eDART XML August 2020 Enhancements

eDART XML Forum Meeting

07/10/2020

- General Discussion Topics

- August 2020 Enhancements

  – General Enhancements

  – Transmission Related Enhancements
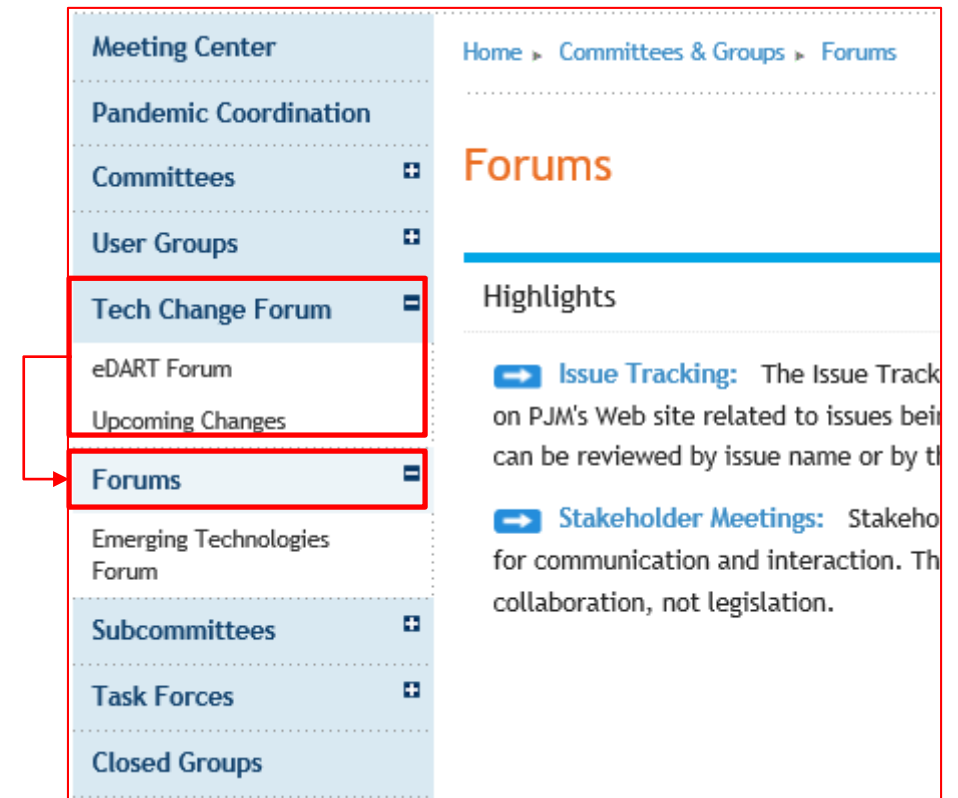
- Question and Answer Resolution

General Discussion Topics

A new Forums page has been created on pjm.com at https://www.pjm.com/committees-and-groups/forums.aspx or

Home > Committees & Groups > Forums

Tech Change Forum and eDART Forum will be moved to be under the Forum page on July 16th.

A re-direct message will be added to old pages for users who have them bookmarked.

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.

August 2020 Enhancements

General Enhancements

Production release of August enhancements scheduled for Wednesday, August 12th.

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

Sandbox/Training release scheduled for Monday, July 20th.

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 all external eDART files
  - Files are available when new data is available or after throttle time; whichever is sooner.

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

- 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.

Facility Outages Reports

| Current & Future | Historical | EMS Outage List | Public Files |
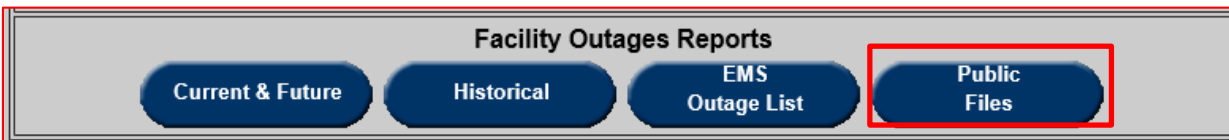
Public Files

Include	File	Description	Timestamp
☐	equiplist.csv	Equipment List/Complete Descriptions file	05/12/2020 20:52:34
☐	linesout.txt	Transmission Facilities Outages List	07/09/2020 14:17:00
☐	linesout_new.txt	Staging version of Transmission Facilities Outages List	07/09/2020 14:17:00
☐	nercalertlinesout.txt	NERC Alert Transmission Outages	07/09/2020 17:00:00
☐	nercratingsalertchanges.txt	Ratings changes due to NERC Alert	07/09/2020 17:00:00
☐	pjm_line_ratings.txt	Current ratings for all reportable facilities in PJM	07/09/2020 17:00:00
☐	pjm_temp_line_ratings.txt	Active temporary changes and future changes to ratings	07/09/2020 17:00:00
☐	pjm_term_reason_list.txt	List of the available reasons for ratings change	07/09/2020 11:41:04
☐	rtep.txt	List of RTEP Transmission Outage Tickets	03/04/2020 18:05:38
☐	voltagelimits.csv	PJM RTO and TO Voltage Limits	07/09/2020 04:05:01

| Download | Refresh | Main Menu |

Changes to Current Facility Outages section of linesout and linesout_new to better reflect the information contained therein – equipment reported as out-of-service on the PJM system.

- CURRENT FACILITY OUTAGES renamed to DE-ENERGIZED EQUIPMENT

- Normally Open equipment will be labeled as such (N.O.), and on the list when they are OPEN

- Retired Normally Open equipment will remain labeled as Retired.

- File description on PJM.com will also be updated.

Before

After

August 2020 Enhancements

Transmission Related Enhancements

Current State

- 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.

eDART enhancement to provide the status of the cut-in tasks on the transmission tickets.

New <cutInInfo> section to be added to Transmission Tickets downloads to display the cut-in details and tasks status.

Cut-In Status include:

- Complete

- Near Term

- Sufficient

- Not Ready

- Unreviewed

- N/A (historical tickets)
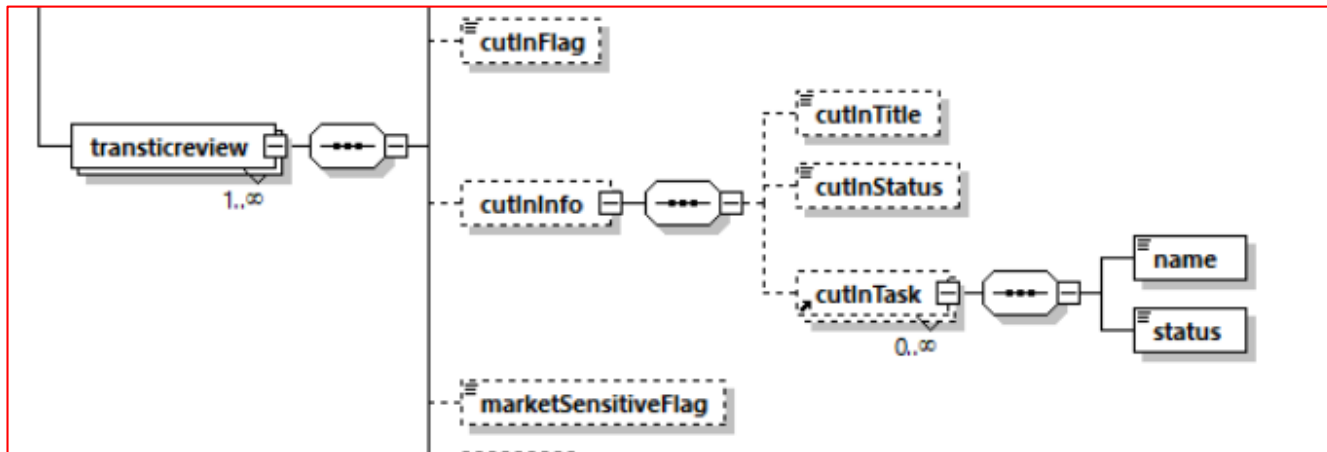
```
<cutInFlag>true</cutInFlag>
- <cutInInfo>
    <cutInTitle>Connect load</cutInTitle>
    <cutInStatus>Sufficient</cutInStatus>
    - <cutInTask>
        <name>Monitored Priority</name>
        <status>N/A</status>
    </cutInTask>
    - <cutInTask>
        <name>Rating</name>
        <status>N/A</status>
    </cutInTask>
    - <cutInTask>
        <name>Contingency</name>
        <status>Complete</status>
    </cutInTask>
    - <cutInTask>
        <name>Connectivity</name>
        <status>Complete</status>
    </cutInTask>
    - <cutInTask>
        <name>SE Override</name>
        <status>Complete</status>
    </cutInTask>
    - <cutInTask>
        <name>Telemetry</name>
        <status>Pending</status>
    </cutInTask>
    - <cutInTask>
        <name>Tie Line Checklist</name>
        <status>N/A</status>
    </cutInTask>
</cutInInfo>
```

New download called 'cutinreport' will return a list of transmission tickets and their <cutInInfo>.

Parameters:

- startdate (mm/dd/yyyy)

- enddate (mm/dd/yyyy)

- ready (true/false)

- notready (true/false)

- includenotify (true/false)

```xml
<?xml version="1.0" encoding="UTF-8" standalone="true"?>
<cutinreport:cutInReport xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
xmlns:cutinreport="http://www.pjm.com/soa/schemas/edart/cutinreport/v1"
xsi:schemaLocation="http://www.pjm.com/soa/schemas/edart/cutinreport/v1
cutinreport.xsd">
  <cutInInfo>
      <ticketId>123456</ticketId>
      <cutInTitle>Unreviewed</cutInTitle>
      <cutInStatus>Unreviewed</cutInStatus>
  </cutInInfo>
  <cutInInfo>
      <ticketId>123457</ticketId>
      <cutInTitle>New Apples Bus</cutInTitle>
      <cutInStatus>Not Ready</cutInStatus>
      <cutInTask>
          <name>Monitored Priority</name>
          <status>Pending</status>
      </cutInTask>
      <cutInTask>
          <name>Rating</name>
          <status>Pending</status>
      </cutInTask>
      <cutInTask>
          <name>Contingency</name>
          <status>Pending</status>
      </cutInTask>
      <cutInTask>
          <name>Connectivity</name>
          <status>Unreviewed</status>
      </cutInTask>
      <cutInTask>
          <name>SE Override</name>
          <status>Near Term</status>
      </cutInTask>
      <cutInTask>
          <name>Telemetry</name>
          <status>Pending</status>
      </cutInTask>
      <cutInTask>
          <name>Tie Line Checklist</name>
          <status>N/A</status>
      </cutInTask>
  </cutInInfo>
  <cutInInfo>
      <ticketId>123458</ticketId>
      <cutInTitle>Unreviewed</cutInTitle>
      <cutInStatus>Unreviewed</cutInStatus>
  </cutInInfo>
```

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.

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

New Equipment Status will be available to identify equipment for takeout and/or restore only on Transmission Ticket uploads:

- T ➜ Takeout Only

- R ➜ Restore Only

- TR ➜ Takeout & Restore

```xml
<xsd:element name="equipment" maxOccurs="unbounded">
    <xsd:complexType>
        <xsd:sequence>
            <xsd:element name="ta_id" type="xsd:positiveInteger"/>
            <xsd:element name="min_mvar" type="xsd:integer" minOccurs="0"/>
            <xsd:element name="max_mvar" type="xsd:integer" minOccurs="0"/>
            <xsd:element ref="interval_definition"/>
        </xsd:sequence>
        <xsd:attribute name="primaryEquipFlag" type="xsd:boolean" use="optional"/>
        <xsd:attribute name="status" use="required">
            <xsd:simpleType>
                <xsd:restriction base="xsd:NMTOKEN">
                    <xsd:enumeration value="O"/>
                    <xsd:enumeration value="C"/>
                    <xsd:enumeration value="E"/>
                    <xsd:enumeration value="T"/>
                    <xsd:enumeration value="R"/>
                    <xsd:enumeration value="TR"/>
                    <xsd:enumeration value="RE"/>
                </xsd:restriction>
            </xsd:simpleType>
        </xsd:attribute>
    </xsd:complexType>
</xsd:element>
```

New <takeout_restore> section will be added to transmission ticket downloads for takeout and restore equipment.
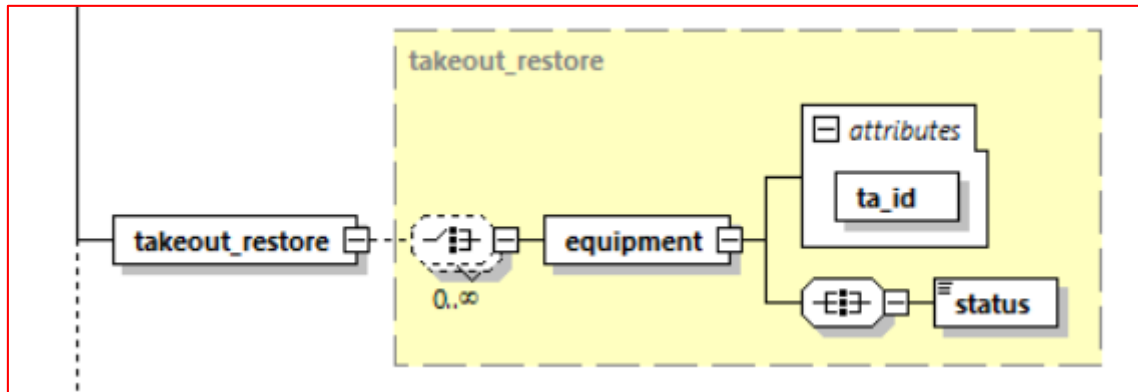
Current State

- SVCs (equipment type = GEN) 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.

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

- 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: RE ➔ Reactive.

- Min and Max MVAR values required.
  - <min_var> changed to <min_mvar>
  - <max_var> changed to <max_mvar>

```
<xsd:element name="equipment" maxOccurs="unbounded">
    <xsd:complexType>
        <xsd:sequence>
            <xsd:element name="ta_id" type="xsd:positiveInteger"/>
            <xsd:element name="min_mvar" type="xsd:integer" minOccurs="0"/>
            <xsd:element name="max_mvar" type="xsd:integer" minOccurs="0"/>
            <xsd:element ref="interval_definition"/>
        </xsd:sequence>
    <xsd:attribute name="primaryEquipFlag" type="xsd:boolean" use="optional"/>
    <xsd:attribute name="status" use="required">
        <xsd:simpleType>
            <xsd:restriction base="xsd:NMTOKEN">
                <xsd:enumeration value="O"/>
                <xsd:enumeration value="C"/>
                <xsd:enumeration value="E"/>
                <xsd:enumeration value="T"/>
                <xsd:enumeration value="R"/>
                <xsd:enumeration value="TR"/>
                <xsd:enumeration value="RE"/>
            </xsd:restriction>
        </xsd:simpleType>
    </xsd:attribute>
    </xsd:complexType>
</xsd:element>
```

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.

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

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