

Short-Term Outage Report: User Guide

Overview

The Short-Term Outage Report (STOR) is a public informational tool regarding transmission outages planned or active within a rolling twenty-one day time-frame. Automation of the STOR has yielded several changes in the manner in which the outage information is presented. While the information is fundamentally the same, additional functionality has been added to the report. This document is intended to both inform the user of format changes as well as acquaint all users with the information contained in the report.

Summary of Changes

The information available in the STOR has been expanded by giving greater detail about each outage. More specific equipment descriptions, station details, and outage times are now included. Outages which run daily (rather than continuously) will be given separate rows for each day of work. Similarly, outages which include multiple pieces of equipment will be given separate rows for each piece of equipment. Information from ISO-NE outage scheduling software is now automatically retrieved every fifteen minutes and automatically refreshed on the website. This will allow users to access time sensitive outage information more readily. Capabilities for filtering and searching outage information have been added to the website. Users can now save filtering options on outage information which are specific to the needs of each user. Details of the report contents and format changes are included below.

I. Report Information

The information contained in the STOR describes dates, locations, and times of transmission outages consistent with prescriptions found in ISO-NE Operating Procedure 3 (OP3)¹. Outage information will be automatically refreshed on the STOR website² every fifteen minutes. The report generation timestamp is in GMT. The local time will be displayed with each row in the report. There are twelve different columns of information about each outage to be populated from the ISO-NE outage database.

¹ http://www.iso-ne.com/rules_proceeds/operating/isone/op3/op3_rto_final.pdf

² http://www.iso-ne.com/trans/ops/short_term/Outages.extension

A. Outage request Number

The first column in the STOR provides the outage request number associated with an outage. These numbers are assigned chronologically based on the date of outage request submittal and are specific to each request. Please note that an outage request may affect multiple pieces of equipment at multiple stations with work spanning multiple days. Equipment details are provided in the “Type” and “Description” columns of the STOR.

B. Company

The “Company” column gives the name of the Local Control Center (LCC) or neighboring control area which requested the outage. There are six satellites and three neighboring control areas affecting ISO-NE territory. The footprint for these areas *generally* corresponds with geographic areas.

The *general* area of control for each of the six New England LCCs is:

1. CONVEX – Connecticut and Western Massachusetts
2. REMVEC – Rhode Island and Eastern Massachusetts
3. NSTAR – Eastern Massachusetts
4. VELCO – Vermont
5. NH – New Hampshire
6. ME – Maine

The three neighboring control areas are:

1. NYISO - New York ISO
2. HQ - Hydro Quebec
3. NBSO - New Brunswick System Operator

C. Station

The “Station” column gives a location for the outage work. Station names are often abbreviated, as station name length is limited to eight characters. A station name may refer to any substation or line junction.

D. Type

The “Type” column gives a two-letter description of the equipment type which is out-of-service. There are three different types of equipment used to describe outages in the STOR. These three types are:

1. CB – Circuit Break (includes disconnects)
2. LN – Line Segment
3. XF – Autotransformer

For outages which include groups of equipment, a separate row will be given for each individual piece of equipment. Details regarding exact equipment names are given in the “Description” column.

E. Description

The “Description” column gives the nomenclature of the equipment expected to be out of service. Along with functionality changes to the STOR website, equipment descriptions have been modified to include more information. If a circuit-break (CB) outage will also interrupt the path of either a line segment (LN) and/or an autotransformer (XF), the name(s) of the affected equipment are also listed after the circuit-break description. Please note that the “Type” and “Voltage” descriptions apply only to the equipment being serviced in the outage. Affected equipment details are limited to description only. Please see Appendix A for details on this format change as well as patterns with equipment nomenclature. Also, station identifiers have been removed from equipment descriptions for all substations owned by Northeast Utilities (NU). For a list of station identifiers, please see Appendix B.

F. Voltage

The “Voltage” column gives the nominal voltage-level for each piece of equipment affected by an outage. Autotransformers receive a voltage rating based on high-side voltage. For example: a 115kV – 345kV autotransformer would show a 345kV rating in the “Voltage” column of the STOR. Outages included in the STOR will have one of four different voltage ratings: 69kV, 115kV, 230kV, or 345kV.

G. Planned Start

The “Planned Start” column gives the date and time that an outage is scheduled to begin. Outages which are effective continuously will have one planned start time. Outages which occur daily will have separate planned start times for each day of work. .

H. Planned End

The “Planned End” column gives the date and time that an outage is scheduled to end. Outages which are effective continuously will have one planned end time. Outages which occur daily will have separate planned end times for each day of work.

I. Actual Start

The “Actual Start” column indicates the date and time at which the outage started. Once an outage has an actual start time it is considered to be “active”.

J. Actual End

The “Actual End” column indicates the date and time at which an outage was complete and that all equipment has been returned to service. Outages with an actual end time are only included in the STOR until hour ending (HE) 24 on the day the outage is completed. After the day the outage is completed, that outage information can be found in historical reports which will be retained on-line for 180 days.

K. Status

The “Status” column gives the current approval rating of an outage request. This column is dynamic, as the outage request follows the approval process outlined in OP3. The six different possible status options are:

1. **Submitted:** Transmission outages prepared for ISO study and acceptance and awaiting Interim Approved Status or Approved Status
2. **Study:** Transmission outages actively being studied and evaluated by ISO to determine Interim Approved Status or Approved Status
3. **Negotiate:** Transmission outages under additional review and pending repositioning
4. **Interim Approved:** Transmission outages that have been studied and accepted by ISO through the Long-Term Transmission Outage process but waiting final Approved status through the Short-Term Transmission Outage Process
5. **Approved:** Transmission outages studied and accepted by ISO in accordance with the Short-Term Transmission Outage process
6. **Implemented:** Transmission outages have been switched out of service

L. Request Type

The “Request Type” column gives limited detail regarding the reason for an outage request. The five possible request type options are:

1. **Emergency:** The obvious failure of a piece of transmission equipment that comes out of service on its own or requires immediate operator intervention to remove it from service.
2. **Forced:** The discovery of a problem that needs to be repaired as soon as crews, equipment, and/or corrective dispatch actions can be put in place to allow the work to be performed.
3. **Short-Term:** Planned Transmission Outage submitted for ISO Approval less than 21 days and greater than 120 hours prior to 00:01 the day the outage is scheduled to begin.
4. **Long-Term:** A Planned Transmission Outage that is requested at least 21 days in advance.
5. **Opportunity:** This is an outage that is submitted for ISO Approval as a result of an unexpected opportunity to accomplish work that would otherwise require another outage at a less opportune time.

M. Flags

The “Flags” column displays certain attributes that an outage request may exhibit as detailed below:

1. **Economic:** A Planned Transmission Outage request that is submitted greater than 90 days in advance of the start date and satisfies reliability *and* economic evaluations, receives economic approval status from ISO.
2. **MTO (Major Transmission Outage):** A Planned Transmission Outage for facilities that are expected to be modeled for purposes of ISO monthly FTR auction as governed by ISO New England Manual for Financial Transmission Rights Manual M-06.
3. **Overrun:** This is any outage that fails to return to service by its planned end time, and the outage has extended into the next calendar day.

II. Long-Term Outage Report

The Long-Term Transmission Operating Plan (LTOR) is an eleven-month transmission outage forecast which is published on a monthly basis and is located in the “Long Term Outages” menu.

III. Filter and Saved Search Capabilities

The STOR now has filter and saved search capabilities to allow each user to quickly sort through outage information. Recognizing that each STOR user is interested in different information, the option to filter on the website facilitates this data sorting without requiring the user to download a .CSV file. Once the information is filtered on the website, the user will have the option to download a .CSV file of the filtered information. Also, recognizing that STOR users are often interested in performing the same filters on a regular basis, the option to save filtering criteria is now available.

A. Filtering

A tab above the outage information gives empty text boxes and drop-down windows for the user to enter filtering criteria. The user can filter the outage information based on any or all of the outage information types (See Section I for details about each information type). The date range used to capture outage information is automatically populated with the full 21-day time-frame of the STOR.

The “Time Frame” drop-down includes preset time frames which can be used to automatically populate the date range. Time frames allow the user to reduce the volume of information shown to a date range which the user feels is most relevant. Time frames will always begin on the current day but allow the user to choose from preset future dates (i.e. one day, one week, two weeks). If the user wishes to view a specific range of dates not included in the time frames drop-down, the date range can be entered manually.

The user can filter by Outage request Number, Station, and Description by typing in the desired information. Typing in these fields will actively search through the column for outages which match the information entered.

The user can sort any of the columns in ascending or descending order by clicking on a directional arrow at the top of the desired column.

The user can filter by Company, Type, Voltage, Status, or Request Type by selecting an option from a drop-down menu. The drop-down menu format was chosen because there are relatively few options for these fields when compared with Outage Request Number, Station, and Description.

B. Saved Searches

The user can save any group of filtering criteria for future use. A maximum of five sets of filtering criteria can be saved. The user has the option of naming the group of filtering criteria as a “Saved Search”. Upon returning to the STOR website at any time, these saved searches will be available to the user to be applied to current outage information. Either an .HTML or a .CSV of the automatically filtered information can be downloaded from the Saved Searches tab.

Appendix A: Equipment Descriptions and Nomenclature

Changes to Equipment Descriptions

A requirement for the new STOR report was to clarify and enhance the description of transmission equipment involved with outages. Below is a summary of the changes to equipment descriptions.

D) Station identifiers have been removed from the equipment names that will be displayed in the STOR.

EXAMPLE: The station identifier for WALNGFRD is “13M”. The description for the circuit breaker previously named “1630-13M-5” will now be shown “1630-5”.

The desired effect of this re-naming is to improve conciseness and increase transparency without losing valuable information. For a list of station identifiers, please see Appendix B.

II) Line segment descriptions have been expanded to include the name of the station to which the line runs. The format is as follows:

“Line Segment Name”: “To-Station Name”

EXAMPLE: At the WALNGFRD station, the “1208” line segment connects the WALNGFRD station to the SOTHNGTN station. This information is communicated to the user with the following description:

1208: SOTHNGTN

III) Transmission-sensitive circuit breakers are defined to be breakers which, when out-of service (OOS), render a piece of transmission equipment (line or transformer) also OOS. In order to provide more detailed information to the user, the descriptions of transmission-sensitive circuit breakers for the STOR have been expanded. The new descriptions include the names of transmission equipment that is OOS as a direct result of the breaker outage. The general format is as follows:

“Breaker Name”: “Affected Equipment”

When there are multiple pieces of transmission equipment affected by a single breaker, the format is as follows:

“Breaker Name”: “Affected Equipment #1”, “Affected Equipment #2, etc.”

EXAMPLES:

At the WALNGFRD station, the “1630-5” breaker causes an outage of the “1630-1” line segment. This information is communicated to the user with the following description:

1630-5: 1630-1

Notes on System Nomenclature

Transmission equipment nomenclature is derived by the equipment owner and is widely varied, however, some patterns exist with nomenclature by equipment type and by geographic area.

Appendix B: List of Station Identifiers

COMMENT: I am just a little uncomfortable with publishing this detail on NU specific equipment. Unless it's important for the reader to make sense of the report (which I don't think it is), I recommend deleting this Appendix.

Station identifiers are alpha-numeric tags used to uniquely identify substations under CONVEX control. In an effort to improve the conciseness of STOR information, these have been removed from equipment descriptions in the report. The station identifiers are included here for reference.

CONVEX Station Identifiers

| STATION NAME | STATION IDENTIFIER |
|--------------|--------------------|
| AGAWAM | 16C |
| ALTRESCO | 41A |
| AMHRST | 17K |
| ANSONIA | 6R |
| ASHFIELD | 38A |
| BALDWIN | 13F |
| BATES_RK | 21K |
| BEAN_HIL | 18N |
| BERKSHRE | 18C |
| BERK_PWR | 31 G |
| BERLIN | 6A |
| BLACK_RK | 11 H |
| BLOOMFLD | 3B |
| BOKUM | 15L |
| BRANFORD | 11J |
| BRANF_RR | 48R |
| BRECKWOD | 20A |
| BRIDEGPT | 8J |
| BRISTOL | 11 K |
| BROADWAY | 36B |
| BROOKLYN | 30Y |
| BUCK_PD | 34B |
| BUDDNGTN | 16L |

| | |
|----------|------|
| BULLSBDG | 11 M |
| BUNKR_HL | 12B |
| CAMPVILL | 14R |
| CANAL_NU | 15Q |
| CANTON | 5R |
| CARD | 11 F |
| CARML_HL | 11S |
| CDEC | 51 L |
| CEDARHTS | 4R |
| CHICOPEE | 18L |
| CHIPINHL | 15U |
| CLINTON | 21S |
| COBBLEMT | 18F |
| COMPO | 23K |
| DARIEN | 13S |
| DEVON | 7R |
| DEVON_RR | 26M |
| DEVON_T | 16P |
| DEXTER | 44R |
| DOOLEY | 30K |
| DOREEN | 19A |
| ELM_WEST | 18M |
| ENFIELD | 12C |
| EXETER | 54N |
| E_HARTFR | 32G |
| E_MERDEN | 21 P |
| E_NBRITN | 7L |

| | |
|-----------|------|
| E_SHORE | 9G |
| E_SPRFLD | 5J |
| FAIRMONT | 16H |
| FALSVL | 9A |
| FLANDERS | 11Y |
| FLAX_HL | 24A |
| FORESTVL | 12A |
| FORT_HIL | 3G |
| FREIGHT | 11 W |
| FRENCHKG | 21B |
| FRMNGTON | 1C |
| FRNCONIA | 22H |
| FRNKLNDR | 1B |
| FRSTBRDG | 8R |
| FRYBROOK | 13B |
| G E_CO_14 | 14E |
| GLENBROK | 1K |
| GRANDAVE | 7G |
| GREEN_HL | 30R |
| GUNN | 15A |
| HADAMNK | 14B |
| HADDAM | 11C |
| HALVARSN | 14P |
| HANOVER | 12F |
| HAWTHORN | 10H |
| HOLYOKE | 17L |
| INDIAN | 47P |

| | |
|-----------|-----|
| INGLESID | 52W |
| JUNE_ST | 1P |
| KILLNGLY | 2G |
| LAKE_RD | 27E |
| LISBON | 46G |
| LONGMTN | 13J |
| LUDLOW | 19S |
| MANCHSTR | 3A |
| MIDDLE_RV | 28M |
| MIDWAY | 19B |
| MILFD_CT | 43G |
| MILL_RV | 38M |
| MILSTONE | 15G |
| MILVON | 30H |
| MIX_AVE | 32K |
| MONTAGUE | 21C |
| MONTVILLE | 4J |
| MT_TOM | 22C |
| MYSTIC_NU | 13K |
| NE_SIMSB | 43F |
| NOERA_ST | 13H |
| NOERA_T | 13H |
| NORTHFLD | 16R |
| NORWALK | 9S |
| NORWALKH | 6J |
| NORWLK_J | 32M |
| NW_HARTF | 2N |
| N_BLOOM | 2A |
| N_HAVEN | 10A |
| N_WALFRD | 36W |
| OLD_TOWN | 3N |
| ORCHARD | 27A |

| | |
|-----------|------|
| OSWALD | 30B |
| P&WAIRCT | 23B |
| PARTRIDG | 15E |
| PEACABLE | 12N |
| PINESHD | 23F |
| PIPER | 21 N |
| PLAINFLD | 18K |
| PLEASANT | 16B |
| PLUMTREE | 30G |
| POCHASSC | 37R |
| PODICK | 18G |
| PORTLAND | 21H |
| PROSPECT | 24B |
| QUINNIPC | 3Q |
| RIDGEFLD | 22N |
| RIVERSDE | 2R |
| ROCKVILLE | 14W |
| ROCKY_HL | 3R |
| ROCKY_RV | 12Y |
| SALISBRY | 21 J |
| SANDY_HK | 37F |
| SASCOCRK | 51R |
| SCITICO | 27H |
| SCOVLRK | 22P |
| SECREC | 10J |
| SHAWS_HL | 24H |
| SHEPAUG | 13A |
| SHUNOCK | 32P |
| SILVER | 30A |
| SILVR_LK | 5C |
| SOTHNGTN | 4C |
| SOUTHEND | 1G |

| | |
|-----------|------|
| SOUTHWCK | 29A |
| STCKHOSE | 34W |
| STONYBRK | 54B |
| STONY_HL | 48C |
| SW_HARTF | 47N |
| S_AGAWAM | 42E |
| S_MEADOW | 1A |
| S_NAUGTK | 2K |
| S_WINDSR | 14L |
| THAMES | 39R |
| THOMASTN | 2B |
| TODD | 30L |
| TORRNGTN | 8A |
| TRACY | 14M |
| TRAPFALS | 16F |
| TRIANGLE | 11A |
| TUNNEL | 12S |
| UNCASVIL | 1Q |
| UNT_TECH | 27N |
| WALNGFRD | 13M |
| WALREC | 42R |
| WATERSDE | 22M |
| WATERSTUI | 12W |
| WESTON | 21 M |
| WESTSIDE | 7A |
| WILLIAMS | 9L |
| WILMATIC | 12S |
| WNSRLKS | 14K |
| WOODLAND | 17G |
| WOODMONT | 28Y |
| W_BROKFD | 14H |
| W_RIVER | 10W |