



GE VERNOVA

**Asset Performance Management**  
**On-Premises APM**  
**V5.2.2.0.0**

**Generation Availability Analysis**  
**Wind**

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# Chapter 1

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## Overview

### Topics:

- [Overview of the Generation Availability Analysis Wind \(GAA Wind\) Module](#)
- [Access the GAA Wind Overview Page](#)
- [GAA Wind Workflow](#)

# Overview of the Generation Availability Analysis Wind (GAA Wind) Module

In North America, utility companies that own one or more wind plants report their wind performance and sub group data to the North American Electric Reliability Corporation (NERC) using the Generating Availability Data System (GADS) Wind Reporting application. The Generation Availability Analysis Wind (GAA Wind) module uses the International Electrotechnical Commission (IEC) event data from the GE Renewables Digital Wind Farm suite to help you record generation and loss data for each wind plant in your fleet.


Using GAA Wind, you can view and modify event data to create Performance Records pertaining to the overall wind turbine operation for a given period. You can then generate reports that follow the GADS mandatory reporting requirements and submit those reports to NERC.

## Access the GAA Wind Overview Page

### Procedure


In the **Applications** menu, navigate to the **RELIABILITY** section, and then select **Generation Availability Analysis Wind**.

**Tip:** You can also access the GAA Wind information for a specific asset hierarchy level (that is, an Equipment or a Functional Location). To do so:

- a. In the main navigation bar, select .  
The Asset Hierarchy appears.
- b. Select the asset for which you want to access the **GAA Wind Overview** page.  
The workspace for the selected asset appears.
- c. Select the **Reliability** tab.  
In the **Generation Availability Analysis Wind** row, the counts of all Events and edited Events appear as a link. These Events are associated with the selected asset hierarchy level for the last month.
- d. Select the link.

The **GAA Wind Overview** page appears, displaying the following sections:

- **All Events:** Contains a table of all Events based on the asset filter (that is, Asset, Start Date, and End Date). The table contains the following columns:
  - **UNIT NAME:** Contains the Unit associated with the Event.
  - **SUB GROUP NAME:** Contains the Sub Group associated with the Event.
  - **IEC STATE:** Contains the IEC type of the Event.

**Note:** If the value in the IEC Event Type field of the Event is IU,  appears next to the value in this column.

- **START DATE:** Contains the date and time when the Event began.
- **END DATE:** Contains the date and time when the Event ended.
- **DURATION:** Contains the duration of the Event which is displayed in hh:mm:ss format.
- **DESCRIPTION:** Contains the description of the Event.

- **NERC STATE:** Contains the NERC type of the Event.
- **ERROR CODE** Contains the error code of the Event.

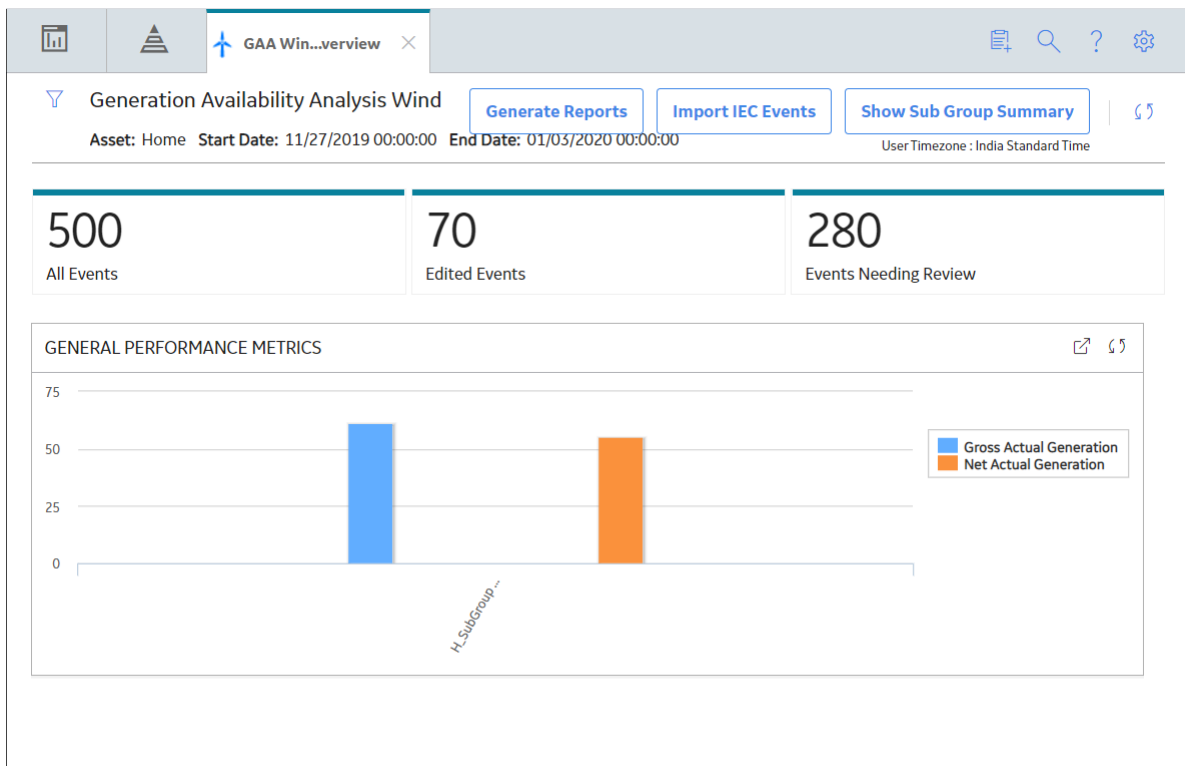
**Note:** If the Event has an error,  appears next to the value in this column.

- **ACTUAL PRODUCTION:** Contains the production value for the Event.
- **EDITED:** Contains check boxes to indicate if the Event has been edited.


**Note:** An Event is considered to be edited if any of the field value has been modified or the Event was created by splitting another Event. A cleared check box in this column indicates that the Event has not been edited, whereas a selected check box indicates that the Event has been edited.


- **Edited Events:** Contains a table of Events whose field values have been modified or the Event was created by splitting another Event. These Events are based on the asset filter. With the exception of the **Edited** column, the columns that appear in the **All Events** section also appear in this section.
- **Events Needing Review:** Contains a table of Events whose value in the NERC Type field is blank or contains values other than CTH and RUTH. These Events are based on the asset filter. All the columns that appear in the **All Events** section also appear in this section.
- **GENERAL PERFORMANCE METRICS:** Contains a bar chart that represents the distribution of the generation values (that is, gross actual generation and net actual generation) for Sub Groups. The category (x) axis represents Sub Groups for which Performance Records have been created; these Sub Groups are categorized based on their generation values. The value (y) axis represents the values in the Gross Actual Generation and Net Actual Generation fields of the Performance Records for a given Sub Group, month, and year. This bar chart is based only on the asset information of the asset filter.

**Note:** To access the detailed graph result, select .



**Note:**

- Using , you can filter the Events based on the following information:
  - Asset: Indicates the asset hierarchy level.
  - Start Date: Indicates the start date and time of the period.
  - End Date: Indicates the end date and time of the period.
- The time stamps of the Events are stored in Coordinated Universal Time (UTC). Therefore, if your time zone is different from UTC, to access all the Events for a given period, you may need to modify the values in the **START DATE** and **END DATE** boxes such that their UTC equivalents account for the entire period.
- The logged in User timezone is displayed in the Header section.
- The event data retrieved includes the following spanning events as well.
  - If the start time stamp of an Event is earlier than the value specified in the **START DATE** box in the **Asset** Filter window.
  - If the end time stamp of an Event is later than the value specified in the **END DATE** box in the **Asset** Filter window.

The **Generation Availability Analysis Wind** overview page is not updated automatically when you return to the previously opened tab. You can select  to update the page.

## GAA Wind Workflow

### About This Task

This workflow provides the basic, high-level steps for using GAA Wind. The steps and links provided in the workflow do not necessarily reference every possible procedure.

### Procedure

1. [Import Events](#) for the required Company and Sub Group from the GE Renewables Digital Wind Farm suite.
2. As needed, [modify](#), [create](#), or [split Events](#) for the Sub Group.
3. [Create a Performance Record](#) for the Sub Group.
4. [Generate a Performance Report](#) for the Sub Group.
5. [Generate a Sub Group Report](#) for the Sub Group.



# Chapter 2

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## Workflow

### Topics:

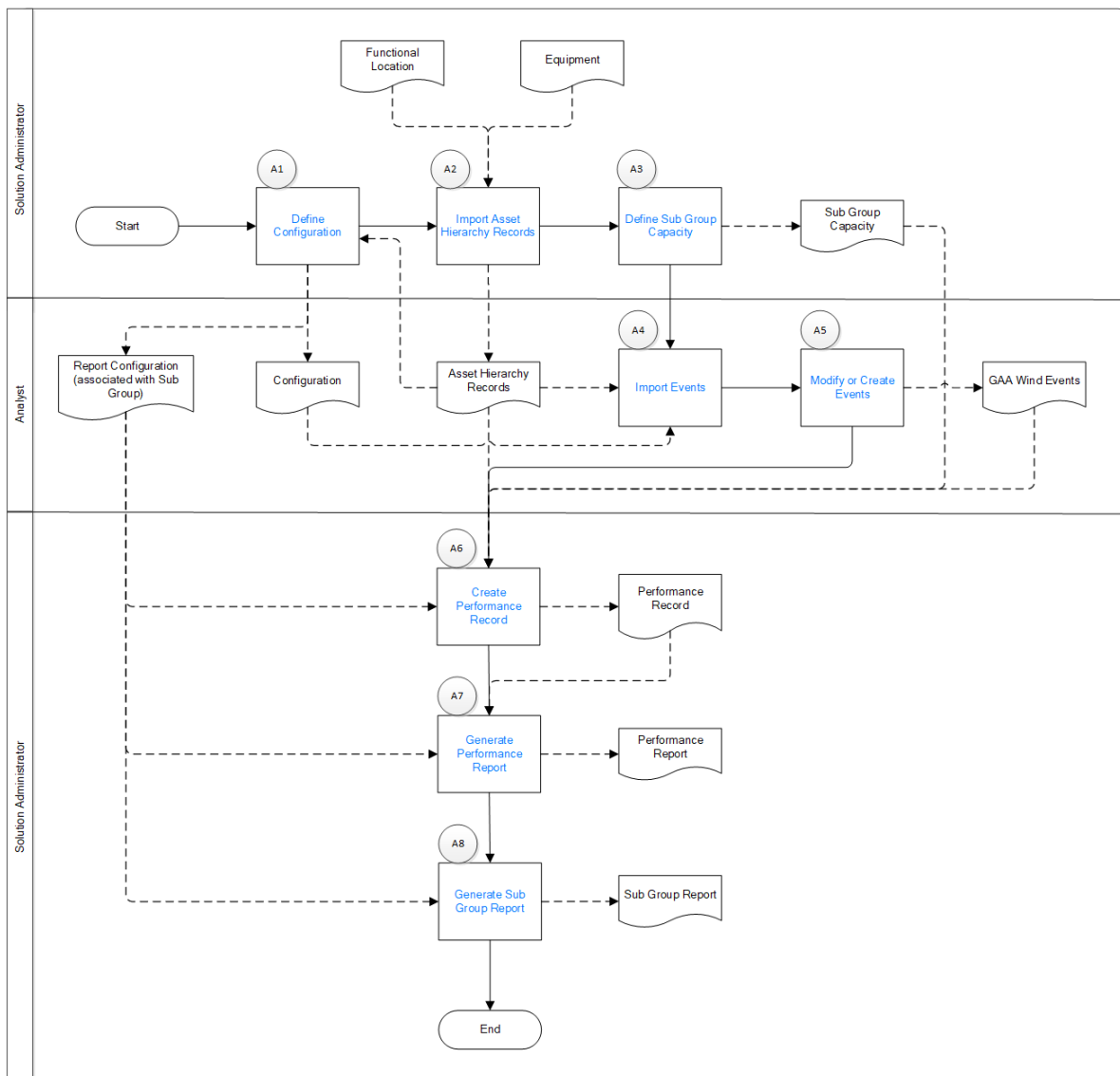
- [GAA Wind Workflow](#)
- [Define Configuration](#)
- [Import Asset Hierarchy Records](#)
- [Define Sub Group Capacity](#)
- [Import Events](#)
- [Modify or Create Events](#)
- [Create Performance Record](#)
- [Generate Performance Report](#)
- [Generate Sub Group Report](#)

# GAA Wind Workflow

This workflow describes how the GAA Wind administrator defines the configuration and sub group capacity for an Analyst to import and modify event data. This workflow also describes how the administrator creates a Performance record and generates Performance and sub group reports.

In the following workflow diagram, the blue text in a shape indicates that the corresponding description has been provided in the sections that follow the diagram. For more information, refer to the [Interpreting the Workflow Diagrams](#) topic in the [APM Product Workflows](#) documentation.

**Note:** For information on the personas associated with a APM module, refer to the [APM Product Workflows](#) documentation.



## Define Configuration

Persona: Solution Administrator

Define the IEC Type, NERC Type, mapping, report configuration, and the settings for importing Events and generating reports.

Associate the Report Configuration record with a Sub Group for generating a Performance Record, Performance Report, and Sub Group Report.

## Import Asset Hierarchy Records

Persona: Solution Administrator

Using the GAA Wind Asset Hierarchy Data Loader, import the following records:

- GAA Company
- GAA Wind Plant
- GAA Wind Group
- GAA Wind Sub Group
- GAA Wind Unit

## Define Sub Group Capacity

Persona: Solution Administrator

Using the GAA Wind Sub Group Capacity Data Loader, import the GAA Wind Sub Group Capacity records for the Sub Group. You can also create the Sub Group Capacity records.

## Import Events

Persona: Analyst

Import Events for creating a Performance Record for the Sub Group based on the asset data.

**Note:** You can import Events without creating or importing the Sub Group Capacity records.

## Modify or Create Events

Persona: Analyst

As needed, modify or create Events for creating a Performance Record for the Sub Group.

## Create Performance Record

Persona: Solution Administrator

Create a Performance Record for the Sub Group based on the asset data, Events, and Sub Group Capacity records.

## Generate Performance Report

Persona: Solution Administrator

Generate the Performance Report to be submitted to NERC based on the Performance Record.

## Generate Sub Group Report

Persona: Solution Administrator

Generate the Sub Group Report to be submitted to NERC based on the Sub Group.

**Note:** You can generate a Sub Group Report without generating a Performance Record or Performance Report.

# Chapter 3

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## Sub Group Summary

### Topics:

- [Access the Sub Group Summary Page](#)
- [Events](#)
- [Performance Records](#)
- [Reports](#)

# Access the Sub Group Summary Page

## Access the Sub Group Summary Page

### About This Task

The Sub Group Summary page provides information about the Events, Performance Records, Performance Reports, and Sub Group Reports associated with a particular GAA Wind Sub Group.

### Procedure

1. Access the [GAA Wind Overview](#) page.

2. Select **Show Sub Group Summary**.

The **Sub Groups** window appears, displaying a list of all Sub Groups.

**Note:** If you select **Show Sub Group Summary** when only one Sub Group exists in APM, the Sub Group Summary page for that Sub Group appears.

3. Select the Sub Group whose Sub Group Summary page you want to access.

4. Select **Navigate to Sub Group**.

The Sub Group Summary page for the selected Sub Group appears, displaying the following workspaces:

- **Events:** Contains a table of Events associated with the Sub Group for the start date and end date specified in the **GAA Wind Overview** page. The table contains the following columns:

- **UNIT NAME:** Represents the Unit Name field of the Event.
- **ERROR CODE:** Represents the Error Code field of the Event.

**Note:** If the Event has an error,  appears next to the value in this column.


- **START DATE (Timezone Value):** Represents the Start Date field of the Event.

**Note:** The Timezone Value indicates the value of the timezone selected in the Consider Dates in dropdown list in the Filter.

- **END DATE (Timezone Value):** Represents the End Date field of the Event.

**Note:** The Timezone Value indicates the value of the timezone selected in the Consider Dates in the dropdown list in the Filter.

- **DURATION:** Represents the Duration field of the Event. The duration of the Event is displayed in the hh:mm:ss format.
- **DESCRIPTION:** Represents the Description field of the Event.
- **IEC STATE:** Represents the IEC Event Type field of the Event.

**Note:** If the value in the IEC Event Type field of the Event is IU,  appears next to the value in this column.

- **NERC STATE:** Represents the NERC Type field of the Event.
- **ACTUAL PRODUCTION:** Represents the production value of the Event.
- **EDITED:** Contains check boxes to indicate if the Event has been edited.

**Note:** A selected check box in this column indicates that the Event has been edited (that is, the value in any of the fields of the Event have been modified or the Event

was created by splitting another Event), whereas a cleared check box indicates that the Event has not been edited.

The From and To values in the **Filter By Date Range** filter will also be considered in the timezone which is selected in the **Consider Dates in** dropdown list in the **Filter**.

The event data retrieved includes the following spanning events as well.

- If the start time stamp of an Event is earlier than the value specified in the **From** box in the **Filter** window.
- If the end time stamp of an Event is later than the value specified in the **To** box in the **Filter** window.
- **Performance:** Contains Performance Records associated with the Sub Group.
- **Reports:** Contains reports (that is, Performance Reports or Sub Group Reports) associated with the Sub Group.

**Note:**

- You can perform the following actions on the table that contains the events.
  - Sort or filter data.
  - Group columns.
  - Reorder or resize columns.
  - Change page numbers.
  - Set your preferences to view the number of records per page.
- The changes made to the table are unique to each Sub Group and user session. If you sign out of APM or refresh the page, the changes made to the table are not retained.

## Events

### About IEC Events

IEC Events are standardized classifications of the operating state of a wind turbine. They are based on the IEC-61400-26 standard of the International Electrotechnical Commission (IEC).

IEC Events are determined from an analysis of the raw event data of wind turbines over time. They are used to determine the key metrics in a Performance Report.

IEC Events are stored in the GAA Wind Event records. You can associate IEC Events with any wind turbine regardless of its manufacturer.

### Import Events

#### Before You Begin

- [Import Company and Sub Group records using the GAA Wind Asset Hierarchy Data Loader.](#)
- [Configure URL and authentication settings.](#)

#### Procedure

1. [Access the GAA Wind Overview page.](#)
2. Select **Import IEC Events**.

The **Imported Events** page appears, displaying a table of log files associated with the imported Events.

**Note:** Depending on the state of the job, the log files appear in the **In progress**, **Successful** or **Failed** section.

3. Select **Import IEC Events**.

The **Import Event** window appears, displaying the **Import Details** section.

4. In the **Company** box, select the Company for which you want to import the Events.
5. In the **Sub Group** box, select the Sub Groups for which you want to import the Events.
6. In the **Start Date** box, select the start date of the period for which you want to import the Events.

**Important:** When importing Events, the value in this box is treated as a Coordinated Universal Time (UTC) value to ensure accuracy in the count of Events imported for a given period, regardless of your time zone.

**Tip:** The screen refreshes automatically every 10 minutes. However, you may control the rate at which the screen refreshes through a **toggle selector control**. The options for refresh are: Off, 30 sec, 1 min, 5 min and 10 min.

7. In the **End Date** box, select the end date of the period for which you want to import the Events.

**Important:**

- When importing Events, the value in this box is treated as a UTC value to ensure accuracy in the count of Events imported for a given period, regardless of your time zone.
- The error code value of an Event may change depending on the values in the **Start Date** and **End Date** boxes (that is, the duration for which you are importing Events).

**Note:** You cannot import Events if the difference between the values in the **Start Date** and **End Date** boxes is greater than 31.

8. Select **Next**.

The **Import Validation** section appears, displaying the fields that are described in the following table.

Field Name	Description
<b>SUB GROUP NAME</b>	The name of the Sub Group for which you want to import the Events.
<b>PREVIOUSLY IMPORTED EVENTS</b>	The total count of Events that were previously imported for the selected Sub Group, and the date range for which the data is displayed.
<b>MANUALLY CREATED EVENTS</b>	The total count of Events that were manually created for the selected Sub Group, and the date range for which the data is displayed.
<b>EDITED EVENTS</b>	The total count of Events that have been edited for the selected Sub Group, and the date range for which the data is displayed.
<b>TOTAL EVENTS</b>	The total count of Events, which is the sum of previously imported and manually created Events for the selected Sub Group, and the date range for which the data is displayed.

9. Select the check box next to the following text: I understand that by clicking 'Finish' I will overwrite the above shown events.

The **Finish** button is enabled.


10. Select **Finish** to start the import.



## Results

- In the **Imported Events** page, a row containing the log file associated with the Events being imported is added to the table under the **In Progress**, **Successful** or **Failed** section for each Sub Group after the import job starts. The table contains the following columns:
  - **ID**: Contains an identifier for the Events.
  - **LOG**: Contains the log file associated with the Events.
  - **STATUS**: Contains one of the following values for each row:
    - Staging: Indicates that the data import job is preparing to load the Events into APM.
    - In Progress: Indicates that the data import job is loading the Events into APM.
    - Submitted for Cancellation: Indicates that the data import job has been submitted for cancellation.
    - Completed: Indicates that the data import job has loaded the Events into APM.
    - Completed With Errors: Indicates that the data import job is completed, but it has encountered one or more errors.

**Note:** The data import job may be completed with errors when it exceeds the time that is specified in the **Import Job Time (Minutes)** box when configuring settings. You can download the log file to access the error messages.

  - Aborted: Indicates that the data import job is aborted either because it is cancelled or because a scheduled job for the Sub Group is running.
  - **CANCEL**: This column appears only in the **In Progress** section. You can select  to cancel a job whose status is Staging or stalled beyond the timeout period.
  - **START DATE**: Contains the start date that you entered in the **Import Event** window.
  - **END DATE**: Contains the end date that you entered in the **Import Event** window.
  - **IU TIME PERCENTAGE**: Contains the percentage of the total IU time for the Events, as a function of the total report time.

**Note:**

  - The total IU time is the sum duration of the IU Events (that is, Events that have the value IU in the IEC Event Type field).
  - The total report time is the duration for which you are attempting to import the Events (that is, the duration specified in the **Import Event** window).
  - **AGGREGATED ERROR CODE**: Contains a two-digit bit-mapped code. The left bit indicates whether at least one Event existed for each wind turbine per hour. The right bit indicates whether the sum duration of the Events is same as the total report time for the Sub Group. The value 0 in either location indicates that the validation passed, whereas the value 1 indicates that it failed.
  - **DATA QUALITY PARAMETERS**: Contains a link that, when selected, displays the [Data Quality Parameters window](#).
  - **RECEIVED RECORDS**: Contains the count of received Events.
  - **INSERTED RECORDS**: Contains the count of inserted Events.
  - **DELETED RECORDS**: Contains the count of deleted Events.
  - **STARTED BY**: Contains the name of the user who started the import job. For scheduled jobs, the value in the column will be MIJOB.
  - **LAST UPDATED DATE**: Contains the date and time when the import job was started.
  - **TERMINATED BY**: Contains the name of the user who cancelled the import job.
  - **TERMINATED DATE**: Contains the date and time when the imported job was cancelled.
- If an Event that is being imported already exists in APM, it is replaced.

## Next Steps

- [Access the Event from the GAA Wind Overview page.](#)
- [Access the Event from the Sub Group Summary page.](#)

## Export Events


### Before You Begin

Confirm that the Events are imported for the Sub Group and the date range for which you want to export the event data.


### About This Task

You can export the Events for a Sub Group and selected date range. This topic describes how to export the Events.


### Procedure

1. [Access the Sub Group Summary Page](#) on page 10 for the Sub Group whose events you want to export.
2. In the **Events** workspace, select  and then, in the **Filter By Date Range** window, modify the values in the following boxes as needed:
  - **From:** Indicates the start date of the period.
  - **To:** Indicates the end date of the period.
  - **Unit:** Indicates the unit for which the events are being retrieved.

Events data gets displayed based on the filter.

3. Select , and then select **Export Current View**.

An Excel work book containing the Events data is downloaded. For more information, refer to [Events Data](#) on page 78.

**Note:** You can select , and then select **Export Entire Subgroup** on the toolbar available in the **Events** workspace to export event data from the Query Designer tool for the required Sub Group and Data Range.

## Access an Event from the GAA Wind Overview Page

### Procedure

1. [Access the GAA Wind Overview page.](#)
2. Select the **All Events** tab.


**Tip:** To access an edited Event (that is, an Event whose field values have been modified or the Event was created by splitting another Event), select the **Edited Events** tab.

**Note:** You can also use the **All Events** section to access the edited Event.

The **All Events** section appears.

3. In the **UNIT NAME** column, select the link in the row that contains the Event that you want to access.

The **Edit Event** window appears.


**Note:** As needed, you can modify the values in the [available fields](#), and then select  to save changes.

## Access an Event from the Sub Group Summary Page

### Procedure

1. [Access the Sub Group Summary page](#) for the Sub Group whose Event you want to access.
2. In the **Events** workspace, in the **UNIT NAME** column, select the link in the row that contains the Event that you want to access.


The **Edit Event** window appears.

**Note:** As needed, you can modify the values in the [available fields](#), and then select  to save your changes.

## Access Surrounding Events for IU Events


### About This Task

### Procedure

1. [Access the Sub Group Summary page](#).  
The **Sub Group Summary** page for the selected Sub Group appears.
2. In the **Events** workspace, in the **IEC STATE** column, select  in the row containing the IU state.  
The **Surrounding Events for IU** window appears.

**Note:** You can select a value between 0 to 99 in the **Number of Events Before** and **Number of Events After** fields and then select **Apply** to view the required number of surrounding events before and after the selected IU Event.

3. As needed, modify the editable field values in the row containing IU Event.
4. Select **Update**.  
The **Events** workspace appears, highlighting the records that you have modified.

**Note:** To discard your changes, select .

5. Select .  
Your changes are saved.

## Modify Events from the GAA Wind Overview Page

### About This Task

This topic describes how to modify multiple Events at once from the **GAA Wind Overview** page.

### Procedure

1. [Access the GAA Wind Overview page](#).
2. As needed, select the **All Events**, **Edited Events**, or **Events Needing Review** tab.

A table of Events appears.

**Note:** This section appears when you select the **All Events** tab.

3. Select the check box next to each row that contains the Event that you want to modify.

**Tip:** To select all the check boxes in a given page at once, select the check box next to the first column heading.

**Note:** After selecting the check boxes in a given page, if you go to a different page in the **All Events** section, and then return to the previous page, the check boxes will be cleared.

4. Select **Edit Events**.


The **GAA Wind Edit Events** page appears.


**Note:** The columns that appear in the **All Events** section in [the GAA Wind Overview page](#) also appear in this page.

**Tip:** You can modify the Events individually in the **GAA Wind Edit Events** page. To do so:

- a. As needed, modify the values in the following cells:

- **DESCRIPTION**
- **NERC STATE**
- **ERROR CODE**
- **ACTUAL PRODUCTION**

**Note:** The cells whose values you have modified are highlighted. To discard your changes, select .

- b. Select  to save your changes.

5. Select the check box next to each row that contains the Event that you want to modify.

**Tip:** To select all the check boxes at once, select the check box next to the first column heading.


6. Select .

The **Bulk Edit** window appears.

7. Select the check boxes next to the fields whose values you want to modify, and then modify the values in [those fields](#).

8. Select **Update**.

In the **GAA Wind Edit Events** page, the cells whose values you have modified are highlighted.

**Note:** To discard your changes, select .

9. Select .

Your changes are saved.

**Note:** You can access an Event by selecting the link in the **UNIT NAME** column in the row that contains the Event.

## Modify Events in the Sub Group Summary Page

### About This Task

This topic describes how to modify multiple Events at once in the Sub Group Summary page.


## Procedure

1. [Access the Sub Group Summary page](#) for the Sub Group whose Events you want to modify.

**Tip:** You can also modify the Events individually in the Sub Group Summary page. To do so:

- a. As needed, modify the values in the following cells:

- **DESCRIPTION**
- **NERC STATE**
- **ERROR CODE**
- **ACTUAL PRODUCTION**

**Note:** The cells whose values you have modified are highlighted. To discard your changes, select .

- b. Select  to save your changes.

2. In the **Events** workspace, select the check box next to each row that contains the Event that you want to modify.


**Tip:** To select all the check boxes in a given page at once, select the check box next to the first column heading.

**Note:** After selecting the check boxes in a given page, if you go to a different page in the **Events** workspace, and then return to the previous page, the check boxes will be cleared.

3. Select .  
The **Bulk Edit** window appears.

4. Select the check boxes next to the fields whose values you want to modify, and then modify the values in [those fields](#).

5. Select **Update**.  
In the **Events** workspace, the cells whose values you have modified are highlighted.

**Note:** To discard your changes, select .

6. Select .  
Your changes are saved.

## Create Events

### About This Task

For a Unit in a Sub Group, if the imported Events have a gap in time, you can create one or more Events for the missing period in the **Events** workspace in the Sub Group Summary page. This topic describes how to create Events.

**Note:** For a Unit, the Events are considered to have a gap in time when:

- For a given period, if the value in the Start Date field of an Event is different from that in the End Date field of the previous Event.

**Note:** The period is identified by the values that are specified in the **From** and **To** boxes in the **Filter By Date Range** window.

- If the imported Events do not account for the complete duration of the period.

**Note:** If the start time stamp of an Event is earlier than the start date and time of the specified period, or if the end time stamp of an Event is later than the end date and time of

the specified period, the Event does not appear in the **Events** workspace. Instead, a highlighted row may appear in the **Events** workspace to indicate that the Event is missing. You can ignore such a row because it is not considered a missing Event.

### Before You Begin

- Confirm that the Events imported for a Unit in a Sub Group have a gap in time.

### Procedure

1. [Access the Sub Group Summary page](#).

**Tip:** In the **Events** workspace, the missing Event is represented by a highlighted row. By default, the **Start Date** and **End Date** columns in this row are populated with values that account for the gap in time.

2. In the **Events** workspace, select the check box next to the row that represents the missing Event that you want to create.

3. Select .

The **Create Event** window appears.

4. As needed, enter values in the [available fields](#).


**Tip:** In the **Create Event** window, in the **Number Of Events** box, enter the number of Events that you want to create. The value that you enter determines the number of rows (that is, the number of Events) that appear in the window.

#### Note:

- In the **Create Event** window, the start date and the end date of the missing period appear in the **Original Start Date** box and the **Original End Date** box respectively.
- The missing period is evenly split based on the number of Events you want to create. The start date and the end date of each split period appear in the **Start Date** column and the **End Date** column of each row. You can modify the values in these columns; however, the value in the **Start Date** column of any row cannot be less than that in the **Original Start Date** box, and the value in the **End Date** column of any row cannot be greater than that in the **Original End Date** box. In addition, all the new Events in the window must account for the missing period.

5. Select **Create**.

In the **Events** workspace, the rows that contain the Events you have attempted to create are highlighted.

**Note:** To discard your changes, select .

6. Select .

The Events are created.

## Split an Event


### About This Task

You can split an Event into two or more Events. This topic describes how to split an Event.

### Procedure

1. Access the **GAA Wind Edit Events** page or [the Sub Group Summary page](#).

**Tip:** To access the **GAA Wind Edit Events** page:

- a. Access the **GAA Wind Overview** page.
  - b. As needed, select the **All Events**, **Edited Events**, or **Events Needing Review** tab.
  - c. Select the check box next to each row that contains the Event that you want to split.
  - d. Select **Edit Events**.
2. Select the check box next to the row that contains the Event that you want to split.
  3. Select .

The **Split Event** window appears.

4. In the **Number of Events** box, enter the number of Events to which you want to split the existing Event (that is, the original Event).


**Note:** The value that you enter determines the number of rows (that is, the number of Events) that appear in the window.

5. As needed, enter values in the **remaining fields**.

**Note:**

- In the **Split Event** window, the start date and the end date of the existing Event appear in the **Original Start Date** box and the **Original End Date** box, respectively.
  - The period of the existing Event is evenly split based on the number of Events to which you want to split the Event. The start date and the end date of each split period appear in the **Start Date** column and the **End Date** column of each row, respectively. You can modify the values in these columns; however, the value in the **Start Date** column of any row cannot be less than that in the **Original Start Date** box, and the value in the **End Date** column of any row cannot be greater than that in the **Original End Date** box. In addition, the sum duration of the split Events in the window must be same as the period of the existing Event.
  - The actual production of the existing Event (that is, the value in the **Original Actual Production** box) is evenly split based on the number of Events to which you want to split the Event. You can modify the value. A warning message appears, if the sum of actual production of the split Events in the window is not same as the actual production of the existing Event.
6. Select **Create**.

In the **Events** workspace, the rows that contain the Events you have attempted to create by splitting the existing Event are highlighted.

**Note:** To discard your changes, select .

7. Select .

The Events are split.

**Note:** The check box for the **Edited** column gets selected for the split Events, which indicates that the Events are edited.

## Performance Records

### About Performance Records

A GAA Wind Performance Record provides information about the GAA Wind Sub Group and performance calculations pertaining to the overall wind turbine operation for a particular

month. In addition to calculating the availability and reliability statistics of a wind plant, you can use the record to evaluate the performance of the Sub Group.

## Access a Performance Record


### Procedure

1. [Access the Sub Group Summary page](#) for the Sub Group whose Performance Record you want to access.
2. Select the **Performance** tab.

Performance Records that are associated with the Sub Group appear for each month of the current year, until the current month.

**Tip:** To access Performance Records for a different year, use .

3. Select the link in the row that contains the Performance Record that you want to access. The **Performance Record** page appears.

**Note:** As needed, you can modify the values in the [available fields](#), and then select  to save your changes.


**Note:** You cannot modify a Performance Record when its sync status is OUT OF SYNC unless you regenerate the record.

## Access the Performance Record History

### About This Task

The history of a Performance Record is recorded each time a field in the record is modified. This topic describes how to access the history of a Performance Record.

### Procedure

1. [Access the Performance Record](#) whose history you want to access.
2. Select , and then select **History**.

The **Datasheet Field History** window appears.

## Create a Performance Record

### Before You Begin

- In the Report Configuration record based on which you want to create a Performance Record, ensure that:
  - The **Is Report** check box is cleared.
  - The **Associated Subgroups** box contains the Sub Group for which you want to create a Performance Record.
- [Create a Sub Group Capacity record](#) for the Sub Group for the month and year for which you want to create a Performance Record.
- [Import Events](#) for the Sub Group for the month and year for which you want to create a Performance Record.



- Ensure that the imported Events do not have an error.
- Ensure that the imported Events do not have a gap in time.

**Note:** For a given month and Unit, if the value in the Start Date field of an Event is different from that in the End Date field of the previous Event, the two Events are considered to have a gap in time. In addition, if the Events imported for a given month do not account for all the 24 hours of each day in the month, the Events are considered to have a gap in time.

## Procedure

1. [Access the Sub Group Summary page](#) for the Sub Group for which you want to create a Performance Record.
2. Select the **Performance** tab.

The Performance Records that are associated with the Sub Group appear for each month of the current year, until the current month.

**Note:** The sync status of a Performance Record that has never been created is OUT OF SYNC.

3. Select **Create Record** next to the month for which you want to create a Performance Record.

The **Performance Record** page appears. Performance calculations are simultaneously run, and the record is updated.

### Note:

If the IU time percentage exceeds 2%, a warning message appears to indicate the same. You can, however, create a Performance Record.

The IU time percentage is the percentage of the total IU time for the Events, as a function of the total report time. For more information, refer to [The Data Quality Parameters Window](#).

The Events data is considered in the Sub Group timezone for creation of the Performance Record.

## Results

The sync status of the Performance Record is SYNCED. If the Event associated with the record is now modified, the sync status will change to OUT OF SYNC.

## Next Steps

- [Access the Performance Record](#).

# Regenerate a Performance Record

## Before You Begin

- [Import Events](#) for the Sub Group for the month and year for which you want to regenerate a Performance Record.
- Ensure that the imported Events do not have an error.
- Ensure that the imported Events do not have a gap in time.

**Note:** For a given month and Unit, if the value in the Start Date field of an Event is different from that in the End Date field of the previous Event, the two Events are considered to

have a gap in time. In addition, if the Events imported for a given month do not account for all the 24 hours of each day in the month, the Events are considered to have a gap in time.

### About This Task


If the Event associated with a Performance Record has been modified, the sync status of the record will be OUT OF SYNC. You can generate the record again to change the sync status to SYNCED. This topic describes how to regenerate a Performance Record.

**Note:** You can regenerate a Performance Record only when the sync status is OUT OF SYNC.

### Procedure

1. [Access the Sub Group Summary page](#) for the Sub Group whose Performance Record you want to regenerate.
2. Select the **Performance** tab.

The Performance Records that are associated with the Sub Group appear for each month of the current year, until the current month.

3. Select the row that contains the Performance Record that you want to regenerate.
4. Select .

The **Regenerate Record** window appears, stating that regenerating the Performance Record may take some time.

5. Select **Yes** or **No** as needed.

**Note:** Both the **Yes** and **No** options in the window will regenerate the Performance Record; however, the **Yes** option will also update the values in the following fields of the Performance Record, whereas the **No** option will not:

- Gross Actual Generation
- Net Actual Generation
- Net Maximum Capacity

Performance calculations are run, and the Performance Record is regenerated.

#### **Note:**

If the IU time percentage exceeds 2%, a warning message appears to indicate the same. You can, however, regenerate the Performance Record.

The IU time percentage is the percentage of the total IU time for the Events, as a function of the total report time. For more information, refer to [The Data Quality Parameters Window](#).

The Events data is considered in the Sub Group timezone for creation of Performance Record.

### Results

The sync status of the regenerated Performance Record is SYNCED.

### Next Steps

- [Access the Performance Record](#).

## Delete a Performance Record


### About This Task

This topic describes how to delete a Performance Record.

### Procedure

1. [Access the Sub Group Summary page](#) for the Sub Group whose Performance Record you want to delete.
2. Select the **Performance** tab.

The Performance Records that are associated with the Sub Group appear for each month of the current year, until the current month.

3. Select the row that contains the Performance Record that you want to delete.
4. Select .

The **Delete Record** window appears, asking you to confirm that you want to delete the Performance Record.

5. Select **Yes**.

The Performance Record is deleted.

## Submit or Resubmit a Performance Record for Review

### Before You Begin

- Ensure that the sync status of the Performance Record is SYNCED.
- Ensure that you are assigned to at least one of the following Security Roles:
  - MI GAA Wind Super Administrator
  - MI GAA Wind Administrator

### About This Task

A Performance Record that is in the In Progress state can be submitted or resubmitted for review. The In Progress state of a Performance Record indicates one of the following:

- It has never been submitted for review.
- It has been rejected.
- It has been re-opened after approval.

This topic describes how to submit or resubmit a Performance Record for review.

### Procedure

1. [Access the Performance Record](#) that you want to submit or resubmit for review.

**Note:** To know which scenario caused the Performance Record to move to the In Progress state, you can access the **History** section in the **State Assignments** window. To access this window, select the **In Progress** drop-down list box in the Performance Record, and then select the **Manage State Assignments** option.

2. Select the **In Progress** drop-down list box, and then select the **Review** option, followed by the **Done** button.

The Performance Record is submitted or resubmitted for review, and its state is changed to Pending Approval. You can modify the Performance Record.

### Next Steps

[Approve or reject the Performance Record.](#)

## Approve or Reject a Performance Record

### Before You Begin

- Ensure that the sync status of the Performance Record is SYNCED.
- Ensure that you are assigned to at least one of the following Security Roles:
  - MI GAA Wind Super Administrator
  - MI GAA Wind Administrator

### Procedure

1. [Access the Performance Record](#) that you want to approve or reject.
2. Select the **Pending Approval** drop-down list box, and then select the **Complete** or **Reject Review** option as needed, followed by the **Done** button.
  - If you selected the **Complete** option: The Performance Record is approved and its state is changed to Approved. You can no longer modify the Performance Record.
  - If you selected the **Reject Review** option: The Performance Record is rejected and its state is changed to In Progress. You can modify the Performance Record.

### Next Steps

- If you want to modify the approved Performance Record, [open it](#).
- Modify the rejected Performance Record, and then [resubmit it for review](#).

## Open an Approved Performance Record

### Before You Begin

- Ensure that you are assigned to at least one of the following Security Roles:
  - MI GAA Wind Super Administrator
  - MI GAA Wind Administrator

### About This Task

### Procedure

1. [Access the Performance Record](#) that you want to open.
2. Select the **Approved** drop-down list box, and then select the **Reject Completed** option, followed by the **Done** button.

The Performance Record is opened, and its state is changed to In Progress. You can modify the Performance record.

### Next Steps

Modify the Performance Record, and then [resubmit it for review](#).

**Note:** If State Management of GAA Wind Performance family is disabled through Configuration Manager, then, the user will not be able to see the state icon in the performance record. But user will be able to perform all the other operations in the performance record and can create its performance report as well. In this case, approval of performance record is not needed for creating performance report.

If State Management of GAA Wind Performance family is enabled again through the Configuration Manager, then, the state will be reset to **In-Progress** for all the existing performance records.

## Reports

### About Reports

To submit data to the North American Electric Reliability Corporation (NERC), GAA Wind provides the following types of reports:


- Performance Report: Provides information about the GAA Wind Sub Group and performance calculations pertaining to the overall wind turbine operation for a particular month. The data contained in this report is used to evaluate the performance and reliability of the assets involved in running a wind turbine and to predict the availability of a wind plant.
- Sub Group Report: Provides information about the configuration data for a GAA Wind Sub Group. The data includes the design, installed units, location, and operating characteristics pertaining to the wind turbines.

### Access a Report

#### Procedure

1. [Access the Sub Group Summary page](#) for the Sub Group whose report you want to access.
2. Select the **Reports** tab.

The reports that are associated with the Sub Group appear for each month of the current year.

**Tip:** To access reports for a different year, use .

3. Select the link in the row that contains the report that you want to access.

The report, which is a Microsoft Excel workbook, is downloaded.

### Generate a Report

#### Before You Begin

- In the Report Configuration record based on which you want to generate a report, ensure that:
  - The **Is Report** check box is selected.
  - The **Associated Subgroups** box contains the Sub Group for which you want to generate a report.

- If you want to generate a Performance Report, [create a Performance Record](#) for the Sub Group for the month and year for which you want to generate the report.

### About This Task

This topic describes how to generate a report, which can be a Performance Report or a Sub Group Report depending on the value in the Report Type field in the associated Report Configuration record.

### Procedure

1. [Access the Sub Group Summary page](#) for the Sub Group for which you want to generate a report.

2. Select the **Reports** tab.

The reports that are associated with the Sub Group appear for each month of the current year, until the current month.

**Note:** The sync status of a report that has never been generated is OUT OF SYNC.

3. Select **Generate Report** next to the month for which you want to generate a report.

The generated report appears as an .xlsx file.

### Results

The sync status of the generated report is SYNCED. If the Performance Record or the Sub Group associated with the report is now modified, the sync status will change to OUT OF SYNC.

### Next Steps

- [Access the report.](#)

## Regenerate a Report

### About This Task

If the Performance Record or the Sub Group associated with a report is modified, the sync status of the report will be OUT OF SYNC. You can generate the report again. This topic describes how to regenerate a report, which can be a Performance Report or a Sub Group Report.

### Procedure

1. [Access the Sub Group Summary page](#) for the Sub Group whose report you want to regenerate.

2. Select the **Reports** tab.

The reports that are associated with the Sub Group appear for each month of the current year, until the current month.

3. Select the row that contains the report that you want to regenerate.

4. Select .

The **Regenerate Report** window appears, indicating that regenerating the report will overwrite the existing report.

5. Select **Yes**.

The report is regenerated.

### Results

The sync status of the regenerated report is SYNCED.

### Next Steps

- [Access the report](#).

## Delete a Report


### About This Task

This topic describes how to delete a report (that is, Performance Report or Sub Group Report).

### Procedure

1. [Access the Sub Group Summary page](#) for the Sub Group whose report you want to delete.
2. Select the **Reports** tab.

The reports that are associated with the Sub Group appear for each month of the current year, until the current month.

3. Select the row that contains the report that you want to delete.
4. Select .

The **Delete Report** window appears, asking you to confirm that you want to delete the report.

5. Select **Yes**.

The report is deleted.

## Generate Bulk Reports

### Before You Begin

- In the Report Configuration record based on which you want to generate a report, ensure that the **Is Report** check box is selected.
- In the same Report Configuration record, in the **Associated Subgroups** drop-down list box, select the Sub Groups for which you want to generate the reports.
- If you want to generate a Performance Report, [create a Performance Record](#) for the Sub Group for the month and year for which you want to generate the report. In addition, ensure that the Performance Record is in the Approved state.

### About This Task

This topic describes how to generate reports for multiple Sub Groups and months, which can be a Performance Report or a Sub Group Report depending on the Report Type selected in the **Generate Reports** window.

## Procedure

1. Access the [GAA Wind Overview](#) page.
2. Select **Generate Reports**.  
The **Report Generation** page appears, displaying a table of log files associated with the reports that were generated previously.
3. Select **Generate Reports**.  
The **Generate Reports** window appears.
4. As needed, enter values in the following fields:
  - a) In the **Report Type** field, select the type for which you want to generate the reports.
  - b) In the **Company** box, select the Company for which you want to generate the reports.
  - c) In the **Sub Groups** box, select the Sub Groups for which you want to generate the reports.
  - d) In the **Years** box, select the year for which you want to generate the reports.
  - e) In the **Months** box, select the months for which you want to generate the reports.  
The **Start Report Generation** button is enabled.
5. Select **Start Report Generation**.

**Tip:** The screen refreshes automatically every 10 minutes. However, you may control the rate at which the screen refreshes through a **toggle selector control**. The options for refresh are: Off, 30 sec, 1 min, 5 min and 10 min.

## Results

- The **Generate Reports** page appears, displaying a row containing the log file that is associated with the reports that are being generated. The table contains the following columns:
  - **COMPANY:** Contains the Company for which the reports are being generated.
  - **LOG:** Contains the log file associated with the reports.
  - **REPORT TYPE:** Contains the type of the reports that are being generated.
  - **MONTHS:** Contains the months for which the reports are being generated.
  - **YEAR:** Contains the year for which the reports are being generated.
  - **SUB GROUPS:** Contains the Sub Groups for which the reports are being generated.
  - **STATUS:** Contains one of the following values for each row:
    - In Progress: Indicates that the report is being generated.
    - Completed: Indicates that the report has been generated.
    - Completed With Errors: Indicates that the report has been generated, but it has encountered one or more errors.
    - Aborted: Indicates that the report generation job has been cancelled by the user.
  - **CREATED BY:** Contains the name of the user who started the report generation job.
  - **LAST UPDATED DATE:** Contains the date and time when the report is generated.
  - **TERMINATED BY:** Contains the name of the user who canceled the report generation job.
  - **TERMINATED DATE:** Contains the date and time when the job was canceled.
- If a report that is being generated already exists in APM, it is replaced.



## Download Bulk Reports

This topic describes how to download reports that are generated for multiple Sub Groups and months.

### Procedure

1. [Access the GAA Wind Overview page](#).
2. Select **Generate Reports**.  
The **Generate Reports** page appears, displaying a table of log files associated with the reports that were generated previously.
3. Select **Download Reports**.  
The **Download Reports** window appears.
4. As needed, enter values in the following fields:
  - a) In the **Report Type** field, select the type for which you want to download the reports.
  - b) In the **Company** box, select the Company for which you want to download the reports.
  - c) In the **Sub Groups** box, select the Sub Groups for which you want to download the reports.
  - d) In the **Years** box, select the year for which you want to download the reports.
  - e) In the **Months** box, select the months for which you want to download the reports.  
The **Download Reports** button is enabled.
5. Select **Download Reports**.  
A Microsoft Excel workbook that contains the reports is downloaded.

# Chapter 4

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## Admin

### Topics:

- [Access the GAA Wind Administrator Page](#)
- [GAA Wind Administrator Workflow](#)
- [Companies](#)
- [IEC Types and NERC Types](#)
- [Report Configuration](#)
- [Connections](#)
- [Schedule Jobs](#)

# Access the GAA Wind Administrator Page

## Access the GAA Wind Administrator Page

### Procedure

In the **Applications** menu, navigate to **ADMIN > Application Settings > Generation Availability Analysis Wind**.

The **GAA Wind Administrator** page appears, containing the following sections:

- **Configuration:** Contains the following subsections:
  - **IEC Types:** Contains a table of IEC Types records.
  - **NERC Types:** Contains a table of NERC Types records.
  - **Mapping:** Contains a table of IEC and NERC Mapping records.
- **Report Configuration:** Contains a list of Report Configuration records.
- **Connections:** Contains the authentication and URL settings required to import Events.
- **Schedule Jobs:** Contains a list of Scheduled Job records.

The screenshot shows the GAA Wind Administrator interface. On the left is a sidebar with 'Generation Availability Analysis Wind' and a list of companies. The main area has a top bar with 'GAA Wind Administrator' and 'Status: Connected'. Below this are tabs for 'Configuration', 'Report Configuration', 'Connections', and 'Schedule Jobs'. The 'Configuration' tab is active, showing a sub-menu with 'IEC Types', 'NERC Types', and 'Mapping'. The 'IEC Types' sub-menu is expanded, displaying a table with columns for ID, DESCRIPTION, and LEVEL.

ID	DESCRIPTION	LEVEL
IA	Information Available	1
IAFM	Force Majeure	2
IANO	Non-Operative	2
IANOFO	Forced Outage	4

**Note: Status** indicates the health of the event service. You can import Events only if the status is displayed as Connected.

## GAA Wind Administrator Workflow

### GAA Wind Administrator Workflow

#### Procedure

1. [Configure the settings](#) for importing Events.
2. [Import the asset hierarchy records](#) for importing Events.
3. [Create](#) or [import the Sub Group Capacity records](#).
4. [Modify](#) or [create a Report Configuration record](#).

# Companies

## About Companies

A GAA Wind Company represents the reporting organization that owns one or more wind plants for which generation and loss data is recorded. Before you use the International Electrotechnical Commission (IEC) event data from the GE Renewables Digital Wind Farm suite, you must create a Company.

A Company is created when you import data using the GAA Wind Asset Hierarchy Data Loader.

Each Company can be associated with only one Functional Location and vice versa.

## About Plants

A GAA Wind Plant represents a collection of wind turbine groups at a single location.

A Plant is created when you import data using the GAA Wind Asset Hierarchy Data Loader.

Each Plant can be associated with only one Functional Location and vice versa.

## About Groups

A GAA Wind Group is a phase that is commissioned during a particular year and it represents one or more sub groups within the boundary of a common wind plant.

A Group is created when you import data using the GAA Wind Asset Hierarchy Data Loader.

Each Group can be associated with only one Functional Location and vice versa.

## About Sub Groups

A GAA Wind Sub Group represents a collection of wind turbines that have the same manufacturer, model number, phase of construction, rotor diameter, and turbine system capacity. The performance data pertaining to the overall wind turbine operation is reported at the sub group level.

Each Sub Group has a unique identifier that is assigned by NERC through the GADS Wind Reporting application.

A Sub Group is created when you import data using the GAA Wind Asset Hierarchy Data Loader. GAA Wind records the revision history of the Sub Group.

Each Sub Group can be associated with only one Functional Location and vice versa.

## About Sub Group Capacity Records

A GAA Wind Sub Group Capacity record represents those characteristics of a GAA Wind Sub Group that vary on a monthly basis, such as Net Actual Generation and Total Loss Estimate (%).

A Sub Group Capacity record is created when you import data using the GAA Wind Sub Group Capacity Data Loader. GAA Wind records the revision history of this record.

## About Units

A GAA Wind Unit represents a wind turbine, which generates power.

A Unit is created when you import data using the GAA Wind Asset Hierarchy Data Loader.

Each Unit can be associated with only one Equipment and vice versa.

## Access a Company

### Procedure

1. [Access the GAA Wind Administrator page.](#)
2. In the pane containing the list of assets, select the Company that you want to access.

The datasheet of the selected Company appears. A list of Plants associated with the selected Company appears in the pane.

## Access a Plant

### Procedure

1. [Access the Company](#) for which you want to access a Plant.
2. In the pane containing the list of assets, select the Plant that you want to access.

The datasheet of the selected Plant appears. A list of Groups associated with the selected Plant appears in the pane.

## Access a Group

### Procedure

1. [Access the Plant](#) for which you want to access a Group.
2. In the pane containing the list of assets, select the Group that you want to access.

The datasheet of the selected Group appears. A list of Sub Groups associated with the selected Group appears in the pane.

## Access a Sub Group

### Procedure

1. [Access the Group](#) for which you want to access a Sub Group.
2. In the pane containing the list of assets, select the Sub Group that you want to access.


The **Definition** section appears, displaying the datasheet of the selected Sub Group. A list of Units associated with the selected Sub Group appears in the pane.

## Access a Sub Group Capacity Record

### Procedure

1. [Access the Sub Group](#) for which you want to access a Sub Group Capacity record.
2. Select the **Capacity** tab.  
A table of Sub Group Capacity records associated with the selected Sub Group appears.
3. In the **Entity ID** column, select the link in the row that contains the Sub Group Capacity record that you want to access.

The **Edit Capacity** window appears.


**Note:** As needed, you can modify the values in the [available fields](#), and then select  to save your changes.

## Access the Sub Group Revision History

### About This Task

The revision history of a Sub Group record is recorded each time a field in the record is modified. This topic describes how to access the revision history of a Sub Group record.

### Procedure

1. [Access the Sub Group](#) whose revision history you want to access.
2. Select .

The **Revision History** page appears, displaying the **Sub Group** section, which contains the following columns:


- **Field:** Contains the modified field.
- **Old Value:** Contains the previous value in the field.
- **New Value:** Contains the current value in the field.
- **Changed Date:** Contains the date when the field was modified.
- **Changed By:** Contains the name of the user who modified the field.

## Access the Sub Group Capacity Revision History

### About This Task

The revision history of a Sub Group Capacity record is recorded each time a field in the record is modified. This topic describes how to access the revision history of a Sub Group Capacity record.

### Procedure

1. [Access the Sub Group](#) of the Sub Group Capacity whose revision history you want to access.
2. Select .

The **Revision History** page appears, displaying the **Sub Group** section.

3. Select the **Sub Group Capacity** tab.

The **Sub Group Capacity** section appears, displaying the following columns:

- **Entity ID:** Contains the identifier of the Sub Group Capacity record.
- **Field:** Contains the modified field.
- **Old Value:** Contains the previous value in the field.
- **New Value:** Contains the current value in the field.
- **Changed Date:** Contains the date when the field was modified.
- **Changed By:** Contains the name of the user who modified the field.

## Access a Unit

### Procedure

1. [Access the Sub Group](#) for which you want to access a Unit.
2. In the pane containing the list of assets, select the Unit that you want to access.

The datasheet of the selected Unit appears.

## Create a Sub Group Capacity Record

### About This Task

**Note:** You can create only one Sub Group Capacity record for a given month of a year.


### Procedure

1. [Access the Sub Group](#) for which you want to create a Sub Group Capacity record.
2. Select the **Capacity** tab.

A table of Sub Group Capacity records associated with the selected Sub Group appears.

3. Select .

The **Add Capacity** window appears.

4. As needed, enter values in the [available fields](#).
5. Select .


The Sub Group Capacity record is created.

## Delete a Sub Group Capacity Record

### Procedure

1. [Access the Sub Group](#) for which you want to delete a Sub Group Capacity record.
2. Select the **Capacity** tab.

A table of Sub Group Capacity records associated with the selected Sub Group appears.

3. Select the row that contains the Sub Group Capacity record that you want to delete.
4. Select .

The **Delete Capacity** window appears, asking you to confirm that you want to delete the Sub Group Capacity record.

5. Select **Yes**.

The Sub Group Capacity record is deleted.

## IEC Types and NERC Types

### About IEC Types and NERC Types

IEC Types and NERC Types are standards enforced by the International Electrotechnical Commission (IEC) and the North American Electric Reliability Corporation (NERC) respectively for the exchange of information pertaining to wind turbine operation between various stakeholders in the wind power generation business. GAA Wind conforms to these established standards, thereby ensuring that the data is reported in accordance with the prescribed format and procedures.

#### Details

To incorporate the IEC and NERC standards, GAA Wind uses the following types of records:

- **GAA Wind IEC Types:** A record that represents the event description of the operating state of a wind turbine during a particular period in the IEC-61400-26 standard of the IEC. The **IEC Types** subsection in GAA Wind contains the baseline IEC Types records.
- **GAA Wind NERC Types:** A record that represents the event description of the operating state of a wind turbine during a particular period in the standard defined by NERC. For more information, refer to the NERC Types documentation. The **NERC Types** subsection in GAA Wind contains the baseline NERC Types records.
- **GAA Wind IEC And NERC Mapping:** A record that represents the method by which an event of IEC Type is converted into its equivalent in NERC Type for the purpose of reporting to NERC using the Generating Availability Data System (GADS) Wind Reporting application. The **Mapping** subsection in GAA Wind contains the baseline IEC and NERC Mapping records.

**Note:** The following details are only applicable to the event data that is imported from the GE Renewables Digital Wind Farm suite:

- By default, the events that belong to IEC Type are converted to their equivalent in NERC Type.
- If the IEC-26 category for an event is IU (Information Unavailable), the event can be manually reviewed. APM attempts to convert the event to its equivalent in NERC Type. If an event that belongs to the IU category is not converted to its equivalent in NERC Type, the event is converted to a NERC Type that is equivalent to the next non-IU event in the sequence if the duration of the IU event is less than 10 minutes; else the NERC Type will be blank if the duration of the IU event is greater than or equal to 10 minutes. For example, if there are five events belonging to the IU category and the next event in the sequence is of a non-IU category, with RUTH as NERC Type, the five events that belong to the IU category are mapped to RUTH if the duration of the IU events is less than 10 minutes.




## Access an IEC Type

### Procedure

1. [Access the GAA Wind Administrator page.](#)
2. In the **IEC Types** subsection, in the **ID** column, select the link in the row that contains the IEC Type that you want to access.

The **Edit IEC Type** window appears.

**Note:** As needed, you can modify the values in the [available fields](#), and then select  to save your changes.

**Note:** You cannot modify the ID value of an IEC Type that is used in an IEC and NERC Mapping record, unless you [delete the Mapping](#) or [modify it](#) such that it is linked to a different IEC Type.

## Access a NERC Type

### Procedure


1. [Access the GAA Wind Administrator page.](#)
2. In the **Configuration** section, select **NERC Types**.

A table of NERC Types appears, displaying the following columns:

- **ID**
- **Description**

3. In the **ID** column, select the link in the row that contains the NERC Type that you want to access.

The **Edit NERC Type** window appears.

**Note:** As needed, you can modify the values in the [available fields](#), and then select  to save your changes.

**Note:** You cannot modify the ID value of a NERC Type that is used in an IEC and NERC Mapping record, unless you [delete the mapping](#) or [modify it](#) such that it is linked to a different NERC Type.

## Access a Mapping

### Procedure


1. [Access the GAA Wind Administrator page.](#)
2. In the **Configuration** section, select **Mapping**.

A table of IEC and NERC Mapping records appears, displaying the following columns:

- **IEC ID**
- **NERC ID**



3. In the **IEC ID** column, select the link in the row that contains the mapping that you want to access.

The **Edit IEC and NERC Type Mapping** window appears.

**Note:** As needed, you can modify the values in the [available fields](#), and then select  to save your changes.



## Create an IEC Type

### Procedure

1. Access the [GAA Wind Administrator](#) page.
  2. In the **IEC Types** subsection, select .  
The **Add IEC Type** window appears.
  3. As needed, enter values in the [available fields](#).
  4. Select .
- The IEC Type is created.



## Create a NERC Type

### Procedure

1. Access the [GAA Wind Administrator](#) page.
  2. In the **Configuration** section, select **NERC Types**.  
A table of NERC Types appears.
  3. Select .
- The **Add NERC Type** window appears.
4. As needed, enter values in the [available fields](#).
  5. Select .
- The NERC Type is created.

## Create a Mapping

### Procedure

1. Access the [GAA Wind Administrator](#) page.
  2. In the **Configuration** section, select **Mapping**.  
A table of IEC and NERC Mapping records appears.
  3. Select .
- The **Add Mapping** window appears.
4. As needed, enter values in the [available fields](#).
  5. Select .
- The mapping is created.

## Delete an IEC Type

### About This Task

**Note:** You cannot delete an IEC Type that is used in a Mapping unless you [delete the Mapping](#) or [modify it](#) such that it is linked to a different IEC Type.

### Procedure

1. [Access the GAA Wind Administrator page.](#)
2. In the **IEC Types** subsection, select the row that contains the IEC Type that you want to delete.

3. Select .

The **Delete IEC Type** window appears, asking you to confirm that you want to delete the IEC Type.

4. Select **Yes**.

The IEC Type is deleted.

## Delete a NERC Type

### About This Task

**Note:** You cannot delete a NERC Type that is used in an IEC and NERC Mapping record unless you [delete the mapping](#) or [modify it](#) such that it is linked to a different NERC Type.

### Procedure

1. [Access the GAA Wind Administrator page.](#)
2. In the **Configuration** section, select **NERC Types**.

A table of NERC Types appears.

3. Select the row that contains the NERC Type that you want to delete.

4. Select .

The **Delete NERC Type** window appears, asking you to confirm that you want to delete the NERC Type.

5. Select **Yes**.

The NERC Type is deleted.

## Delete a Mapping

### Procedure

1. [Access the GAA Wind Administrator page.](#)
2. In the **Configuration** section, select **Mapping**.

A table of IEC and NERC Mapping records appears.

3. Select the row that contains the mapping that you want to delete.

4. Select .

The **Delete Mapping** window appears, asking you to confirm that you want to delete the mapping.

5. Select **Yes**.

The mapping is deleted.

## Report Configuration

### About Report Configuration Records

Report Configuration records provide the configuration data that is used for performance calculations in Performance Records, Performance Reports, and Sub Group Reports linked to a Sub Group.

A Report Configuration record can represent either a Performance Record or a report (that is, a Performance Report or a Sub Group Report), depending on the values provided in the Is Report and Report Type fields.

The **Report Configuration** section in GAA Wind contains the baseline Report Configuration records.

### Access a Report Configuration Record


#### Procedure

1. [Access the GAA Wind Administrator page](#).
2. Select the **Report Configuration** tab.

A pane containing the list of Report Configuration records appears.

3. In the pane, select the Report Configuration record that you want to access.

The datasheet of the selected Report Configuration appears.

**Note:** As needed, you can modify the values in the [available fields](#), and then select  to save your changes.

### Access the Report Configuration Record Associated with a Sub Group

#### Procedure

1. [Access the Sub Group](#) whose associated Report Configuration record you want to access.
2. Select the **Associated Report Configurations** tab.



A pane containing the Report Configuration records that are associated with the Sub Group appears.

3. In the **ENTITY ID** column, select the link in the row that contains the Report Configuration record that you want to access.

The **View Report Configuration** window appears, displaying the Report Configuration record in the view mode.

## Create a Report Configuration Record


### Procedure

1. Access the [GAA Wind Administrator](#) page.
2. Select the **Report Configuration** tab.  
A pane containing the list of Report Configuration records appears.
3. Select .  
A blank datasheet appears.
4. As needed, enter values in the [available fields](#).
5. Select .  
The Report Configuration record is created.

## Delete a Report Configuration Record

### About This Task

### Procedure

1. Access the [GAA Wind Administrator](#) page.
2. Select the **Report Configuration** tab.  
A pane containing the list of Report Configuration records appears.
3. In the pane, select the row that contains the Report Configuration record that you want to delete.
4. Select .  
The **Delete Report Configuration** window appears, asking you to confirm that you want to delete the Report Configuration record.
5. Select **Yes**.  
The Report Configuration record is deleted.

## Connections

### About Connections

To import an Event from the GE Renewables Digital Wind Farm suite into APM, you must first establish a connection between GAA Wind and an external web service that facilitates the transfer of data. To do so, you must configure the connections in GAA Wind by providing the appropriate URL and credentials to the external server.

## Access a Connection



### Procedure

1. Access the [GAA Wind Administrator](#) page.
2. Select the **Connections** tab.  
A pane containing a list of Connections appears.
3. In the pane, select the Connection that you want to access.  
The datasheet of the selected Connection appears.

**Note:** You can modify the values in the [available fields](#), and then select  to save your changes.

## Create a Connection

### Procedure


1. Access the [GAA Wind Administrator](#) page.
2. Select the **Connections** tab.  
A pane containing a list of Connections appears.
3. Select .  
A blank datasheet appears.
4. As needed, enter values in the [available fields](#).
5. Select .  
The Connection is created.

### Next Steps

- [Import Events](#).

## Delete a Connection

### Procedure

1. Access the [GAA Wind Administrator](#) page.
2. Select the **Connections** tab.  
A pane containing a list of Connections appears.
3. In the pane, select the Connection that you want to delete.  
The datasheet of the selected Connection appears.
4. Select .  
The **Delete Connection** window appears, asking you to confirm that you want to delete the Connection.
5. Select **Yes**.  
The Connection is deleted.

# Schedule Jobs

## About GAA Wind Scheduled Job Records

GAA Wind Scheduled Job records provide information about the schedule details that are used to import the Events data automatically for Sub Groups and generate Performance Report automatically for Sub Groups. A Scheduled Job can be configured to run as a one time job or as a recurring job.

## Access a Scheduled Job

### Procedure

1. [Access the GAA Wind Administrator page](#).
2. Select the **Schedule Jobs** tab.  
A pane containing the list of Scheduled Jobs appears.

**Note:** The first record is selected by default.

3. Select the Scheduled Job that you want to access.  
The datasheet of the selected Scheduled Job appears.

**Important:** You cannot update a One Time Scheduled Job if it has already run. Also, you cannot change the type of job schedule from One Time Scheduled Job to Recurring Scheduled Job or vice versa.

**Note:** You can modify the values in the [available fields](#), and then select **Save** to save your changes.

## Create a Scheduled Job

### About This Task

You can create the following types of Event Import Scheduled Jobs:

- **One Time:** This is a one-time job that is created based on the selected Import Duration Type. The Scheduled Job will start based on the selected Start Date. The following Import Duration Types are available:
  - **Date range:** Identifies the time period for which data will be imported. Event Import Start Date and Event Import End Date values are considered in Coordinated Universal Time (UTC) for importing the events data.
  - **Month and Year:** Identifies the month and year for which data will be imported.
- **Recurring:** This is a recurring job based on the selected Repeat Interval, Start Date, and End Date. Import Start Date indicates the start date from when the event data must be imported. Import End Date is based on the selected Repeat Interval.

You can create the following types of Performance Report Scheduled Jobs:

- **One Time:** This is a one-time job that is created to generate performance reports for the selected month and year. The Scheduled Job will start based on the selected Start Date.
- **Recurring:** This is a monthly recurring job based on the selected Start Date and End Date. Month and Year indicates the start month and year from when the performance report is

generated. Every occurrence of the job will generate performance reports for the next month from the previous occurrence.

### Procedure

1. [Access the GAA Wind Administrator page.](#)
2. Select **Schedule Jobs**.
3. Select , and then select **Event Import Job** or **Performance Report Job**.  
A blank datasheet appears.
4. As needed, enter values in the [available fields](#).

**Important:** If the **Overwrite Existing Data** check box is cleared, and data exists for the selected date range or month and year, the Scheduled Job will not create new records. For a Sub Group, you can create multiple One Time Scheduled Jobs, but only one Recurring Scheduled Job.

5. Select **Save**.  
The Scheduled Job is created.

## Delete a Scheduled Job

### Procedure

1. [Access the GAA Wind Administrator page.](#)
2. Select the **Schedule Jobs** tab.  
A pane containing the list of Scheduled Jobs appears.
3. In the pane, select the Scheduled Job that you want to delete.
4. Select **Delete**.  
The **Delete Schedule Job** window appears, asking you to confirm that you want to delete the selected item.
5. Select **Yes**.  
The Scheduled Job is deleted.



# Chapter 5

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## Data Loaders

### Topics:

- [GAA Wind Data Loaders](#)
- [GAA Wind Asset Hierarchy Data Loader](#)
- [GAA Wind Sub Group Capacity Data Loader](#)
- [GAA Wind Events Data Loader](#)

# GAA Wind Data Loaders

## About the GAA Wind Data Loaders

APM uses the following Data Loaders to load the GAA Wind asset data into APM:

- GAA Wind Asset Hierarchy
- GAA Wind Sub Group Capacity

APM uses the following Data Loader to load the GAA Wind Event data.

- GAA Wind Events

Each GAA Wind Data Loader uses an Excel workbook, which is referred to as the data loader workbook.

## GAA Wind Asset Hierarchy Data Loader

### About the GAA Wind Asset Hierarchy Data Loader

Using the GAA Wind Asset Hierarchy Data Loader, you can create the following records in the Asset Hierarchy for GAA Wind:

- GAA Company
- GAA Wind Plant
- GAA Wind Group
- GAA Wind Sub Group
- GAA Wind Unit

### About the GAA Wind Asset Hierarchy Data Loader Requirements

#### Prerequisites

1. Download the GAA Wind Asset Hierarchy data loader workbook from the GAA Wind Generation data loader category in APM.
2. Identify the data requirements for exporting data from the GE Renewables Digital Wind Farm suite into the data loader workbook.
3. Extract data from the GE Renewables Digital Wind Farm suite to populate the data loader workbook.
4. Ensure that the system code table values that are specified in the data loader workbook belong to the [system code table defined in GAA Wind](#).

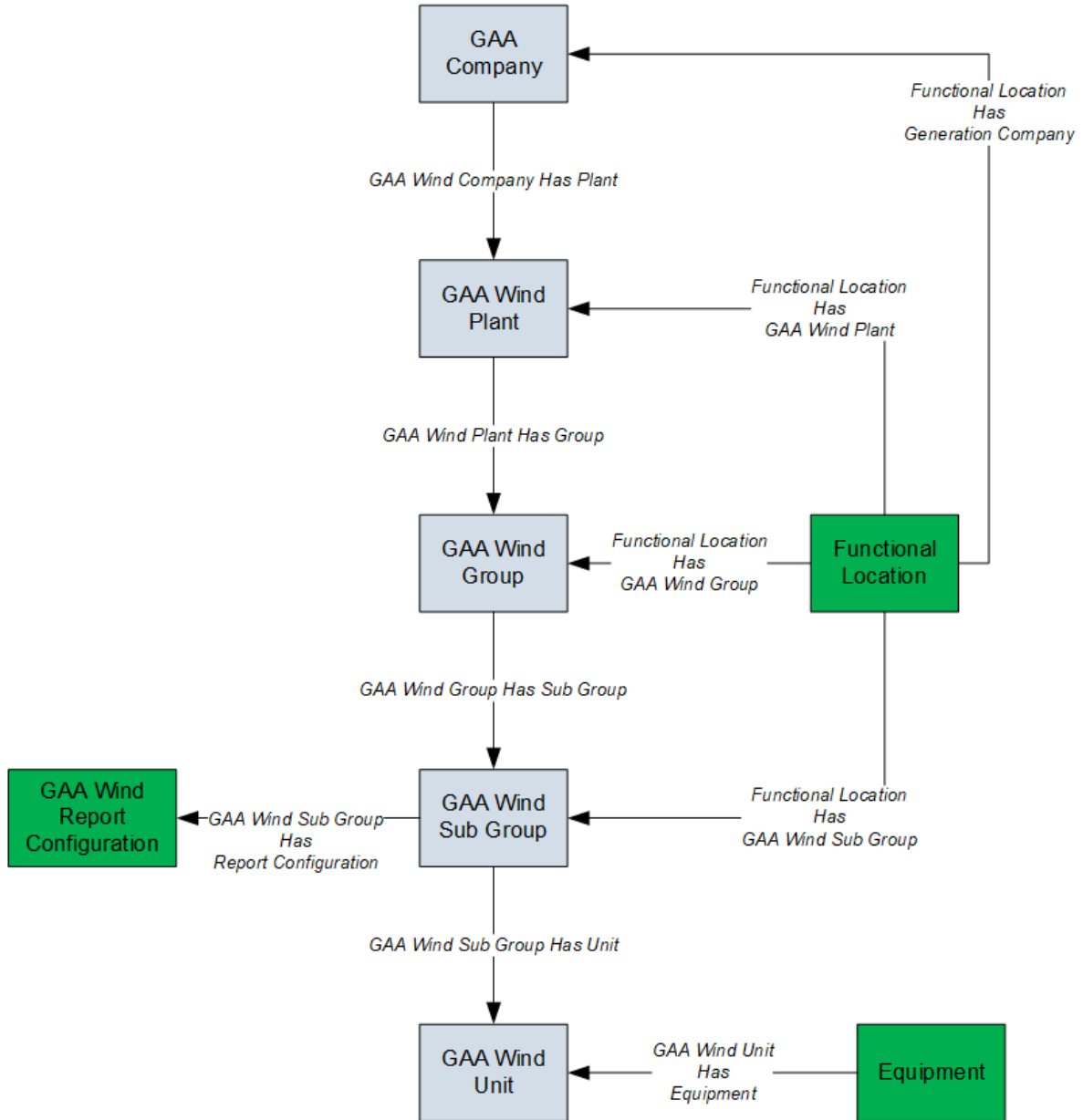
#### Security Settings

The user who loads data into APM must be associated with the following Security Groups and Security Roles:

- MI Data Loader User Security Role
- or
- MI Data Loader Admin Security Role

## About the GAA Wind Asset Hierarchy Data Loader Data Model

The following data model illustrates which records are supported by the GAA Wind Asset Hierarchy Data Loader:



- Elements shown in grey are imported into APM by the Data Loader.
- Elements shown in green may exist in APM and may be related to the data that is being loaded. Except for GAA Wind Report Configuration, if these elements do not exist, they will be created in APM when you load data using the Data Loader.

# About the GAA Wind Asset Hierarchy Data Loader General Loading Strategy

## Best Practices

When using the data loader workbook, consider the following best practices:

- Ensure that Field IDs (that is, row 2 of each worksheet) do not include special characters or spaces.
- Do not modify the first two rows of each worksheet.
- Do not try to create and modify the same record in the same data loader workbook.
- Consider the rules described in the Workbook Layout and Use section of this document.
- In addition to the fields included in the data loader workbook, if you want to add values for more fields for a record, you can add columns for those fields in the appropriate worksheet.

**Note:** The fields that you want to add to the data loader workbook must already exist in the corresponding family. If not, you must add the fields to the family via Configuration Manager.

## Load Sequence

The data in the data loader workbook is processed in the following sequence:

1. The Company worksheet is processed. The Data Loader searches for the Company record specified in the Company ID column. If the record exists, it is updated. Otherwise, a Company record is created.
2. The Plant worksheet is processed. The Data Loader searches for the Plant record specified in the Plant ID column. If the record exists, it is updated. Otherwise, a Plant record is created and linked to the Company record specified in the Company ID column.
3. The Group worksheet is processed. The Data Loader searches for the Group record specified in the Group ID column. If the record exists, it is updated. Otherwise, a Group record is created and linked to the Plant record specified in the Plant ID column.
4. The Sub Group worksheet is processed. The Data Loader searches for the Sub Group record specified in the Group ID column. If the record exists, it is updated. Otherwise, a Sub Group record is created and linked to the Group record specified in the Group ID column.
5. The Unit worksheet is processed. The Data Loader searches for the Unit record specified in the Unit ID column. If the record exists, it is updated. Otherwise, a Unit record is created and linked to the Sub Group record specified in the Sub Group Name column.

# About the GAA Wind Asset Hierarchy Data Loader Workbook Layout and Use

## Color Coding

Certain columns in the worksheets have different functions and requirements. To illustrate this, they are color-coded. The following table provides a list of colors and what they represent.

Color	Description	Comment
Pink	Required fields	Indicates columns that contain values that are required in GAA Wind.
Blue	Recommended fields	Indicates columns that, according to GE Vernova Best Practice for GAA Wind, should contain values.
White	Optional fields	Indicates columns where you can specify custom fields.

### Company Worksheet

The following table provides a list of fields that appear in the Company worksheet.

Field Caption	Field ID	Data Type (Length)	Comments
Company Key	COMPANY_KEY	Numeric	This cell is required.  Enter a unique value to identify the batch associated with this Company.  Other worksheets within the workbook can reference this Company using this value.
Company ID	MI_GMCOMPNY_COMP_ID_C	Character (50)	This cell is required.  Enter a unique value that you want to assign to each Company. Other worksheets within the workbook can reference this Company using this value.
Company Name	MI_GMCOMPNY_COMP_NAME_C	Character (50)	This cell is required.  Enter the full name of the Company. The value must be unique.

### Plant Worksheet

The following table provides a list of fields that appear in the Plant worksheet.

Field Caption	Field ID	Data Type (Length)	Comments
Company Key	COMPANY_KEY	Numeric	This cell is required. Enter the respective Company Key specified in the Company worksheet.
Plant ID	MI_GAA_W_PLAN_PLAN_ID_CHR	Character (100)	This cell is required. Enter a unique value that you want to assign to each Plant. Other worksheets within the workbook can reference this Plant using this value.
Plant Name	MI_GAA_W_PLAN_PLAN_NAME_CHR	Character (100)	This cell is required. Enter the full name of the Plant. The value must be unique.
Company ID	MI_GAA_W_PLAN_COMPANY_ID_NBR	Character	This cell is required. Enter the respective Company ID specified in the Company worksheet.
Region	MI_GAA_W_PLAN_REGION	Character (100)	This cell is recommended. Enter the region where the Plant is located.
Country	MI_GAA_W_PLAN_COUNTRY	Character (100)	This cell is recommended. Enter the country where the Plant is located.
State	MI_GAA_W_PLAN_STATE	Character (100)	This cell is recommended. Enter the state or province where the Plant is located.
City	MI_GAA_W_PLAN_CITY	Character (100)	This cell is recommended. Enter the city where the Plant is located.

### Group Worksheet

The following table provides a list of fields that appear in the Group worksheet.

Field Caption	Field ID	Data Type (Length)	Comments
Company Key	COMPANY_KEY	Numeric	This cell is required. Enter the respective Company Key specified in the Company worksheet.
Group ID	MI_GAA_W_GROU_GROU_ID_CHR	Character (100)	This cell is required. Enter a unique value that you want to assign to each Group. Other worksheets within the workbook can reference this Group using this value.
Group Name	MI_GAA_W_GROU_GROU_NAME_CHR	Character (100)	This cell is required. Enter the full name of the Group. The value must be unique.
Plant ID	MI_GAA_W_GROU_PLAN_ID_NBR	Character	This cell is required. Enter the respective Plant ID specified in the Plant worksheet.

### Sub Group Worksheet

The following table provides a list of fields that appear in the Sub Group worksheet.

Field Caption	Field ID	Data Type (Length)	Comments
Company Key	COMPANY_KEY	Numeric	This cell is required. Enter the respective Company Key specified in the Company worksheet.
Utility ID	MI_GAA_W_SUB_GROU_UTILITY_ID_NBR	Character (100)	This cell is required. Enter the NERC Compliance Registry (NCR) number or voluntary reporting ID (assigned by NERC) of your Company.
Region	MI_GAA_W_SUB_GROU_REGION_CHR	Character (100)	This cell is required. Enter the region where the Sub Group is located.
Plant ID	MI_GAA_W_SUB_GROU_PLANT_ID_NBR	Character	This cell is required. Enter the respective Plant ID specified in the Plant worksheet.

Field Caption	Field ID	Data Type (Length)	Comments
Group ID	MI_GAA_W_SUB_GROU_GROU_ID_NBR	Character	This cell is required. Enter the respective Group ID specified in the Group worksheet.
Sub Group ID	MI_GAA_W_SUB_GROU_SUB_GRP_ID_C	Character (100)	This cell is required. Enter a unique value that you want to assign to each Sub Group.
Sub Group Name	MI_GAA_W_SUB_GROU_SUB_GRP_NM_C	Character (100)	This cell is required. Enter the full name of the Sub Group. The value must be unique.
ISO Resource ID	MI_GAA_W_SUB_GRP_ISO_RES_ID_C	Character (100)	This cell is required. Enter the unique identifier provided by the International Organization for Standardization (ISO) to link Sub Groups with an ISO market in the event that the ISO requires mandatory GADS reporting.
Country	MI_GAA_W_SUB_GROU_COUNTRY_CHR	Character (100)	This cell is required. Enter the country where the Sub Group is located.
Nearest City	MI_GAA_W_SUB_GROU_CITY_CHR	Character (100)	This cell is required. Enter the city where the Sub Group is located.
State	MI_GAA_W_SUB_GROU_STATE_CHR	Character (100)	This cell is required. Enter the state or province where the Sub Group is located.
Location Latitude	MI_GAA_W_SUB_GROU_LOCATION_LAT_NBR	Numeric	This cell is required. Enter the degrees of latitude of the physical location of the Sub Group.
Location Longitude	MI_GAA_W_SUB_GROU_LOCATION_LON_NBR	Numeric	This cell is required. Enter the degrees of longitude of the physical location of the Sub Group.



Field Caption	Field ID	Data Type (Length)	Comments
Elevation	MI_GAA_W_SUB_GROU_EL EV_NBR	Numeric	This cell is required.  Enter the elevation of the physical location of the Sub Group, in meters.
Wind Regime	MI_GAA_W_SUB_GRP_WIN D_REGI_CHR	Character (100)	This cell is required.  Enter the average topography of the area where the Sub Group is located.
Annual Average Wind Speed	MI_GAA_W_SUB_GROU_AA WS_NBR	Numeric	This cell is required.  Enter the annual average wind speed at a height of 80 meters, in meters per second.
SCADA Manufacturer	MI_GAA_W_SUB_GROU_SC AD_MANU_C	Character (100)	This cell is required.  Enter the manufacturer of the SCADA system.
SCADA Model	MI_GAA_W_SUB_GROU_SC AD_MDL_CHR	Character (100)	This cell is required.  Enter the model name of the SCADA system.
Commissioning Year	MI_GAA_W_SUB_GROU_CO MM_YEAR_DT	Numeric	This cell is required.  Enter the year when the Sub Group was commissioned, in the following format: yyyy.
Total Installed Capacity	MI_GAA_W_SUB_GRP_TOTL _IN_CAP_N	Numeric	This cell is required.  Enter the total capacity for the Sub Group, in megawatts.
Reserve Capacity	MI_GAA_W_SUB_GROU_RE S_CAP_NBR	Numeric	This cell is required.  Enter the reserve capacity of the Sub Group that is held in reserve, in megawatts.
Total Number of Turbines	MI_GAA_W_SUB_GP_TOT_N M_OF_TR_N	Numeric	This cell is required.  Enter the actual number of turbines that exist in the Sub Group.

Field Caption	Field ID	Data Type (Length)	Comments
Turbine System MW	MI_GAA_W_SUB_GRP_TURB_SYS_MW_N	Numeric	This cell is required. Enter the System MW rating of a single turbine in the Sub Group.
Max Turbine Capacity MW	MI_GAA_W_SUB_GRP_MX_TR_CP_MW_C	Character (50)	This cell is required. Enter the maximum capacity that can be produced from a single turbine in the Sub Group.
Turbine Manufacturer	MI_GAA_W_SUB_GROU_TURB_MANF_C	Character (100)	This cell is required. Enter the name of the manufacturer of the turbines in the Sub Group.
Turbine Model	MI_GAA_W_SUB_GROU_TURB_MDL_CHR	Character (100)	This cell is required. Enter the model of the turbines in the Sub Group.
Turbine Model Version	MI_GAA_W_SUB_GRP_TURB_MDL_VER_C	Character (100)	This cell is required. Enter the version name of the turbines in the Sub Group.
Rotor Height	MI_GAA_W_SUB_GROU_TURB_HEIG_NBR	Numeric	This cell is required. Enter the height of the rotor hub in meters.
Rotor Diameter	MI_GAA_W_SUB_GROU_TURB_TO_DIA_NBR	Numeric	This cell is required. Enter the diameter of the rotor in meters.
Cut-in Wind Speed	MI_GAA_W_SUB_GRP_CUT_IN_WD_SPD_N	Numeric	This cell is required. Enter the lowest wind speed at which the turbine will start to generate power, in meters per second.
Low Cut-out Wind Speed (meters/second)	MI_GAA_W_SUB_GRP_LOW_CUT_OUT_W_SPD_N	Numeric	This cell is required. Enter the lowest wind speed at which the turbine can generate power before cutting out, in meters per second.

Field Caption	Field ID	Data Type (Length)	Comments
High Cut-out Wind Speed (meters/second)	MI_GAA_W_SUB_GRP_HG_CTO_W_SP_N	Numeric	This cell is required.  Enter the highest wind speed at which the turbine can generate power before cutting out, in meters per second.
Turbulence Intensity	MI_GAA_W_SUB_GRP_TURB_INTE_CHR	Character (50)	This cell is required.  Enter the average wind turbulence where the Sub Group is located.
Average Wind Speed	MI_GAA_W_SUB_GRP_AV_WIND_SPD_N	Numeric	This cell is required.  Enter the average annual wind speed in meters per second.
Wind Shear	MI_GAA_W_SUB_GRP_WIND_SHEA_CHR	Character (50)	This cell is required.  Enter the average strength of the difference between the speeds of wind.
Reference Anemometer Height	MI_GAA_W_SUB_GRP_REF_ANE_HEI_N	Numeric	This cell is required.  Enter the height of the highest anemometer on the reference meteorological tower, in meters.
Minimal Operating Temperature	MI_GAA_W_SUB_GRP_MIN_OP_TEMP_N	Numeric	This cell is required.  Enter the minimum operating temperature in degrees Celsius.
Maximum Operating Temperature	MI_GAA_W_SUB_GRP_MAX_OP_TEMP_N	Numeric	This cell is required.  Enter the maximum operating temperature in degrees Celsius.
Sub Group Status	MI_GAA_W_SUB_GRP_SUB_GRP_STAT_C	Character (50)	This cell is required.  Enter the status of the entire Sub Group during the period for which the data is entered.
Sub Group Ownership Status	MI_GAA_W_SUB_GRP_SUB_GRP_OW_ST_C	Character (50)	This cell is required.  Enter the ownership status of the Sub Group.

Field Caption	Field ID	Data Type (Length)	Comments
Effective Date	MI_GAA_W_SUB_GROU_EFF_DATE_DT	Date	This cell is required. Enter the effective date for which the Sub Group Ownership Status is reported, in the following format: mm/dd/yyyy.
Transfer to Utility	MI_GAA_W_SUB_GRP_TR_TO_UTIL_C	Character (100)	This cell is required. Enter the Utility ID of the Company to which the Sub Group is sold.
Timezone	MI_GAA_W_SUB_GROU_TIME_CHR	Character (50)	This cell is required. Enter the time zone associated with the Sub Group.
Transformation losses	MI_GAA_W_SUB_GROU_TRANSFORM_LOSS_N	Numeric	This cell is optional. Enter the transformer losses in megawatt hours.
Other losses	MI_GAA_W_SUB_GROU_OTHER_LOSS_N	Numeric	This cell is optional. Enter the electrical losses due to transmission between the turbine and the revenue meter, in megawatt hours.
Station Service	MI_GAA_W_SUB_GROU_STATION_SERV_N	Numeric	This cell is optional. Enter the station service load in megawatt hours.
Auxiliary loads	MI_GAA_W_SUB_GROU_AUX_LOAD_N	Numeric	This cell is optional. Enter the auxiliary losses in megawatt hours.

### Unit Worksheet

The following table provides a list of fields that appear in the Unit worksheet.

Field Caption	Field ID	Data Type (Length)	Comments
Company Key	COMPANY_KEY	Numeric	This cell is required. Enter the respective Company Key specified in the Company worksheet.
Unit ID	MI_GAA_W_UNIT_UNIT_ID_CHR	Character (100)	This cell is required. Enter a unique value that you want to assign to each Unit.
Unit Name	MI_GAA_W_UNIT_UNIT_NAME_CHR	Character (100)	This cell is required. Enter the full name of the Unit. The value must be unique.
Sub Group Name	MI_GAA_W_UNIT_SUB_GROUP_U_NM_NBR	Character	This cell is required. Enter the respective Sub Group Name specified in the Sub Group worksheet.

## About the GAA Wind Asset Hierarchy Data Loader Load Verification

### About This Task

After you load data, you should perform the following steps in APM to confirm the accuracy and integrity of the data imported from the data loader workbook:

### Procedure

1. Access the details of the import job. In addition to the general information regarding the records that were loaded during the data load operation, these details may include error and warning messages pertaining to the records.
2. In GAA Wind, access the records specified in the data loader workbook, and then verify that the expected data is present or updated, as applicable.

## GAA Wind Sub Group Capacity Data Loader

### About the GAA Wind Sub Group Capacity Data Loader

Using the GAA Wind Sub Group Capacity Data Loader, you can create the GAA Wind Sub Group Capacity records.

### About the GAA Wind Sub Group Capacity Data Loader Requirements

#### Prerequisites

1. Download the GAA Wind Sub Group Capacity data loader workbook from the APM Wind Generation data loader category in APM.

2. Identify the data requirements for exporting data from the GE Renewables Digital Wind Farm suite into the data loader workbook.
3. Extract data from the GE Renewables Digital Wind Farm suite to populate the data loader workbook.

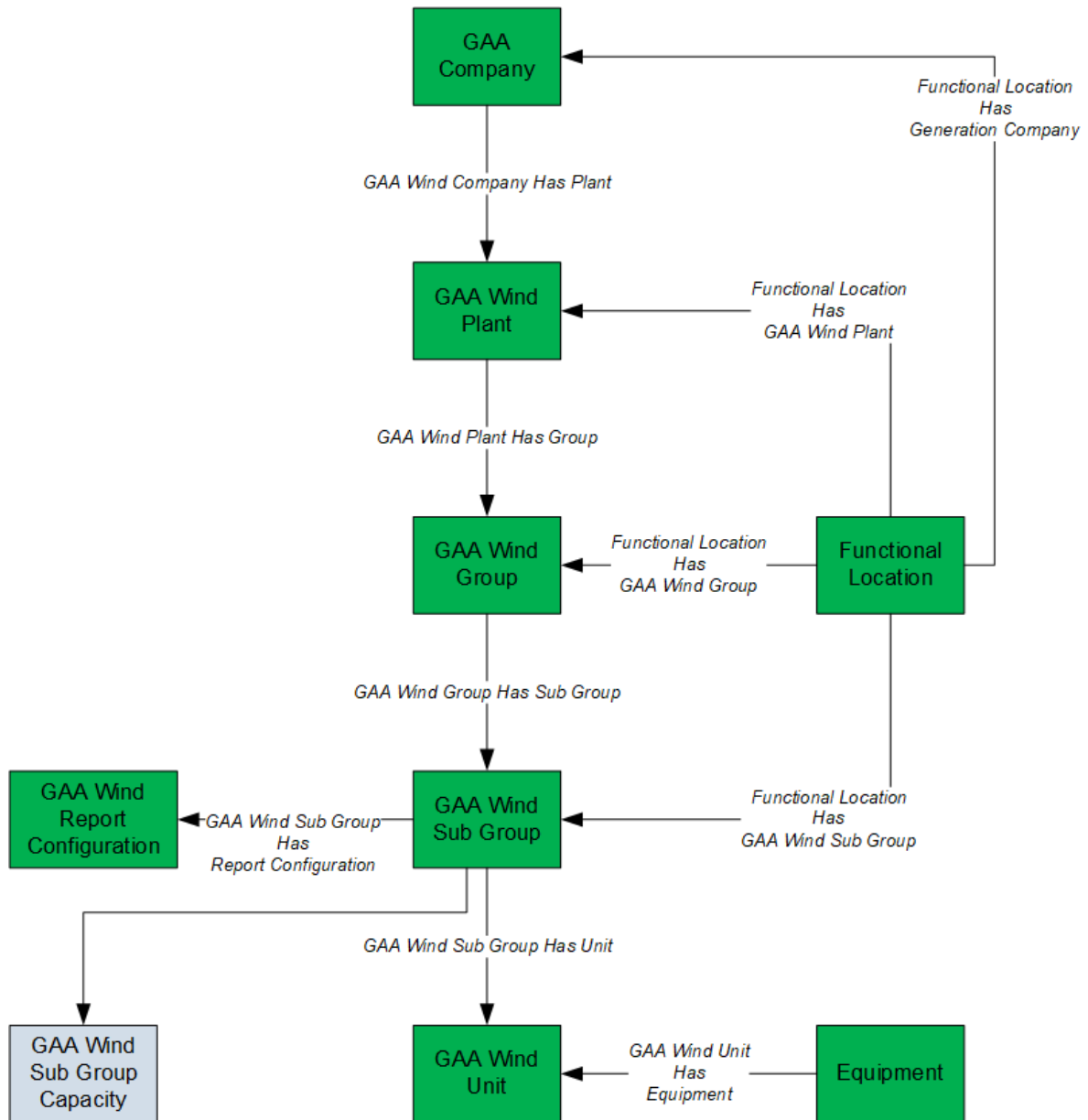
### **Security Settings**

The user who loads data into APM must be associated with the following Security Groups and Security Roles:

- MI Data Loader User Security Role  
or  
MI Data Loader Admin Security Role

### **About the GAA Wind Sub Group Capacity Data Loader Data Model**

The following data model illustrates which records are supported by the GAA Wind Sub Group Capacity Data Loader:



- Elements shown in grey are imported into APM by the Data Loader.
- Elements shown in green exist in APM and may be related to the data that is being loaded.

## About the GAA Wind Sub Group Capacity Data Loader General Loading Strategy

### Best Practices

When using the data loader workbook, consider the following best practices:

- Ensure that Field IDs (that is, row 2 of each worksheet) do not include special characters or spaces.
- Do not modify the first two rows of each worksheet.
- Do not try to create and modify the same record in the same data loader workbook.

- Consider the rules described in the Workbook Layout and Use section of this document.
- In addition to the fields included in the data loader workbook, if you want to add values for more fields for a record, you can add columns for those fields in the appropriate worksheet.

**Note:** The fields that you want to add to the data loader workbook must already exist in the corresponding family. If not, you must add the fields to the family via Configuration Manager.

### Load Sequence

The data in the data loader workbook is processed in the following sequence:

1. The Sub Group Capacity worksheet is processed. The Data Loader searches for the Sub Group Capacity record specified in the Sub Group Capacity Key column based on the Sub Group Name, Month, and Year specified in the respective columns. If the record exists, it is updated. Otherwise, a Sub Group Capacity record is created and linked to the Sub Group record specified in the Sub Group Name column.

## About the GAA Wind Sub Group Capacity Data Loader Workbook Layout and Use

### Color Coding

Certain columns in the worksheets have different functions and requirements. To illustrate this, they are color-coded. The following table displays a color and what it represents.

Color	Description	Comment
Pink	Required fields	Indicates columns that contain values that are required in GAA Wind.

### Sub Group Capacity Worksheet

The following table provides a list of fields that appear in the Sub Group Capacity worksheet.

Field Caption	Field ID	Data Type (Length)	Comments
Sub Group Capacity Key	SUBGROUPCAP_KEY	Character	This cell is required. Enter a unique value to identify the batch associated with this Sub Group Capacity.
Sub Group Name	MI_GAA_W_SUB_GP_CAP_S B_GP_KY_N	Character (100)	This cell is required. Enter the full name of the Sub Group with which the Sub Group Capacity is associated.



Field Caption	Field ID	Data Type (Length)	Comments
Month	MI_GAA_W_SUB_GRP_CAP A_MONT_CHR	Numeric	This cell is required.  Enter the month for which the Sub Group data is reported, in the following format: mm (for example, 01 for January, 02 for February, and so on).
Year	MI_GAA_W_SUB_GROU_CA PA_YEAR_N	Numeric	This cell is required.  Enter the year for which the Sub Group data is reported, in the following format: yyyy (for example, 2019).
Total Loss Estimate (%)	MI_GAA_W_SUB_GR_CP_TO _LS_EST_N	Numeric	This cell is required.  Enter, in percentage, losses such as line loss, transformer loss, and other auxiliary losses between the turbine and the revenue meter.

## About the GAA Wind Sub Group Capacity Data Loader Load Verification

### About This Task

After you load data, you should perform the following steps in APM to confirm the accuracy and integrity of the data imported from the data loader workbook:

### Procedure

1. Access the details of the import job. In addition to the general information regarding the records that were loaded during the data load operation, these details may include error and warning messages pertaining to the records.
2. In GAA Wind, access the records specified in the data loader workbook, and then verify that the expected data is present or updated, as applicable.

## GAA Wind Events Data Loader

### About GAA Wind Events Data Loader

Using the GAA Wind Events Data Loader, you can update the GAA Wind Event.

## About the GAA Wind Events Data Loader Requirements

### Prerequisites

1. Download the GAA Wind Events data loader workbook from the APM Wind Generation data loader category in APM.
2. Identify the data requirements for [exporting data](#) from the Events workspace into the data loader workbook.
3. Extract data from the exported Excel file to populate the data loader workbook.

**Note:** Ensure to copy the content from the IEC Events Worksheet.

### Security Settings

The user who loads data into APM must be associated with the following Security Groups and Security Roles:

- MI Data Loader User Security Role  
or  
MI Data Loader Admin Security Role

## About the GAA Wind Events Data Loader General Loading Strategy

### Best Practices

When using the data loader workbook, consider the following best practices:

- Ensure that Field IDs (that is, row 2 of IEC Events worksheet) do not include special characters or spaces.
- Do not modify the first two rows of IEC Events worksheet once the data to be imported is copied from the exported file.
- Consider the rules described in the Workbook Layout and Use section of this document.

## About the GAA Wind Events Data Loader Workbook Layout and Use

### Color Coding

Certain columns in the worksheets have different functions and requirements. To illustrate this, they are color-coded. The following table provides a list of colors and what they represent.

Color	Description	Comment
Pink	Required fields	Indicates columns that contain values that are required in GAA Wind.
Blue	Recommended fields	Indicates columns that, according to GE Vernova Best Practice for GAA Wind, should contain values.
White	Optional fields	Indicates columns where you can specify custom fields.

Configuration Worksheet

Please refer to About the Configuration Worksheet topic that provides a list of fields that appear in the Configuration worksheet.

**Note:** Do not modify any of the column values on this worksheet.

### IEC Events Worksheet

The following table provides a list of fields that appear in the IEC Events worksheet.

**Note:** Modify only the editable fields (NERC Type, Description, Error Code, and Actual Production) before importing the GAA Wind Events Data Loader workbook. Modifying any other fields will result in unwanted changes in the Event data.

Field Caption	Data Type (Length)	Comment
Unit Name	Character	Identifies the unit for which Event is reported.
IEC Type	Character	Identifies the type of the Event.
Start Date	Date	Identifies the start date of the Event.
End Date	Date	Identifies the end date of the Event.
Duration	Numeric	Identifies the difference between the values in the End Date field and the Start Date field.
Description	Text	Identifies the description of the Event.
NERC Type	Character	Identifies the NERC equivalent of the IEC type.
Error Code	Character	Identifies the validation error.
Actual Production	Numeric	Identifies the actual production of the Unit in megawatt hours.
Event ID	Character	Identifies the Event.
Sub Group Key	Numeric	Identifies the key of the Sub Group for which the Event is reported.
Unit Key	Numeric	Identifies the key of the Unit for which the Event is reported.
Site Reference Name	Character	Identifies the name of the site that is assigned to the Event record.

Field Caption	Data Type (Length)	Comment
Start Date Timezone	Character	Identifies the name of the time zone for the Start Date field.  <b>Note:</b> The value in this field will always be logged in the User time zone.
End Date Timezone	Character	Identifies the name of the time zone for the End Date field.  <b>Note:</b> The value in this field will always be logged in the User time zone.

# Chapter 6

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## Deployment and Upgrade

Topics:

- [Deployment](#)
- [Upgrade](#)

## Deployment

### Deployment

Refer to the deployment information here [Deploy GAA Wind for the First Time](#).

## Upgrade

### Upgrade

Refer to the upgrade information here: Upgrade GAA Wind.

# Chapter 7

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## Reference

### Topics:

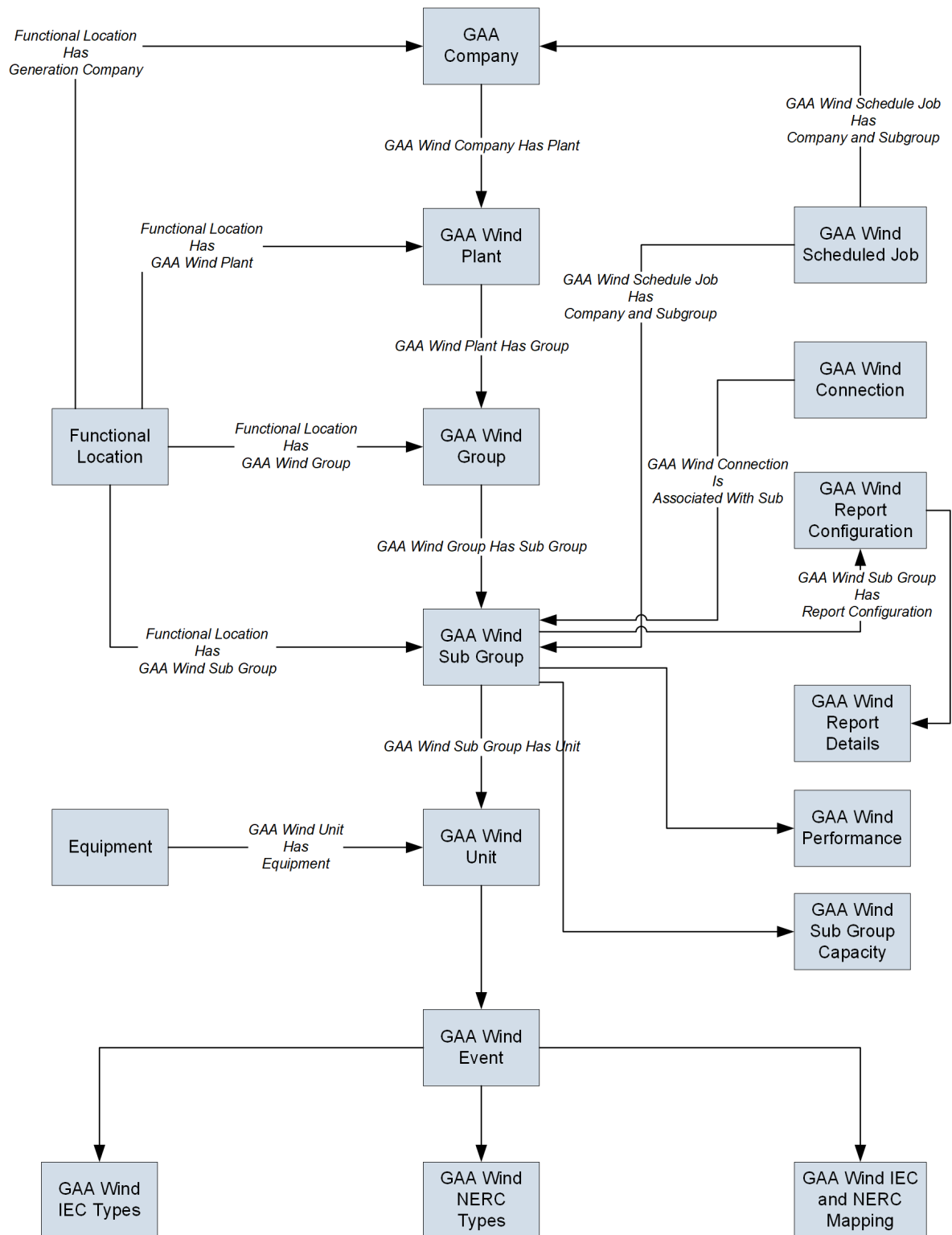
- [General Reference](#)
- [Family Field Descriptions](#)
- [Catalog Items](#)
- [Pages and Windows](#)
- [Reports](#)

## **General Reference**

### **GAA Wind Data Model**

The following diagram shows the relationships between the families used in GAA Wind.





**Note:** In the diagram, boxes represent entity families and arrows that are labeled represent relationship families that are configured in the baseline database. Arrows that are not labeled represent foreign key relationships. You can determine the direction of each relationship from the direction of the arrow head: the box from which the arrow originates is the predecessor, and the box to which the arrow head points is the successor.

## Additional GAA WindEntity Families

In addition to the entity families shown in the diagram, the following entity families are used in GAA Wind:

- GAA Wind Import Details
- GAA Wind Report Details
- GAA Wind Bulk Report Details

## GAA Wind Security Groups

The following table lists the baseline Security Groups available for users within this module, as well as the baseline Roles to which those Security Groups are assigned.

**Important:** Assigning a Security User to a Role grants that user the privileges associated with all of the Security Groups that are assigned to that Role. To avoid granting a Security User unintended privileges, before assigning a Security User to a Role, be sure to review all of the privileges associated with the Security Groups assigned to that Role. Also, be aware that additional Roles, as well as Security Groups assigned to existing Roles, can be added via Security Manager.

Security Group	Roles
GAA Wind	
MI GAA Wind Super Administrator	MI GAA Wind Super Administrator
MI GAA Wind Administrator	MI GAA Wind Administrator
MI GAA Wind Analyst	MI GAA Wind Analyst
MI GAA Wind Operator	MI GAA Wind Operator
GAA Wind with APM Connect	
MI CMMS Interface Administrator	MI GAA Wind Super Administrator MI GAA Wind Administrator
GAA Wind with Policy Designer	
MI Policy Designer	MI GAA Wind Super Administrator MI GAA Wind Administrator
MI Policy User	MI GAA Wind Analyst MI GAA Wind Operator

The baseline family-level privileges that exist for these Security Groups are summarized in the following table.

Family	MI GAA Wind Super Administrator	MI GAA Wind Administrator	MI GAA Wind Analyst	MI GAA Wind Operator
Entity Family				
GAA Company	View, Insert, Update, Delete	View, Insert, Update, Delete	View	View

<b>Family</b>	<b>MI GAA Wind Super Administrator</b>	<b>MI GAA Wind Administrator</b>	<b>MI GAA Wind Analyst</b>	<b>MI GAA Wind Operator</b>
GAA Wind Bulk Report Details	View, Insert, Update, Delete	View, Insert, Update, Delete	View	View
GAA Wind Connection	View, Insert, Update, Delete	View, Insert, Update, Delete	View	View
GAA Wind Event	View, Insert, Update, Delete	View, Insert, Update, Delete	View, Insert, Update, Delete	View
GAA Wind Group	View, Insert, Update, Delete	View, Insert, Update, Delete	View	View
GAA Wind IEC And NERC Mapping	View, Insert, Update, Delete	View	View	View
GAA Wind IEC Types	View, Insert, Update, Delete	View	View	View
GAA Wind Import Details	View, Insert, Update, Delete	View, Insert, Update, Delete	View, Insert, Update	View
GAA Wind NERC Types	View, Insert, Update, Delete	View	View	View
GAA Wind Performance	View, Insert, Update, Delete	View, Insert, Update, Delete	View	View
GAA Wind Plant	View, Insert, Update, Delete	View, Insert, Update, Delete	View	View
GAA Wind Report Configuration	View, Insert, Update, Delete	View, Insert, Update, Delete	View	View
GAA Wind Report Details	View, Insert, Update, Delete	View, Insert, Update, Delete	View	View
GAA Wind Scheduled Job	View, Insert, Update, Delete	View, Insert, Update, Delete	View	View
GAA Wind Sub Group	View, Insert, Update, Delete	View, Insert, Update, Delete	View	View
GAA Wind Sub Group Capacity	View, Insert, Update, Delete	View, Insert, Update, Delete	View	View
GAA Wind Unit	View, Insert, Update, Delete	View, Insert, Update, Delete	View	View
<b>Relationship Family</b>				
Functional Location Has GAA Wind Group	View, Insert, Update, Delete	View, Insert, Update, Delete	View	View
Functional Location Has GAA Wind Plant	View, Insert, Update, Delete	View, Insert, Update, Delete	View	View

Family	MI GAA Wind Super Administrator	MI GAA Wind Administrator	MI GAA Wind Analyst	MI GAA Wind Operator
Functional Location Has GAA Wind Sub Group	View, Insert, Update, Delete	View, Insert, Update, Delete	View	View
Functional Location Has Generation Company	View, Insert, Update, Delete	View, Insert, Update, Delete	View	View
GAA Wind Company Has Plant	View, Insert, Update, Delete	View, Insert, Update, Delete	View	View
GAA Wind Connection is associated with Sub Group	View, Insert, Update, Delete	View, Insert, Update, Delete	View	View
GAA Wind Group Has Sub Group	View, Insert, Update, Delete	View, Insert, Update, Delete	View	View
GAA Wind Plant Has Group	View, Insert, Update, Delete	View, Insert, Update, Delete	View	View
GAA Wind Schedule Job Has Company And Subgroup	View, Insert, Update, Delete	View, Insert, Update, Delete	View	View
GAA Wind Sub Group Has Configuration	View, Insert, Update, Delete	View, Insert, Update, Delete	View	View
GAA Wind Sub Group Has Unit	View, Insert, Update, Delete	View, Insert, Update, Delete	View	View
GAA Wind Unit Has Equipment	View, Insert, Update, Delete	View, Insert, Update, Delete	View	View

## GAA Wind URLs

The URL route that is associated with GAA Wind is gaa-wind. The following table describes the various paths that build on the route, and the elements that you can specify for each path.

**Tip:** For more information, refer to the URLs section of the documentation.

Element	Description	Accepted Value(s)	Notes
gaa-wind/dashboard/<EntityKey>: Displays the <b>GAA Wind Overview</b> page for a particular asset.			
<EntityKey>	Represents the Entity Key of the asset for which you want to access the <b>GAA Wind Overview</b> page.	Numeric Entity Key that corresponds to an asset.	If <EntityKey> is 0, the <b>GAA Wind Overview</b> page appears for all assets, unless you have already selected an asset in the Asset Hierarchy. If <EntityKey> is other than 0, the <b>GAA Wind Overview</b> page appears for a specific asset.
eventimport: Displays the <b>GAA Wind Event Import</b> page.			
gaa-wind/<EntityKey>/<StartDate>T<StartTime>.000%20/%20<EndDate>T<EndTime>.000/<EditedStatus>/ eventlists: Displays the <b>Events</b> workspace in the Sub Group Summary page.			
<EntityKey>	Represents the Entity Key of the Sub Group that is associated with the Events that you want to access.	Numeric Entity Key that corresponds to a Sub Group.	None.
<StartDate>	Represents the start date based on which the Events are filtered.	Date in the following format: yyyy-mm-dd.	None.
<StartTime>	Represents the start time based on which the Events are filtered.	Time in the following format: hh:mm:ss.	None.
<EndDate>	Represents the end date based on which the Events are filtered.	Date in the following format: yyyy-mm-dd.	None.
<EndTime>	Represents the end time based on which the Events are filtered.	Time in the following format: hh:mm:ss.	None.
<EditedStatus>	Indicates if the Events have been edited (that is, if the value in the NERC Type field of the Events is different from that in the Mapped NERC Type field).	One of the following values: <ul style="list-style-type: none"> <li>false: If you want to access Events that have not been edited.</li> <li>true: If you want to access Events that have been edited.</li> </ul>	None.
gaa-wind/<EntityKey>/performance: Displays the <b>Performance</b> workspace in the Sub Group Summary page.			
<EntityKey>	Represents the Entity Key of the Sub Group that is associated with the Performance Records that you want to access.	Numeric Entity Key that corresponds to a Sub Group.	None.

Element	Description	Accepted Value(s)	Notes
windperformance/<EntityKey1>/<EntityKey2>/<ReportingMonth>/<ReportingYear>/<EntityKey3>: Displays the Performance Record.			
<EntityKey1>	Represents the Entity Key of the Sub Group that is associated with the Performance Record that you want to access or create.	Numeric Entity Key that corresponds to a Sub Group.	None.
<EntityKey2>	Represents the Entity Key of the Performance Record that you want to access.	Numeric Entity Key that corresponds to a Performance Record.	To create a Performance Record, enter the value 0.
<ReportingMonth>	Represents the month associated with the Performance Record that you want to access or create.	Month in the following format: mm.	None.
<ReportingYear>	Represents the year associated with the Performance Record that you want to access or create.	Year in the following format: yyyy.	None.
<EntityKey3>	Represents the Entity Key of the Report Configuration record associated with the Sub Group for which you want to access or create a Performance Record.	Numeric Entity Key that corresponds to a Report Configuration record.	None.
gaa-wind/<EntityKey>/reports: Displays the <b>Reports</b> workspace in the Sub Group Summary page.			
<EntityKey>	Represents the Entity Key of the Sub Group that is associated with the Performance or Sub Group Reports that you want to access.	Numeric Entity Key that corresponds to a Sub Group.	None.
gaa-wind/admin/settings: Displays the <b>GAA Wind Administrator</b> page.			
gaa-wind/admin/company/<EntityKey>: Displays the Company.			
<EntityKey>	Represents the Entity Key of the Company that you want to access.	Numeric Entity Key that corresponds to a Company.	None.
gaa-wind/admin/plant/<EntityKey>: Displays the Plant.			
<EntityKey>	Represents the Entity Key of the Plant that you want to access.	Numeric Entity Key that corresponds to a Plant.	None.
gaa-wind/admin/group/<EntityKey>: Displays the Group.			

Element	Description	Accepted Value(s)	Notes
<EntityKey>	Represents the Entity Key of the Group that you want to access.	Numeric Entity Key that corresponds to a Group.	None.
gaa-wind/admin/subgroup/<EntityKey>: Displays the Sub Group.			
<EntityKey>	Represents the Entity Key of the Sub Group that you want to access.	Numeric Entity Key that corresponds to a Sub Group.	None.
gaa-wind/admin/unit/<EntityKey>: Displays the Unit.			
<EntityKey>	Represents the Entity Key of the Unit that you want to access.	Numeric Entity Key that corresponds to a Unit.	None.

## URLs

URL	Destination
gaa-wind/ 1234567/2019-01-13T00:00:00.000%20/%202019-01-19T00:00:00.000/false/ eventlists	The <b>Events</b> workspace for the Sub Group whose Entity Key is 1234567, displaying Events that have not been edited and whose start time stamp and end time stamp together are within January 13, 2019, 00:00:00, and January 19, 2019, 00:00:00.
gaa-wind/1234567/ performance	The <b>Performance</b> workspace for the Sub Group whose Entity Key is 1234567.
windperformance/ 1234567/2345678/01/2019/ 3456789	Performance Record whose Entity Key is 2345678, for January 2019, for the Sub Group whose Entity Key is 1234567, and for the Report Configuration record whose Entity Key is 3456789.
gaa-wind/1234567/reports	The <b>Reports</b> workspace for the Sub Group whose Entity Key is 1234567.
gaa-wind/admin/company/ 4567891	Company whose Entity Key is 4567891.
gaa-wind/admin/plant/ 5678912	Plant whose Entity Key is 5678912.
gaa-wind/admin/group/ 6789123	Group whose Entity Key is 6789123.

URL	Destination
gaa-wind/admin/subgroup/ 7891234	Sub Group whose Entity Key is 7891234.
gaa-wind/admin/unit/ 8912345	Unit whose Entity Key is 8912345.

## GAA Wind System Code Tables

The following table provides a list of System Code Tables that are used by GAA Wind.

Table ID	Table Description	Function
MI_GAA_WIND_MONTH_LIST	GAA Wind Month	Populates the Month field in the GAA Wind Sub Group Capacity record.
MI_GAA_WIND_STATES	GAA Wind State	Populates the State field in the GAA Wind Plant and GAA Wind Sub Group records.
MI_GAA_WIND_COUNTRY	GAA Wind Country	Populates the Country field in the GAA Wind Plant and GAA Wind Sub Group records.
MI_GAA_WIND_REGIMES	GAA Wind Regime	Populates the Wind Regime field in the GAA Wind Sub Group record.
MI_GAA_WIND_REPORT_TYPES	GAA Wind Report Type	Populates the Report Type field in the GAA Wind Report Configuration record.
MI_GAA_WIND_SCADA_MANUFACTURERS	GAA Wind SCADA Manufacturer	Populates the SCADA Manufacturer field in the GAA Wind Sub Group record.
MI_GAA_WIND_SHEAR	GAA Wind Shear	Populates the Wind Shear field in the GAA Wind Sub Group record.
MI_GAA_WIND_SUBGROUP_OWNERSHIP_STAT US	GAA Wind Sub Group Ownership Status	Populates the Sub Group Ownership Status field in the GAA Wind Sub Group record.
MI_GAA_WIND_SUBGROUP_STATUS	GAA Wind Sub Group Status	Populates the Sub Group Status field in the GAA Wind Sub Group record.
MI_GAA_WIND_TURBINE_MANUFACTURERS	GAA Wind Turbine Manufacturer	Populates the Turbine Manufacturer field in the GAA Wind Sub Group record.
MI_GAA_WIND_TURBULENCE	GAA Wind Turbulence	Populates the Turbulence Intensity field in the GAA Wind Sub Group record.



Table ID	Table Description	Function
MI_GAA_WIND_NERC_REGIONS	GAA Wind NERC Region	Populates the Region field in the GAA Wind Plant and GAA Wind Sub Group records.
MI_GAA_WIND_IEC_TYPES_LEVELS	GAA Wind IEC Type Level	Populates the Level field in the GAA Wind IEC Types record.

## GAA Wind Site Filtering

The GAA Wind families use the Site Filtering feature of APM. You can access or modify only global records and records that are associated with sites to which you are assigned.

The following GAA Wind families are not enabled for site filtering and are considered global records:

- IEC and NERC Mapping
- IEC Types
- NERC Types
- Report Configuration

**Tip:** For more information, refer to the Site Filtering section of the documentation.

Consider an organization that has three sites: Site X, Site Y, and Site Z.

**Scenario 1: User assigned to only Site X**

This user can access or modify only the global records and records that are associated with Site X.

**Scenario 2: User assigned to only Site X and Site Y**

This user can access or modify only the global records and records that are associated with Site X and Site Y.

**Scenario 3: Super User**

This user can access or modify the global records and records that are associated with Site X, Site Y, and Site Z.

## GAA Wind State Management

GAA Wind uses the standard State Management functionality to manage GAA Wind Performance Records. The following baseline states are configured for records in the GAA Wind Performance family:

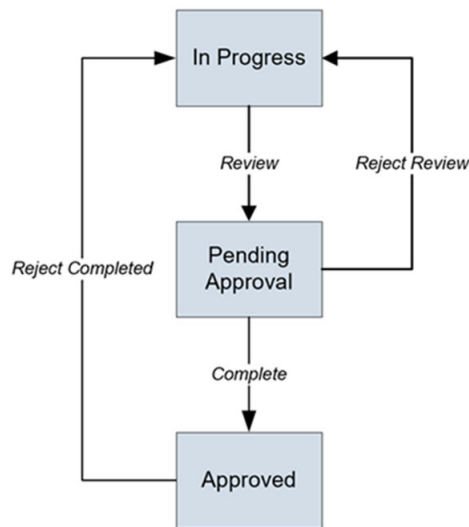
- In Progress: State of a Performance Record that is new, rejected, or reopened.
- Pending Approval: State of a Performance Record that is submitted for review or resubmitted for review.
- Approved: State of a Performance Record that is approved. You cannot modify such a Performance Record.

**Important:**

- A user who is assigned to the following Security Roles can change the state of a Performance Record from In Progress to Pending Approval:
  - MI GAA Wind Super Administrator

- MI GAA Wind Administrator
- A user who is assigned to the following Security Roles can change the state of a Performance Record from Pending Approval to Approved or In Progress:
  - MI GAA Wind Super Administrator
  - MI GAA Wind Administrator
- A user who is assigned to the following Security Roles can change the state of a Performance Record from Approved to In Progress:
  - MI GAA Wind Super Administrator
  - MI GAA Wind Administrator

The following diagram shows the workflow of the baseline GAA Wind State Management process for the GAA Wind Performance family.



## Events Data

When you export an event, an Excel work book containing the Events data is downloaded.

### Note:

- The Excel work book will have the same order of columns as the grid on the **Events** workspace and the data will always be in logged in user time zone. Few other columns are also exported which will be required when importing the same data back into APM.
- The first row in the Excel work book will have the field IDs from GAA Wind Event family which identifies the data in each column.
- The event data in Excel work book cannot be loaded back to APM using GAA Wind Events data loader work book, if grouping is done on event data in Events workspace before exporting the data.
- The gap records if any, present in the Events workspace will not be exported.
- Individual Event records cannot be exported using this feature.
- All the Excel work book standards and limitations are applicable.

The following table lists all the columns that appear in the downloaded file unless the user has made some modifications on the visibility and order of the columns on the Events workspace.

**Table 1:**

Field ID	Data Type (Length)	Comments
MI_GAA_WIND_EVEN_ASSE_ID_C	Character	Identifies the Unit for which the Event is reported. Corresponds to the Unit Name field in IEC Events worksheet in GAA Wind Events Dataloader workbook.
MI_GAA_WIND_EVE_IEC_EVE_TYP_C	Character	Identifies the type of the Event. Corresponds to the IEC Type field in IEC Events worksheet in GAA Wind Events Dataloader workbook.
MI_GAA_WIND_EVEN_STAR_DATE_D	Date	Identifies the start date of the Event. Corresponds to the Start Date field in IEC Events worksheet in GAA Wind Events Dataloader workbook.
MI_GAA_WIND_EVEN_END_DATE_D	Date	Identifies the end date of the Event. Corresponds to the End Date field in IEC Events worksheet in GAA Wind Events Dataloader workbook.
MI_GAA_WIND_EVEN_EVEN_DURA_N	Numeric	Identifies the difference between the values in the End Date field and the Start Date field. Corresponds to the Duration field in IEC Events worksheet in GAA Wind Events Dataloader workbook.
MI_GAA_WIND_EVEN_DESC_C	Text	Identifies the description of the Event. Corresponds to the Description field in IEC Events worksheet in GAA Wind Events Dataloader workbook.
MI_GAA_WIND_EVE_NER_TYP_C	Character	Identifies the NERC equivalent of the IEC type. Corresponds to the NERC Type field in IEC Events worksheet in GAA Wind Events Dataloader workbook.
MI_GAA_WIND_EVEN_ERRO_CODE_C	Character	Identifies the validation error. Corresponds to the Error Code field in IEC Events worksheet in GAA Wind Events Dataloader workbook.
MI_GAA_WIND_EVE_ACT_PRO_N	Numeric	Identifies the actual production of the Unit in megawatt hours.
MI_GAA_WIND_EVEN_EVEN_ID_C	Character	Identifies the Event. Corresponds to the Event ID field in IEC Events worksheet in GAA Wind Events Dataloader workbook.

Field ID	Data Type (Length)	Comments
MI_GAA_WIND_EVEN_SUBG_KEY_N	Numeric	Identifies the key of the Sub Group for which the Event is reported. Corresponds to the Sub Group Key field in IEC Events worksheet in GAA Wind Events Dataloader workbook.
MI_GAA_WIND_EVEN_ASSE_KEY_N	Numeric	Identifies the key of the Unit for which the Event is reported. Corresponds to the Unit Key field in IEC Events worksheet in GAA Wind Events Dataloader workbook.
MI_SITE_NAME	Character	Identifies the name of the site that is assigned to the Event record. Corresponds to the Site Reference Name field in IEC Events worksheet in GAA Wind Events Dataloader workbook.
MI_GAA_WIND_EVEN_STAR_DATE_D  TZ	Character	Identifies the name of the time zone for the Start Date field. Corresponds to the Start Date Timezone field in IEC Events worksheet in GAA Wind Events Dataloader workbook.  <b>Note:</b> The value in this field will always be logged in User time zone.
MI_GAA_WIND_EVEN_END_DATE_D  TZ	Character	Identifies the name of the time zone for the End Date field. Corresponds to the End Date Timezone field in IEC Events worksheet in GAA Wind Events Dataloader workbook.  <b>Note:</b> The value in this field will always be logged in User time zone.

## Family Field Descriptions

### GAA Company Records

GAA Company records store information about fields that are defined for the GAA Company family in the baseline APM database. This topic provides an alphabetical list and description of fields that exist for the GAA Company family and appear in the GAA Wind Company datasheet, unless otherwise specified. The information in the table reflects the baseline state and behavior of these fields.

This family is enabled for site filtering, which means that records in this family can be assigned to a specific site and will only be accessible to users who are assigned to the same site and have the appropriate license and family privileges. For more information, refer to the [Sites](#) section of the documentation.

Field	Data Type	Description	Behavior and Usage
Asset Key	Numeric	Identifies the Functional Location associated with the Company.	This field does not appear in the datasheet.
Company ID	Character	Identifies the Company.	This field is disabled and automatically populated for all GAA Companies.
Company Name	Character	Identifies the full name of the Company.	This field is disabled and automatically populated for all GAA Companies.
GAA Type	Character	Identifies the type of the Company.	This field is populated by the MI_GAA_MODULE_TYPE System Code Table and it is automatically populated with the value Wind.  This field does not appear in the datasheet.

## GAA Wind Connection Records

GAA Wind Connection records store information about fields that are defined for the GAA Wind Connection family in the baseline APM database. This topic provides an alphabetical list and description of fields that exist for the GAA Wind Connection family and appear in the GAA Wind Connection datasheet, unless otherwise specified. The information in the table reflects the baseline state and behavior of these fields.

This family is not enabled for site filtering, which means that records in this family can be accessed by any user with the appropriate license and family privileges. For more information, refer to the [Sites](#) section of the documentation.

Field	Data Type	Description	Behavior and Usage
Associated Subgroups	Character	Identifies the Sub Groups that are associated with the Connection.	This field is required.  Each value in the field represents the Sub Group Name of the GAA Wind Sub Group record.  You can select one or more values in the field.  <b>Note:</b> A Sub Group cannot be associated with more than one Connection.
Authentication URL	Character	Identifies the authentication URL to the external server.	This field is required.  You can enter a value in the field.

Field	Data Type	Description	Behavior and Usage
Client ID	Character	Identifies the ID required to establish a connection between APM and the external server.	This field is required. You can enter a value in the field.
Connection Name	Character	Identifies the name of the connection.	This field is required. You can enter a value in the field.
IEC Events URL	Character	Identifies the URL required to import Events from the external server.	This field is required. You can enter a value in the field.
Import Job Time (Minutes)	Numeric	Indicates the time beyond which the data import job stops importing Events into APM.	This field is required. You can enter a value in the field.  The box is automatically populated with the value 90. You can, however, modify the value in the field.
Is New API Format?	Boolean	Indicates the format in which you want the imported Events to be processed in APM.	The No option is selected by default, indicating that the imported Events will be processed in the default format. You can, however, select the Yes option.
Username	Character	Identifies the username corresponding to the authentication URL.	This field is required. You can enter a value in the field.
Password	Character	Identifies the password corresponding to the authentication URL.	This field is required. You can enter a value in the field.

## GAA Wind Event Records

GAA Wind Event records store information about fields that are defined for the GAA Wind Event family in the baseline APM database. This topic provides an alphabetical list and description of fields that exist for the GAA Wind Event family and appear in the GAA Wind Event datasheet, unless otherwise specified. The information in the table reflects the baseline state and behavior of these fields.

This family inherits the site filtering setting of the GAA Wind Unit family. For more information, refer to the Site Filtering section of the documentation.

Field	Data Type	Description	Behavior and Usage
Actual Production	Numeric	Identifies the actual production of the Unit in megawatt hours.	<p>For a new Event (that is, in the <b>Create Event</b> or <b>Split Event</b> window), you can enter a value in this field.</p> <p>For a split Event, the field is populated by default. You can, however, modify the value in the field.</p> <p>For an existing Event, the field is disabled and populated by default.</p>
Creation Type	Character	Indicates whether the Event was imported or manually created.	<p>This field does not appear in the datasheet. It contains the following values:</p> <ul style="list-style-type: none"> <li>• API: Indicates that the Event was imported to APM.</li> <li>• Manual: Indicates that the Event was created in APM.</li> </ul>
Description	Text	Identifies the description of the Event.	You can enter a value in this field.
Duration	Numeric	Identifies the difference between the values in the End Date field and the Start Date field.	<p>This field does not appear in the datasheet. It appears as a column in the tables in:</p> <ul style="list-style-type: none"> <li>• The <b>All Events, Edited Events</b>, and <b>Events Needing Review</b> sections in the <b>GAA Wind Overview</b> page.</li> <li>• The <b>Events</b> workspace in the <b>GAA Wind Sub Group Summary</b> page.</li> </ul> <p>The value in the column appears in the following format: hh:mm:ss.</p>

Field	Data Type	Description	Behavior and Usage
End Date	Date	Identifies the end date of the Event.	<p>For a new or split Event, by default, this field is populated with the value that accounts for any gap in time, along with the Start Date field. You can, however, select a value in the field. The value must be greater than that in the Start Date field.</p> <p>For an existing Event, the field is disabled. By default, it is populated with the value in the IEC End Date field after it is converted to a readable date format.</p>
Error Code	Character	Identifies the validation error.	This field is disabled.
Event ID	Character	Identifies the Event.	<p>This field is disabled and contains values from the following fields:</p> <ul style="list-style-type: none"> <li>• IEC End Date</li> <li>• IEC Start Date</li> <li>• Unit ID</li> </ul>
Has Error	Boolean	Indicates whether the Event has a validation error.	<p>This field does not appear in the datasheet.</p> <p>If the value in the Error Code field contains the bit value 1 in any position other than the third position, this field will be set to true, indicating that the Event has an error.</p>
IEC End Date	Character	Identifies the end date and time of the Event in the Unix Epoch time format.	This field does not appear in the datasheet. It is used to populate the End Date field.
IEC Start Date	Character	Identifies the start date and time of the Event in the Unix Epoch time format.	This field does not appear in the datasheet. It is used to populate the Start Date field.



Field	Data Type	Description	Behavior and Usage
IEC Type	Character	Identifies the type of the Event.	<p>This field appears as IEC State in the <b>Events</b> workspace in the <b>Sub Group Summary</b> page.</p> <p>For a new or split Event, the field is required. You can select a value in the field.</p> <p>For an existing Event, the field is disabled.</p> <p>Each value in the field represents a record in the GAA Wind IEC Types family.</p>
Is Split Event	Boolean	Indicates whether the Event was created by splitting an existing Event.	This field does not appear in the datasheet.
Mapped NERC Type	Character	Identifies the NERC equivalent of the IEC type, as defined in the mapping record for that IEC type.	This field is disabled.
NERC Type	Character	Identifies the NERC equivalent of the IEC type.	<p>In the user interface, this field appears as NERC State.</p> <p>For a new Event, the field is blank by default. You can, however, select a value in the field.</p> <p>For an existing or split Event, by default, the field is populated with the value in the Mapped NERC Type field; however, unlike the Mapped NERC Type field, you can select a value in this field.</p> <p>Each value in the field represents a record in the GAA Wind NERC Types family.</p>

Field	Data Type	Description	Behavior and Usage
Start Date	Date	Identifies the start date of the Event.	For a new or split Event, by default, this field is populated with the value that accounts for any gap in time, along with the End Date field. You can, however, select a value in the field. The value must be less than that in the End Date field.  For an existing Event, the field is disabled. By default, it is populated with the value in the IEC Start Date field after it is converted to a readable date format.
Sub Group Name	Character	Identifies the Sub Group for which the Event is imported.	This field does not appear in the datasheet. By default, it is populated with the value in the Sub Group Name field of the associated GAA Wind Sub Group.
Unit Name	Character	Identifies the Unit for which the Event is reported.	This field is disabled. By default, it is populated with the value in the Unit Name field of the associated GAA Wind Unit.

## GAA Wind Group Records

GAA Wind Group records store information about fields that are defined for the GAA Wind Group family in the baseline APM database. This topic provides an alphabetical list and description of fields that exist for the GAA Wind Group family and appear in the GAA Wind Group datasheet, unless otherwise specified. The information in the table reflects the baseline state and behavior of these fields.

This family is enabled for site filtering, which means that records in this family can be assigned to a specific site and will only be accessible to users who are assigned to the same site and have the appropriate license and family privileges. For more information, refer to the [Sites](#) section of the documentation.

Field	Data Type	Description	Behavior and Usage
Functional Location Key	Numeric	Identifies the Functional Location associated with the Group.	This field does not appear in the datasheet.
Group ID	Character	Identifies the Group.	This field is disabled and automatically populated.
Group Name	Character	Identifies the full name of the Group.	This field is disabled and automatically populated.
Plant Name	Numeric	Identifies the Plant to which the Group belongs.	This field is disabled and automatically populated with the Plant Name of the corresponding GAA Wind Plant record. The field, however, stores the key of the GAA Wind Plant record.

## GAA Wind IEC And NERC Mapping Records

GAA Wind IEC And NERC Mapping records store information about fields that are defined for the GAA Wind IEC And NERC Mapping family in the baseline APM database. This topic provides an alphabetical list and description of fields that exist for the GAA Wind IEC And NERC Mapping family and appear in the GAA Wind IEC And NERC Mapping datasheet, unless otherwise specified. The information in the table reflects the baseline state and behavior of these fields.

This family is not enabled for site filtering, which means that records in this family can be accessed by any user with the appropriate license and family privileges. For more information, refer to the [Sites](#) section of the documentation.

Field	Data Type	Description	Behavior and Usage
IEC ID	Character	Identifies the IEC type.	This field is required. Each value in this field represents the ID of the GAA Wind IEC Types record. You can enter or select a value in this field.
NERC ID	Character	Identifies the NERC type.	This field is required. Each value in this field represents the ID of the GAA Wind NERC Types record. You can enter or select a value in this field.

## GAA Wind IEC Types Records

GAA Wind IEC Types records store information about fields that are defined for the GAA Wind IEC Types family in the baseline APM database. This topic provides an alphabetical list and description of fields that exist for the GAA Wind IEC Types family and appear in the GAA Wind IEC Types datasheet, unless otherwise specified. The information in the table reflects the baseline state and behavior of these fields.

This family is not enabled for site filtering, which means that records in this family can be accessed by any user with the appropriate license and family privileges. For more information, refer to the [Sites](#) section of the documentation.

Field	Data Type	Description	Behavior and Usage
Description	Character	Identifies the description of the IEC type.	You can enter a value in this field.
ID	Character	Identifies the IEC type.	This field is used to populate the IEC ID field in the GAA Wind IEC And NERC Mapping record.  The field is required. You can enter a value in the field.
Level	Character	Identifies the level of the IEC type.	This field is populated by the MI_GAA_WIND_IEC_TYPES_LEVELS System Code Table.  You can enter or select a value in this field.

## GAA Wind NERC Types Records

GAA Wind NERC Types records store information about fields that are defined for the GAA Wind NERC Types family in the baseline APM database. This topic provides an alphabetical list and description of fields that exist for the GAA Wind NERC Types family and appear in the GAA Wind NERC Types datasheet, unless otherwise specified. The information in the table reflects the baseline state and behavior of these fields.

This family is not enabled for site filtering, which means that records in this family can be accessed by any user with the appropriate license and family privileges. For more information, refer to the [Sites](#) section of the documentation.

Field	Data Type	Description	Behavior and Usage
Color Code	Character	Holds the color code for the NERC type	You can enter a HEX code value. Example: #80ffff  If empty value is entered then the color is treated as transparent.
Description	Character	Identifies the description of the NERC type.	You can enter a value in this field.
ID	Character	Identifies the NERC type.	This field is used to populate the NERC ID field in the GAA Wind IEC And NERC Mapping record.  The field is required. You can enter a value in the field.
Is Mandatory	Boolean	Identifies whether the NERC type is mandatory or not	None.

## GAA Wind Performance Records

GAA Wind Performance Records store information about fields that are defined for the GAA Wind Performance family in the baseline APM database. This topic provides an alphabetical list and description of fields that exist for the GAA Wind Performance family and appear in the GAA Wind Performance datasheet, unless otherwise specified. The information in the table reflects the baseline state and behavior of these fields.

This family inherits the site filtering setting of the GAA Wind Sub Group family. For more information, refer to the Site Filtering section of the documentation.

Field	Data Type	Description	Behavior and Usage
Active Turbine Hours	Numeric	Identifies the sum of turbine hours when the value in the Sub Group Status field is Active.	This field is disabled and populated as a result of performance calculations.
Calendar Hours	Numeric	Identifies the sum of hours in a given month.	This field is disabled and populated by default.
Contact Turbine Hours	Numeric	Identifies the sum of turbine hours when the Sub Group is synchronized with the power system (that is, when the contactor is closed and the generator is connected to the grid).	This field is disabled and populated as a result of performance calculations.

<b>Field</b>	<b>Data Type</b>	<b>Description</b>	<b>Behavior and Usage</b>
Equivalent Forced Derated Turbine Hours	Numeric	Identifies the sum of turbine hours when the output of the Unit is reduced due to a forced event.	This field does not appear in the datasheet.
Equivalent Maintenance Derated Turbine Hours	Numeric	Identifies the sum of turbine hours when the output of the Unit is reduced due to a maintenance event.	This field does not appear in the datasheet.
Equivalent Planned Derated Turbine Hours	Numeric	Identifies the sum of turbine hours when the output of the Unit is reduced due to a planned event.	This field does not appear in the datasheet.
Equivalent Reserve Shutdown Derated Turbine Hours	Numeric	Identifies the sum of reserve shutdown hours in a month when the output of the Unit is reduced due to economic reasons.	This field does not appear in the datasheet.
Forced Delay Turbine Hours	Numeric	Identifies the sum of hours of delay in a month in the operation of the Unit due to an outage.	This field does not appear in the datasheet.
Forced Turbine Hours	Numeric	Identifies the sum of turbine hours when the Sub Group is offline due to a forced event (that is, when the wind turbine generator must be removed from service).	This field is disabled and populated as a result of performance calculations.

Field	Data Type	Description	Behavior and Usage
Gross Actual Generation	Numeric	Identifies, in megawatt hours, the total wind turbine energy generated by the Units for the Sub Group.	<p>This field is used to calculate the values in the Net Actual Generation and Net Maximum Capacity fields. By default, it is populated with the sum of the positive actual production values of all the Events for the associated Units.</p> <p><b>Note:</b> If the actual production value of an Event is negative, it is ignored.</p> <p>You can modify the value in the field. The value must be either greater than or equal to the value in the Net Actual Generation field.</p> <p><b>Important:</b> The value in this field is not dependent on that in the Net Actual Generation field.</p>
Group Key	Numeric	Identifies the key of the GAA Wind Group that is associated with the Performance Record	This field appears as Group Name on the datasheet displaying the name of the Group based on key.
Inactive Reserve Turbine Hours	Numeric	Identifies the sum of turbine hours when the value in the Sub Group Status field is Inactive Reserve.	This field is disabled and populated as a result of performance calculations.
Last Regenerated Date	Date	Identifies the date when the last performance calculations were run.	This field does not appear in the datasheet.
Maintenance Delay Turbine Hours	Numeric	Identifies the sum of hours of delay in a month in the operation of the Unit due to a maintenance event.	This field does not appear in the datasheet.
Maintenance Turbine Hours	Numeric	Identifies the sum of turbine hours when the Sub Group is offline due to a maintenance event.	This field is disabled and populated as a result of performance calculations.

Field	Data Type	Description	Behavior and Usage
Mothballed Turbine Hours	Numeric	Identifies the sum of turbine hours when the value in the Sub Group Status field is Mothballed.	This field is disabled and populated as a result of performance calculations.
Net Actual Generation	Numeric	Identifies, in megawatt hours, the net generation recorded at the Sub Group boundary (usually the revenue meter). It is the Gross Actual Generation (GAG) minus line loss, transformer loss, and auxiliary load loss.	<p>This field is used to calculate the value in the Net Maximum Capacity field. It is populated by default.</p> <p>The value in the field is calculated using the following formula:</p> $\text{GAG} \times (1 - \text{TLE})$ <p>where:</p> <ul style="list-style-type: none"> <li>• GAG is the value in the Gross Actual Generation field.</li> <li>• TLE is the value in the Total Loss Estimate (%) field.</li> </ul> <p>If GAG is 1000 megawatt hours and TLE is 2%, the value in this field is calculated as follows:</p> $1000 \times (1 - 0.02) = 980 \text{ megawatt hours}$ <p>You can modify the value in the field. The value must be either less than or equal to the value in the Gross Actual Generation field.</p> <p><b>Important:</b> The value in this field is updated whenever the value in the Gross Actual Generation field changes.</p>



Field	Data Type	Description	Behavior and Usage
Net Maximum Capacity	Numeric	Identifies the actual generating capability at the Sub Group boundary in megawatts.	<p>This field is disabled and populated by default.</p> <p>The value in the field is calculated using the following formula:</p> $(NAG / GAG) \times Capacity \times \text{No. of Units}$ <p>where:</p> <ul style="list-style-type: none"> <li>• NAG is the value in the Net Actual Generation field.</li> <li>• GAG is the value in the Gross Actual Generation field.</li> <li>• Capacity is either the installed capacity or the maximum capacity of the associated Sub Group, depending on which of the two values is greater.</li> <li>• Installed capacity is the value in the Turbine System MW field of the associated Sub Group.</li> <li>• Maximum capacity is the value in the Max Turbine Capacity MW field of the associated Sub Group.</li> <li>• No. of Units is the value in the Total Number of Turbines field of the associated Sub Group.</li> </ul> <p><b>Note:</b> The value in this field is updated whenever the value in the Gross Actual Generation field or the Net Actual Generation field changes.</p>

Field	Data Type	Description	Behavior and Usage
OMC Equivalent Forced Derated Turbine Hours	Numeric	Identifies the sum of turbine hours when the output of the Unit is reduced due to an Outside Management Control (OMC)-forced event.  <b>Note:</b> This is a subset of the equivalent forced derated turbine hours.	This field does not appear in the datasheet.
OMC Equivalent Maintenance Derated Turbine Hours	Numeric	Identifies the sum of turbine hours when the output of the Unit is reduced due to an OMC-maintenance event.  <b>Note:</b> This is a subset of the equivalent maintenance derated turbine hours.	This field does not appear in the datasheet.
OMC Equivalent Planned Derated Turbine Hours	Numeric	Identifies the sum of turbine hours when the output of the Unit is reduced due to an OMC-planned event.  <b>Note:</b> This is a subset of the equivalent planned derated turbine hours.	This field does not appear in the datasheet.
OMC Forced Turbine Hours	Numeric	Identifies the sum of turbine hours when the Sub Group is offline due to an OMC-forced event.  <b>Note:</b> This is a subset of the forced turbine hours.	This field is disabled and populated as a result of performance calculations.
OMC Maintenance Turbine Hours	Numeric	Identifies the sum of turbine hours when the Sub Group is offline due to an OMC-maintenance event.  <b>Note:</b> This is a subset of the maintenance turbine hours.	This field is disabled and populated as a result of performance calculations.

Field	Data Type	Description	Behavior and Usage
OMC Planned Turbine Hours	Numeric	Identifies the sum of turbine hours when the Sub Group is offline due to an OMC-planned event.  <b>Note:</b> This is a subset of the planned turbine hours.	This field is disabled and populated as a result of performance calculations.
Planned Delay Turbine Hours	Numeric	Identifies the sum of hours of delay in a month in the operation of the Unit due to the repairs extended beyond their planned period.	This field does not appear in the datasheet.
Planned Turbine Hours	Numeric	Identifies the sum of turbine hours when the Sub Group is offline due to a planned event.	This field is disabled and populated as a result of performance calculations.
Plant Key	Numeric	Identifies the key of the GAA Wind Plant that is associated with the Performance Record.	This field appears as Plant Name on the datasheet displaying the name of the Plant based on key.
Report Configuration Key	Numeric	Identifies the key of the Report Configuration based on which the Performance Record is created.	This field does not appear in the datasheet.
Report Period	Character	Identifies the period being reported.	This field is disabled.
Report Year	Numeric	Identifies the year being reported.	This field is disabled.
Reserve Shutdown Turbine Hours	Numeric	Identifies the sum of turbine hours when the Sub Group is offline due to economic reasons but is available for service.  <b>Note:</b> The value in this field does not include the hours when the Sub Group is unavailable due to an outage.	This field is disabled and populated as a result of performance calculations.

<b>Field</b>	<b>Data Type</b>	<b>Description</b>	<b>Behavior and Usage</b>
Resource Unavailable Turbine Hours	Numeric	Identifies the sum of turbine hours when the Unit is available but not producing electricity due to environmental conditions that are outside the operating specifications of Unit (that is, low wind or high wind) or due to inspection and calibration.	This field is disabled and populated as a result of performance calculations.
Retired Unit Turbine Hours	Numeric	Identifies the sum of turbine hours when the value in the Sub Group Status field is Retired.	This field is disabled and populated as a result of performance calculations.
Revision	Numeric	Identifies the number of revisions made to a Performance Record. This value is used to determine the sync status of the record.	This field does not appear in the datasheet.
Sub Group Key	Numeric	Identifies the key of the GAA Wind Sub Group that is associated with the Performance Record.	This field does not appear in the datasheet.
Sub Group Name	Character	Identifies the full name of the Sub Group.	This field is disabled. By default, it is populated with the value in the Sub Group Name field of the associated GAA Wind Sub Group record.
Sub Group Status	Character	Identifies the status of the entire Sub Group during the period for which the data is entered.	This field is disabled.

Field	Data Type	Description	Behavior and Usage
Total Loss Estimate (%)	Numeric	Indicates losses such as line loss, transformer loss, and other auxiliary losses between the Unit and the revenue meter.	This field is used to calculate the value in the Net Actual Generation field. It does not appear in the datasheet. By default, it is populated with the value in the Total Loss Estimate (%) field of the associated GAA Wind Sub Group Capacity record.  <b>Note:</b> The value in this field is not dependent on the values in the Gross Actual Generation and Net Actual Generation fields.
Turbine Hours	Numeric	Identifies the sum of calendar hours for all the Units in the Sub Group.	This field is disabled and populated by default.
Utility ID	Character	Identifies the NERC Compliance Registry number (NCR #) or voluntary reporting ID (assigned by NERC) of your Company.	This field is disabled. By default, it is populated with the value in the Utility ID field of the associated GAA Wind Sub Group record.

## GAA Wind Plant Records

GAA Wind Plant records store information about fields that are defined for the GAA Wind Plant family in the baseline APM database. This topic provides an alphabetical list and description of fields that exist for the GAA Wind Plant family and appear in the GAA Wind Plant datasheet, unless otherwise specified. The information in the table reflects the baseline state and behavior of these fields.

This family is enabled for site filtering, which means that records in this family can be assigned to a specific site and will only be accessible to users who are assigned to the same site and have the appropriate license and family privileges. For more information, refer to the [Sites](#) section of the documentation.

Field	Data Type	Description	Behavior and Usage
City	Character	Identifies the city where the Plant is located.	This field is disabled.
Company Name	Numeric	Identifies the Company of the Plant.	This field is disabled and automatically populated with the Company Name of the GAA Wind Company record. The field, however, stores the key of the GAA Wind Company record.

Field	Data Type	Description	Behavior and Usage
Country	Character	Identifies the country where the Plant is located.	This field is disabled and populated by the MI_GAA_WIND_COUNTRY System Code Table.
Functional Location Key	Numeric	Identifies the Functional Location associated with the Plant.	This field does not appear in the datasheet.
Plant ID	Character	Identifies the Plant.	This field is disabled and automatically populated.
Plant Name	Character	Identifies the full name of the Plant.	This field is disabled and automatically populated.
Primary Regulatory Organization	Character	Identifies the first council to which the data will be reported.	This field is populated with the value NERC and it does not appear in the datasheet.
Region	Character	Identifies the region where the Plant is located.	This field is disabled and populated by the MI_GAA_WIND_NERC_REGIONS System Code Table.
Secondary Regulatory Organization	Character	Identifies the second council to which the data will be reported.	This field does not appear in the datasheet.
State	Character	Identifies the state or province where the Plant is located.	This field is disabled and populated by the MI_GAA_WIND_STATES System Code Table.

## GAA Wind Report Configuration Records

GAA Wind Report Configuration records store information about fields that are defined for the GAA Wind Report Configuration family in the baseline APM database. This topic provides an alphabetical list and description of fields that exist for the GAA Wind Report Configuration family and appear in the GAA Wind Report Configuration datasheet, unless otherwise specified. The information in the table reflects the baseline state and behavior of these fields.

This family is not enabled for site filtering, which means that records in this family can be accessed by any user with the appropriate license and family privileges. For more information, refer to the [Sites](#) section of the documentation.

Field	Data Type	Description	Behavior and Usage
Associated Query	Character	Identifies the query that is used to create a Performance Record or a report.	This field is required. You can enter the path of the query in this field. Ensure that the query exists in APM.
Associated Subgroups	Character	Identifies the Sub Groups that are associated with the Report Configuration.	Each value in the field represents the Sub Group Name of the GAA Wind Sub Group record. You can select one or more values in the field.
Description	Text	Identifies the description of the record.	You can enter a value in this field.
Is Default	Boolean	Indicates whether this record will be associated with a new Sub Group.	This check box is automatically cleared, indicating that the record will not be associated with a new Sub Group unless you select the check box.
Is Report	Boolean	Indicates whether this record is used for a Performance Record or a report.	This check box is automatically selected, indicating that the record is used for a report. Clear the check box if you want the record to be used for a Performance Record.
Report Name	Character	Identifies the full name of the record.	This field is required. You can enter a value in this field.
Report Type	Character	Identifies the type of the record.	This field is required and populated by the MI_GAA_WIND_REPORT_TY PES System Code Table. You can enter or select a value in this field.
Reporting Year	Numeric	Identifies the year of the record.	This field is required. You can enter a value in this field.

## GAA Wind Scheduled Job Records

GAA Wind Scheduled Job records store information about fields that are defined for the GAA Wind Scheduled Job family in the baseline APM database. This topic provides an alphabetical

list and description of fields that exist for the GAA Wind Scheduled Job family. The information in the table reflects the baseline state and behavior of these fields.

This family is not enabled for site filtering, which means that records in this family can be accessed by any user with the appropriate license and family privileges. For more information, refer to the [Sites](#) section of the documentation.

Field	Data Type	Description	Behavior and Usage
Associated Companies	Character	Identifies the companies that are associated with the Scheduled Job.	This field is required. Each value in the field represents the Company ID of the GAA Company record. You can select one or more values in the field.
Associated Sub Groups	Character	Identifies the Sub Groups associated with the Scheduled Job.	This field is required. Each value in the field represents the Sub Group Name of the GAA Wind Sub Group record. You can select one or more values in the field.
Event Import Start Date	Date	Identifies the start date from when the Event data must be retrieved.	This field is required only if the Job Schedule Type is Recurring or if Job Schedule Type is One Time and Import Duration Type is set to Date Range and Job Type is Event Import Job.
Import Duration Type	Character	Identifies the type of duration applicable for the import.	This field is required only if the Job Scheduled Type is One Time and Job Type is Event Import Job. This field can contain either of the following values. <ul style="list-style-type: none"> <li>• <b>Date Range:</b> Identifies the time period for which data will be imported. Event Import Start Date and Event Import End Date values are considered in Coordinated Universal Time (UTC) for importing the events data. It is recommended that you import data for one month at a time.</li> <li>• <b>Month and Year:</b> Identifies the month and year for which data will be imported.</li> </ul>
Import Month	Numeric	Identifies the month for which the import is scheduled.	This field is required only if the Job Schedule Type is One Time and the Import Duration Type is set as Month and Year or if Job Type is Performance Report Generation Job.
Import Year	Numeric	Identifies the year for which the import is scheduled.	This field is required only if the Job Schedule Type is One Time and the Import Duration Type is set as Month and Year or if Job Type is Performance Report Generation Job.
Is Deleted	Boolean	Indicates if the Scheduled job has been deleted.	This field is used to mark a Scheduled Job deleted.
Job Name	Character	Identifies the name for the Scheduled Job.	This field is required. You can enter a value in the field.



Field	Data Type	Description	Behavior and Usage
Job Schedule Type	Character	Identifies the type of job schedule.	<p>This field is required and can be set to either of the following values:</p> <ul style="list-style-type: none"> <li>• One Time</li> <li>• Recurring</li> </ul> <p>You can create the following types of <b>Event Import Scheduled Jobs</b>:</p> <ul style="list-style-type: none"> <li>• <b>One Time:</b> This is a one-time job that is created based on the selected Import Duration Type. The Scheduled Job will start based on the selected Start Date. The following Import Duration Types are available: <ul style="list-style-type: none"> <li>◦ Date range</li> <li>◦ Month and Year</li> </ul> </li> <li>• <b>Recurring:</b> This is a recurring job based on the selected Repeat Interval, Start Date, and End Date. Import Start Date indicates the start date from when the event data must be imported. Import End Date is based on the selected Repeat Interval.</li> </ul> <p>You can create the following types of <b>Performance Report Scheduled Jobs</b>:</p> <ul style="list-style-type: none"> <li>• <b>One Time:</b> This is a one-time job that is created to generate performance reports for the selected month and year. The Scheduled Job will start based on the selected Start Date.</li> <li>• <b>Recurring:</b> This is a monthly recurring job based on the selected Start Date and End Date. Month and Year indicates the start month and year from when the performance report is generated. Every occurrence of the job will generate performance reports for the next month from the previous occurrence.</li> </ul>
Job Type	Character	Identifies the type of Job.	<p>This field indicates the type of Scheduled Job that will be run. This field can contain either of the following values:</p> <ul style="list-style-type: none"> <li>• Event Import Job</li> <li>• Performance Report Generation Job</li> </ul>
Log Level	Character	Identifies the level of logging that will be done for the scheduled job.	<p>This field is required.</p> <p>You can select any of the following values in the field:</p> <ul style="list-style-type: none"> <li>• Trace</li> <li>• Debug</li> <li>• Info</li> <li>• Warn</li> <li>• Error</li> </ul>
Max Retry Count	Numeric	Identifies the maximum number of retries that will be done for the job.	<p>This field is required.</p> <p>You can enter a value in the field.</p> <p>The box is automatically populated with the value 3. However, you can modify the value in the field.</p>

Field	Data Type	Description	Behavior and Usage
Overwrite Existing Data	Boolean	Indicates whether to overwrite the existing data when the Scheduled Job runs.	The field value is selected by default. However, you can clear the box.
Retry After Hours	Numeric	Indicates the number of hours after which the Scheduled Job will run during a retry attempt.	This field is required. You can enter a value in the field. The box is automatically populated with the value 2. However, you can modify the value in the field.
Schedule End Date	Date	Identifies the end date for the Recurring Scheduled Job.	This field is required only if the Job Scheduling Type is Recurring.
Schedule Repeat Interval	Character	Indicates the repeat interval for the recurring schedule.	This field is required only if the Job Scheduling Type is Recurring. You can select any of the following values in the field: <ul style="list-style-type: none"> <li>• Daily</li> <li>• Monthly</li> <li>• Weekly</li> </ul> <b>Note:</b> For a recurring Performance Report Job, this field is always set to Monthly.
Schedule Start Date	Date	Identifies the start date of the Scheduled Job.	This field is required.
Event Import End Date	Date	Identifies the end date till when the Event data must be retrieved.	This field is required only if Job Schedule Type is One Time and Import Duration Type is set to Date Range and Job Type is Event Import Job.

## GAA Wind Sub Group Capacity Records

GAA Wind Sub Group Capacity records store information about fields that are defined for the GAA Wind Sub Group Capacity family in the baseline APM database. This topic provides an alphabetical list and description of fields that exist for the GAA Wind Sub Group Capacity family and appear in the GAA Wind Sub Group Capacity datasheet, unless otherwise specified. The information in the table reflects the baseline state and behavior of these fields.

This family inherits the site filtering setting of the GAA Wind Sub Group family. For more information, refer to the Site Filtering section of the documentation.

Field	Data Type	Description	Behavior and Usage
Line Loss	Numeric	Identifies line losses in percentage.	This field does not appear in the datasheet.
Month	Character	Identifies the month for which the Sub Group data is reported.	This field is required and populated by the MI_GAA_WIND_MONTH_LIST System Code Table. You can select a value in the field; however, after the record is saved, the field is disabled.
Sub Group Name	Numeric	Identifies the Sub Group.	This field is disabled. By default, it is populated with the Sub Group Name of the associated GAA Wind Sub Group record.
Total Loss Estimate (%)	Numeric	Indicates losses such as line loss, transformer loss, and auxiliary load loss between the Unit and the revenue meter.	This field is used to calculate the value in the Net Actual Generation field of a Performance Record. The field is required. You can enter a value in the field.
Turbine Level Consumption	Numeric	Identifies the consumption by the Unit in megawatt hours.	This field does not appear in the datasheet.
Year	Numeric	Identifies the year for which the Sub Group data is reported.	This field is required. You can enter a value in the field; however, after the record is saved, the field is disabled.

## GAA Wind Sub Group Records

GAA Wind Sub Group records store information about fields that are defined for the GAA Wind Sub Group family in the baseline APM database. This topic provides an alphabetical list and description of fields that exist for the GAA Wind Sub Group family and appear in the GAA Wind Sub Group datasheet, unless otherwise specified. The information in the table reflects the baseline state and behavior of these fields.

This family is enabled for site filtering, which means that records in this family can be assigned to a specific site and will only be accessible to users who are assigned to the same site and have the appropriate license and family privileges. For more information, refer to the [Sites](#) section of the documentation.

<b>Field</b>	<b>Data Type</b>	<b>Description</b>	<b>Behavior and Usage</b>
Annual Average Wind Speed	Numeric	Identifies, in meters per second, the annual average wind speed at a height of 80 meters.	This field is disabled and populated by default.
Auxiliary Loads	Numeric	Identifies auxiliary losses in megawatt hours.	This field does not appear in the datasheet.
Average Wind Speed	Numeric	Identifies the average annual wind speed in meters per second.	This field is disabled and populated by default.
City	Character	Identifies the city where the Sub Group is located.	This field is disabled and populated by default.
Commissioning Year	Numeric	Identifies the year when the Sub Group was commissioned.	This field is disabled and populated by default.
Country	Character	Identifies the country where the Sub Group is located.	This field is disabled and populated by the MI_GAA_WIND_COUNTRY System Code Table.
Cut-In Wind Speed	Numeric	Identifies, in meters per second, the lowest wind speed at which the Unit will start to generate power.	This field is disabled and populated by default.
Effective Date	Date	Identifies the effective date for which the Sub Group Ownership Status is reported.	This field is disabled and populated by default.
Elevation	Numeric	Identifies the elevation of the physical location of the Sub Group in meters.	This field is disabled and populated by default.
Group Name	Numeric	Identifies the Group of the Sub Group.	This field is disabled. By default, it is populated with the value in the Group Name of the associated GAA Wind Group record. The field, however, stores the key of the GAA Wind Group record.
High Cut-Out Wind Speed	Numeric	Identifies, in meters per second, the highest wind speed at which the Unit can generate power before cutting out.	This field is disabled and populated by default.

<b>Field</b>	<b>Data Type</b>	<b>Description</b>	<b>Behavior and Usage</b>
ISO Resource ID	Character	A unique identifier provided by the International Organization for Standardization (ISO) to link Sub Groups with an ISO market in the event that the ISO requires mandatory GADS reporting.	This field is disabled and populated by default.
Location Latitude	Numeric	Identifies the degrees of latitude of the physical location of the Sub Group.	This field is disabled and populated by default.
Location Longitude	Numeric	Identifies the degrees of longitude of the physical location of the Sub Group.	This field is disabled and populated by default.
Low Cut-Out Wind Speed	Numeric	Identifies, in meters per second, the lowest wind speed at which the Unit can generate power before cutting out.	This field is disabled and populated by default.
Max Turbine Capacity MW	Numeric	Identifies the maximum capacity that can be produced from a single Unit in the Sub Group. It is used to calculate the value in the Net Maximum Capacity field of a Performance Record.	This field is disabled and populated by default.
Maximum Operating Temperature	Numeric	Identifies the maximum operating temperature in degrees Celsius.	This field is disabled and populated by default.
Minimal Operating Temperature	Numeric	Identifies the minimum operating temperature in degrees Celsius.	This field is disabled and populated by default.
Other Losses	Numeric	Identifies, in megawatt hours, electrical losses due to transmission between the Unit and the revenue meter.	This field does not appear in the datasheet.

Field	Data Type	Description	Behavior and Usage
Plant Name	Numeric	Identifies the Plant of the Sub Group.	This field is disabled. By default, it is populated with the value in the Plant Name field of the associated GAA Wind Plant record. The field, however, stores the key of the GAA Wind Plant record.
Reference Anemometer Height	Numeric	Identifies, in meters, the height of the highest anemometer on the reference meteorological tower. Often, the turbine anemometer is used for reference.	This field is disabled and populated by default.
Region	Character	Identifies the region where the Sub Group is located.	This field is disabled and populated by the MI_GAA_WIND_NERC_REGIONS System Code Table.
Reserve Capacity	Numeric	Identifies, in megawatts, the reserve capacity of the Sub Group that is held in reserve.	This field is disabled and populated by default.
Rotor Diameter	Numeric	Identifies the diameter of the rotor in meters.	This field is disabled and populated by default.
Rotor Height	Numeric	Identifies the height of the rotor hub in meters.	This field is disabled and populated by default.
SCADA Manufacturer	Character	Identifies the manufacturer of the SCADA system.	This field is disabled and populated by the MI_GAA_WIND_SCADA_MANUFACTURERS System Code Table.
SCADA Model	Character	Identifies the model name of the SCADA system.	This field is disabled and populated by default.
State	Character	Identifies the state or province where the Sub Group is located.	This field is disabled and populated by the MI_GAA_WIND_STATES System Code Table.
Station Service	Numeric	Identifies the station service load in megawatt hours.	This field does not appear in the datasheet.
Sub Group ID	Character	Identifies the Sub Group.	This field is disabled and populated by default.

<b>Field</b>	<b>Data Type</b>	<b>Description</b>	<b>Behavior and Usage</b>
Sub Group Name	Character	Identifies the full name of the Sub Group.	This field is disabled and populated by default.
Sub Group Ownership Status	Character	Identifies the ownership status of the Sub Group.	This field is disabled and populated by the MI_GAA_WIND_SUBGROUP_OWNERSHIP_STATUS System Code Table.
Sub Group Status	Character	Identifies the status of the entire Sub Group during the period for which the data is entered.	This field is disabled and populated by the MI_GAA_WIND_SUBGROUP_STATUS System Code Table.
Time Zone	Character	Identifies the time zone associated with the Sub Group.	This field is disabled and populated by default.
Total Installed Capacity	Numeric	Identifies the total capacity for the Sub Group in megawatts.	This field is disabled and populated by default.
Total Number Of Turbines	Numeric	Identifies the actual number of Units that exist in the Sub Group. It is used to calculate the value in the Net Maximum Capacity field of a Performance Record.	This field is disabled and populated by default.
Transfer To Utility	Character	Identifies the Utility ID of the Company to which the Sub Group is sold.	This field is disabled. It is required when the Sub Group Ownership Status being reported has the value Transfer.
Transformer Losses	Numeric	Identifies transformer losses in megawatt hours.	This field does not appear in the datasheet.
Turbine Manufacturer	Character	Identifies the name of the manufacturer of the Units in the Sub Group.	This field is disabled and populated by the MI_GAA_WIND_TURBINE_MANUFACTURERS System Code Table.
Turbine Model	Character	Identifies the model of the Units in the Sub Group.	This field is disabled and populated by default.
Turbine Model Version	Character	Identifies the version name of the Units in the Sub Group.	This field is disabled and populated by default.

Field	Data Type	Description	Behavior and Usage
Turbine System MW	Numeric	Identifies the System MW (megawatts) rating of a single Unit in the Sub Group. It is used to calculate the value in the Net Maximum Capacity field of a Performance Record.	This field is disabled and populated by default.
Turbulence Intensity	Character	Identifies the average wind turbulence where the Sub Group is located.	This field is disabled and populated by the MI_GAA_WIND_TURBULENCE System Code Table.
Utility ID	Character	Identifies the NERC Compliance Registry number (NCR #) or voluntary reporting ID (assigned by NERC) of your Company.	This field is disabled and populated by default.
Wind Regime	Character	Identifies the average topography of the area where the Sub Group is located.	This field is disabled and populated by the MI_GAA_WIND_REGIMES System Code Table.
Wind Shear	Character	Identifies the average strength of the difference between the speeds of wind.	This field is disabled and populated by the MI_GAA_WIND_SHEAR System Code Table.

## GAA Wind Unit Records

GAA Wind Unit records store information about fields that are defined for the GAA Wind Unit family in the baseline APM database. This topic provides an alphabetical list and description of fields that exist for the GAA Wind Unit family and appear in the GAA Wind Unit datasheet, unless otherwise specified. The information in the table reflects the baseline state and behavior of these fields.

This family is enabled for site filtering, which means that records in this family can be assigned to a specific site and will only be accessible to users who are assigned to the same site and have the appropriate license and family privileges. For more information, refer to the [Sites](#) section of the documentation.



Field	Data Type	Description	Behavior and Usage
Equipment Key	Numeric	Identifies the Equipment associated with the Unit.	This field does not appear in the datasheet.
Sub Group Name	Numeric	Identifies the full name of the Sub Group of the Unit.	This field is disabled and automatically populated with the key of the Sub Group Name of the corresponding GAA Wind Sub Group record.
Unit ID	Character	Identifies the Unit.	This field is disabled and automatically populated.
Unit Name	Character	Identifies the full name of the Unit.	This field is disabled and automatically populated.

## Catalog Items

### The Graphs Folder

The Catalog folder \\Public\Meridium\Modules\GAA Wind\Graphs contains the following item.

Graph Name	Behavior and Usage
GAA Wind General Performance Metrics	Displays the bar chart in the <b>GENERAL PERFORMANCE METRICS</b> section in the <b>GAA Wind Overview</b> page.

### The Queries Folder

The Catalog folder \\Public\Meridium\Modules\GAA Wind\Queries contains the following items.

Item Name	Behavior and Usage
Filter Query	Used in the page filter in the <b>GAA Wind Overview</b> page.
GAA Wind Edited Events Count Query	Returns the count of the edited Events in the Asset Hierarchy for GAA Wind.
GAA Wind Edited Events Tile Query	Returns the results in the <b>Edited Events</b> section in the <b>GAA Wind Overview</b> page.
GAA Wind Events Count Query	Returns the count of all the Events in the Asset Hierarchy for GAA Wind.
Gaa Wind Events Tile Query	Returns the results in the <b>All Events</b> section in the <b>GAA Wind Overview</b> page.
GAA Wind get all NERC types	Returns the values used to populate the NERC Type field in the GAA Wind Event record.
GAA Wind Reports Configuration List	Returns the results in the <b>Report Configuration</b> subsection in the <b>GAA Wind Administrator</b> page.

Item Name	Behavior and Usage
Get Data for Performance Report	Returns the data required to generate or regenerate a Performance Report.
Get Data for Sub Group Report	Returns the data required to generate or regenerate a Sub Group Report.
Get Gross Actual Generation for a Sub Group	Returns the value in the Gross Actual Generation field in a Performance Record.
Get IEC and NERC mapping for GAA Wind	Returns the results in the <b>Mapping</b> subsection in the <b>GAA Wind Administrator</b> page.
Get IEC Edited Events for selected Sub Group	Returns the results in the <b>Events</b> section in the Sub Group Summary page after you apply the <b>Show Only Edited Events</b> filter.
Get IEC Events for selected Sub Group	Returns the results in the <b>Events</b> section in the Sub Group Summary page.
Get IEC types for GAA Wind	Returns the results in the <b>IEC Types</b> subsection in the <b>GAA Wind Administrator</b> page.
Get Import details for selected status	Returns the results in the <b>GAA Wind Event Import</b> page.
Get NERC Calculations for a Sub Group	Returns the values in the following fields in a Performance Record: <ul style="list-style-type: none"> <li>• Active Turbine Hours</li> <li>• Contact Turbine Hours</li> <li>• Forced Turbine Hours</li> <li>• Inactive Reserve Turbine Hours</li> <li>• Maintenance Turbine Hours</li> <li>• Mothballed Turbine Hours</li> <li>• Planned Turbine Hours</li> <li>• Reserve Shutdown Turbine Hours</li> <li>• Resource Unavailable Turbine Hours</li> <li>• Retired Unit Turbine Hours</li> </ul>
Get NERC types for GAA Wind	Returns the results in the <b>NERC Types</b> subsection in the <b>GAA Wind Administrator</b> page.
Get Count of Import Details for each status	Returns the count of records for each status (In Progress, Completed, and Failed) in the GAA Wind Event Import page.
Get Bulk Report Generation Details	Returns the results in the GAA Wind Report Generation page.
Get Count of Bulk Report Details for each status	Returns the count of records for each status (In Progress, Completed, and Failed) in the GAA Wind Report Generation page.
Get OMC Calculations for a Sub Group	Returns the values in the following fields of a Performance Record: <ul style="list-style-type: none"> <li>• OMC Forced Turbine Hours</li> <li>• OMC Maintenance Turbine Hours</li> <li>• OMC Planned Turbine Hours</li> </ul>
Graph Queries	A subfolder that contains the following query: <ul style="list-style-type: none"> <li>• Get Actual Generation for Sub Groups: Returns the results in the bar chart in the <b>GENERAL PERFORMANCE METRICS</b> section in the <b>GAA Wind Overview</b> page.</li> </ul>

Item Name	Behavior and Usage
Reports list for Sub Group Datagrid	Returns the results in the <b>Performance &amp; Reports</b> section of a Sub Group in the <b>GAA Wind Administrator</b> page.
Sub Group has Performance Records	Returns the results in the <b>Performance</b> section in the Sub Group Summary page.
SubGroup information based on asset context	Returns the results in the <b>Sub Groups</b> window that appears when you select the <b>Show Sub Group Summary</b> button.
Wind subgroups for given group	Returns the Sub Group capacities by Sub Group key. <b>Note:</b> You should not modify the field caption of the Entity ID in this query.

## Pages and Windows

### The Data Quality Parameters Window


The **Data Quality Parameters** window appears when you select the link in the **Data Quality Parameters** column in [the GAA Wind Event Import page](#). It contains the following information pertaining to the Events for the Sub Group and the period you selected in the **Import Event** window:



- **Error Event Percentage:** The percentage of Events that contain an error, as a function of the total Events.  
For example, if there are 100 Events out of which 20 have an error, the Error Event Percentage is 20%.  
This data provides information about how many Events that are used for reporting contains errors.
- **Total Report Time:** The duration for which you are importing the Events, in minutes.
- **IU Time Percentage:** The percentage of the total IU time for the Events, as a function of the total report time.  
For example, if the total report time is 100 minutes, and the sum duration of the IU Events is 20 minutes, the IU Time Percentage is 20%.
- **Aggregated Error Code:** The two-digit bit-mapped code that indicates the result of the validation performed on the Sub Group. The left bit indicates whether at least one Event existed for each wind turbine per hour. The right bit indicates whether the sum duration of the Events is same as the total report time for the Sub Group. The value 0 in either location indicates that the validation passed, whereas the value 1 indicates that it failed.
- **Total Events:** The total number of Events.
- **Total Error Events:** The total number of Events that contain an error.
- **Error Time Percentage:** The percentage of the total error time for the Events, as a function of the total report time.  
For example, if the total report time is 100 minutes, and the sum duration of Events that have an error is 20 minutes, the Error Time Percentage is 20%.
- **Total IU Time:** The sum duration of the IU Events (that is, Events that have the value IU in the IEC Event Type field), in minutes.
- **Total Error Time:** The sum duration of Events that have an error, in minutes.
- **IU Event Percentage:** The percentage of the IU Events, as a function of the total Events.  
For example, if there are 100 Events out of which 20 have the value IU in the IEC Event Type field, the IU Event Percentage is 20%.




## The Events Workspace and the GAA Wind Edit Events Page


The following table provides a list of tasks that you can perform in:

- The **Events** workspace, which appears in [the Sub Group Summary page](#) with a table of Events.
- The **GAA Wind Edit Events** page, which appears when you select **Edit Events** in the **All Events** section in [the GAA Wind Overview page](#).







Task	Location	Description
Filter the Events based on the period and history.	The <b>Events</b> workspace.	<p>Select , and then, in the <b>Filter By Date Range</b> window, modify the values in the following boxes as needed:</p> <ul style="list-style-type: none"> <li>• <b>From:</b> Indicates the start date of the period.</li> <li>• <b>To:</b> Indicates the end date of the period.</li> <li>• <b>Show Only Edited Events:</b> If you select this check box, only edited Events (that is, Events whose value in the NERC Type field is different from that in the Mapped NERC Type field) appear for the specified period.</li> </ul> <p><b>Important:</b> When filtering Events, the values in the <b>From</b> and <b>To</b> boxes are treated as Coordinated Universal Time (UTC) values to ensure accuracy in the count of Events retrieved for a given period, regardless of your time zone.</p> <p><b>Note:</b></p> <ul style="list-style-type: none"> <li>• If the start time stamp of an Event is earlier than the value specified in the <b>From</b> box, the Event does not appear after applying the filter.</li> <li>• If the end time stamp of an Event is later than the value specified in the <b>To</b> box, the Event does not appear after applying the filter.</li> </ul>
Modify the count of Events that appear in the table in a given page.	The <b>Events</b> workspace and the <b>GAA Wind Edit Events</b> page.	<p>Select one of the following buttons:</p> <ul style="list-style-type: none"> <li>• <b>100:</b> Displays a maximum of 100 Events.</li> <li>• <b>250:</b> Displays a maximum of 250 Events.</li> <li>• <b>500:</b> Displays a maximum of 500 Events.</li> <li>• <b>1000:</b> Displays a maximum of 1000 Events.</li> </ul> <p><b>Note:</b> By default, the table displays a maximum of 500 Events.</p>


Task	Location	Description
Sort the Events in ascending or descending order based on one or more columns.	The <b>Events</b> workspace and the <b>GAA Wind Edit Events</b> page.	Right-click the column heading, and then select <b>Sort Ascending</b> or <b>Sort Descending</b> as needed.
Clear the sorting in the columns.	The <b>Events</b> workspace and the <b>GAA Wind Edit Events</b> page.	Right-click the column heading, and then select <b>Clear Sorting</b> .
Display or hide the columns.	The <b>Events</b> workspace.	When you select  , the <b>Column Chooser</b> window appears, where all the columns appear with check boxes. By default, these check boxes are selected, indicating that the corresponding columns appear in the table. To hide a column in the table, clear the check box next to the column.
Display or hide the columns.	The <b>GAA Wind Edit Events</b> page.	When you select  , the <b>Column Chooser</b> window appears, where all the columns appear with check boxes. By default, these check boxes are selected, indicating that the corresponding columns appear in the table. To hide a column in the table, clear the check box next to the column.
Group the Events by one or more columns.	The <b>Events</b> workspace and the <b>GAA Wind Edit Events</b> page.	Right-click the column heading, and then select the <b>Group by this column</b> option. Alternatively, you can drag the column heading next to  , where the following text appears: Drag a column heading here to group by that column. <b>Note:</b> The order in which these column headings appear in the table when you group the Events corresponds to the order in which they appear next to  . You can modify the order next to  by dragging the column headings to where you want them.

Task	Location	Description
<p>Ungroup the Events by one or more columns.</p>	<p>The <b>Events</b> workspace and the <b>GAA Wind Edit Events</b> page.</p>	<p>Right-click the column heading next to  or in the table, and then select the <b>Ungroup</b> option.</p> <p><b>Tip:</b> To ungroup the Events by all columns at once, right-click a column, and then select the <b>Ungroup All</b> option.</p>
<p>Filter the Events using the column headings.</p>	<p>The <b>Events</b> workspace and the <b>GAA Wind Edit Events</b> page.</p>	<p>When you select  next to any column heading except <b>NERC State</b>, a list of values that are available in the column appears with check boxes; for the <b>NERC State</b> column heading, a list of all NERC states appears with check boxes.</p> <p><b>Note:</b>  does not appear for the <b>Start Date</b> and <b>End Date</b> columns.</p> <p>Select the check boxes next to the values based on which you want to filter the Events, and then select <b>OK</b>.</p> <p><b>Tip:</b> To select all the check boxes at once, select the <b>Select All</b> check box, and then select <b>OK</b>.</p> <p>To remove certain values from the filter, clear the check boxes next to those values, and then select <b>OK</b>.</p> <p><b>Tip:</b> If all the check boxes were previously selected and you want to now clear all the check boxes at once, clear the <b>Select All</b> check box, and then select <b>OK</b>.</p>

Task	Location	Description
Filter the Events using regular expressions.	The <b>Events</b> workspace and the <b>GAA Wind Edit Events</b> page.	<p>Point to  below a column heading, and then select one the following options as needed:</p> <ul style="list-style-type: none"> <li>• <b>Contains:</b> Does not appear for the <b>Start Date</b> and <b>End Date</b> columns.</li> <li>• <b>Does not contain:</b> Does not appear for the <b>Start Date</b> and <b>End Date</b> columns.</li> <li>• <b>Starts with:</b> Does not appear for the <b>Start Date</b> and <b>End Date</b> columns.</li> <li>• <b>Ends with:</b> Does not appear for the <b>Start Date</b> and <b>End Date</b> columns.</li> <li>• <b>Equals</b></li> <li>• <b>Does not equal</b></li> <li>• <b>Less than:</b> Appears only for the <b>Start Date</b> and <b>End Date</b> columns.</li> <li>• <b>Greater than:</b> Appears only for the <b>Start Date</b> and <b>End Date</b> columns.</li> <li>• <b>Less than or equal to:</b> Appears only for the <b>Start Date</b> and <b>End Date</b> columns.</li> <li>• <b>Greater than or equal to:</b> Appears only for the <b>Start Date</b> and <b>End Date</b> columns.</li> <li>• <b>Between:</b> Appears only for the <b>Start Date</b> and <b>End Date</b> columns.</li> <li>• <b>Reset</b></li> </ul>



Task	Location	Description
Filter the Events using the column values.	The <b>Events</b> workspace and the <b>GAA Wind Edit Events</b> page.	<p>For a column that contains check boxes, select  in the drop-down list box below the column heading, and then select one of the following options as needed:</p> <ul style="list-style-type: none"> <li>• <b>(All)</b></li> <li>• <b>true</b></li> <li>• <b>false</b></li> </ul> <p>To apply the filter, select .</p> <p>For the <b>Start Date</b> and <b>End Date</b> columns, select  in the drop-down list box below the column heading. In the calendar that appears, modify the date and time as needed, and then select <b>Done</b>.</p> <p>To apply the filter, select .</p> <p>For a column that does not contain check boxes, enter the value (that is, the filter criterion) in the text box below the column heading, and then select .</p> <p><b>Note:</b> In the text box, the Events are filtered using the Contains regular expression. Therefore, you can enter a partial value in the text box.</p>
Clear, at once, all the filters applied using the column headings, regular expressions, and column values.	The <b>Events</b> workspace and the <b>GAA Wind Edit Events</b> page.	Select <b>Clear Filter</b> .
Bulk Edit	The <b>Events</b> workspace and the <b>GAA Wind Edit Events</b> page.	<p>Select , and then select the check boxes next to the fields whose values you want to modify. After modifying the values, select <b>Update</b>.</p> <p>In the GAA Wind Edit Events page, the cells whose values you have modified are highlighted.</p>
Create Events	The <b>Events</b> workspace.	For more information, refer to the <a href="#">Create Events</a> section of the documentation.
Split an Event	The <b>Events</b> workspace and the <b>GAA Wind Edit Events</b> page.	For more information, refer to the <a href="#">Split an Event</a> section of the documentation.

Task	Location	Description
Discard Changes	The <b>Events</b> workspace and the <b>GAA Wind Edit Events</b> page.	Select  to discard your changes.
Export Events	The <b>Events</b> workspace.	For more information, refer to the <a href="#">Export Events</a> section of the documentation.

## The Error Code Window

The error code window contains information about the error pertaining to the associated Event. The window appears when you select the link (that is, the six-digit bit-mapped code) in the **Error Code** column in:

- The **All Events** and **Edited Events** sections in [the GAA Wind Overview page](#).
- [The GAA Wind Edit Events page](#).
- The **Events** workspace in [the Sub Group Summary page](#).

The error in the error code window is represented by the value 1 in the six-digit bit-mapped code. The following table illustrates what the value 1 in each position of the code represents.

**Note:** The value 000000 in the **Error Code** column indicates that there is no error.

Position of 1	Error Name	Error Message Description
First	Error 1	The end time stamp of the Event does not equal the start time stamp of the next Event.
Second	Error 2	The start or end time stamp of the Event does not fall within the requested period of the API call.
Third	Error 3	Information is unavailable.
Fourth	Error 4	The production value of the Event is out of range for the associated Sub Group.
Fifth	Error 5	Warning: The Event falls within the recommended coverage delay period.
Sixth	Error 6	The production value of the Event exceeds the maximum production value for the associated Sub Group.

## Reports

### Performance Reports

The following table provides a list of columns that appear in a Performance Report and the fields they represent in the GAA Wind Performance family, unless otherwise specified.

Column	Field
UtilityID	Utility ID
PlantIDName	Plant Name <b>Note:</b> This field belongs to the GAA Wind Plant family.
GroupIDName	Group Name <b>Note:</b> This field belongs to the GAA Wind Group family.
SubGroupID	Sub Group ID <b>Note:</b> This field belongs to the GAA Wind Sub Group family.
ReptMonth	Report Period
ReptYear	Report Year
SGStatus	Sub Group Status
GAG	Gross Actual Generation
NAG	Net Actual Generation
NMC	Net Maximum Capacity
ACTH	Active Turbine Hours
CTH	Contact Turbine Hours
RSTH	Reserve Shutdown Turbine Hours
FTH	Forced Turbine Hours
MTH	Maintenance Turbine Hours
PTH	Planned Turbine Hours
OFTH	OMC Forced Turbine Hours
OMTH	OMC Maintenance Turbine Hours
OPTH	OMC Planned Turbine Hours
RUTH	Resource Unavailable Turbine Hours
IRTH	Inactive Reserve Turbine Hours
MBTH	Mothballed Turbine Hours
RTH	Retired Unit Turbine Hours

## Sub Group Reports

The following table provides a list of columns that appear in a Sub Group Report and the fields they represent in the GAA Wind Sub Group family, unless otherwise specified.

Column	Field
UtilityID	Utility ID
Region	Region
PlantIDName	Plant Name <b>Note:</b> This field belongs to the GAA Wind Plant family.
GroupIDName	Group Name <b>Note:</b> This field belongs to the GAA Wind Group family.
SubGroupID	Sub Group ID
SubGroupName	Sub Group Name
ISOID	ISO Resource ID
Country	Country
NearCity	City
State	State
Latitude	Location Latitude
Longitude	Location Longitude
Elevation	Elevation
WRegime	Wind Regime
AAWS	Annual Average Wind Speed
SCADAMfr	SCADA Manufacturer
SCADAMdl	SCADA Model
CommYear	Commissioning Year
TotInstCapacity	Total Installed Capacity
RsrvCapacity	Reserve Capacity
TurbineCount	Total Number Of Turbines
SystemMW	Turbine System MW
MaxTurbineCap	Max Turbine Capacity MW
TurbineMfr	Turbine Manufacturer
TurbineMdl	Turbine Model
TurbineMdlVer	Turbine Model Version
RotorHeight	Rotor Height
RotorDiam	Rotor Diameter
CutinSpd	Cut-In Wind Speed
LowCutoutSpd	Low Cut-Out Wind Speed
HighCutoutSpd	High Cut-Out Wind Speed

Column	Field
TurbIntensity	Turbulence Intensity
AvgWindSpd	Average Wind Speed
WindShear	Wind Shear
ReferenceAnemom	Reference Anemometer Height
MinOpTemp	Minimal Operating Temperature
MaxOpTemp	Maximum Operating Temperature
SubGrpOwnStatus	Sub Group Ownership Status
StatusEffDate	Effective Date <b>Note:</b> This value appears in the Coordinated Universal Time (UTC), in the following format: mm/dd/yyyy.
TransfertoUtility	Transfer To Utility