARNEGAT,69 KV,DUM1,BARNEGAT DUM1 DIS
BRKR,AE,AE,BARNEGAT,69 KV,E,BARNEGAT E CB
BRKR,AE,AE,BARNEGAT,69 KV,F,BARNEGAT F CB
BRKR,AE,AE,BARNEGAT,69 KV,G,BARNEGAT G CB
BRKR,AE,AE,BARNEGAT,69 KV,H,BARNEGAT H CB
BRKR,AE,AE,BECKETT,69 KV,AB C,BECKETT AB C
BRKR,AE,AE,BECKETT,69 KV,AB D,BECKETT AB D

```

Model Sharing Non-Disclosure Agreement is currently signed monthly in eDART by transmission users.

Issues:

- No validation on name and email address submitted.
- PJM manually deleting invalid signoffs & users needing to re-sign the NDA

Enhancements:

- Check for valid email addresses.
- Non-corporate email addresses (e.g. Gmail, Yahoo) no longer allowed.



Future Enhancements – August 2020

The linesout (<https://edart.pjm.com/reports/linesout.txt>) and linesout_new (https://edart.pjm.com/reports/linesout_new.txt) files were designed to be easily read by users but it has been observed that several users are now using programs to scrape the data from the files.

The information in the files is available via XML downloads in eDART (emsoutage/ems_outage and toimwg) and anyone with an automated download process should utilize the eDART XML download option.

August 2020 Updates:

- Attempts to download the linesout and linesout_new files will be throttled.
- Throttling being extended to other external eDART files
 - Files are available when new data is available or after throttle time; whichever is sooner.
- External files will also be available via the Transmission Tickets Menu in eDART.
 - Option to select which files to download.
 - Zip file will be downloaded with selected files.



Updates to Other eDART Files

File	Update Frequency	Throttle time (minutes)
Voltage Limits	Daily	30
Equipment List/Complete Descriptions	Quarterly	30
Linesout	5 minutes	5
Linesout_new	5 minutes	5
Ratings	Twice a Day	30
Temporary Ratings	Twice a Day	30
NERC Alert Ratings Changes	Twice a Day	30
TERM Reasons List	Daily	30
RTEP Tickets	5 minutes	5
NERC Alert Linesout	Daily	30

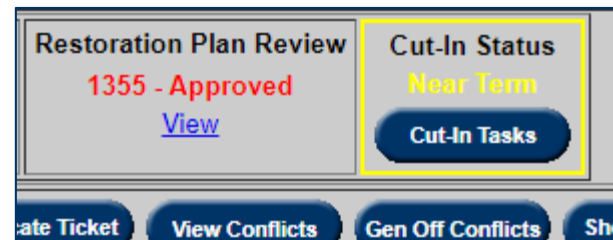
There are cut-in tasks that if not completed, can hold up the energization of cut-in equipment.

e.g. Monitored Priority, Ratings, Contingency, Connectivity, SE Override, Telemetry

There is limited TO visibility to current statuses of the cut-in tasks.

New Cut-In Task button on Transmission Tickets

- Only available if ticket is a cut-in ticket
- Cut-In Status displayed above the button in colored text
 - Green if Complete
 - Yellow if Near Term
 - Blue if Sufficient
 - Red if Not Ready
 - Black if N/A (historical tickets)



Cut-In Task Status	
Title:	[Redacted]
Status:	Near Term
Task	Task Status
Monitored Priority	Complete
Rating	Complete
Contingency	Complete
Connectivity	Complete
SE Override	Complete
Telemetry	Near Term
Tie Line Checklist	Complete
<input type="button" value="Close Window"/>	

- Cut-In Status Report information will also be added to the transmission ticket download via XML

New report of Cut-In tickets and their status information to be available via web UI and XML.

Transmission Reports

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

Submitted: 63 / 0 Revised: 0 / 0 Received: 5 / 0 Cut-In Today: 10 / 11 Cut-In Near Future: 10 / 11
 Approved: 311 / 2 Active: 42 / 2 Incomplete: 36

Cut-In Tickets Report									
Company: PJM Transmission Company LLC Not Ready: <input type="radio"/> Ready: <input type="radio"/> Both: <input checked="" type="radio"/> From: 05/05/2020 To: 05/12/2020 Tickets Only: <input checked="" type="radio"/> Notification Only: <input type="radio"/>									
Apply Filter Main Menu									
Ticket ID	Ticket Status	Start Date	End Date	On Time	Congestion Expected	Station	Cut-In Title	Cut-In Status	Incomplete Cut-In Tasks
787264	Active	01/20/2020 00:30	03/03/2020 16:00	No	No	70000000	Remove Illinois tap (2019/01/20/2020)	Sufficient	
787082	Active	10/29/2019 08:00	03/03/2020 16:00	No	Yes	60000000	Remove tap to correct configuration	Complete	
846544	Active	01/06/2020 08:00	03/05/2020 16:00	No	No	60000000	Correct configuration	Sufficient	
809059	Active	01/06/2020 08:00	03/06/2020 16:00	No	No	60000000	Remove tap from 60000000	Not Ready	Connectivity;Contingency;Monitored Priority;Rating;SE Override;Telemetry;Tie Line Checklist
838753	Received	03/16/2020 08:00	03/16/2020 16:00	Yes	No	60000000	Remove tap from 60000000	Not Ready	Contingency;Monitored Priority;Rating;SE Override;Telemetry;Tie Line Checklist
787272	Received	03/05/2020 07:00	03/18/2020 16:00	Yes	No	60000000	Remove tap from 60000000	Not Ready	Contingency;Monitored Priority;Rating;SE Override;Telemetry;Tie Line Checklist
853790	Received	03/17/2020 08:00	03/19/2020 16:00	No	No	60000000	Unreviewed	Unreviewed	

Equipment for switching (takeout/restore) are usually out for a short duration at the beginning or the end of an outage ticket.

Currently, TOs are either

- noting these in the description of work,
- adding the equipment to the ticket with staggered dates or
- adding the equipment to the ticket for the duration of the outage.

Future eDART functionality to clearly identify the equipment for takeout and/or restore only.

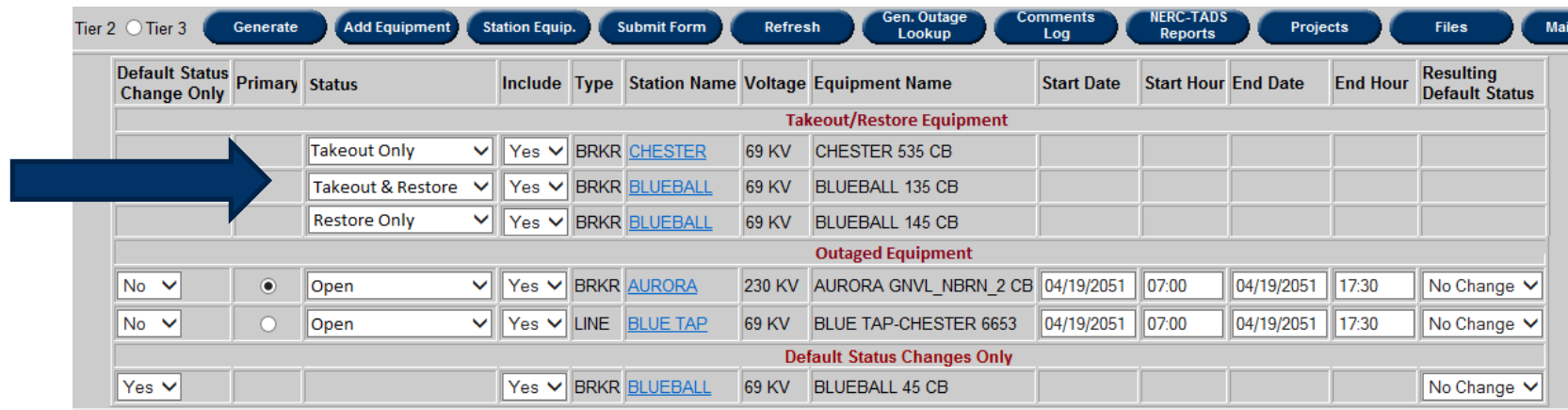
New Equipment Status available to identify equipment for takeout and/or restore only:

- Takeout Only
- Takeout & Restore
- Restore Only

These will also be available via XML for transmission ticket upload and downloads.

Equipment outage dates will be set behind the scenes and fed to downstream processes (SDX, outage reports, etc.)

Takeout/Restore equipment cannot be normally open or primary equipment.



Default Status Change Only	Primary	Status	Include	Type	Station Name	Voltage	Equipment Name	Start Date	Start Hour	End Date	End Hour	Resulting Default Status
Takeout/Restore Equipment												
		Takeout Only	Yes	BRKR	CHESTER	69 KV	CHESTER 535 CB					
		Takeout & Restore	Yes	BRKR	BLUEBALL	69 KV	BLUEBALL 135 CB					
		Restore Only	Yes	BRKR	BLUEBALL	69 KV	BLUEBALL 145 CB					
Outaged Equipment												
No	<input checked="" type="radio"/>	Open	Yes	BRKR	AURORA	230 KV	AURORA GNVL_NBRN_2 CB	04/19/2051	07:00	04/19/2051	17:30	No Change
No	<input type="radio"/>	Open	Yes	LINE	BLUE TAP	69 KV	BLUE TAP-CHESTER 6653	04/19/2051	07:00	04/19/2051	17:30	No Change
Default Status Changes Only												
Yes			Yes	BRKR	BLUEBALL	69 KV	BLUEBALL 45 CB					No Change

Current State

- SVCs must be in a separate transmission ticket.
- Other equipment out as part of the SVC job must be in a separate transmission ticket; including the SVC breaker.

Future enhancement to allow users to create transmission tickets with mixture of SVCs and non-SVCs

SVCs (equipment type = GEN) can be included on the same transmission ticket as other equipment types.

- SVC can be O (open) if out of service or C (closed) if in service.
 - Min and Max MVAR values not required.
- SVC can be used for takeout and restore.

New Equipment Status will be available to identify if ticket is for a reduction in SVC output: Reactive.

- Min and Max MVAR values required.
 - Min Var changed to Min MVAR
 - Max Var changed to Max MVAR



Transmission Outage Tickets for SVCs

Takeout and Restore Equipment												
		Status	Include	Type	Station Name	Voltage	Equipment Name					
		Takeout Only	Yes	BRKR		765 KV						
		Takeout & Restore	Yes	BRKR		765 KV						
		Takeout & Restore	Yes	BRKR		765 KV						
		Restore Only	Yes	BRKR		765 KV						
Reactive Equipment												
		Status	Include	Type	Station Name	Voltage	Equipment Name	Min MVAR	Max MVAR			
		Reactive	Yes	GEN		765 KV						
Outaged Equipment												
Default Status Change Only	Primary	Status	Include	Type	Station Name	Voltage	Equipment Name	Start Date	Start Hour	End Date	End Hour	Resulting Default Status
No	<input type="radio"/>	Open	Yes	LINE		765 KV		05/15/2020	11:00	05/22/2020	11:00	No Change
No	<input type="radio"/>	Open	Yes	BRKR		765 KV		05/15/2020	11:00	05/22/2020	11:00	No Change
No	<input type="radio"/>	Open	Yes	BRKR		765 KV		05/15/2020	11:00	05/22/2020	11:00	No Change
No	<input type="radio"/>	Open	Yes	BRKR		765 KV		05/15/2020	11:00	05/22/2020	11:00	No Change
Default Status Changes Only												
Default Status Change Only			Include	Type	Station Name	Voltage	Equipment Name					Resulting Default Status
Yes			Yes	BRKR		765 KV						Open
Yes			Yes	BRKR		765 KV						Open

Current State

- No validations in place to align with the outage types.
 - e.g. Daily – Weekends Only ticket that are not scheduled for a weekend.
- Results in misalignment of outage dates downstream of eDART.

Future enhancement to implement checks that the outage dates are valid based on the outage type selected.

eDART Help: edarthelp@pjm.com

Chidi Ofoegbu: Chidi.Ofoegbu@pjm.com

Vy Le: Vy.Le@pjm.com