

Voltage Limits

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New eDART web-based functionality to allow Transmission Owners (TOs) to update and view current voltage limits on buses.

- Available via the TERM Main Menu.
- TOs submit changes to Voltage Limits: company defaults or per station/voltage combination with effective date.
- PJM approves changes to Voltage Limits.
- Tickets implemented in PJM's EMS by PJM or implemented without approval if limits already updated in PJM's EMS.
- Report for PJM & TOs to see effective voltage limits and PJM defaults.



- Initial Voltage Limits in eDART will be populated with data in PJM Manual 03.
- New stations will be assigned the company default limits as part of the model build.
- eDART Voltage Limits only includes companies and stations with PJM monitored equipment:
 - MP1: Reliability & Markets
 - MP2: Reliability BES
 - MP6: Reliability non-BES



Company

- Voltage Limits per Voltage level.
- Company Voltage Limits will be applied to all Stations in the company per voltage level.
- Station tickets can be created for exceptions.

Station

- Voltage Limits per Station per Voltage level
- Not needed if following Company defaults.



Submitted

Ticket has been submitted to PJM

Received

- Acknowledgement that PJM received the ticket
- Changes to Received ticket will result in status change to Submitted

Approved

 Ticket has been reviewed, accepted as valid & approved by PJM



Implemented

- Data from approved ticket has been reconciled in PJM EMS
- Actual Start Date confirms that ticket is in use by EMS

Implemented w/o Approval

- Data from non-approved ticket has been reconciled in PJM EMS
- Ticket was automatically generated based on PJM EMS data
- Actual Start Date confirms that ticket is in use by PJM EMS

Cancelled by Company/PJM Admin Closure

Ticket can be cancelled by PJM or TO for various reasons



Restored

Station ticket status for restoring station limits to company limits

Restored w/o approval

 Station ticket status when station limits from PJM EMS matches company limits without ticket being approved.

Completed

- The ticket is completed due to a new implemented ticket
- Actual End Date confirms that ticket is no longer in use by PJM EMS

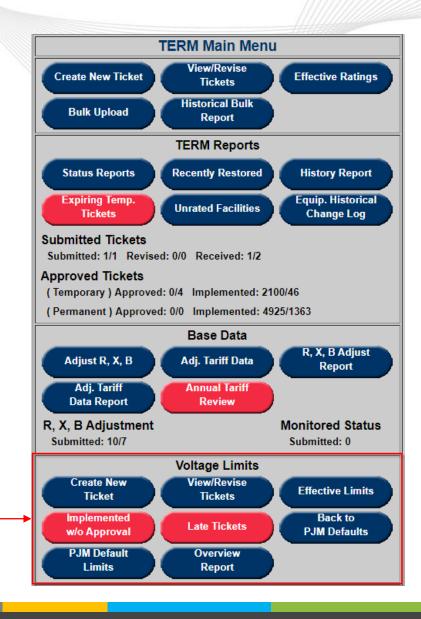


Retired

- Ticket is for station that has been retired or company that is longer a part of Voltage Limits
- PJM is no longer monitoring company or station



Main Menu

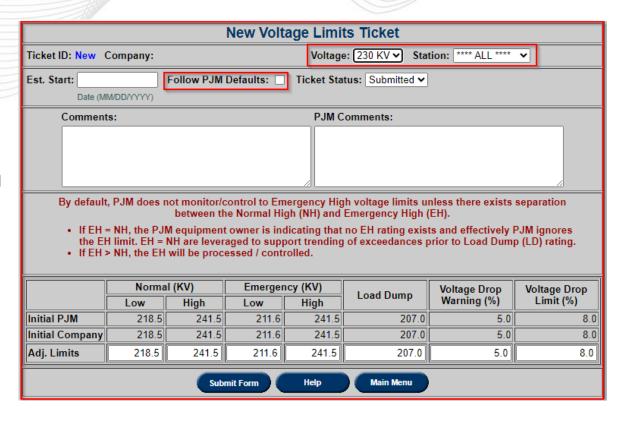


Red buttons indicate attention required



Create New ticket

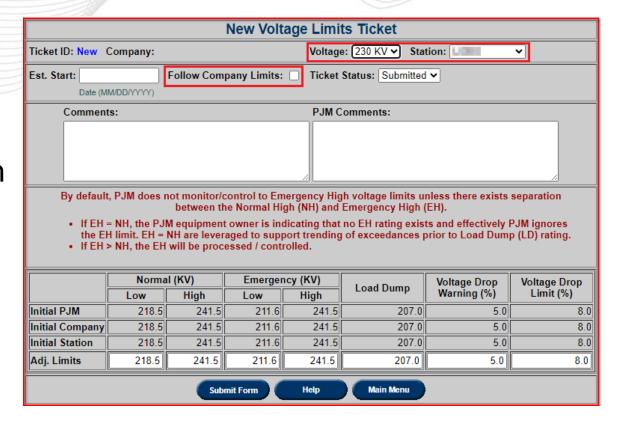
- To create a company limits ticket, select Voltage and leave station as **** ALL ****
 - Adj. limits is prepopulated with Initial Company limits; user can edit fields as needed
- To follow PJM defaults, check the Follow PJM Defaults box.





Create New ticket

- To create a station limits ticket, select Voltage and station.
 - Adj. limits is prepopulated with Initial Station limit; user can edit fields as needed
- To follow Company Limits, check the Follow Company Limits box.





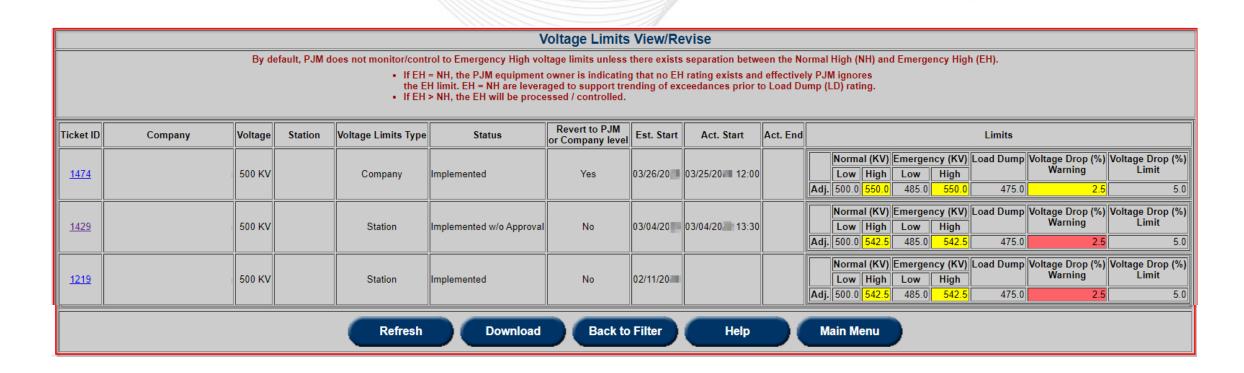
View/Revise Tickets

Voltage Limits View/Revise Reports Filter									
Company	Voltage	Station	Voltage Limits Type						
PJM TEST		~	~						
Ticket Status	Current/Historical	Revert to PJM / Company Level Only	Late Only						
Approved Cancelled by Company Completed Denied Implemented Implemented w/o Approval PJM Admin Closure Received Restored Restored Restored w/o Approval Retired	● Current ○ Historical ○ Both Ticket ID:								
Tickets Occurring (mm/dd/yyyy)	Start Date (mm/dd/yyyy)	End Date (mm/dd/yyyy)	Limit Details						
From: To:	From: To:	From: To:	Adj. Adj. + Initial Adj. + Initial + Curr.						
	Apply Filter Refresh	Help Main Menu							

Select how much details will be displayed



View/Revise Ticket





Yellow

- Indicates that Voltage Limit of current level is different from Voltage Limit of the next level up.
 - Company limit is different from PJM Default.
 - Station limit is different from Company default limit.

Red

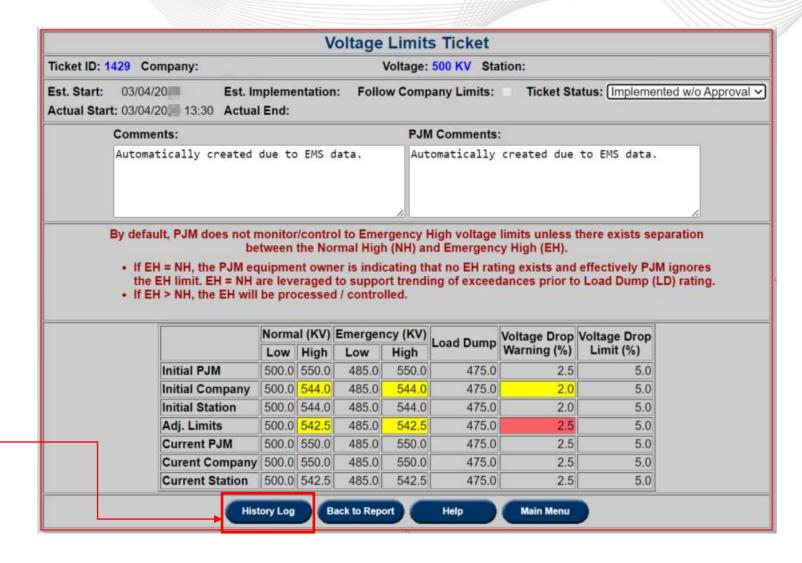
 Indicates that Station Voltage Limit is different from Company default limit but the same as PJM Default.



Log of ticket

status changes

View/Revise Ticket



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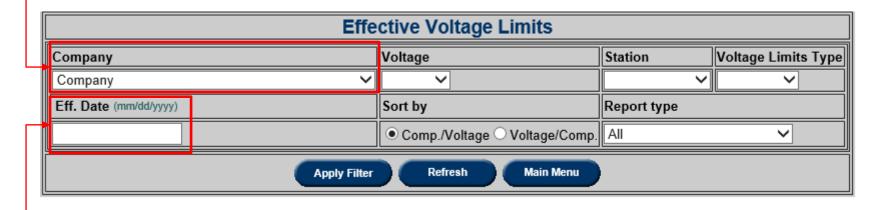


- Report of Voltage Limits effective on selected dates
- TOs can view effective limits of other TOs.
- Report types
 - All
 - Follow PJM Defaults
 - Not Following PJM Defaults
 - Exceptions
 - Non-Exceptions
 - Overview Report : Company Version of Manual 03 Report



Effective Limits

Defaults to user's company
User can pick other TOs from the Company list



Defaults to today if left blank

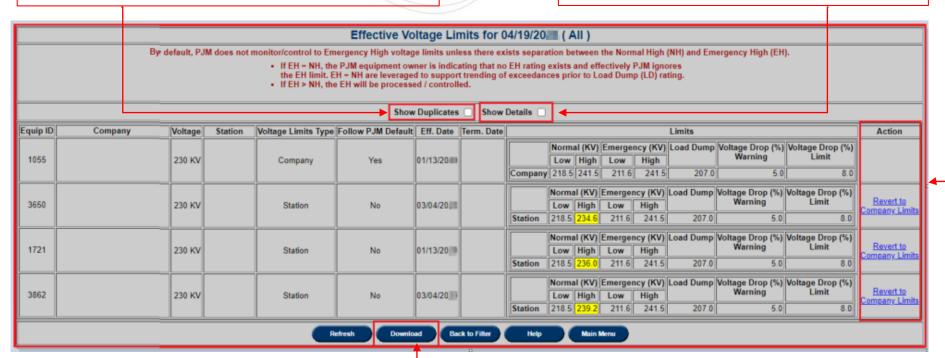


Effective Limits

Check to display all stationsstations following company limitsare hidden by default

Check to display all limit levels

– if limits match only the lowest
level is displayed by default

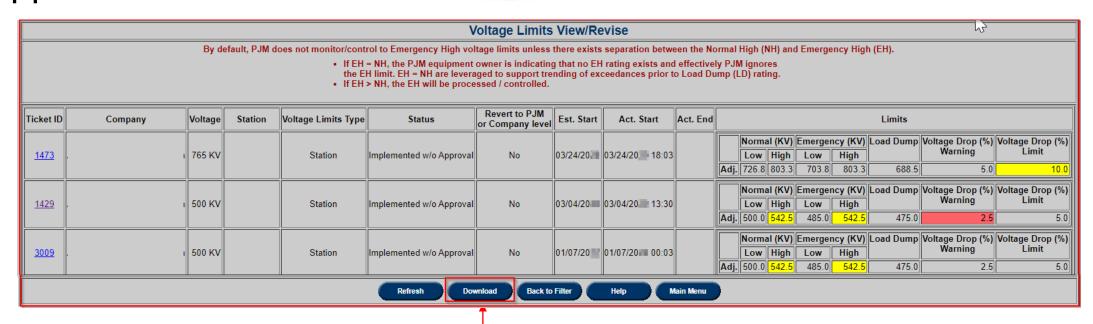


Download CSV export of the report

Click on the Action to open a new, prepopulated ticket



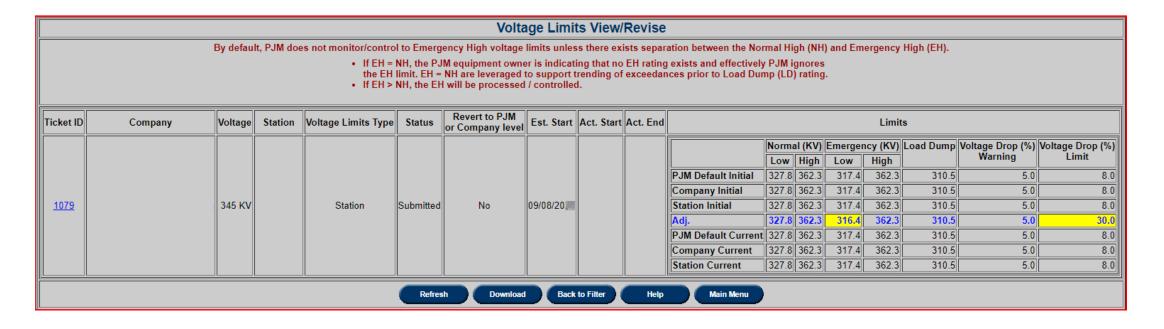
Report of tickets in Implemented w/o Approval and Restored w/o Approval status.



Download CSV export of the report

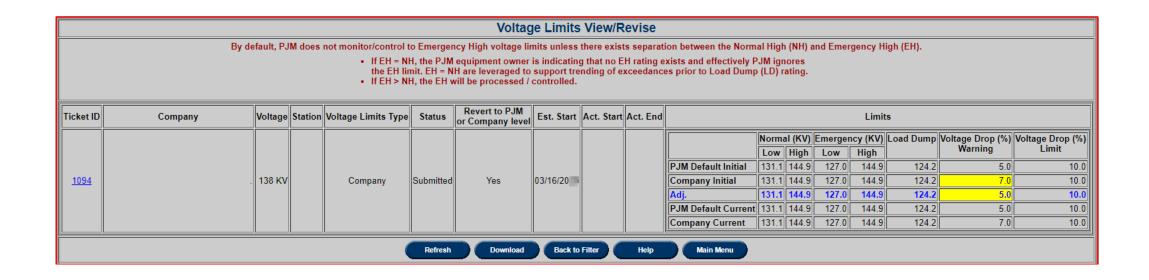


Tickets that have not been implemented and the Est. Start date is in the past.





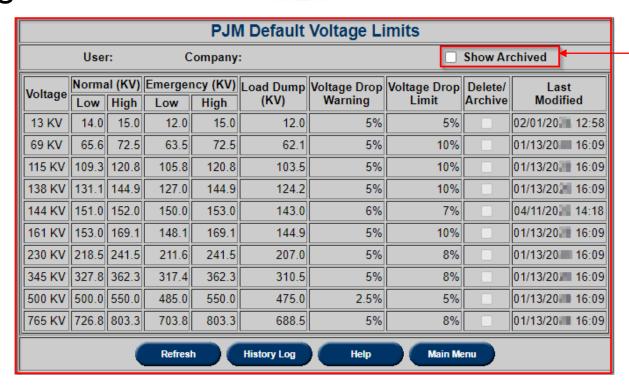
Report of Company tickets created to follow PJM Defaults.



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Report of Voltage Levels that PJM is monitoring and the corresponding PJM Default limits



Check to display data that was deleted or archived by PJM

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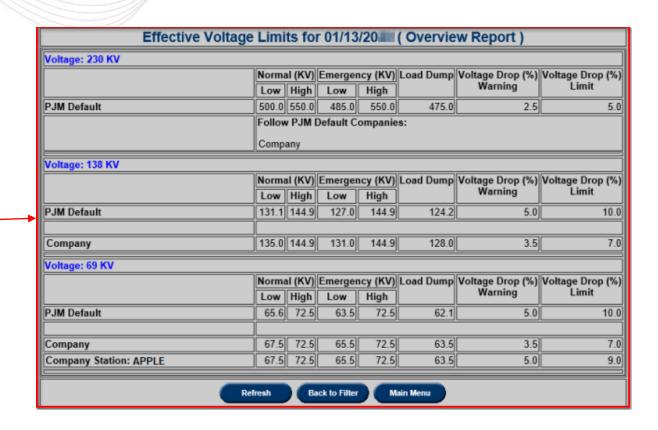


Company Version of PJM Manual 03 Report

230 KV: Company is following PJM Default

138 KV: Company is not following PJM Default

69kV: Company is not following PJM Default APPLE station is not following Company Default





The Overview Report will also be available on PJM.com.

https://edart.pjm.com/reports/voltagelimits.csv

- It is a reflection of the current PJM EMS voltage limits, updated daily.
- It provides PJM Default Voltage and Voltage Stability Limits by voltage class.

In addition, any Equipment Owner (Company) or Station deviations by voltage class can be identified where the 'Follow PJM' column is set to 'No'. Companies only have a line entry for voltage classes for which that have that voltage level of equipment under the control of PJM. (i.e., Only those companies that have a given level of equipment under PJM control are listed.)



Overview Report File

https://edart.pjm.com/reports/voltagelimits.csv

	Α	В	С	D	E	F	G	Н	1	J	K		
1	TIMESTAMP: 01	1-02-20xx 00:02:01											
2	The table below is a reflection of the current PJM EMS voltage limits, updated daily. It provides PJM Default Voltage and Voltage Stability Limits by voltage class. In addition, any Equipment Owner (Company) or Station deviations by voltage class can be identified where the 'Follow PJM' column is set to 'No'. Companies only have a line entry for voltage classes for which that have that voltage level of equipment under the control of PJM. (i.e., Only those companies that have a given level of equipment under PJM control are listed.) By default, PJM does not monitor/control to Emergency High voltage limits unless there exists separation between the Normal High (NH) and Emergency High (EH). If EH = NH, the PJM equipment owner is indicating the no EH rating exists and effectively PJM ignores the EH limit. EH = NH are leveraged to support trending of exceedances. When EH > NH, the EH will be processed / controlled.												
						Emergency Low	Normal Low	Normal High	Emergency High	Voltage Drop	Voltage Drop		
4	Company	Voltage	Follow PJM	Station	Load Dump	(KV)	(KV)	(KV)	(KV)	Warning(%)	Limit(%)		
5	PJM Default	765 KV			688.5	703.8	726.8	803.3	803.3	5	8		
6	Company 1	765 KV	No		688.5	703.8	726.8	803.3	803.3	5	10		
7	Company 2	765 KV	No		688.5	703.8	726.8	803.3	803.3	5	10		
8	Company 2	765 KV	No	Station 1	688.5	703.8	726.8	803.5	803.5	5	10		
9	Company 2	765 KV	No	Station 2	688.5	688.5	726.8	803.3	803.3	5	10		
10	Company 3	765 KV	No		688.5	703.8	726.8	803.3	803.3	7	10		
11	PJM Default	500 KV			475	485	500	550	550	2.5	5		
12	Company 1	500 KV	Yes		475	485	500	550	550	2.5	5		
13	Company 2	500 KV	Yes		475	485	500	550	550	2.5	5		
14	Company 3	500 KV	Yes		475	485	500	550	550	2.5	5		
15	Company 4	500 KV	Yes		475	485	500	550	550	2.5	5		
16	Company 5	500 KV	Yes		475	485	500	550	550	2.5	5		
17	Company 6	500 KV	Yes		475	485	500	550	550	2.5	5		
18	Company 7	500 KV	Yes		475	485	500	550	550	2.5	5		
19	Company 8	500 KV	Yes		475	485	500	550	550	2.5	5		

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