eReliability Tracker Software Member Guide

Revision Date: 10/15/2014

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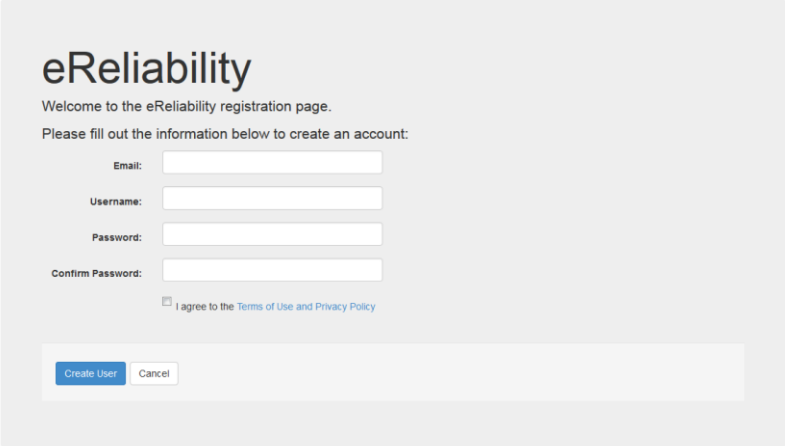
Introduction

Log-in/Create an Account

You should have received a registration link that allows you to fill out the form yourself. When you click on the registration link, the screen shown to the right should open up.



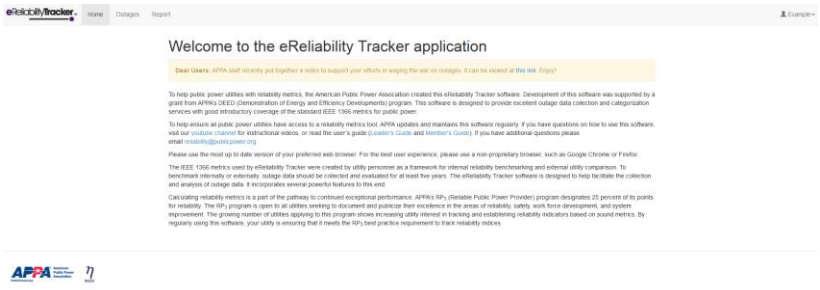
Enter the required information, which includes:

- Email
- Username
- Password

Then you must read the terms and conditions and click the box to accept them.

Then click the "Create User" button.

If creating the account is successful, then the welcome page should open up and a green label should say that the account was successfully created.



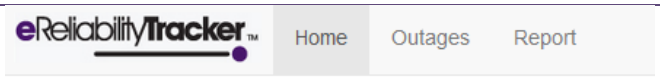
Since your role (permission level) is "Leader," the screen will have all of the tabs shown on the screen to the right.

Types of Users and Permissions

Spectator	This type of user has permissions to view the report and home tabs in the system.
Member	This includes people working in the field who can document outages and view reports.
Leader	Document outages, create profiles for utility personnel and can view and run reports.

Functions

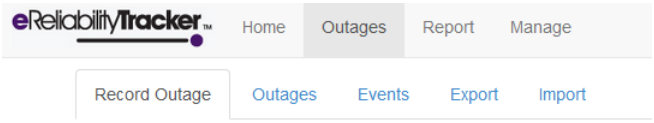
Home



At the top of the screen, there should be three tabs, “Home,” “Outages,” and “Report”. If you click home, then it will bring you back to the welcome screen that you started on.

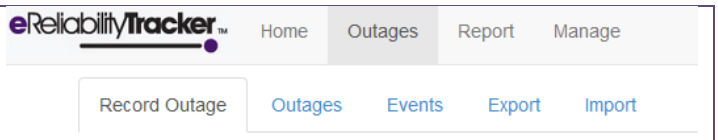
Outages Tab

If you click “Outages,” five options will appear underneath the tabs (shown in the image on the right).



Record Outage	Enter a new outage
Outages	View all recorded outages
Events	Lists all events (each outage is automatically entered as a single event, but outages can be combined to form one event for partial restorations or related outages)
Export	Export all outages from a specific time period
Import	Import previously recorded events from a CSV file

Record Outages



If you wish to record an outage, click on "Record Outage" and then fill out all of the required information on the form. The top portion of the page is required and the bottom portion contains fields for additional details that you can add for your own convenience.

Required Fields

Fields required in order to submit a report:

Address	This field requires the address of the customer associated with the outage being reported. Ex: 1875 Connecticut Ave.
Substation	Substations perform as parts of a generation, transmission, and distribution system. It is an electric system facility. In the drop down menu, select the specific substation where the outage occurred. Utilities can use their own naming conventions when naming their substations (more thoroughly described in the ***Manage*** section of this manual).
Circuit	Also called feeders, circuits carry power to load areas from substations. A substation is comprised of a number of incoming and outgoing circuits connected to a bus-bar system. In addition to noting the substation, it is important to note which circuit in the specified substation was relevant to the outage. In the drop down menu, select the circuit on which the outage occurred. Utilities can use their own naming conventions when naming their circuits (more thoroughly described in the ***Manage*** section of this manual). Circuits are not automatically related to substations so be sure to use a good naming convention and select the proper circuit.
Primary Cause	In this field, there is a drop down menu with all of the causes of service interruption. It is important to fill out the correct primary cause so that you can analyze the reasons for the outages in your utility and take preventative measures for the future. It is also important to select the most exact cause of the outage. For example, if there is a storm and the wind blows a tree onto a line causing an outage, the tree should be selected as the cause of the outage. Every service provider may categorize causes differently, but as long as you stay consistent with your own method of categorizing them, you will be able to analyze the causes of your utility's outages in the future. This cause list follows IEEE recommendations. In situations where the cause of the outage is unknown, the utility should do its best to develop substantial conclusions about the most likely cause based on analysis of similar past interruption events.

Primary Cause : Scheduled	This category includes interruptions that can safely be delayed by the utility personnel and customers can be notified in advance. **Customer Service** ▪ Non-Payment ▪ Relocation ▪ Repairs **Non-Customer Requests** ▪ Fire Department ▪ Police Department **Non-Utility Construction** ▪ Commercial Construction o Non-Utility Employee o Contractor Dig-In ▪ Residential Construction ▪ Road Construction **Utility Maintenance and Repairs** ▪ Equipment Replacement ▪ Load Swap
Primary Cause: Unscheduled	This category includes any interruption that is a result of the actions of the public. **Equipment** ▪ Electrical Failure ▪ Equipment Damage ▪ Equipment Worn Out ▪ Manufacturing Defect **Natural** ▪ Lightning o Direct Stroke o Lightning-Induced Flashover o Unknown/other ▪ Vegetation o Other o Tree o Vine ▪ Weather o Heat o Ice o Storm o Wind ▪ Wildlife o Bird o Other o Snake o Squirrel **Power Supply** ▪ Failure of Greater Transmission ▪ Loss of Generating Unit ▪ Overloaded **Public** ▪ Contact with Foreign Object ▪ Human Accident ▪ Non-Utility Excavation ▪ Non-Utility Fire ▪ Vandalism ▪ Vehicle Accident **Unknown** **Utility Human Error** ▪ Construction ▪ Maintenance ▪ Operations
Number of Customers without Power	Specify, for the utility being addressed, how many customers were without power during the outage being reported. Enter the value in numerical format. Ex: 158

Time Outage Began	Identify the most accurate time for when the outage began in military time. Ex: 05:00 AM
Date Outage Began	Indicate the specific date when the outage began. The format should be: mm/dd/yyyy or you can click on the calendar icon to select the date. Ex: 02/16/2012
Time Outage Ended	Identify the most accurate time for when the outage ended in military time. Ex: 06:00 AM
Date Outage Ended	Identify the specific date when the outage ended. The format should be: mm/dd/yyyy or you can click on the calendar icon to select the date. Ex: 02/17/2012
Is Partial Restoration?	Partial restoration is a way to note that this recorded outage is one of several related to a single restoration event. Check the box if the outage is partially restored. Don't forget to group partial restorations of outages together in the "Events" tab.
System Characteristics Fields not required in order to submit a report (these are additional details that are recommended to be filled out)	
Descriptive Characteristics	Describe the utility's electrical distribution system. Options: Underground or Overhead Electrical distribution systems were traditionally overhead; however, now there are many systems that have been converted to an underground distribution system. Choose whether the utility the outage report is being made for is an underground or overhead electrical distribution system.
System Voltage at Site	The voltage information should be based on the highest voltage level affected by the outage event.
Circuit Type	Choose the type of circuit that your utility system uses. Options include: Radial, primary loop, primary selective, secondary selective, and spot network ○ Radial-This is the most common and simple distribution system. It can be completely overhead or underground. It is connected to only one source of power. ○ Primary loop-also known as open ring system. Provides power from two feeders. ○ Primary selective-This type of circuit uses some of the same basic components as the primary loop. Ahead of the consumer's transformer, an automatic switch is provided, which helps to limit interruptions in the event of loss of feeder. ○ Secondary selective-This system uses two transformers from two different primary feeders. Unlike the primary selective system, it uses low voltage switching. This system is generally used for industrial plants. ○ Spot networks-This system is very similar to a closed ring system. It is a network, which means

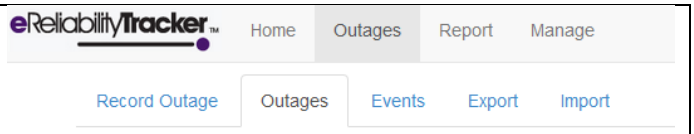
	that it utilizes two or more transformer units in parallel. It is most commonly used in high load density areas.
Phases Impacted	A three-phase electric power system is a type of polyphase system. It is a common method of electric power transmission and tends to be a much smoother form of electricity than the single or two phase systems. Select in the drop down menu exactly which phases (which overhead line(s)) were affected by the outage. Options include any combination of phase 1, 2, and 3 (A, B, and C).
Load Interrupted (in kVA)	This is the value, in kilovolt-amps, of connected load interruptions.
Miscellaneous Details Fields not required in order to submit a report (these are additional details that are recommended to be filled out)	
Key accounts without power	These are the key customers for which the utility wants to track service and reliability levels. These customers can be referenced when creating a new outage. Information on how these customers can be created can be found under the ***Manage*** section of this manual.
How was the outage reported	Options include: Customer call-in, Outage Management System, and Other
Total work hours to complete restoration	Identify how many work hours it took to complete total restoration of the utility. Enter value in numerical format. Ex: 5.
Total Customers	Number of customers served by utility.
Work Details	
Equipment Action	This identifies if the notes or equipment used relative to the outage are for restoration, repair, replacement, or a work detail.
Equipment	This is the actual equipment used. The list is drawn from the equipment list created in the ***Manage*** section.
Notes	This area is for notes related to the restoration, repair, replacement, or work details for an outage.

How to record an outage:

Once the required information, and addition details, are filled out, click “Create Outage” and you will be automatically taken to the list of outages that you have for your utility. If the addition was successful, there should be a green label at the top of the page that says it was successfully added.

From that page, if you wish to record another outage, click on “Create New Outage” on the top right corner of the page, which will take you back to the form to record a new outage.

Outages



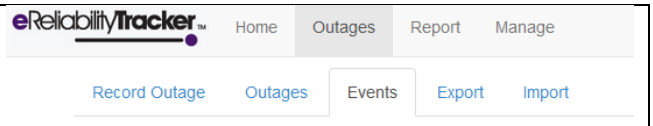
If you click on “Outages” sub tab you will be taken to the listing of recorded outages for your utility. From this page, you may click on “Create an Outage” to record another outage. You can also search, edit, or delete the recorded outages.

When searching for an outage, all eight (8) fields you see listed across the screen will be searched as you type into the search box. For a more detailed report you will want to use the Export function to create a spreadsheet.

On this “Outages” page, you have the ability to delete outages by placing checks next to the outages you would like to delete and then clicking on the “Bulk Action” drop down menu and selecting “Delete Selected Outages.” Caution: once an outage is deleted it is deleted permanently from the system.

By clicking on any of the outages, you can edit the details that were recorded for them. This page displays the following details of the listed outages: address, utility, substation, circuit, customers out.

Events



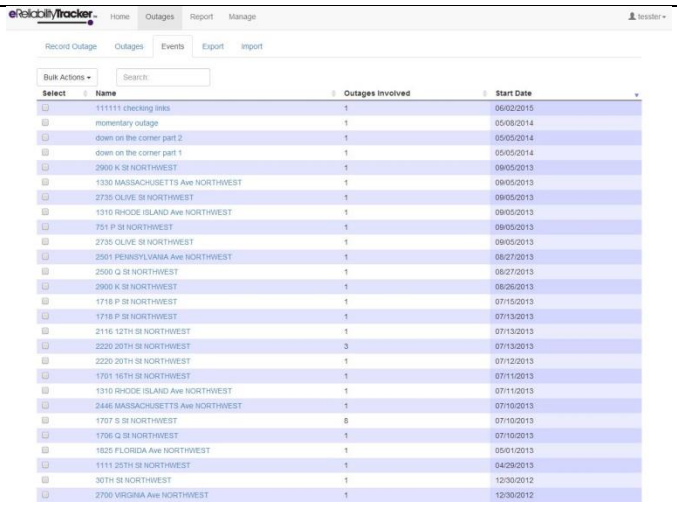
If you click on “Events,” you will come across a page with a listing of all of the events that have been recorded for your utility. The details of each event shown on this page include: name, outages involved, and start date. An event is a collection of outages, typically partial restorations related to single outages.

On this page, you have the ability to delete events by placing checks next to the events you would like to delete and then clicking on the “Bulk Action” drop down menu and selecting “Delete Selected Events.”

By clicking on one of the events, you may edit the name of the event, edit any of the outages involved with the event, or sort the outages listed. This is a good way to group partial outages together to be treated as one event in the system.

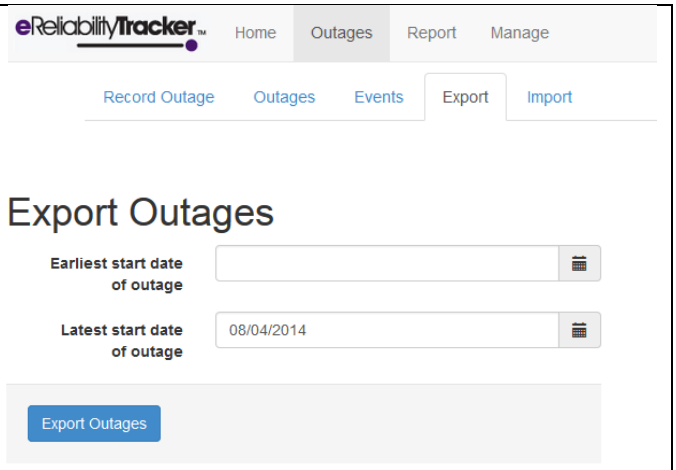
To sort the outages listed within an event, you have to click the boxes of those outages that you would like to move, and click the “Bulk Action” drop down menu, and then choose either “Separate Selected Outages into Unique Event” or “Delete Selected Outages.”

Once you are done with any changes on this page, click “Update Event” and a green label should appear on the top of the screen that says the modification was successful.

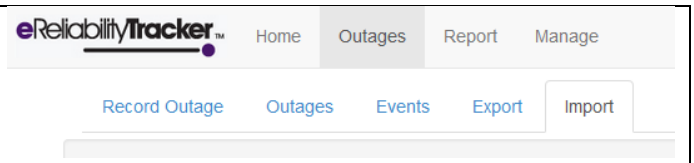


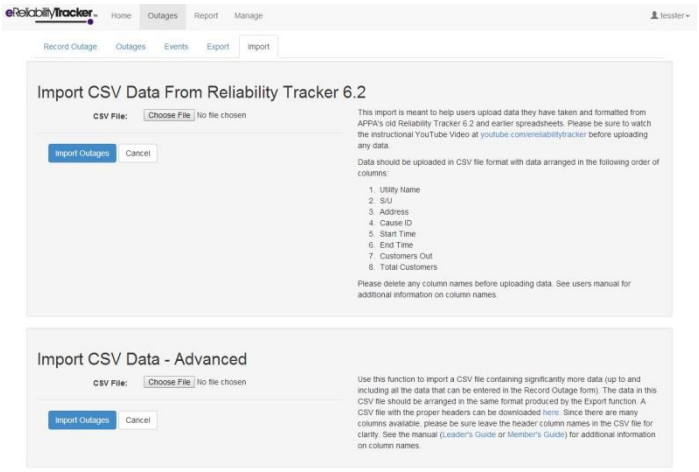
Export

Only Leaders are able to view this button. When you click on “Export” you will see two boxes where you can input the date range of the outages you want reported. Once you’ve chosen your dates click the export button to see all your data in a spreadsheet format. You may want to export data to perform additional analysis.



Import





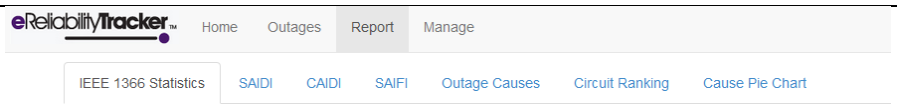
Use this function to upload any data you already have recorded into this eReliability software. The spreadsheet you upload should be arranged in the following way in CSV format (**please note that there cannot be any headers in the spreadsheet you are trying to import**):

Note: the cause ID is a number and corresponds to the following table:

Cause number ID

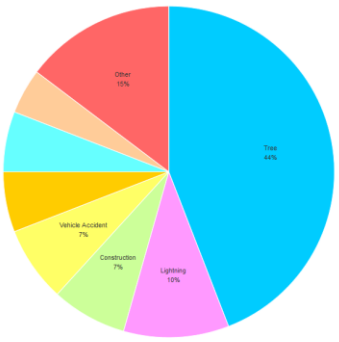
0	Supply to City
1	Overhead Equipment Failure
2	Underground Equipment Failure
3	Weather
4	Birds, Animals, Snakes, etc.
5	Trees
6	Foreign Interference
7	Human
8	Other
9	Unknown
10	Vehicle

Report



Reports are used to display data visually. Reports can be essential to discovering problem areas and identifying the most severe outages.

IEEE 1366 Statistics	This report will provide you with: ASAI, CAIDI, SAIDI, SAIFI
SAIDI	This report will provide you with your SAIDI and graph of your results
CAIDI	This report will provide you with your CAIDI and graph of your results
SAIFI	This report will provide you with your SAIFI and graph of your results
Outage Causes	This report will provide you with a list of outages based on if they are scheduled/unscheduled and their cause.
Circuit Ranking	This report will list your: • Top 10 Circuits Ranked by Customer Minutes of Duration • Top 10 Circuits Ranked by Customer Interruptions
Cause Pie Chart	This report will produce a pie chart of your outages grouped by outage cause or outage duration (in minutes).

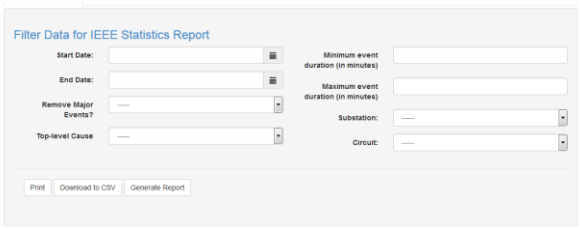


Outage Cause	Count	View
Tree	30	
Lightning	7	
Construction	5	
Vehicle Accident	5	
Squirrel	4	
Unknown	4	
Electrical Failure	3	
Equipment Worn Out	2	
Failure of Greater Transmission	2	
Wind	1	
Non-Payment	1	
Equipment Damage	1	
Overloaded	1	
Ice	1	
Equipment	1	
Total	68	

Running Reports

For each type of report listed at the top of your screen, also seen to the right, you can view your utility's reliability statistics. Click which type of report you wish to run.

Each type of report form can be filled by basic information such as the date range you want a report from and/or which substation you want a report for. Once you tailor the information you want to review you have three options to view the data, print, download the report to a CSV file or generate the report directly on your screen.



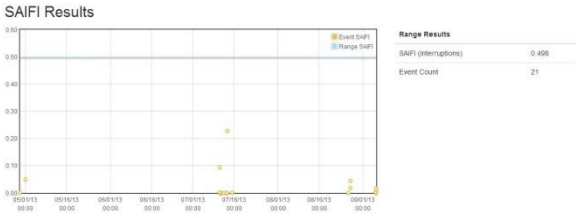
Report Filters

Start Date	dd/mm/yyyy
End Date	dd/mm/yyyy
Remove Major Events	APPA Event Threshold: This threshold is calculated based on outages and removes outages that exceed the IEEE 2.5 beta threshold as calculated based directly on outages. IEEE Day Threshold: This threshold is based on SAIDI-days (all of the outage events grouped together by day) and removes SAIDI-days where the IEEE 2.5 beta threshold is exceeded. The graph displays outage events, and after using this filter any outage event that occurred starting/occurring on a day where the SAIDI-day calculation exceeds the IEEE 2.5 beta threshold is removed.
Top Level Cause	Scheduled v. Unscheduled
Minimum Event Duration (in minutes)	Provide the minimum number of minutes
Maximum Event Duration (in minutes)	Provide the maximum number of minutes
Substation	Filter based on the substations that you added to your utility profile
Circuit	Filter based on the circuits that you added to your utility profile
(Cause Pie Chart Only)	This report will produce a pie chart of your outages grouped by outage cause or outage

Report on Outage duration (in minutes).

Generating Report Results

For each type of report, after pressing the "generate report" button, a report will show up based on the information that you put in to the previous screen. You can run an infinite number of reports.



This form is used to access reports for SAIDI, CAIFI, SAIFI, Outage Causes, Circuit Ranking, and Cause Pie Chart. All reports are accessed the same way by imputing basic information about the report.

The best method is to assign the new user to create his/her own account (their own username/password). To assign a new user use the form on the right. Fill out the information required and then click "Create Registration." Once clicked, a green text box should appear below the "Create Registration" button with a registration link. Send this link to the user that wishes to create an account. The new user should follow the link and fill out the required information to create an account.

Troubleshooting

If you have any troubles understanding this software, find a bug in the system, or for general eReliability Tracker ™ questions, please contact reliability@PublicPower.org.