Generation Availability Analysis

GE VERNOVA

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Chapter

1

Overview

Topics:

Overview of the Generation Availability Analysis (GAA) Module

In North America, many utility companies report generation and loss event data to the North American Electric Reliability Corporation (NERC) or Canadian Electricity Association (CEA) using the Generating Availability Data System (GADS) application. The Generation Availability Analysis (GAA) module uses the core functionality of APM to help you record generation and loss data for each unit in your company.

Using GAA, you can view and modify event and fuel consumption data to create performance records pertaining to the overall power generation for a given period. You can then generate reports that follow the GADS mandatory reporting requirements and submit those reports to NERC or CEA.

In addition to simple data collection and reporting, you can use GAA to analyze your power generation data further using other APM modules. Examples:

- You can use Root Cause Analysis to conduct a root cause analysis on the failure of a unit to produce the required output.
- You can use eLog to create a log entry for a generation event.
- You can use Asset Health Manager to access the health indicators for an asset.

Assumptions Made in the GAA Documentation

Throughout this documentation, we assume that you are familiar with the terminology and concepts discussed in documentation released by the http://www.nerc.com/ and http://www.electricity.ca/.

In addition, we assume that you have not modified the baseline family- and field-level rules for the GAA families and that you are using the workflows that are described in this documentation. If you modify the baseline rules or use workflows other than those described in this documentation, the field behavior and record functionality may differ from what is described.

About Policies and R Scripts used by GAA

R scripts are used in GAA to perform calculations. The libraries available in R scripts simplify calculations in GAA. The R scripts can be used with policies to provide a graphical representation of performance information in GAA.

You can modify an R script or a policy to customize calculations or the graphical representations in GAA.

You can customize calculations in GAA using one of the following methods:

- Modify an R script.
- Create an R script and link it to the appropriate policy.

GAA Calculate Performance Policy

The GAA Calculate Performance policy is used to perform unit-related calculations in GAA. The following diagram shows the baseline GAA Calculate Performance policy:
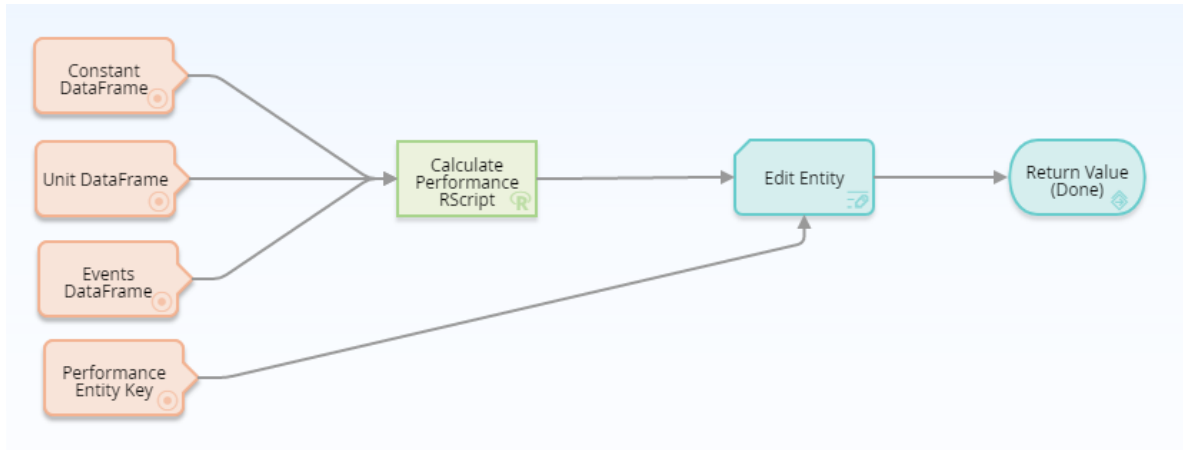
You can access the baseline GAA Calculate Performance policy and modify it based on your needs. In the existing policy, you can modify the baseline R script node (Calculate Performance RScript in the diagram) or add new nodes. You must link all existing or new nodes as input to the **Edit Entity** node. You must not modify the following default nodes shown in the diagram:

- **Constant DataFrame**
- **Unit DataFrame**
- **Events DataFrame**
- **Performance Entity Key**

We recommend that you do not modify the **Edit Entity** node in the baseline GAA Calculate Performance policy.

The following table provides the Policy and the R script used in GAA to perform various calculations. This R script is stored in the following catalog folder: **Public\Meridium\Modules\Generation Management \RScripts\CalculatePerformance**.

Policy	R script Name
GAA Calculate Performance	CalculatePerformance

Access the GAA Overview Page

About This Task

This topic describes how to access the **GAA Overview** page, on which you can view all the information and perform various tasks related to Generation Availability Analysis.

By default, the information that appears on the **GAA Overview** page is related to all Hierarchy Levels. You can select 🔽 to filter and view the information related to either of the following based on the sites to which you are assigned:

- All the GAA Units associated to a GAA Company: When you select a GAA Company in the **Asset** field, information related to all the GAA Units associated with all the GAA Plants within the selected GAA Company appears on the **GAA Overview** page.
- All the GAA Units associated to a GAA Plant: When you select a GAA Plant in the **Asset** field, information related to all the GAA Units associated with the selected GAA Plant appears on the **GAA Overview** page.

- A GAA Unit: When you select a GAA Unit in the **Asset** field, information related only to the selected GAA Unit appears on the **GAA Overview** page.

By default, the information on the **GAA Overview** page is displayed for a time period between the first day of the current year and the current date. You can modify the time period by selecting ▽ , and then specifying values in the Start Date and End Date fields.

The tasks that you can perform on this page differ depending on the Security Groups with which you are associated.

Tip: For more information, refer to the Security Group topic for this module.

Procedure

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

Note:

You can also access Generation Availability Analysis information associated with a functional location and its children. To do so:

a. In the upper-left corner of the top navigation bar, select ⛰ .

   The **Asset** page appears.
b. In the left pane, navigate to the function location for which you want to access the **GAA Overview** page.
c. In the workspace, select the **Reliability** tab.

   A list of types of performance related analyses performed on the selected functional location appears.
d. Select the hyperlink for **Generation Availability Analysis** that specifies the number of Events Under Review, Approved Events, and Generation Reports generated for the selected functional location.

The **GAA Overview** page appears, displaying the following information related to each GAA Unit for the specified period:

- The **Events Under Review** section: Contains a list of Events that are being reviewed. The section contains the following columns of information:

  ◦ **Event ID**: Contains the value from the Event ID field. You can select the link in the **Event ID** column to access the selected event.
  ◦ **Unit Name**: Contains the value that you entered in Unit Name field to identify the GAA Unit to which the event occurred. You can select the link in the **Unit Name** column to access the **Unit Summary** workspace for the selected GAA Unit.
  ◦ **Event Type**: Contains the value that you entered in Capacity Event Type field to identify the type of event.
  ◦ **Event Description**: Contains the value that you entered in Capacity Event Type field to describe the event.
  ◦ **Start Date**: Contains the value that you entered in the Event Start field to indicate the date and time that the event started.
  ◦ **End Date**: Contains the value that you entered in the Event End field to indicate the date and time that the event ended.
- The **Approved Events** section: Contains a list of Events that have been approved. The section contains the same columns of information as the **Events Under Review** tab.
- The **Generation Reports** section: Contains a list of regulatory and management (SSRS) reports and links to generate management reports. The section contains the following columns of information:

  ◦ **Report ID**: Contains the value that identifies the report.

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- ◦ **Unit ID**: Contains the value that identifies the GAA Unit.
- ◦ **Modified By**: Contains the value that identifies the user who modified the reports.
- ◦ **Last Modified**: Contains the time when the report was last modified.

You can manage the Regulatory reports using the **Manage Reports** button.

- The **General Performance Metrics** graph section: Contains a bar graph that shows the actual and maximum productivity of each GAA Unit for the specified period. The graph plots the following fields:

  - ◦ **Gross Maximum Generation (MWh)**
  - ◦ **Gross Actual Generation (MWh)**
  - ◦ **Net Maximum Generation (MWh)**
  - ◦ **Net Actual Generation (MWh)**

  The y-axis shows the number of Megawatt Hours for each GAA Unit.

  When you select a bar in the graph, the **Unit Summary** workspace for the associated GAA Unit appears in a new tab.

- The **Events Causing Losses** graph section: Contains a doughnut graph that shows the sum of losses of each of the following type for each GAA Unit for the specified period:

  - ◦ Outages (MWH loss)
  - ◦ Derates (MWH loss)
  - ◦ Reserve Shutdown (MWH loss)

- The **Count of Event Types** graph section: Contains a bar graph that shows the number of following types of events for each GAA Unit during the specified time:

  - ◦ **Unplanned Deratings**
  - ◦ **Planned Deratings**
  - ◦ **Unplanned Outages**
  - ◦ **Planned Outages**
  - ◦ **Reserve Shutdown**

  The x-axis shows the name of each GAA Unit and y-axis shows the number of events that occurred at each of the GAA Unit.

  The colors that represent various fields in this graph appear based on the color that you specify when adding an Event Category. You must then modify the colors of the graph for each of the Event Categories.

  When you select a bar in the graph, the **Unit Summary** workspace for the associated GAA Unit appears in a new tab.

- The **Event and Performance Report Statistics** section: Contains a grid that displays the values from all the fields available on the Detailed Loss Net MWh tab on the Performance datasheet for each GAA Unit for the specified period.
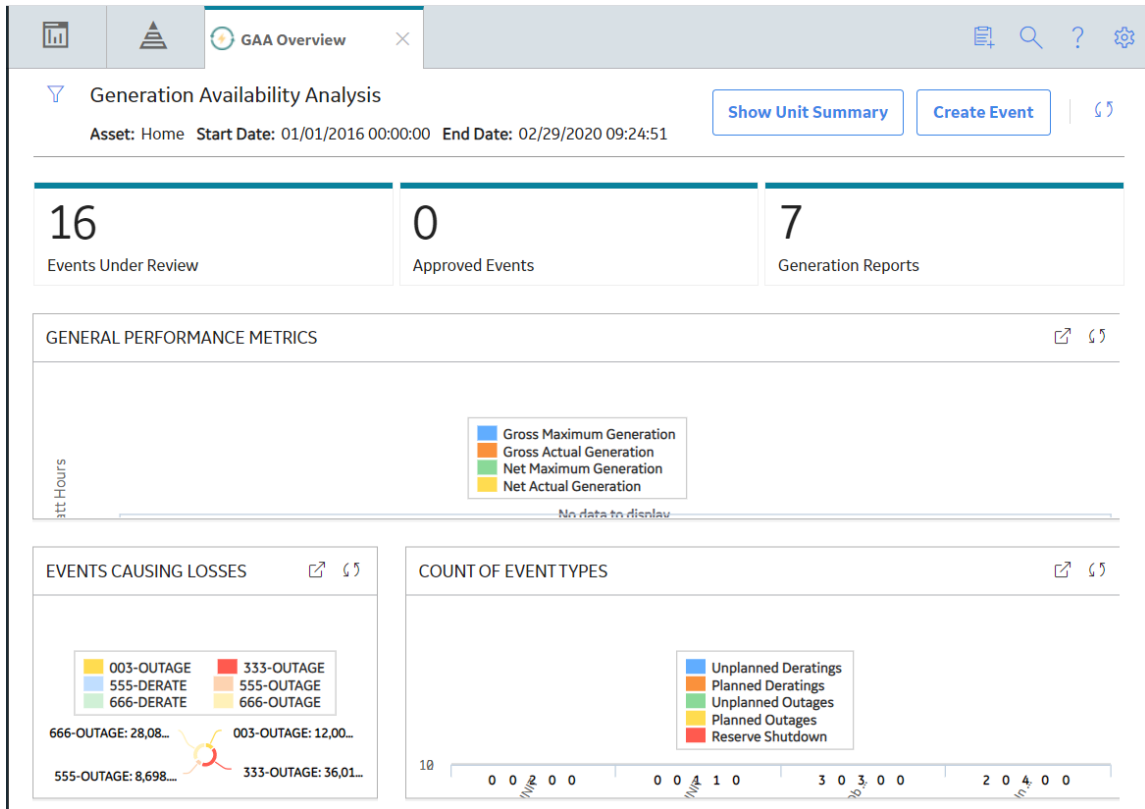
Note: The **Generation Availability Analysis** overview page is not updated automatically when you return to the previously opened tab. You can select ↻ to update the page.

While viewing any of the above charts, you can select ⬈ in the upper-right corner of the chart to customize the appearance of the plot by using standard graph features.

Access the Unit Summary Workspace

About This Task

The tasks that you can perform on this page differ depending on the Security Groups with which you are associated.

Tip: For more information, refer to the Security Group topic for this module.

Procedure

1. Access the **GAA Overview** page.

   Note:

   You can also access the **Unit Summary** workspace by using one of the following methods:

   - Access the **Events Under Review** section, and in the **Unit Name** column, select the required GAA Unit.
   - Access the Primary Event for which you want to access the summary of the associated GAA Unit. In the left pane, select **Unit Summary**.

2. In the upper-right corner of the page, select **Show Unit Summary**.

The **Units** window appears.

Note: The **Units** window appears only if there are multiple GAA Units available.

3. Select the GAA Unit whose summary you want to access, and then select **Open Unit Summary**.

The summary of the GAA Unit appears in the workspace. The **Events Breakdown** tab is selected by default. The information in the workspace is filtered based on the time period specified on the **GAA Overview** page. You can customize the time period by selecting ▽ in the upper-left corner of the workspace.

The following tabs appear in the workspace:

- **Events Breakdown** : Contains the **Impact of Event Types** graph, **Frequency of Event Types** graph, and lists the **Highest Impact Events** information for the selected GAA Unit.
- **Breakdown of Period Hours**: Contains a multi-level pie chart that shows the percentage of the Good Production, Planned Derate, Planned Outage, Reserve Shutdown, Unplanned Derate, and Unplanned Outage for the specified period for the selected GAA Unit.
- **Generation Metrics** : Contains a graph that shows the performance of the GAA Unit during the specified period.
- **Event Timeline**: Contains a graph that shows the loss in the GAA Unit during the specified period.

You can also view the **Health Summary** page for an Asset if the selected GAA Unit is associated with an Asset.

The left pane contains the following tabs:

- **Events**: Contains a list of Primary Events associated with the selected GAA Unit.
- **Performance & Reports**: Contains a list of Performance records and reports associated with the selected GAA Unit for the current year.
- **Reference Documents**: Contains a list of Reference Documents for the selected GAA Unit.

About the Unit Summary Workspace

The **Unit Summary** workspace provides a graphical representation of the data that exists in a GAA Unit associated with a selected Primary Event.

The following tabs appear in the workspace:

- **Events Breakdown** : Contains the following information for the selected GAA Unit:

  ◦ **Impact of Event Types**: Contains a doughnut chart that shows the type of the events that occurred during the specified time period. When you hover or click on a section of the graph, the sum of all the loss occurred due of that type of events appears.
  ◦ **Frequency of Event Types**: Contains a vertical bar graph that shows the number of events of each type that occurred during the specified time period.
  ◦ **Highest Impact Events**: Contains a list of events that cause maximum loss during the specified time period. This section will show a maximum of 5 events and contains the following values for each of the events:

    ◦ **Event ID** : Contains a hyperlink that identifies the event. When you select the hyperlink, the **Primary Event** window appears, displaying the details of the selected Primary Event. In this window, you can only view the details of the event. You cannot modify the details.
    ◦ **Event Type**: Contains the type of event.
    ◦ **Impact**: Contains the loss that occurred due to the event.
    ◦ **Start Date**: Contains the date and time when the event began.
    ◦ **End Date**: Contains the date and time when the event ended.

The colors that represent various fields in these graphs appear based on the color that you specify when adding an Event Type.

- **Breakdown of Period Hours**: Contains a doughnut graph that shows the percentage of following for the specified period for the selected GAA Unit:
  - **Good Production**
 - **Planned Derate**
  - **Planned Outage**
  - **Reserve Shutdown**
  - **Unplanned Derate**
  - **Unplanned Outage**

  The colors that represent various fields in this graph appear based on the color that you specify when adding an Event Type or Event Category.

  When you select a slice in the graph, the types of events in that category are plotted on a bar graph next to the doughnut graph.

  When you hover over or select a slice in the graph, the number of hours and percentage of sum of values of the each of the fields appears.

- **Generation Metrics**: Contains a graph that shows the performance of the GAA Unit during the specified period.

  The graph shows the following fields represented in the vertical bar graph format:
  - **Gross Maximum Generation**: Contains the sum of values in the Gross Maximum Generation (MWh) field for all events during the specified period.
  - **Gross Actual Production (MWh)**: Contains the sum of values in the Gross Actual Generation (MWh) field for all events during the specified period.
  - **Net Maximum Production (MWh)**: Contains the sum of values in the Net Maximum Production (MWh) field for all events during the specified period.
  - **Net Actual Production (MWh)**: Contains the sum of values in the Net Actual Production (MWh) field for all events during the specified period.
  - **Startup Attempts (Count)**: Shows the sum of values in the Attempted Unit Starts field for all events during the specified period.
  - **Startup Success (Count)**: Shows the sum of values in the Actual Unit field for all events during the specified period.

- **Event Timeline**: Contains a graph that shows the loss in the GAA Unit during the specified period.

  The x-axis represents the period. The y-axis represents the loss in megawatts. When you select or tap a bar in the graph, following details for the selected Event appear:
  - **Event Type**
  - **Loss**
  - **Start Date**
  - **End Date**

  On the **Timeline** slider, you can select the duration for which you want to view the losses for the GAA Unit.

You can also view the **Health Summary** page for an Asset if the selected GAA Unit is associated with an Asset. Also, make sure that the Asset Health license is active and that you are member of one of the following Asset Health Manager Security Groups:

- MI AHI Administrator
- MI AHI User
- MI AHI Viewer

To view the **Health Summary** page for an Asset, in the upper-right corner of the **Unit Summary** workspace, select [icon].

GAA Workflow

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

1. Create Primary Events to record data to represent each event in which units suffer a loss of power generation capacity.
2. Create Contributing Events to represent events related to the Primary Event and link them to the Primary Event. This is required only if you selected NERC as your Primary Regulatory Organization in the GAA Unit record.
3. Create Performance records to gather event statistics and link it to the GAA Unit record that represents the unit for which the Performance record stores data. This is required only if you selected NERC as your Primary Regulatory Organization in the GAA Unit record.
4. Update Performance records to make sure that all the Performance records for the reporting period are up-to-date. This is required only if you selected NERC as your Primary Regulatory Organization in the GAA Unit record.
5. Report data to NERC or CEA. You should run reports after the end of each reporting period. The reporting periods and the schedule on which you should report data are defined by the organization to which you are reporting the data.

Chapter
2

Workflows

Topics:

- [Administration](#)
- [Event Management](#)
- [Performance](#)
- [Reporting](#)

Administration

GAA Administration Workflow

This workflow describes the process for adding a GAA Company, GAA Plant, and GAA Unit.

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 configuration to be used in a GAA unit for generating reports.

Define Company

Persona: Solution Administrator

Define the GAA Company to represent the functional location that you want to use in GAA.

Define Plant

Persona: Solution Administrator

Define the GAA Plant to represent the functional location that you want to use in GAA.

Define Unit

Persona: Solution Administrator

Define the GAA Unit to represent the functional location that you want to use in GAA. You can also define additional Unit Capacities and configure and associate Regulatory reports for a GAA Unit.

Unit

Persona: Solution Administrator

Defining GAA Unit provides GAA Unit record, Unit Capacity record, and GAA Report record.

GAA Event Management

Persona: Operator or Supervisor

Define an event when operating status or capability of a GAA Unit changes.

Go to the GAA Event Management workflow.

Event Management

GAA Event Management Workflow

This workflow describes the process for managing events that occur in a GAA Unit.

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.

eLog

Persona: Solution Administrator

Create or associate log entries to document events that occur during shifts for power generation.

Go to the eLog workflow.

GAA Administration

Persona: Solution Administrator

Define an event when operating status or capability of a GAA Unit changes.

Go to the GAA Administration workflow.

Unit

Persona: Solution Administrator

Defining GAA Unit provides GAA Unit record, Unit Capacity record, and GAA Report record.

Create Event

Persona: Operator or Supervisor

Define an event when operating status or capability of a GAA Unit changes.

Review Event

Persona: Analyst

Use state management to track the progress of an event and review the event for Unit Level approval.

Approve Event

Persona: Solution Administrator

Use state management to track the progress of an event and review the event for submittal to NERC.

Root Cause Analysis (RCA)

Persona: Analyst

Create an RCA for the selected event.

Go to the Root Cause Analysis.

GAA Reporting

Persona: Solution Administrator or Analyst

Generate Regulatory or Management reports based on events or performance.

Go to the GAA Reporting.

Asset Health Management View

Persona: Analyst

Navigate to the Asset Health Management View to see all the Health Indicators for the selected GAA Unit.

Go to the Manage Health Indicators Workflow.

Performance

GAA Performance Workflow

This workflow describes the process for creating and reviewing the Performance records for a GAA Unit.

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.

GAA Administration

Persona: Solution Administrator

Define an event when operating status or capability of a GAA Unit changes.

Go to the GAA Administration workflow.

Unit

Persona: Solution Administrator

Defining GAA Unit provides GAA Unit record, Unit Capacity record, and GAA Report record.

Create Performance Record

Persona: Analyst

Create a Performance record for the selected GAA Unit.

Review or Approve Performance Record

Persona: Solution Administrator

Use state management to review or approve the Performance record for the selected GAA Unit.

GAA Reporting

Persona: Solution Administrator or Analyst

Generate Regulatory or Management reports based on events or performance.

Go to the GAA Reporting.

Reporting

GAA Reporting Workflow

This workflow describes the process for generating reports for a GAA Unit.

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.

Regulatory Report

Persona: Solution Administrator or Analyst

Choose whether to generate a Regulatory report or Management report for the selected GAA Unit.

Event Report

Persona: Solution Administrator or Analyst

Choose whether to generate a report based on events or performance of the selected GAA Unit.

GAA Administration

Persona: Solution Administrator

Define an event when operating status or capability of a GAA Unit changes.

Go to the GAA Administration workflow.

Unit

Persona: Solution Administrator

Defining GAA Unit provides GAA Unit record, Unit Capacity record, and GAA Report record.

GAA Event Management

Persona: Operator or Supervisor

Define an event when operating status or capability of a GAA Unit changes.
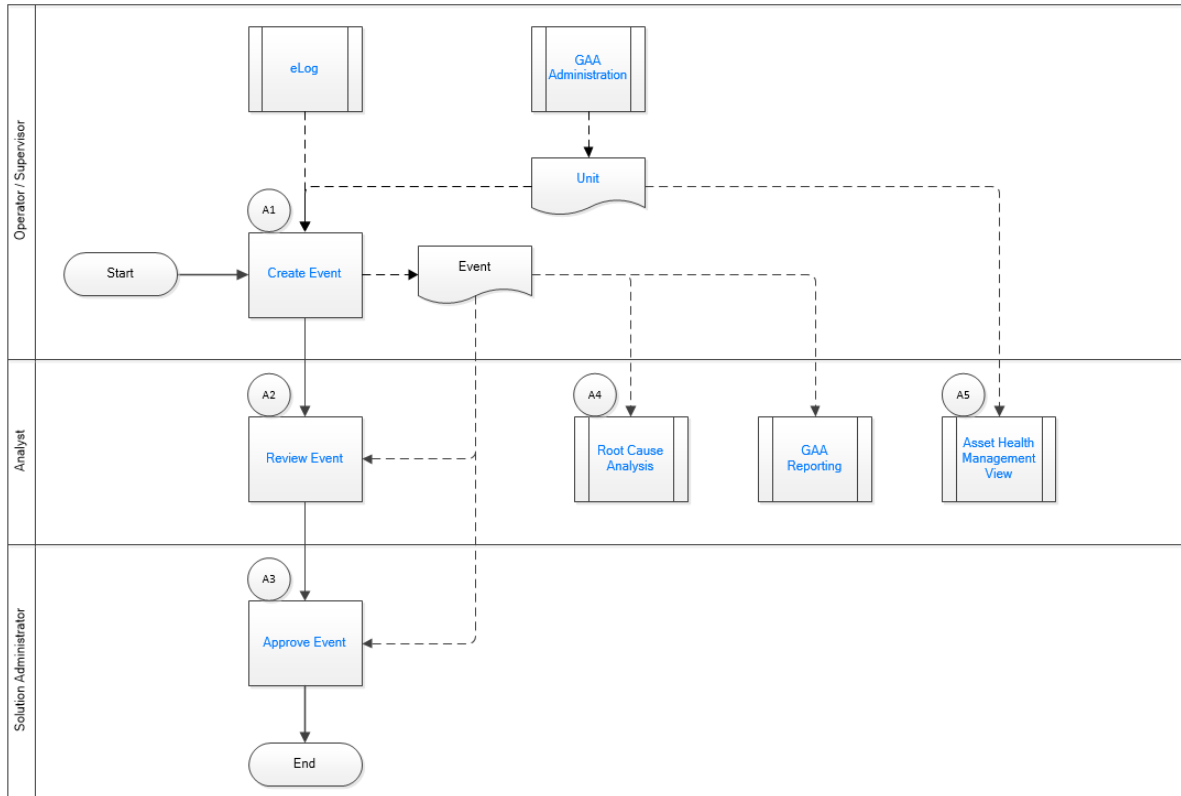
Go to the GAA Event Management workflow.

GAA Performance

Persona: Solution Administrator or Analyst

Create a Performance record for the selected GAA Unit.

Go to the GAA Performance workflow.

Generate Regulatory Event Report

Persona: Solution Administrator or Analyst

Generate Regulatory report based on events (07 report) for the selected GAA Unit for submittal to NERC.

Generate Regulatory Performance Report

Persona: Solution Administrator or Analyst

Generate Regulatory report based on performance (05 report) for the selected GAA Unit for submittal to NERC.

Generate Event Report

Persona: Solution Administrator or Analyst

Generate Management report based on events for the selected GAA Unit for internal use.

Generate Performance Report

Persona: Solution Administrator or Analyst

Generate Management report based on performance of the selected GAA Unit for internal use.

Chapter

3

Primary Events

Topics:

About Events

In GAA, Events store information about events in which a unit suffers a loss of power generation capacity. GAA uses two types of Events:

- **Primary Event**: Stores information about the primary cause of an event. When something goes wrong in a unit, you will record information about the event as a Primary Event. Primary Events are linked to the GAA Unit that represents the unit at which the event occurred.
- **Contributing Event**: Stores additional information about the event, such as a secondary cause. All Contributing Events are linked to a Primary Event. Therefore, to create a Contributing Event, you must have already created the Primary Event to which it will be linked. When you create a Contributing Event, all necessary fields will be populated automatically with values in the Primary Event to which it is linked.

Each event that occurs will be represented by at least a Primary Event. Depending on the event, one or more Contributing Events may need to be created and linked to the Primary Event. Together, the Primary Event and all the Contributing Events that are linked to it represent a single event.

Because Primary Events and Contributing Events are similar in that they share many of the same fields and behave the same way, throughout this documentation we refer to them collectively as Events. Where necessary, we make a distinction between the functionality of Primary Events and Contributing Events. Wherever that distinction is not made, you can assume that all Events function the same way.

About Event Spanning Multiple Years

You can now easily create an event that spans multiple years. For instance, if your event runs from December 15, 2023 to January 15, 2024, within a single event, you can set the start date as December 15, 2023 and end date as January 15, 2024.

Note: Event 07 reports import must be created in the chronological order of each year in order to handle spanning events correctly.

For events that span into the next year, in an Event 07 report, the end date will be reported as 12312400 if the following conditions are satisfied:

- The Event End Date value is not provided.
- The Event End Date is Dec 31, 23:59:59 and the End Date Is Estimated check box is selected.
- The Event End Date is not within the Reporting Year.

The event in the next year will be reported with the Event Start Date of 01010000.

Table 1: Scenarios for Importing Reports

Scenario	Example
Primary active events spanning multiple years	If an event runs from December 15, 2023 to March 24, 2024, two events are created: 1. December 15, 2023 to December 31, 2023 2. January 1, 2024 to March 24, 2024
Related active events extending beyond the current year	If an event runs from December 15, 2023 to March 24, 2024, and an MO-related event extends from March 24, 2024 to January 25, 2025, four events are created: 1. December 15, 2023 to December 31, 2023 2. January 1, 2024 to March 24, 2024 3. March 24, 2024 to December 31, 2024 4. January 01, 2025 to January 25, 2025 The last two events are MO-related events.
Related inactive events extending beyond the current year	If an event runs from December 15, 2023 to March 24, 2024, and an MB related event extends from March 24, 2024 to January 25, 2025, three events are created: 1. December 15, 2023 to December 31, 2023 2. January 1, 2024 to March 24, 2024 3. March 24, 2024 to January 25, 2025 The last event is the MB-related event.
Related extension events extending beyond the current year	If an MO-related primary event runs from December 15, 2023 to March 24, 2024, and an ME-related extension event extends from March 24, 2024 to January 25, 2025, three events are created: 1. December 15, 2023 to December 31, 2023 2. January 1, 2024 to March 24, 2024 3. March 24, 2024 to January 25, 2025 The first two events are MO events and the last one is the ME-related event.

About Event Start and Event End Dates

The value in the Event Start and Event End fields identify the way in which an event contributes to the NERC GADS Event Report 07 or NERC GADS Performance Report 05. This topic describes how these fields contribute to the reports in various scenarios.

Scenario 1: Event start and end date are known

In this scenario, the Event Start field contains the actual date when the event started and the End Date field contains the actual date when the event ended. The actual date can be a date of the past or current date. The following will be true in this scenario:

- The **Start Date is Estimated?** check box must be cleared.
- The **End Date is Estimated?** check box must be cleared.
- The NERC GADS Event Report 07 includes the event.
- The NERC GADS Performance Report 05 includes the effect on performance due to this event.

Scenario 2: Start date is known but event end date is unknown

In this scenario, the Event Start field contains the actual date when the event started, but the End Date field contains no value to indicate when the event might end. The actual date can be a past date or the current date. The following will be true in this scenario:

- The **Start Date is Estimated?** check box must be cleared.
- The **End Date is Estimated?** check box must be cleared.

- The NERC GADS Event Report 07 includes the event with no value in the Event End field.
- The NERC GADS Performance Report 05 includes the event with the end of month as the value in the Event End field. The report also includes the effect on performance due to this event.

Scenario 3: Start date is known but event end date is estimated

In this scenario, the Event Start field contains the actual date when the event started but the End Date field contains an estimated date in future when the event might end. The actual date can be a past date or the current date. The following will be true in this scenario:

- The **Start Date is Estimated?** check box must be cleared.
- The **End Date is Estimated?** check box must be selected.
- The NERC GADS Event Report 07 includes the event with no value in the Event End field.
- The NERC GADS Performance Report 05 includes the event with no value in the Event End field. The report also includes the effect on performance due to this event.

Scenario 4: Start and End date of an event are estimated

In this scenario, the Event Start field contains the estimated date in future when the event will start and the End Date field contains an estimated date in future when the event might end. The following will be true in this scenario:

- The **Start Date is Estimated?** check box must be selected.
- The **End Date is Estimated?** check box must be selected.
- The NERC GADS Event Report 07 does not include the event.
- The NERC GADS Performance Report 05 does not include the event.

About Events with Only One Cause

Some types of events have only one possible cause. In Events where the value in Capacity Event Type field identifies a single-cause event, the Cause Code System, Cause code Component, and Cause Code fields will be disabled and populated automatically with the appropriate cause code. The following table lists these Capacity Event Type values and their corresponding Cause Code values.

Capacity Event Type	Cause Code System	Cause Code Component	Cause Code
IR (Inactive Reserve)	Inactive State	Inactive State	0002 (Inactive Reserve)
MB (Mothballed)	Inactive State	Inactive State	9991 (Mothballed Unit)
RS (Reserve Shutdown)	External	Economic	0000 (Reserve Shutdown)
RU (Retired)	Inactive State	Inactive State	9990 (Retired Unit)

About Event Types

This topic describes the event types that are defined for a GAA Unit that reports to NERC and a GAA Unit that reports to CEA.

Event Types for a GAA Unit that Reports to NERC

Each Primary and Contributing Event can be either in Inactive State or Active state. Each Primary or Contributing Event must be classified using a value in the Capacity Event Type field.

- **Inactive State**: Indicates the state in which a unit is unavailable for service for an extended period of time for reasons not related to the equipment. There are three types of events in an Inactive state:

- ◦ IR (Inactive Reserve): The unit could not generate power but can do so after some repairs. You can create this event only as a Related Event to a Reserve Shutdown (RS) Event when the duration of the RS event is more than 60 days.

  - ◦ MB (Mothballed): The unit could not generate power but can do so after some repairs with an appropriate notification period. You can create this event only as a Related Event to an Outage Event (U1 or SF) when the duration of the U1 or SF event is more than 60 days.
  - ◦ RU (Retired): The unit could not generate power and will never do so in the future.
- • **Active State**: Indicates the state in which a unit is available to generate power. There are four types of events in an Active state:

  - ◦ **Outage Events**: The unit could generate no power during the event. If a Primary Event or Contributing Event contains one of the following values in the Capacity Event Type field, it is considered an outage event:

    - ◦ U1 (Unplanned (forced) Outage - Immediate)
    - ◦ U2 (Unplanned (forced) Outage - Delayed)
    - ◦ U3 (Unplanned (forced) Outage - Postponed)
    - ◦ MO (Maintenance Outage)
    - ◦ PO (Planned Outage)
    - ◦ ME (Maintenance Outage Extension): This event type will be available only when you create a Related Event.
    - ◦ PE (Planned Outage Extension): This event type will be available only when you create a Related Event.
    - ◦ SF (Startup Failure): This event type will be available only when you create a Related Event.

  - ◦ **Derate Events**: The unit could produce power during the event, but at a reduced capacity. If a Primary Event or Contributing Event contains one of the following values in the Capacity Event Type field, it is considered a derate event:

    - ◦ D1 (Unplanned (forced) Derating - Immediate)
    - ◦ D2 (Unplanned (forced) Derating - Delayed)
    - ◦ D3 (Unplanned (forced) Derating - Postponed)
    - ◦ D4 (Maintenance Derating)
    - ◦ DM (Maintenance Derating Extension): This event type will be available only when you create a Related Event.
    - ◦ PD (Planned Derating)
    - ◦ DP (Planned Derating Extension): This event type will be available only when you create a Related Event.

  - ◦ **Reserve Shutdown Events**: The unit can produce power during the event, but is generating no power due to lack of demand. You must not report a Reserve Shutdown. If a Primary Event or Contributing Event contains the following value in the Capacity Event Type field, it is considered an Reserve Shutdown event:

    - ◦ RS (Reserve Shutdown)

  - ◦ **Non-Curtailing Events**: The unit could produce power during the event, although an equipment or a major component was removed for maintenance, testing, or other purposes. If a Primary Event or Contributing Event contains the following value in the Capacity Event Type field, it is considered an Non-Curtailing event:

    - ◦ NC (Noncurtailing Event)

Event Types for a GAA Unit that Reports to CEA

Each Primary Event can be either in Commercial Service State or Not in Commercial Service state. Each Primary Event must be classified using a value in the Capacity Event Type field.

- **Not in Commercial Service State**: Indicates the state in which a unit is unavailable for commercial service for an extended period of time, to perform repairs that will improve the performance of the unit and extend the life of the plant. The following are the events types that are associated with a unit in the Not in Commercial Service state:

    ◦ 30-1 (Not-in-Commercial Service (NICS) (Decommissioned))
    ◦ 30-2 (Not-in-Commercial Service (NICS) (Mothballed))
    ◦ 30-3 (Not-in-Commercial Service (NICS) (Refurbishment))
    ◦ 30-4 (Not-in-Commercial Service (NICS) (Deferred))

- **Commercial Service State:** Indicates the state in which a unit is available for commercial service. The following are the event types that can be associated with a unit in the Commercial Service state:

    ◦ 11-1 (Operating (O) in a Synchronous Condenser Mode)
    ◦ 11-2 (Operating (O) in Spin no Load Mode)
    ◦ 12 (Operating under a Forced Derating (OFD))
    ◦ 12-1 (Operating under a Forced Derating (OFD) (Synchronous Condenser))
    ◦ 12-2 (Operating under a Forced Derating (OFD) (Spin No Load))
    ◦ 13 (Operating under a Scheduled Derating (OSD))
    ◦ 13-1 (Operating under a Scheduled Derating (SD) (Synchronous Condenser))
    ◦ 13-2 (Operating under a Scheduled Derating (SD) Spin no Load)
    ◦ 14 (Available but not Operating (ABNO))
    ◦ 14-1 (Available but not Operating (ABNO) (Synchronous Condenser))
    ◦ 14-2 (Available but not Operating (ABNO) (Spin No Load))
    ◦ 15 (Available but not Operating (Forced Derating) (ABNO-FD))
    ◦ 15-1 (Available but not Operating (Forced Derating) (ABNO-FD) (Synchronous Condenser))
    ◦ 15-2 (Available but not Operating (Forced Derating) (ABNO-FD) (Spin No Load))
    ◦ 16 (Available but not Operating (Scheduled Derating) (ABNO-SD))
    ◦ 16-1 (Available but not Operating (Scheduled Derating) (ABNO-SD) (Synchronous Condenser))
    ◦ 16-2 (Available but not Operating (Scheduled Derating) (ABNO-SD) (Spin no Load))
    ◦ 21-1 (Forced Outage (FO) (Sudden Forced Outage))
    ◦ 21-2 (Forced Outage (FO) (Immediately Deferrable Forced Outage))
    ◦ 21-3 (Forced Outage (FO) (Deferrable Forced Outage))
    ◦ 21-4 (Forced Outage (FO) (Starting Failure Outage))
    ◦ 22 (Forced Extension of Maintenance Outage (FEMO))
    ◦ 23 (Forced Extension of Planned Outage (FEPO))
    ◦ 24 (Maintenance Outage (MO))
    ◦ 25 (Planned Outage (PO))

About Entity ID in Events

The Entity ID field in all Events is generated automatically, but the fields that are used to generate the values are different for Primary Events and Contributing Events.

- The value in the Entity ID field for each Primary Event is unique to all Primary Events that are linked to a given Generation Unit. The Entity ID in Primary Events is generated automatically using the following format:

    <**Event ID**> ~ <**Cause Code Description**> ~ <**Capacity Event Type**>

    ...where:

    ◦ <**Event ID**> is the value in the Event ID field.
    ◦ <**Cause Code Description**> is the value in the Cause Code field.

- ◦ <**Capacity Event Type**> is the value in the Capacity Event Type field.

  The value in the Event ID field in Primary Events is generated using the following format:

  <**Unit ID**> ~ <**Reporting Year**> ~ <**Event Number**>

  ...where:

  - ◦ <**Unit ID**> is the value in the Unit ID field.
  - ◦ <**Reporting Year**> is the value in the Reporting Year field.
  - ◦ <**Event Number**> is the value in the Event Number field. If the value in the Event Number field is fewer than four digits, zeros will be added in front of the value so that the event number in the Event ID field will be four digits.

- • The value in the Entity ID field in Contributing Events identifies the Primary Event to which the Contributing Event is linked. The values in the Entity ID field in all Contributing Events that are linked to a given Primary Event will match one another. The Entity ID in Contributing Events is generated using the following format:

  <**Primary Incident ID**> ~ <**Capacity Event Type**> <**Cause Code**>

  ...where:

  - ◦ <**Primary Incident ID**> is the value in the Primary Incident ID field.
  - ◦ <**Capacity Event Type**> is the value in the Capacity Event Type field.

The Primary Incident ID field is populated automatically with the value in the Event ID field in the Primary Event for which the Contributing Event exists. The value in the Primary Incident ID field for all Contributing Events will match the value in the Event ID field in the Primary Event to which they are linked.

For example, suppose the following diagram.
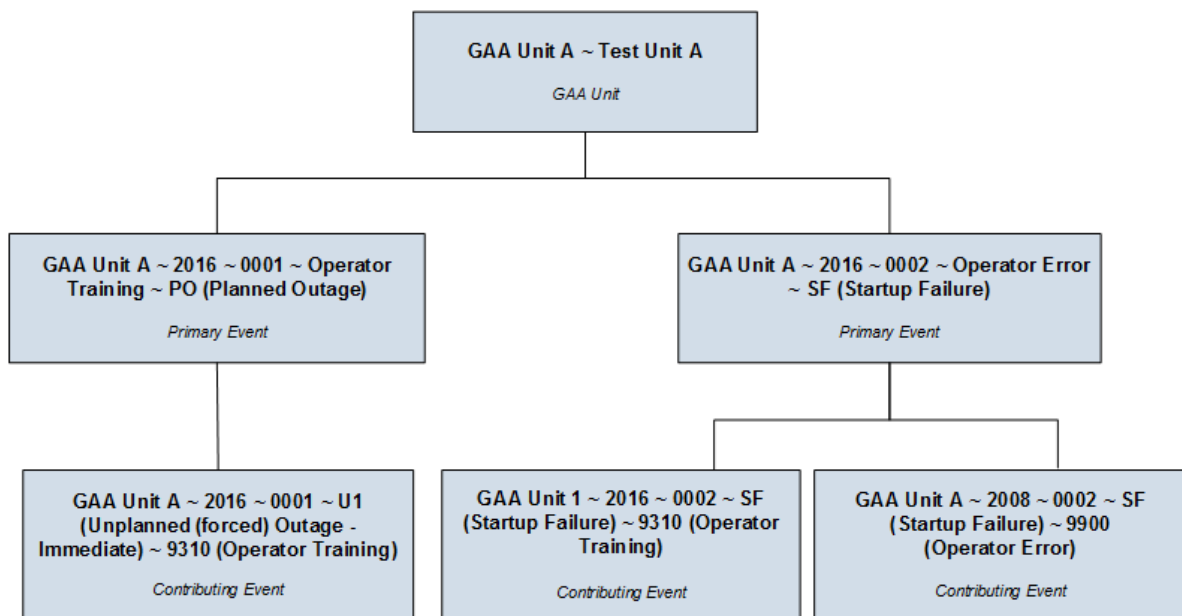
The Entity ID of the first Primary Event begins with GAA Unit ~ 2016 ~ 0001. You can identify the Contributing Event that is linked to this Primary Event because its Entity ID also begins with GAA Unit ~ 2016 ~ 0001.

The Entity ID of the second Primary Event begins with GAA Unit ~ 2016 ~ 0002. This event is linked to two Contributing Events, both of which begin with GAA Unit ~ 2016 ~ 0002, which allows you to determine that both Contributing Events are linked to the second Primary Event.

About Sorting Primary Events

When you create a Primary Event for a unit, an event number is created and stored in the Event Number field, which is included in the Event ID. The value in the Event Number field corresponds to the order in which the record was created for that particular unit for that year, which is determined based on the value in the Event Start Date field. So, for example, if the record is the third record that you have created for a unit for 2016, the event number will be 3 (three).

Note: If the value in the Event Number field is fewer that four digits, zeros will be added in front of the value so that the formatted event number will be four digits.

Throughout the year, however, Primary Events may be created in an order that does not reflect the order in which the events occurred. For example, an event might occur on January 12, 2016, but you might not create the record to capture the event data until January 15, 2016. When events are not recorded immediately after they occur, the values in the Event Number field in the Primary Events may get out of order.

Event Occurs	Record is Created	Event Number Assigned
January 1, 2016	January 1, 2016	1
January 2, 2016	January 2, 2016	2
January 3, 2016	January 6, 2016	4
January 4, 2016	January 4, 2016	3

In this example, one event occurred each day, beginning January 1 and ending January 4. On January 1 and January 2, a record was created immediately after the event occurred. On January 3, however, a record was not created immediately after the event occurred. Another event occurred on January 4, and the data was immediately entered into a record. It was not until January 6 that a record was created to record the event from January 3.

In other words, the order in which the records were created does not reflect the order in which the events occurred. APM automatically sorts the events in a chronological order so that they reflect the event order based on start date rather than creation date.

About Revision History

Using the Revision History feature, you can keep track of the revisions made for a Primary Event in a GAA Unit. When you modify a value in the Primary Event or delete the Primary Event, a Revision History record for that event is created.

In the list of Revision History records, the records are listed in descending order based on the value in the Last Updated Date field.

About Accounting for Daylight Saving Time Adjustments

If an event occurs during a time period when Daylight Saving Time (DST) begins or ends, and your plant exists in a part of the country where DST is observed, you will probably want to adjust the values in these fields to account for the DST adjustment.

For example, in 2007, DST in the United States started at 2:00 A.M. on March 11. As a result, observers of DST lost one hour of daylight (e.g., a clock that read 4:00 A.M. on March 11 would have read 3:00 A.M. on March 10). Because DST started at 2:00 A.M., observers were required to set their clocks forward one hour

at that time. So at 2:00 A.M., you had to set your clock to 3:00 A.M. even though an hour had not actually passed.

With that in mind, suppose an event occurred at 11:00 P.M. on March 10, 2007 and ended at 4:00 A.M. on March 11, 2007. By the clock, it would appear that the event lasted five hours. In reality, the event lasted only four hours because DST added an hour to the clock even though that hour did not actually occur.

If you allow the APM system to take DST into account, the calculations will account for power for the four hours that the event lasted according to real linear time. To do so, you must select the **Use Daylight Saving Time** check box in Plant datasheet.

If you do not allow the APM system to take DST into account, the calculations will account for power for the five hours the event lasted according to the clock.

Access a Primary Event

Procedure

1. Access the **GAA Overview** page.
2. Select one of the following tabs:

    - **Events Under Review**: Select this tab if you want to view an event that is not in an Approved state.
    - **Approved Events**: Select this tab if you want to view an event that is in an Approved state.

    A list of Primary Events available in the database appears based on the tab that you selected. The following columns appear in the section:

    - **Event ID**
    - **Unit Name**
    - **Event Type**
    - **Event Description**
    - **Start Date**
    - **End Date**

3. In the **Event ID** column, select the link for the Primary Event that you want to view.

    The **Events** workspace appears, displaying the **Definition**, **Related Event**, and **Contributing Events** tabs. The **Definition** tab is selected by default, displaying the datasheet for the selected Primary Event.

    Note: The **Related Event** and **Contributing Events** tabs appear only if the value in the Primary Regulatory Body field for the associated GAA Unit is North American Electric Reliability Corporation (NERC).

    You can view the Revision History for the Primary Event by selecting 🕐 . The number to the right of 🕐 represents the total number of revisions made for the selected Primary Event.

    Note:

    - As needed, you can modify the values in the available fields, and then select 💾 to save your changes.
    - At this point, you can also access the list of Primary Events associated with the GAA Unit to which the selected Event is associated.
    - You can now see a warning message displayed for all types of Events when there is an Overlapping Event. To facilitate this enhancement, you can now select the **Flag Overlapping Events** option

under filter in the **Events List** of **Unit Summary** workspace. Once you select this option, it records the overlapping events and you can find an indicator which lists the overlapping events linked to the Event.

Access a List of Primary Events Associated with a GAA Unit

Procedure

1. Access a Primary Event associated with the GAA Unit for which you want to view all the associated Primary Events.

2. Select ⟨ .
   A list of Primary Events associated with the GAA Unit to which the selected Event is associated appears.

   In the **Events** workspace for the GAA Unit, the following information related to each Event appears:

   • **Event ID** : Contains the value from the Event ID field for the Event. You can select the link in the **Event ID** column to access the selected event.
   • **Event State** : Contains the state of the event.
   • **Contributing Events Count:** Contains the number of Contributing Events. You can select the link in the **Contributing Events Count** column to access the **Contributing Events** section for the primary event.
   • **Related Event** : Contains the ID of the related event, if any. You can select the link in the **Related Event** column to access the related event.
   • **Event Type** : Contains the value that you entered in Capacity Event Type field to identify the type of event.
   • **Event Start Date** : Contains the value that you entered in the Event Start field to indicate the date and time that the event started.
   • **Event End Date** : Contains the value that you entered in the Event End field to indicate the date and time that the event ended.
   • **Associated RCA** : Contains the value that you entered in the Analysis Name field when creating the RCA for the Event.
   • **Associated eLog** : Contains the value that you entered in the Headline field when creating the eLog entry for the Event.

   Note:

   • The **Associated RCA** and **Associated eLog** columns only appear if the license for RCA and eLog is active and you have the required privileges.

   • You can use the Column Chooser (⚙) button to show or hide the columns in the table. When you select the Column Chooser (⚙) button, a list of all the columns appears with check boxes. You can select or clear the check box in front of a column to show or hide the column respectively.

   The Primary Events are sorted in ascending order based on the value in the Start Date field. You can also sort the information in the grid based on the Event ID, Event Code, Event Start Date, and Event End Date.

   By default, the Primary Events are filtered based on the date range provided on the **GAA Overview** page. You can select ▽ to filter the Primary Events based on a different date range by entering values in the **From** and **To** cells.

Note: If you want to modify multiple Primary Events, select check box next to one or more Primary Events that you want to modify, and then select ✎. The **Event Creation** page appears. You can modify the values in the available fields, and then select 💾 to save your changes.

Access the Revision History of a Primary Event

Procedure

1. Access the Primary Event whose revision history you want to access.

2. In the upper-right corner of the **Events** workspace, select 🕐.

   The **Revision History** page appears, displaying a list of Revision History records for the selected Primary Event. The Revision History records contain information from the fields defined in the Primary Event and Primary Event History families.

   Note:

   To view the revision history of a deleted Primary Event:

   a. Access the **Catalog** page.
   b. Navigate to the folder `\\Public\Meridium\Modules\Generation Management \Queries`.
   c. In the **Name** column, select **Primary Event History Result Grid**.
      The **Enter Parameter Values** window appears.
   d. In the **Primary Event Entity Key** box, enter the Event Key of the Primary Event that you want to access.
   e. Select **Done**.
      On the **Primary Event History Result Grid** page, the revision history for the deleted Primary Event appears.

Access a Reference Document

About This Task

This topic describes how to access the list of reference documents via the **Unit Summary** workspace. You can also access the list of reference documents when accessing a GAA Unit.

Procedure

1. Access the **Unit Summary** workspace for the GAA Unit whose reference documents you want to access.
2. In the pane, select **Reference Documents**.

   The **Reference Documents** workspace appears, displaying a list of reference documents that are linked to the selected GAA Unit.

   Note: The file that was used for importing existing data will be added as reference documents for the selected Unit.

   Tip: For more information, refer to the Manage Reference Documents section of the Record Manager module for additional options when working with reference documents.

Create a Primary Event

About This Task

Complete one of the following sequences of steps.

Procedure

- Create a Primary Event with detailed information: Use this method when detailed information for an event is available
    1. Access the **GAA Overview** page.
    2. Select the **Events Under Review** tab.

       A list of Primary Events available in the database appears.
    3. In the upper-left corner of the **Events Under Review** section, select ＋.

       Note:

       You can also create a new Primary Event by:

       ○ Accessing a list of Primary Events associated with a GAA Unit. After accessing the list, select ＋, and then select **Create New Event**.
       ○ Selecting the **Create Event** button in the upper-right corner of the **GAA Overview** page, as described in the next section.

       The **New Event** window appears, displaying a blank datasheet.
    4. As needed, enter values in the available fields.
    5. Select 💾.

       The new Primary Event is saved. You can select **Open Event** to access the event.
- Create a Primary Event with basic information: Use this method when you want to add multiple events with basic information, such as Unit ID, Event Start date, Capacity Event Type
    1. Access the **GAA Overview** page.
    2. In the upper-right corner of the page, select **Create Event**.

       The **Event Creation** page appears.
    3. In the grid, enter values in the following fields:

       ○ **Unit ID**: Select the GAA Unit for which you want to add a Primary Event.
       ○ **Capacity Event Type**: Specify the type of Primary Event that you want to create.
       ○ **Start Date**: Select the date for which you want to add a Primary Event.
    4. Select 💾.

       The new Primary Event is saved. You can repeat the above steps to add additional Primary Events.

       Note: You can now see a warning message displayed for all types of Events when there is an Overlapping Event.

Results

- The newly created Primary Event is linked to the GAA Unit identified by the value that you selected in the Unit ID field.
- An APM Event may also be created and linked to the Primary Event, depending on the value in the APM Event Creation field in the linked GAA Unit.

Next Steps

- [Create a Contributing Event](#)

Change the State of a Primary Event

About This Task

This topic describes how to change the state of a Primary Event, while assigning the state of the event to the appropriate user.

Important: You can modify a Primary Event in a particular state only if you are an administrator or the assignee for that state.
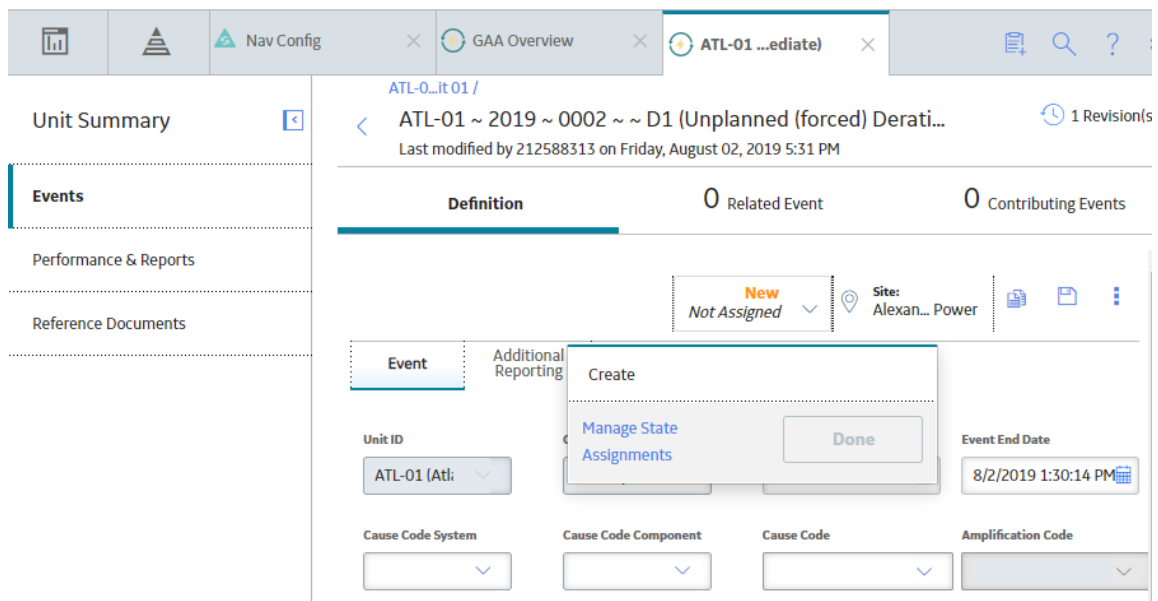
Procedure

1. [Access the Primary Event](#) for which you want to change the state.

   The current state of the event appears in upper-right corner of the **Definition** section.

   Note: The images in this procedure show the workspace for a Primary Event that is associated with a GAA Unit in which the value in the Primary Regulatory Body field is North American Electric Reliability Corporation (NERC). The **Related Event** and **Contributing Events** tabs appear only if the value in the Primary Regulatory Body field for the associated GAA Unit is North American Electric Reliability Corporation (NERC).

2. In the **Definition** section, select the button that indicates the current state of the event. For example, if the current state of the analysis is New, select the **New** button.

   A menu appears, displaying a list of operations that you can perform on the event to change its state.

3. Select the necessary operation that will change the state of the event, and then select **Done**. For example, if you want to change the state of the event from New to In Progress, select **Create**, and then select **Done**.

   Note: You can view the states assigned to various users by selecting the **Manage State Assignments**. If not already done, you can assign the next state of the event to the appropriate user, and then select **Done**.

The state of the event is changed.

Copy a Primary Event

About This Task

This topic describes how to copy a Primary Event. You can also create a new Primary Event.

Procedure

1. Access the **GAA Overview** page.
2. Select the **Events Under Review** tab.

   A list of Primary Events that are in progress appears.

3. In the upper-left corner of the section, select ▤.

   Note: You can also copy a Primary Event by accessing a list of Primary Events associated with a GAA Unit. After accessing the list, select ✛, and then select **Copy Existing Event**.

   The **Copy Primary Event** window appears.

4. In the **Look in** box, select **Primary Event**.

   A list of Primary Events available in the database appears.

5. Select the row containing the Primary Event that you want to copy, and then select **OK**.

   The **Copy Primary Event** dialog box appears, asking you to confirm that you want to copy the selected Primary Event.

6. Select **Yes**.

   The **Create copy of Event** window appears, displaying the datasheet for the copied Primary Event.

7. As needed, modify values in the available fields, and then select 💾.

   The selected Primary Event is copied. You can select **Open Event** to access the event.

Results

When you copy a Primary Event:

- Value in the Unit ID field represents:
  ◦ The GAA Unit to which the Primary Event is associated when you copy a Primary Event from the **Events Under Review** tab.
  ◦ The current GAA Unit to which you are copying the Primary Event when you copy a Primary Event by accessing a list of Primary Events associated with a GAA Unit.
- Values in the following fields that exist in the original Primary Event will be copied to the new Primary Event:
  ◦ Capacity Event Type
  ◦ Cause Code System
  ◦ Cause Code Component
  ◦ Cause Code
  ◦ Amplification Code
  ◦ Verbal Description

  Note:

If you modify the Unit ID and the new Unit ID belongs to:

- ◦ Unit Type same as the copied Unit, the values in the Cause Code, Cause Code Component, Cause Code System, and Amplification Code fields will be copied.
- ◦ Unit Type different than the copied Unit, the values in the Cause Code, Cause Code Component, Cause Code System, and Amplification Code fields will be cleared.
- Values in the following fields are cleared:

  - ◦ **Event Start**: You must enter a value in this field manually. When you do so, the value in the Reporting Month field is updated based on new value in the Event Start field.
  - ◦ **Event End**: You can enter a value manually in this field.

Delete a Primary Event

About This Task

You cannot delete a Primary Event that is in Approved state.

Procedure

1. Access the **GAA Overview** page.
2. Select **Show Unit Summary**.
   The **Units** window appears.
3. Select the GAA Unit whose events you want to delete, and then select **Open Unit Summary**.
   The summary of the GAA Unit appears in the workspace.
4. In the pane, select **Events**.
   A list of Primary Events associated with the selected GAA Unit appears.
5. Select the check box corresponding to the Primary Events that you want to delete, and then select 🗑.

   Tip: You can select more than one Primary Event to delete. However, for best performance, it is recommended to select a maximum of 10 records.

   The **Delete Confirmation** window appears, displaying a list of selected events along with the associated related events, associated RCAs, and eLogs.

   Note: When you select **Related** for the event in the **All Related Events** column, a list of related events that are linked to the Primary Event are displayed for review.
6. Select **Delete**.
   The selected Primary Event is deleted and the updated list of Primary Events appears.

Results

- All the associated Related Events and Contributing Events are deleted.
- Relationship with RCA and eLogs are removed, if any.

Export Primary Events

About This Task

You can export the Primary Event records associated with a GAA Unit to a Microsoft Excel file. If a Primary Event has a Contributing Event associated with it, you can export the Contributing Event record along with the Primary Event record.

The Related Events associated with a Primary Event are also Primary Event records. Therefore, if a Primary Event has Related Events associated with it, you can also select the Related Event record along with the Primary Event record to export both the records to the same file.

Procedure

1. Access the **Unit Summary** workspace for the GAA Unit whose Primary Events you want to export.
2. In the **Unit Summary** pane, select **Events**.

   The **Events** workspace appears, displaying a list of Primary Events that are linked to the selected GAA Unit.
3. Perform one of the following steps:

   - To export all Primary Event records associated with the GAA Unit, in the table, select ⬇, and then select **Export All**.
   - To export only some of the Primary Event records associated with the GAA Unit, in the table, select

     the check box for the records that you want to export, select ⬇, and then select **Export Selected**.
   - To export a Primary Event record and the Related Event records associated with it, in the table,

     select the check box for the Primary Event record and its Related Event records, select ⬇, and then select **Export Selected**.

   The **Export Confirmation** window appears.
4. **Optional:** Select the **Include Contributing Events** check box. to export the Contributing Event records associated with the Primary Event records that you selected to export.
5. Select **Export**.
   The records are exported to a Microsoft Excel file that is automatically downloaded to your local drive.

   Note:

   - Information in the Primary Event and associated Related Event records are available in the **Primary and Related Events** sheet of the Microsoft Excel file.
   - If you exported the Contributing Event records associated with the Primary Event records, information in the Contributing Event records are available in the **Contributing Events** sheet of the Microsoft Excel file.

Chapter

4

Contributing Events

Topics:

Access a Contributing Event

About This Task

A Contributing Event is available only for Primary Event that is associated with a GAA Unit in which the value in the Primary Regulatory Body field is North American Electric Reliability Corporation (NERC).

Procedure

1. Access the Primary Event for which you want to access a Contributing Event.
2. In the **Events** workspace, select **Contributing Events**.

   A list of Contributing Events associated with the selected Primary Event appears.

3. In the **Event ID** column, select the Contributing Event that you want to access.

   The datasheet for the selected Contributing Event appears.

   Note: As needed, you can modify the values in the available fields, and then select 🖫 to save your changes.

Create a Contributing Event

Before You Begin

• Create a Primary Event

About This Task

A Contributing Event is available only for Primary Event that is associated with a GAA Unit in which the value in the Primary Regulatory Body field is North American Electric Reliability Corporation (NERC).

This topic describes how to create a new Contributing Event. You can also copy a Contributing Event.

Procedure

1. Access the Primary Event for which you want to create a Contributing Event.
2. In the **Events** workspace, select **Contributing Events**.

   A list of Contributing Events associated with the selected Primary Event appears.

3. In the upper-left corner of the **Contributing Events** section, select +.

   A datasheet appears.
4. As needed, enter values in the available fields.
5. Select 🖫.

   The Contributing Event is saved and linked to the selected Primary Event.

Copy a Contributing Event

Before You Begin

- Create a Primary Event

About This Task

A Contributing Event is available only for Primary Event that is associated with a GAA Unit in which the value in the Primary Regulatory Body field is North American Electric Reliability Corporation (NERC).

This topic describes how to copy a Contributing Event. You can also create a new Contributing Event.

Procedure

1. Access the Primary Event within which you want to copy a Contributing Event.
2. In the **Events** workspace, select **Contributing Events**.

   A list of Contributing Events associated with the selected Primary Event appears.

3. In the upper-left corner of the workspace, select .

   The **Copy Contributing Event** window appears.
4. In the **Look in** box, select **Contributing Event**.

   A list of Contributing Events available in the database appears.
5. Select the row containing the Contributing Event that you want to copy, and then select **OK**.

   The **Copy Contributing Event** dialog box appears, asking you to confirm that you want to copy the selected Contributing Event.
6. Select **Yes**.

   The datasheet for the copied Contributing Event appears.
7. As needed, modify values in the available fields, and then select .

   The selected Contributing Event is copied.

Delete a Contributing Event

About This Task

A Contributing Event is available only for Primary Event that is associated with a GAA Unit in which the value in the Primary Regulatory Body field is North American Electric Reliability Corporation (NERC).

Procedure

1. Access the Primary Event for which you want to delete a Contributing Event.
2. In the **Events** workspace, select **Contributing Events**.

   A list of Contributing Events associated with the selected Primary Event appears.

3. Select the check box corresponding to the Contributing Event that you want to delete, and then select .

> **Tip:** You can select more than one Contributing Event to delete. However, for best performance, it is recommended to select a maximum of 10 records.

The **Delete Contributing Event** dialog box appears, asking you to confirm that you want to delete the selected Contributing Event.

4. Select **Yes**.
   The selected Contributing Event is deleted and the updated list of Contributing Events appears.

Export Contributing Events

About This Task

You can export the Contributing Event records associated with the Primary Events of a GAA Unit to a Microsoft Excel file.

Procedure

1. Access the **Unit Summary** workspace for the GAA Unit whose Contributing Events you want to export.
2. In the **Unit Summary** pane, select **Events**.

   The **Events** workspace appears, displaying a list of Primary Events that are linked to the selected GAA Unit.
3. In the table, select the check box for the Primary Event records whose Contributing Event records you want to export.

4. Select ⬇, and then select **Export Contributing Events**.
   The records are exported to a Microsoft Excel file that is automatically downloaded to your local drive.

Chapter

5

Related Events

Topics:

About Related Events

Sometimes, one event will directly follow another event, where each event is represented by a separate Primary Event. There is no limit to the chain of subsequent events that may occur, each of which will be represented by its own Primary Event. In this documentation, we refer to two Primary Events that represent two related events as related Primary Events. A chain of sequential events can be represented by multiple sequential Primary Event pairs.

The APM system determines that two Primary Events represent related events when the value in the Event Start Date field in a new Primary Event matches the value in the Event End Date field of an existing Primary Event that is linked to the same GAA Unit. In this case, the value in the Capacity Event Type field in the subsequent event can contain only certain values, depending on the value in the Capacity Event Type field in the preceding event.

Note: Because certain Capacity Event Type values are allowed only for subsequent Primary events, if you select one of these values in a new Primary Event and the record for the preceding event does not already exist, a warning message appears.

When creating a subsequent Primary Event, if you select a Capacity Event Type value that is not listed as an allowable event type in the subsequent Event and you specify a value in the Cause Code field, a warning message appears, explaining that you have selected an invalid scenario that follows an existing Primary Event.

Note: In a chain of events, only the value in the Capacity Event Type field of the immediately preceding event determines the allowable Capacity Event Type in the subsequent event.

Access a Related Event

Procedure

1. Access the Primary Event whose Related Event you want to access.
2. In the **Events** workspace, select the **Related Event** tab.

   A hyperlink to the Related Event associated with the selected Primary Event appears.

3. Select the link.

   The datasheet for the selected Related Event appears.

   Note: As needed, you can modify the values in the available fields, and then select to save your changes.

Create a Related Event

Before You Begin

- Create a Primary Event.
- The Primary Event must have a value in the Event End Date field.
- The Primary Event must not have another Related Event.

Procedure

1. Access the Primary Event for which you want to create a Related Event.
2. Select the **Related Event** tab.

   The **Related Event** section appears.
3. In the upper-left corner of the section, select **Create Related Event**.

   An Event datasheet appears.

   Note:
   - The Event Start Date field on the datasheet will be disabled and populated with the value that you specified in the Event End Date field for the Primary Event .
   - The Capacity Event Type field on the datasheet will be filtered based on the value that you specified in the Capacity Event Type field for the Primary Event.
4. As needed, enter values in the available fields.
5. Select 💾 .

   The related Primary Event is saved and linked to the selected Primary Event.

Example

Consider an example of GAA Unit A, represented by the GAA Unit record GAA Unit A. On January 3, 2016, GAA Unit A suffered an unplanned outage due to an external influence and had to be repaired before it could be used again. Repairs began at 9:00 A.M. on January 5 and continued until 5:00 P.M., when it was determined that a new part had to be ordered to complete the repairs. The new part arrived on January 8, and the repairs were finished by 5:00 P.M. on January 8.

In this scenario, you would have needed to create three Primary Events:

- One to capture the initial outage.
- One to capture the maintenance.
- One to capture the extended maintenance due to other circumstances.

Consider the following table, where each column represents an Event that you would have created in this scenario.

Fields	Primary Event 1	Primary Event 2	Primary Event 3
Capacity Event Type	U1 (Unplanned (forced) Outage - Immediate)	MO (Maintenance Outage)	ME (Maintenance Outage Extension)
Event Start Date	January 3, 2016, 9:00 A.M.	January 5, 2016, 9:00 A.M.	January 5, 2016, 5:00 P.M.
Event End Date	January 5, 2016, 9:00 A.M.	January 5, 2016, 5:00 P.M.	January 8, 2016, 5:00 P.M.

In this example, you would have created two sequential Primary Event pairs:

- **Pair 1**: Primary Event 1 + Primary Event 2.
- **Pair 2**: Primary Event 2 + Primary Event 3.

None of these Primary Events can stand alone because none of them describes completely what happened to GAA Unit A.

- **Primary Event 1** indicates that the unit was out during the time between when it stopped producing power and repairs began. By itself, it would not indicate that any repairs were attempted on the unit.
- **Primary Event 2** indicates that repairs on the unit began at 9:00 A.M. on January 5, 2016 and ended at 5:00 P.M. the same day. By itself, it neither indicates that the unit had stopped producing power before the repairs began nor that maintenance was extended to account for the time it takes to order and receive a new part. The Capacity Event Type value for Primary Event 2 is MO, which is a valid event type for subsequent events of type U1, as defined in Primary Event 1.
- **Primary Event 3** indicates that maintenance was extended but does not indicate when repairs began on the unit or that it had stopped producing power before the repairs began. The Capacity Event Type value for Primary Event 3 is ME, which is a valid event type for subsequent events of type MO, as defined in Primary Event 2.

Note: The event type ME is not valid when the event type of the preceding event is U1. But because valid event type for subsequent event are determined only by the immediately preceding event, the event type of the first event is not considered when determining allowable event types for the third event.

Chapter
6

Performance Records

Topics:

About Performance Records

Performance records store statistical data about capacity events and fuel consumption for a particular unit within a given month of a specific year. Each Performance record should be linked to the GAA Unit record that represents the unit for which the Performance record stores data. For a given GAA Unit record, one Performance record should exist for each month and year combination for which data exists.

The values in Performance records are used for reporting event data to NERC and CEA. All capacity event and generation statistics are calculated using the calculations defined by NERC in the GADS DRI. For fields that are neither calculated nor populated automatically by APM but are required for reporting, you will need to collect the data and enter values into the fields manually if you want that information to be reported.

You can create Performance records manually. After Performance records exist, you will need to update them manually on a regular basis to ensure that all values within the records are up-to-date before that information is reported.

At the end of the reporting period, before you can start reporting data, you need to create Performance records for months in which events did not occur.

While you are not required to have a Performance record for every month in a reporting period before you can report data, data will be reported only for the months for which Performance record exist. So, if you need to report data for a given month, you will need to make sure that the Performance record has been created and is up-to-date.

Weightage Types

You can create Performance records that include all events or exclude OMC events. Based on these Performance types, you can view performance calculations for the following weightage types:

- Net Maximum Capacity (NMC)
- Gross Maximum Capacity (GMC)

About Creating Performance Records that Exclude OMC Events

Some events, such as a power outage that occurred as the result of a thunderstorm, are not preventable. These types of events are considered to be outside management control (i.e., OMC events). Other preventable events, such as loss in generation capacity that resulted from an equipment failure or operator error are considered to be within management control.

All event data, regardless of its cause, must be reported to NERC. For internal tracking purposes, however, you may not be concerned with statistics associated with events that could not be avoided. Instead, you may want to review data associated with events that could have been avoided since these are the events from which strategies could be developed to prevent future, similar events. In other words, only the events that are within management control represent potential cost savings.

APM provides you with the option of collecting a separate set of statistics for the events that are within management. To do so, you must complete two steps:

1. In GAA Unit records, set the Create Outside Management Control Statistics? field to True.
2. In any Event record that represents an event outside management control, set the OMC Event? field to True.

You can create two Performance records for each reporting month and year:

- One record will include values from all Event records, regardless of the value in the OMC Event field in the Primary Event record that is linked to the Performance record. The Capacity History Statistics Type field in this Performance record will contain the value All Events.
- The other record will exclude values from Event records in which the OMC Event field is set to True. The Capacity History Statistics Type field in this Performance record will contain the value Excludes OMC Events.

Access a Performance Record

Before You Begin

- Associate a Performance record with a GAA Unit

Procedure

1. Access the **Unit Summary** workspace for the GAA Unit whose Performance record you want to access.
2. In the left pane, select **Performance & Reports**.

   The **Performance & Reports** workspace appears. The **Performance Records** tab is selected by default, displaying a list of Performance records associated with the GAA Unit for the current year in reverse chronological order.

   The **Performance Records** section contains the following columns of information:

   - **Record ID**: Contains links to access the Performance records associated with the selected Primary Event, for the specified month.

     The link to the Performance record appears in the following format:

     <Record Name> ~ **<Record Type>** ~~ **<Performance Type>**

     Note: As needed, you can modify the ID Template of the GAA Configuration family to specify a different format.

     <Performance Type> indicates one of the following:

     ◦ **All Events**: Select the link containing **All Events** to access the Performance record that contains all events, including OMC Events.
     ◦ **ExcludingOMC**: Select the link containing **ExcludingOMC** to access the Performance record that contains all events, excluding OMC Events.
   - **Last Modified By**: Contains the name of the last user who modified the Performance record during the specified month.
   - **Event List**: Contains the number of events that occurred during the specified month and the number of events that are in OUT OF SYNC status currently. When you select the link in this column, you can view the list of events that occurred during the specified month. The events that are in SYNCED status appear with a green bar to their left, and the events that are in the OUT OF SYNC status appear with a red bar to their left.
   - **State**: Indicates the state of the Performance record.
   - **Sync Status**: Indicates whether or not the Performance record includes updated information. A Performance record can have one of the following statuses:

     ◦ **SYNCED**: A Performance record is in SYNCED status when the record includes updated information.
     ◦ **OUT OF SYNC**: A Performance record is in OUT OF SYNC status when the record does not include updated information. A Performance record is in OUT OF SYNC status when an

associated Event has been modified or a new Event has been added. If a Performance record is in OUT OF SYNC status, you can regenerate the Performance record for that month.

Note: If no Performance record exists for the specified month, you can **create a Performance record** for that month. You can create a Performance record that includes all events, or a Performance record that includes all events except the OMC events.

Tip:

You can also select ▽ to filter the events that appear in the **Performance Records** section.

The **Records for the Year** option allows you to specify the year for which you want to view the Performance records in the **Performance Records** section. By default, current year is selected.

3. In the month for which you want to view a Performance record, select the link.

On a new page, the following tabs appear:

- **Performance Summary:** This tab is selected by default.
- **Performance Indexes:** Contains loss- and performance-related information for all the Weightage Types that you configured in the **Performance & Reports** workspace. You cannot modify the values in any of the fields.
- **Performance Fuel:** Contains fuel-related information.

Note: As needed, you can modify the values in the available fields, and then select 💾 to save your changes.

Create a Performance Record

Before You Begin

- Associate a Performance record to a GAA Unit

About This Task

If no Performance record exists for a month, you can create the Performance record for that month. You can create the Performance record that includes all events, or the Performance record that includes all events except the OMC events.

Procedure

- Create a Performance Record for a Month

  1. Access the **Unit Summary** workspace for the GAA Unit whose Performance record you want to create.
  2. In the left pane, select **Performance & Reports**.

     The **Performance & Reports** workspace appears, displaying the **Performance Records** section, which contains a list of Performance records associated with the GAA Unit for the current year.
  3. For the month for which you want to create a Performance record, in the **Sync Status** column, select **Create Record**.

     Note: You can create a Performance record for a month only if no Performance record exists for that month. If a Performance record exists for a month but is in OUT OF SYNC status, you can regenerate the Performance record for that month.

     On a new page, the Performance Summary, Performance Indexes, and Performance Fuel tabs appear. The following fields are populated by default:

- ◦ **Plant ID**
- ◦ **Plant Name**
- ◦ **Reporting Year**
- ◦ **Unit ID**
- ◦ **Reporting Month**
- ◦ **Unit Type**
- ◦ **Unit Name**
- ◦ **Primary Unit Code**
- ◦ **Revision**
- ◦ **Reporting Date**
- ◦ **Primary Utility Code**

4. Select 💾.

   The Performance record is saved.

   Note: For GAA Units for which the value in the Primary Regulatory Organization field is Canadian Electricity Association (CEA), the NERC Event Types mapped to the CEA Event Types are used to calculate data. The calculations are based on the calculations defined for North American Reliability Corporation (NERC) in the IEEE Standard Definitions for Use in Reporting Electric Generating Unit Reliability, Availability, and Productivity documentation.

5. If you want to include the calculated values, then, in the upper-right corner of the **Performance Records** section, select ⟳.

   The **Regenerate Record** dialog box appears, asking you to confirm that you want to regenerate the Performance record.

6. Select **Yes**.

   The Performance record appears in the workspace. The **Sync Status** column indicates that the record is in SYNCED status.

- Create Performance Records for a Year

  1. Access the **Unit Summary** workspace for the GAA Unit whose Performance record you want to create for a year.
  2. In the left pane, select **Performance & Reports**.

     The **Performance & Reports** workspace appears, displaying the **Performance Records** section, which contains a list of Performance records associated with the GAA Unit for the current year.

  3. In the upper-left corner of the Performance records section, select ▽ .

     The **Records for the Year** window appears.

  4. Select the year for which you want to generate the Performance records, and then select **Apply**.

     The Performance records associated with the GAA Unit for the selected year appear.

     In the upper-right corner of the **Performance Records** section, the 📊 button is enabled.

     Note: If all the Performance records for the year exist, the 📊 button is disabled.

  5. Select 📊 .

     The **Performance for <Year>** dialog box appears, asking you to confirm that you want to create and regenerate the Performance records for the selected year.

  6. Select **Yes**.

The Performance records for the selected year are created and regenerated. If the regeneration of the Performance records was successful, the status will be **SYNCED**. If the regeneration was unsuccessful, the status will be **OUT OF SYNC**.

If an error occurred while creating and regenerating Performance records, the ⊠ button will appear. If you want to view the details of the error, select ⊠.

Regenerate a Performance Record

About This Task

When you create a Performance record, it will be populated with the values that you specified when you created it. After it exists, it will not be updated automatically by the APM system. Since values in Performance records will be used in reports, before you begin reporting event and fuel consumption data, ensure that you regenerate all the Performance records for that reporting period to keep them up-to-date.

Procedure

1. Access the Primary Event that is associated with the GAA Unit for which you want to regenerate a Performance record.
2. In the left pane, select **Performance & Reports**.

   The **Performance & Reports** workspace appears, displaying the **Performance Records** section, which contains a list of Performance records associated with the Generation Unit for the current year.

3. Locate the month that indicates that the Performance record is in OUT OF SYNC status.

   Note: If no Performance record exists for a month, you can create a Performance record for that month.
4. Select the row containing the Performance record in OUT OF SYNC status.

   Note: You can also regenerate a Performance record by accessing a Performance record.

   In the upper-right corner of the **Performance Records** section, ⟳ is enabled.

   Note: If you want to view the list of events that occurred during the specified month, select the link in the **Event List** column. The events that are in **SYNCED** status will appear with a green bar to their left, and the events that are in the **OUT OF SYNC** status will appear with a red bar to their left.
5. In the upper-right corner of the section, select ⟳.

   The **Regenerate Record** window appears, asking you to confirm that you want to regenerate the Performance record.

   Note: If the Performance Record is in the approved state for a particular month and year, the **Regenerate Record** window appears with the additional message that the Performance Record for the month and year is in the approved state, and asks you to confirm that you want to regenerate the Performance record.

   Important: For the bulk report generation, validation messages appear in the log file. However, for the single report generation, the validation messages appear in the windows.
6. Select **Yes**.

   The Performance record is regenerated and the status changes to SYNCED.

Change the State of a Performance Record

About This Task

This topic describes how to change the state of a Performance record, while assigning the state of the event to the appropriate user.

Important: You can modify a Performance record in a particular state only if you are an administrator or the assignee for that state.

Procedure

1. Access the Performance record for which you want to change the state.

   The current state of the record appears in upper-right corner of the workspace.

2. Select the button that indicates the current state of the Performance record. For example, if the current state of the Performance record is New, select the **New** button.

   A menu appears, displaying the operation that you can perform on the Performance record to change its state.

3. Select the necessary operation that will change the state of the Performance record, and then select **Done**. For example, if you want to change the state of the Performance record from New to In Progress, select **Create**, and then select **Done**.

   Note: You can view the states assigned to various users by selecting the **Manage State Assignments**. If not already done, you can assign the next state of the event to the appropriate user, and then select **Done**.

   The state of the Performance record is changed.

Delete a Performance Record

About This Task

You cannot delete a Performance record that is in the Approved state.

Procedure

1. Access the Unit Summary workspace for the GAA Unit whose Performance record that you want to delete.

2. In the left pane, select **Performance & Reports**.

   The **Performance & Reports** workspace appears, displaying the **Performance Records** tab, which contains a list of Performance records associated with the GAA Unit for the current year.

3. For the month for which you want to delete a Performance record, select the row containing the Performance record.

   In the upper-right corner of the **Performance Records** section, 🗑 is enabled.

4. In the upper-right corner of the section, select 🗑.

   The **Delete Record** dialog box appears, asking you to confirm that you want to delete the selected Performance record.

5. Select **Yes**.

   The selected Performance record is deleted and the updated list of Performance record appears.

Results

- All the associated event details are deleted.
- The graphs on the **GAA Overview** and the **Unit Summary** workspace are updated.

Generate Performance Records

You can generate and download Performance Records in bulk for a GAA Unit record.

Procedure

1. Access the **GAA Overview** page.
2. Select **Bulk Generation**.
   The **Bulk Generation** page appears.
3. Select the **Generate** tab, and then select **Performance Record**.
4. As needed, enter values in the following fields.

Fields	Description
Company	The name of the company that contains the GAA Units for which you want to generate the performance records.
Units	The GAA Units for which you want to generate the records.
Year	The year for which you want to generate the records.
Months	The months in the year for which you want to include the details in the records.

5. Select **Submit**.
   The generation of the record starts. You can view the status of the job by selecting the **Bulk Generation Logs** button.

Next Steps

After the performance records are generated, you can download the records by selecting the **Download** tab in the **Bulk Generation** page. You can download the records as a single file or multiple files by selecting the appropriate option.

Chapter
7

Manage Root Cause Analysis (RCA) from GAA

Topics:

- Access an RCA from GAA
- Create an RCA from GAA

Access an RCA from GAA

About This Task

Important: You can view the list of RCAs created from GAA only if the license for Root Cause Analysis is active.

Procedure

1. [Access a list of Primary Events associated with a GAA Unit](#) that contains the Primary Event for which you want to access an associated RCA.
2. Locate the row containing the RCA that you want to access.
3. In the **Associated RCA** column, select the link.

   The **Analysis Summary** workspace for the selected RCA opens in a new tab.

Create an RCA from GAA

Before You Begin

- Ensure that the license for the Root Cause Analysis (RCA) module is active.
- Ensure that you are assigned to one of the following Security Groups:

    ◦ MI PROACT Administrator
    ◦ MI PROACT Team Member
- [Create a Primary Event](#).

About This Task

APM provides the Root Cause Analysis (RCA) module, which allows you to conduct an in-depth analysis to evaluate and determine the underlying cause of the capacity event and associated asset impacts. By creating an RCA, you can determine the cause of an event, implement corrective actions to prevent future events, and track associated actions related to the event.

You can perform various tasks in this page based on your membership in the GAA Security Groups.

Procedure

1. [Access a list of Primary Events associated with a GAA Unit](#) that contains the Primary Event for which you want to create an RCA.
2. Select the check box containing the Primary Event for which you want to create an RCA.
3. In the **Events** workspace, select **Create RCA**.

   The **Create RCA** window appears. The **Analysis Details** tab is selected by default.

   Note: The Analysis Name and Analysis Description fields in the RCA are [automatically populated](#) based on the values in the selected Primary Event. The Start Date field is automatically populated with the current date.

4. As needed, enter values in the available fields.

   Note: For more information about these available fields, refer to the RCA Analysis Records section of the documentation.

5. Select 🖫.

   The Primary Event and the RCA are automatically linked. The associated RCA appears in the **Associated RCA** column.

Chapter

8

Manage Log Entries from GAA

Topics:

Access a Log Entry from an Event

Before You Begin

- Ensure that your eLog license is active.
- Ensure that you belong to the MI eLog Administrator or MI eLog Contributor Security Group.

  Note: For more information, refer to the eLog Security Groups topic in the General Reference section of the eLog documentation.

- In the eLog module, sign in to the Shift whose log entry you want to access. For more information, refer to the Sign in to a Shift topic in the Overview section of the eLog documentation.

  Note: If you attempt to access a log entry without signing in to a Shift, the **Sign In** window appears.

About This Task

This topic describes how to access an eLog Generation Event record (that is, a generation event log entry) from a Primary Event.

Procedure

1. Access the table of Primary Events associated with the GAA Unit that contains the Primary Event for which you want to access a generation event log entry.
2. In the **Associated eLog** column, select the link in the row the contains the Primary Event for which you want to access the log entry.

   The **Generation Event Log** page appears in a new tab, displaying the datasheet of the generation event log entry.

   Note: As needed, you can modify the values in the available fields, and then select to save your changes. For more information about the available fields, refer to the eLog Generation Event Records section (that is, in the eLog Entry Records topic) in the Family Field Descriptions section of the eLog documentation.

Create a Log Entry for an Event

Before You Begin

- Ensure that your eLog license is active.
- Ensure that you belong to the MI eLog Administrator or MI eLog Contributor Security Group.

  Note: For more information, refer to the eLog Security Groups topic in the General Reference section of the eLog documentation.

- In the eLog module, sign in to the Shift for which you want to create a log entry. For more information, refer to the Sign in to a Shift topic in the Overview section of the eLog documentation.

  Note: If you attempt to create a log entry without signing in to a Shift, the **Sign In** window appears.

- Create a Primary Event.

About This Task

This topic describes how to create an eLog Generation Event record (that is, a generation event log entry) for a Primary Event.

Note: You can create only one generation event log entry for a Primary Event.

Procedure

1. Access the Primary Event for which you want to create a generation event log entry.

2. Select .

3. Select **Create**, and then select **Create Log Entry**.

   The **Generation Event Log** page appears in a new tab.

   Tip: If you are signed in to multiple Shifts, in the **Shifts** drop-down list box, select the Shift for which you want to create a log entry.

4. As needed, enter values in the available fields.

   Note: For more information about the available fields, refer to the eLog Generation Event Records subsection (that is, in the eLog Entry Records topic) in the Family Field Descriptions section of the eLog documentation.

5. Select .

   The generation event log entry is created.

   Note: To access the new generation event log entry, select the **Navigate to eLog Summary Page** link.

Results

The new generation event log entry appears in:

- The **Associated eLog** column for the Primary Event in the **Events** workspace (that is, in the Unit Summary page for the associated GAA Unit).
- The **All Log Entries** section in the **eLog Overview** page, in the eLog module.
- The **Shift Log** workspace in the **Shift Summary** page for the associated Shift, in the eLog module.

Chapter

9

Reports

Topics:

About Regulatory Reports

APM provides following types of Regulatory reports, each of which reports a different set of data:

- **NERC Event Reports**: Includes data about Events for which the Regulatory Organization is NERC. This report contains all NERC Events logged in a GAA Unit for a specified period. APM provides the **NERC GADS Event Report 07** in the baseline GAA NERC Report record that can be used to generate NERC Event report. The **NERC GADS Event Report 07** returns event data in the 07 format required by NERC.
- **CEA Event Reports:** Includes data about Events for which the Regulatory Organization is CEA. This report contains all CEA Events logged in a GAA Unit for a specified period. APM provides the **CEA Event Report** in the baseline GAA NERC Report record that can be used to generate CEA Event report. The **CEA Event Report** returns event data in the Generation Equipment Status File format as specified by CEA.
- **NERC Performance Reports**: Includes data about unit performance for the specified month.APM provides the **NERC GADS Performance Report 05** baseline GAA NERC Report record that can be used to generate NERC performance report. The **NERC GADS Performance Report 05** returns performance data in the 05 format required by NERC. APM also provides the **CEA Performance Report** which contains data based on NERC calculations.

All the Regulatory reports are downloaded as text files.

You can view a list of Regulatory reports configured for a GAA Unit only if the reports have been configured for a GAA Unit by the administrator.

About Management Reports

APM provides three types of Management reports, each of which reports a different set of data:

- **Event Reports**: Includes data about Events.
- **Performance Reports**: Includes data about unit performance.
- **Events Based on Cause Code and Date Reports**: Includes Event data based on the Unit ID, Cause Code System, and the events that have Event start date or Even end date within the specified period.

Data Included in an Event Report

The Event Report contains the following sections:

- **A – Event Identification**: Contains values from the following fields in Event records:
  - Record Code: For a **NERC GADS Event Report 07**, the value in this field is 07.
  - Primary Utility Code
  - GADS Unit Code
  - Reporting Year
  - Event Number
  - Revision
  - Event Type
- **B – Event Magnitude**: Contains values from the following fields in Event records:
  - Event Start
  - Event End

- ◦ Gross Available Capacity
- ◦ Net Available Capacity
- ◦ Dominant Derate
- ◦ Dominant Derate
- ◦ Record Number
- **C – Primary Cause of Event**: Contains values from the following fields in Event records:

  - ◦ Cause Code System
  - ◦ Amplification Code
  - ◦ Work Started
  - ◦ Work Ended
  - ◦ Event Contribution Code
  - ◦ Problem Alert
  - ◦ Man-hours Worked
  - ◦ Verbal Description

- **D – Additional Work During Event**: Contains values from the following fields in Event records:

  - ◦ Cause Code System
  - ◦ Amplification Code
  - ◦ Work Started
  - ◦ Work Ended
  - ◦ Event Contribution Code
  - ◦ Problem Alert
  - ◦ Man-hours Worked
  - ◦ Verbal Description

Note:

- In NERC Event reports, the following values are gathered only from Primary Event records:

  - ◦ Event End
  - ◦ Event Start
  - ◦ Work Ended
  - ◦ Work Started

  The values in the above fields from the Contributing Event records are not used.

- You can view Event Number for the corresponding event in the NERC GADS Event Report 07. By default, the Event Number field in an event report shows sequential numbers. You can modify the Get the Record Order Preference for Event Report query to return the Event ID for the Event Number field. For more information on modifying the query, refer to KBA 000037247.

Note:

In the **NERC GADS Event Report 07**, if the event spans across years and the **End Date Is Estimated?** check box is selected in the Primary Event datasheet, then the time value in the Event End Date field will be formatted to 2400.

Data Included in a Performance Report

The Performance Report contains the following sections:

- **A – Unit Identification**: Contains values from the following fields in Performance records:

  - ◦ Record Code: For a **NERC GADS Performance Report 05**, the value in this field is 05.
  - ◦ Utility Code

- Unit Code
- Reporting Year
- Reporting Month
- Revision
- **B – Unit Generation Performance**: Contains values from the following fields in Performance records:

    - Gross Maximum Capacity
    - Gross Dependable Capacity
    - Gross Actual Generation
    - Net Maximum Capacity
    - Net Dependable Capacity
    - Net Actual Generation
- **C – Unit Starting Characteristics**: Contains values from the following fields in Performance records:

    - Typical Unit Loading Characteristics
    - Attempted Unit Starts
    - Actual Unit Starts
    - Verbal Description
    - Record Number
- **D – Unit Time Information**: Contains values from the following fields in Performance records:

    - Service Hours
    - Reserve Shutdown Hours
    - Pumping Hours
    - Synchronous Condensing Hours
    - Available Hours
    - Planned Outage Hours
    - Forced Outage Hours
    - Maintenance Outage hours
    - Extensions of Scheduled Outages Hours
    - Unavailable Hours
    - Period Hours
    - Inactive Hours
    - Record Number
- **E – Primary Fuel**: Contains values from the following fields in Performance records:

    - Fuel Code
    - Quantity Burned
    - Average Heat Content
    - Percent Ash
    - Percent Moisture
    - Percent Sulfur
    - Percent Alkalines
    - Grindability Index
    - Ash Softening Temp
- **F – Secondary Fuel**: Contains values from the following fields in Performance records:

    - Fuel Code
    - Quantity Burned
    - Average Heat Content
    - Percent Ash

- Percent Moisture
- Percent Sulfur
- Percent Alkalines
- Grindability Index
- Ash Softening Temp
- Record Number

Data Included in an Events Based on Cause Code and Date Report

The Events Based on Cause Code and Date Report contains the following fields, which contain values from the Event record.

- Unit ID
- Unit Name
- Plant Name
- Event Number
- Event ID
- Capacity Event Type
- Event Start Date
- Event End Date
- Cause Code System
- Cause code Component
- Cause Code
- Amplification Code
- Verbal Description

Access a Regulatory Report

Before You Begin

- Configure and associate a Report

Procedure

1. Access the **GAA Overview** page.
2. Select the **Generation Reports** tab.

   A list of GAA reports appears, displaying the following columns of information:

   - **Report ID**
   - **Unit ID**
   - **Modified By**
   - **Last Modified**

3. In the **Report ID** column, select the link to the Regulatory report that you want to access.

   Tip: All the Regulatory reports are text files.

   The **Save As** window appears.

   Note: These steps may change depending on the browser and browser settings that you use.

4. Navigate to the location to which you want to save the report.

5. In the **File name** box, enter the name of the file, and then select **Save**.

   The report is saved to the selected location. The Regulatory report is saved as a text file as per NERC requirement. You can send this report directly to NERC.

Generate a Regulatory Report

Before You Begin

- Configure and associate a Report

Procedure

1. Access the **GAA Overview** page.

2. Select the **Generation Reports** tab.

   A list of GAA reports appears.

3. In the upper-right corner of the **Generation Reports** section, select **Manage Reports**.

   The **Units** window appears.

   Note: The **Units** window will appear if there is more than one GAA Unit. If there is only one GAA Unit, the **Performance & Reports** workspace appears, displaying the **Regulatory Reports** section. If this occurs, proceed to step 6.

4. Select the GAA Unit for which you want to generate a Regulatory report.

   Note: You can generate only the reports that you have configured and associated with the selected GAA Unit.

5. Select **Open Reports**.

   The **Performance & Reports** workspace appears, displaying the **Regulatory Reports** section.

6. For the month for which you want to generate a Regulatory report, in the **Created On** column, select **Generate Report**.

   The report is generated and saved to the Reference Document family.

   Note: When you generate a single or bulk Performance Report, the error or warning messages appear in the following scenarios:

   - If the Performance Record does not exist for a particular month and year, an **Error** window appears, and you cannot generate the report successfully.
   - If the Performance Record exists for a particular month and year but is not in the approved state, a **Warning** window appears, asking you to confirm if you want to generate the report.
   - If you generate an Event Report for which an Event does not exist, an **Error** window appears, and you cannot generate the report successfully.

   Important:

   For the bulk report generation, validation messages appear in the log file. However, for the single report generation, the validation messages appear in the windows.

   The following columns of information are updated in the **Regulatory Reports** section:

   - **Report Name**: Contains the name of the report. The name of the report appears in the following format:

     <Regulatory Organization> <Report Name> <Reporting Month> <Reporting Year>.txt

◦ If the report is generated, the name appears as a hyperlink and the date when the report was generated appears in the **Created On** column.

◦ If the report is not generated, the name appears as plain text and the **Generate Report** button appears in the **Created On** column.

- **Report Type**: Indicates whether the report is an Event report or a Performance report.
- **Created By**: Indicates the user who generated the report.
- **Created On**: Contains the date when the report was generated.

By default, the reports appear for the current year. If you want to view reports for a previous year, you can select ▽ to specify a different year.

Note: For a GAA Unit that reports to CEA, in the regulatory report, the Common Mode Outage, Auxiliary Number, and Selected Component Outage fields will be blank. Also, in a GAA Unit, if the Primary Regulatory Body and Secondary Regulatory Body are configured, then the report will be generated for both.

Generate a Management Report

Before You Begin

- Configure and associate a Report

Procedure

1. Access the **GAA Overview** page.
2. Select the **Generation Reports** tab.
   A list of GAA reports appears.

   Note:

   You can also generate a Management report via the **Management Reports** section. To do so:

   a. In the upper-right corner of the **Generation Reports** section, select **Manage Reports**.

   The **Units** window appears. The **Units** window will appear if there are more than one GAA Units. If there is only one GAA Unit, the **Performance & Reports** workspace appears, displaying the **Regulatory Reports** section.

   b. Select the GAA Unit for which you want to generate a Management report.

   c. Select **Open Reports**.

   The **Performance & Reports** workspace appears, displaying the **Regulatory Reports** section.

   d. Select the **Management Reports** tab.

   A list of Management Reports appears, displaying links for the various Management reports.

3. In the **Report ID** column, as needed, select a link for an Event report, Performance report, or Events Based on Cause Code and Date report.

   Note: You can generate only the reports that you have configured and associated for the selected GAA Unit.

   The **Enter Parameter Values** window appears.

4. If you selected Event or Performance report in the previous step, enter the values in the following fields:

   - In the **Unit ID** cell, enter the ID of the Unit for which you want to generate a report.
   - In the **Reporting Month** cell, enter the month for which you want to generate a report.
   - In the **Reporting Year** cell, enter the year for which you want to generate a report.

If you selected Events Based on Cause Code and Date report in the previous step, enter the values in the following fields:

- In the **Unit ID** cell, enter the ID of the Unit for which you want to generate a report.
- In the **Start Date** cell, enter the date when the Event started.
- In the **End Date** cell, enter the date when the Event ended.
- In the **Cause Code System** cell, select the value for which you want to generate a report.

5. Select **Done**.
   The Management report is generated and appears in a new tab.

Regenerate a Regulatory Report

Before You Begin

- Configure a Report

Procedure

1. Access the **GAA Overview** page.
2. Select the **Generation Reports** tab.

   A list of GAA reports appears.

3. In the upper-right corner of the **Generation Reports** section, select **Manage Reports**.

   The **Units** window appears.

   Note: The **Units** window will appear if there are more than one GAA Units. If there is only one GAA Unit, the **Performance & Reports** workspace appears, displaying the **Regulatory Reports** section.

4. Select the GAA Unit for which you want to regenerate a Regulatory report.
5. Select **Open Reports**.

   The **Performance & Reports** workspace appears, displaying the **Regulatory Reports** section.

6. For the month for which you want to regenerate a Regulatory report, locate the row containing the report that you want to regenerate.

   Note: Regardless of which Event report you select to regenerate, both the Event Reports are regenerated. For example, if you select Event report for NERC to regenerate, the Event report for CEA is also regenerated, and vice versa.

7. In the upper-right corner of the section, select ⟳.

   The **Regenerate Report** dialog box appears, asking you to confirm that you want to regenerate the selected report.

8. Select **Yes**.

   The selected report is regenerated.

   Note: When you generate a single or bulk Performance Report, you get the error or warning messages in the following scenarios:

   - If the Performance Record does not exist for a particular month and year, the **Generate Report** dialog box appears that does not allow you to generate the report.
   - If the Performance Record exists for a particular month and year but is not in the approved state, a warning message appears asking you to confirm if you want to generate the report.

Important: For the bulk report generation, validation messages appear in the log file, but for the single report generation, they appear in the pop-up windows.

Delete a Regulatory Report

Procedure

1. Access the **GAA Overview** page.
2. Select the **Generation Reports** tab.

   A list of GAA reports appears.

3. In the upper-right corner of the **Generation Reports** section, select **Manage Reports**.

   The **Units** window appears.

   Note: The **Units** window will appear only if there is more than one GAA Unit. If there is only one GAA Unit, then the **Performance & Reports** workspace appears, displaying the **Regulatory Reports** section.

4. Select the GAA Unit for which you want to regenerate a Regulatory report.
5. Select **Open Reports**.

   The **Performance & Reports** workspace appears, displaying the **Regulatory Reports** section.

6. For the month for which you want to delete a Regulatory report, locate the row containing the report that you want to delete.

7. In the upper-right corner of the section, select 🗑.

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

8. Select **Yes**.

   The selected report is deleted.

Generate Regulatory Reports

You can generate and download Regulatory Reports in bulk for a GAA Unit record.

Procedure

1. Access the **GAA Overview** page.
2. Select **Bulk Generation**.
   The **Bulk Generation** page appears.
3. Select the **Generate** tab, and then select **Report**.
4. As needed, enter values in the following fields.

Fields	Description
Company	The name of the company that contains the GAA Units for which you want to generate the reports.
Units	The GAA Units for which you want to generate the reports.
Year	The year for which you want to generate the reports.
Months	The months in the year for which you want to include the details in the reports.

Fields	Description
Report Type	The type of the report that you will generate for the selected GAA Units.

5. Select **Submit**.

   The generation of the report starts. You can view the status of the job by selecting the **Bulk Generation Logs** button.

Next Steps

After the reports are generated, you can download the reports by selecting the **Download** tab in the **Bulk Generation** page. You can download the reports as a single file or multiple files by selecting the appropriate option.

Chapter

10

Admin

Topics:

Access the GAA Administrator Page

Access the GAA Administrator Page

About This Task

You can access the **GAA Administrator** page only if you are a member of the MI GAA Administrator Security Group. You can perform various tasks on this page based on membership in various Security Groups.

Tip: For more information, refer to the Security Group topic for this module.

Procedure

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

The **GAA Administrator** workspace appears, displaying the following tabs:

- **System Codes**: Contains the system codes for the families available in GAA. This tab is selected by default.
- **Mappings**: Lists the code mappings for the regulatory organizations.
- **Configurations**: Lists the Performance records and reports configured in GAA.

GAA Administrator Workflow

GAA Administrator Workflow

About This Task

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

Procedure

1. Add a GAA Company to represent the functional location that you want to use in GAA. You must add a GAA Company at the highest level in the Asset Hierarchy.
2. Add a GAA Plant to represent the functional location that you want to use in GAA. You must add a GAA Plant at the level next to GAA Company in the Asset Hierarchy.
3. Add a GAA Unit to represent the functional location that you want to use in GAA. You must add a GAA Unit at the level next to GAA Plant in the Asset Hierarchy.
4. Verify GAA Unit Capacity record. When you add a GAA Unit record, a GAA Unit Capacity record is automatically created with the values defined in the capacity related fields in the GAA Unit record. You must verify these values. As needed, you can modify the values in the available fields or create new GAA Unit Capacity records.
5. Configure and associate GAA Reports that you want to appear for a GAA Unit.

System Codes

Access a List of Regulatory Organizations

Procedure

1. Access the **GAA Administrator** page.
2. In the **System Codes** section, select **Regulatory Organization**.

   The **Regulatory Organization** section appears, displaying the following columns of information:

   - **Name**
   - **Description**

Access a List of Unit Types

Procedure

1. Access the **GAA Administrator** page.
2. In the **System Codes** section, select **Unit Types**.

   The **Unit Types** section appears, displaying the following columns of information:

   - **Unit Type Code**
   - **Type Description**
   - **Regulatory Organization**

Access a List of Unit States

Procedure

1. Access the **GAA Administrator** page.
2. In the **System Codes** section, select **Unit States**.

   The **Unit States** section appears, displaying the following columns of information:

   - **Unit State Code**
   - **State Description**
   - **Regulatory Organization**

Event Categories

Access an Event Category

Procedure

1. Access the **GAA Administrator** page.
2. In the **System Codes** section, select **Event Categories**.

   The **Event Categories** subsection appears, displaying the following columns of information:

- **Event Category ID:** This column is populated based on the value in the Entity ID field.
- **Event Category Code**
- **Category Description**
- **Associated Event Types**
- **Color Code**
- **Mapped ID**
- **Regulatory Organization**

3. Locate the row that contains the Event Category that you want to access.

4. In the **Event Category ID** column, select the link.

   The **Edit Event Categories** window appears, displaying the datasheet of the selected Event Category.

   Note: As needed, you can modify the values in the available fields, and then select ⊟ to save your changes.

Add an Event Category

Procedure

1. Access the **GAA Administrator** page.

2. In the **System Codes** section, select **Event Categories**.

   The **Event Categories** subsection appears.

3. In the upper-left corner of the Event Categories section, select ＋.

   The **Add Event Category** window appears.

4. As needed, enter the values in the available fields.

5. Select ⊟.

   The new Event Category is added.

Delete an Event Category

About This Task

Important: You must not delete a baseline Event Category.

Procedure

1. Access the **GAA Administrator** page.

2. In the **System Codes** section, select **Event Categories**.

   The **Event Categories** subsection appears.

3. Select the row containing the Event Category that you want to delete.

4. In the upper-right corner of the Event Category section, select 🗑.

   The **Delete Event Category** dialog box appears, asking you to confirm that you want to delete the selected Event Category.

5. Select **Yes**.

   The selected Event Category is deleted, and the updated list of Event Categories appears.

Event Types

Access an Event Type

Procedure

1. Access the **GAA Administrator** page.
2. In the **System Codes** section, select **Event Types**.

   The **Event Types** subsection appears, displaying the following columns of information:

   - **Event Type Code**
   - **Event Type Description**
   - **Color Code**
   - **Mapped ID**
   - **Regulatory Organization**

3. Locate the row that contains the Event Type that you want to access.
4. In the **Event Type Code** column, select the link.

   The **Edit Event Types** window appears, displaying the datasheet of the selected Event Type.

   Note: As needed, you can modify the values in the available fields, and then select 🖫 to save your changes.

Add an Event Type

Procedure

1. Access the **GAA Administrator** page.
2. In the **System Codes** section, select **Event Types**.

   The **Event Types** subsection appears.

3. In the upper-left corner of the **Events Types** section, select ┼.

   The **Add Event Type** window appears.
4. As needed, enter the values in the available fields.
5. Select 🖫.

   The new Event Type is added.

Delete an Event Type

About This Task

Important: You must not delete a baseline Event Type.

Procedure

1. Access the **GAA Administrator** page.
2. In the **System Codes** section, select **Event Types**.

The **Event Types** subsection appears.

3. Select the row containing the Event Type that you want to delete.

4. In the upper-right corner of the Events Types section, select 🗑.

    The **Delete Event Type** dialog box appears, asking you to confirm that you want to delete the selected Event Type.

5. Select **Yes**.

    The selected Event Type is deleted and the updated list of Event Types appears.

Cause Codes

About Cause Codes

In an Event, the Cause Code field stores value that is used to identify the cause of the event. The value in the Cause Code field is populated using value in the Cause Codes records. Each Cause Codes record represents a Cause Code and can be used to populate the Cause Code field in an Event.

The baseline APM database contains Cause Codes records that are already populated with values that identify cause codes as they are defined by NERC or CEA. We recommend that you:

• Do not modify the baseline Cause Codes records so that they match what is defined by NERC or CEA.
• Do not create your own Cause Codes records.

Note: For cause codes that can be used to identify the cause of an event for more than one Unit Type, multiple Cause Codes records exist in the baseline APM database, one for each Cause Code and Unit Type combination.

The Cause Codes themselves are defined by NERC and CEA. NERC and CEA divides cause codes into systems and components to group the codes into categories. As a result, the APM system uses four fields to define cause codes.

• Cause Code System
• Cause Code Component
• Cause Code Description
• Cause Code

About Populating the Cause Code Field in an Event

Cause Code field in an Event is populated using value from the Code field in a Cause Code record. In an Event, the Cause Code System field will contain a list of each unique value in the System field in all Cause Code records with the value in the Unit Type field that matches the value in the Unit Type field in the GAA Unit record with which the Event is associated.

Example: Value in Cause Code field when value of Unit Type field is Miscellaneous (800)

For example, using the baseline Cause Code record, consider a Primary Event that is linked to a GAA Unit with the value Miscellaneous (800) in the Unit Type field. In this case, the Cause Code System field in Event record will contain a list of each unique value in the System field in all Cause Code records with the value Miscellaneous (800) in the Unit Type field.

In an Event, when the Cause Code System field is populated with a value, the Cause code Component field will contain only values in the Component field in Cause Code records with a value in the System field that matches the value in the Cause Code System field in the Event. The Cause code Component field will not contain a list of values until the Cause Code System field contains a value. So in this example, if you select

External in the Cause Code System field, the Cause code Component field would contain a list of the following values:

- Catastrophe
- Economic
- Fuel Quality
- Miscellaneous (External)

If you populate the Cause Code Category field, the Cause Code field will contain only values in the Code and Code Description fields in Cause Code records with values in the System and Component fields that match the values in the Cause Code System and Cause code Component fields in the Event. The list in the Cause Code field in an Event is displayed using the format Cause Code (Cause Code Description). The Cause Code field will not contain a list of values until the Cause code Component field contains a value. So in this example, if you select Miscellaneous (External) in the Cause code Component field, the Cause Code field would contain a list of the following values:

- 9300 (Transmission System Problems Other Than Catastrophe)
- 9305 (Ash Disposal Problem)
- 9310 (Operator Training)
- 9320 (Other Miscellaneous External Problems)

Access a Cause Code

Procedure

1. Access the **GAA Administrator** page.
2. In the **System Codes** section, select **Cause Codes**.

   The **Cause Codes** subsection appears, displaying the following columns of information:

   - **Code**
   - **Code Description**
   - **System**
   - **Component**
   - **Unit Type**
   - **Regulatory Organization**

3. Locate the row that contains the Cause Code that you want to access.
4. In the **Code** column, select the link.

   The **Edit Cause Code** window appears, displaying the datasheet of the selected Cause Code.

   Note: As needed, you can modify the values in the available fields, and then select 🖫 to save your changes.

Add a Cause Code

Procedure

1. Access the **GAA Administrator** page.
2. In the **System Codes** section, select **Cause Codes**.

   The **Cause Codes** subsection appears.

3. In the upper-left corner of the **Cause Codes** section, select ﹢.

The **Add Cause Code** window appears.

4. As needed, enter the values in the available fields.

5. Select 🖫.

The new Cause Code is added.

Delete a Cause Code

About This Task

Important: You must not delete a baseline Cause Code.

Procedure

1. Access the **GAA Administrator** page.
2. In the **System Codes** section, select **Cause Codes**.

   The **Cause Codes** subsection appears.
3. Select the row containing the Cause Code that you want to delete.

4. In the upper-right corner of the **Cause Codes** section, select 🗑.

   The **Delete Cause Code** dialog box appears.
5. Select **Yes**.

   The selected Cause Code is deleted and the updated list of Cause Codes appears.

Amplification Codes

Access an Amplification Code

Procedure

1. Access the **GAA Administrator** page.
2. In the **System Codes** section, select **Amplification Codes**.

   The **Amplification Codes** subsection appears, displaying the following columns of information:
   - **Amplification Code**
   - **Code Description**
   - **Unit Type**
   - **Event Type**
   - **Regulatory Organization**

3. Locate the row that contains the Amplification Code that you want to access.
4. In the **Amplification Code** column, select the link.

   The **Edit Amplification Code** window appears, displaying the datasheet of the selected Amplification Code.

   Note: As needed, you can modify the values in the available fields, and then select 🖫 to save your changes.

Add an Amplification Code

Procedure

1. Access the **GAA Administrator** page.
2. In the **System Codes** subsection, select **Amplification Codes.**

   The **Amplification Codes** section appears.

3. In the upper-left corner of the **Amplification Codes** section, select ＋.

   The **Add Amplification Code** window appears.
4. As needed, enter the values in the available fields.
5. Select 🖫.

   The new Amplification Code is added.

Delete an Amplification Code

About This Task

Important: You must not delete a baseline Amplification Code.

Procedure

1. Access the **GAA Administrator** page.
2. In the **System Codes** subsection, select **Amplification Codes**.

   The **Amplification Codes** section appears.
3. Select the row containing the Amplification Code that you want to delete.
4. In the upper-right corner of the **Amplification Codes** section, select 🗑.

   The **Delete Amplification Code** dialog box appears, asking you to confirm that you want to delete the selected Event Type.
5. Select **Yes**.

   The selected Amplification Code is deleted and the updated list of Amplification Codes appears.

Fuel Types

Access a Fuel Type

Procedure

1. Access the **GAA Administrator** page.
2. In the System Codes section, select **Fuel Types**.

   The **Fuel Types** subsection appears, displaying the following columns of information:

   - **Fuel Code**
   - **Fuel Description**
   - **Regulatory Organization**

- **Mapped ID**

3. Locate the row that contains the Fuel Code that you want to access.
4. In the **Fuel Code** column, select the link.

   The **Edit Fuel Type** window appears, displaying the datasheet for the selected Fuel Code.

   Note: As needed, you can modify the values in the available fields, and then select 💾 to save your changes.

Add a Fuel Type

Procedure

1. Access the **GAA Administrator** page.
2. In the **System Codes** section, select **Fuel Types**.

   The **Fuel Types** subsection appears.

3. In the upper-left corner of the **Fuel Types** section, select ✛.

   The **Add Fuel Type** window appears.
4. As needed, enter the values in the available fields.
5. Select 💾.

   The new Fuel type is added.

Delete a Fuel Type

About This Task

Important: You must not delete a baseline Fuel Type.

Procedure

1. Access the **GAA Administrator** page.
2. In the **System Codes** section, select **Fuel Types**.

   The **Fuel Types** subsection appears.
3. Select the row containing the Fuel Type that you want to delete.
4. In the upper-right corner of the **Fuel Types** section, select 🗑.

   The **Delete Fuel Type** dialog box appears, asking you to confirm that you want to delete the selected Fuel Type.
5. Select **Yes**.

   The selected Fuel Type is deleted and the updated list of Fuel Types appears.

Mapping Records

Access a Mapping

Procedure

1. Access the **GAA Administrator** page.
2. Select the **Mappings** tab.

   The **Mappings** section appears, displaying the following columns of information:

   - **Entity ID**: This field is populated using the following format:

     <CEA Outage Code> ~ <NERC Cause Code>

     Where, each of the variable represents the value in the corresponding field in the GAA Code Mapping record.
   - **CEA Unit Type**
   - **CEA Amplification Code**
   - **CEA Outage Code**
   - **NERC Cause Code**

3. Locate the row that contains the Mapping that you want to access.
4. In the **Entity ID** column, select the link.

   The **Edit Mapping** window appears, displaying the datasheet of the selected Mapping.

   Note: As needed, you can modify the values in the available fields, and then select 💾 to save your changes.

Add a Mapping

Procedure

1. Access the **GAA Administrator** page.
2. Select the **Mappings** tab.

   The **Mappings** section appears.

3. In the upper-left corner of the section, select ✚.

   The **Add Mapping** window appears.
4. As needed, enter the values in the available fields.

5. Select 💾.

   The new Mapping is added.

   Example

   Suppose that for a GAA Unit Unit 1, the primary reporting organization is CEA and secondary reporting organization is NERC. For the primary reporting organization CEA, the Amplification Code field contains the value 84. For the secondary reporting organization NERC, the Amplification Code field contains the value 85. When you generate a Primary Event Report, in the file for the primary reporting organization CEA, the Amplification Code field will contain the value 84, and in the file for the

   ---

secondary reporting organization NERC, the Amplification Code field will contain the value 85. This mapping is similar for the Cause Code field.

Delete a Mapping

Procedure

1. Access the **GAA Administrator** page.
2. Select the **Mappings** tab.

   The **Mappings** section appears.
3. Select the row containing the Mapping that you want to delete.

   Note: You cannot delete a baseline Mapping.
4. In the upper-right corner of the section, select 🗑.

   The **Delete Mapping** dialog box appears, asking you to confirm that you want to delete the selected Mapping.
5. Select **Yes**.

   The selected Mapping is deleted, and the updated list of Mappings appears.

Event Transitions

About Event Transition

Event transition is the concept of starting an event only if another event ends. The first event is called the parent event; the second event is called the related event. The related event starts immediately after the parent event ends. Therefore, the value in the Event Start field in the related event is the same as the value in the Event End field in the parent event.

The following image shows how the two events in a transition are related.
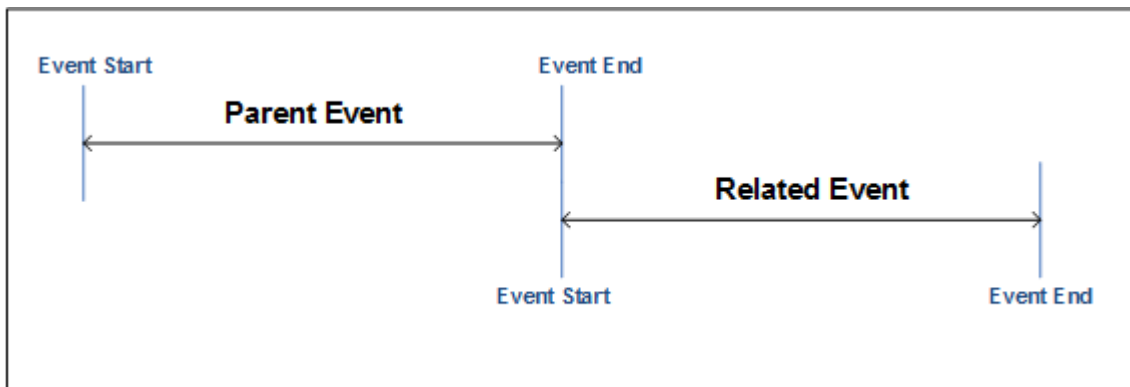
North American Electric Reliability Corporation (NERC) and Canadian Electricity Association (CEA) provide details on whether two events can be included in a transition based on their event types. Therefore, before you add an Event Transition for two events, you must determine which one of the following conditions exists:

- It is acceptable for the events to be in transition.
- It is not acceptable for the events to be in transition.
- It is acceptable for the events to be in transition only if certain conditions are satisfied (only for CEA).

Example: Event Transition from a Parent Event to a Related Event

Suppose that an event, D1 must be followed by an event, D2 only. When you create an Event Transition, in the **From Event Type field**, select D1 and in the **To Event Type** field, select D2. When you create a Related Event for D1, the **Capacity Event Type** drop-down box will contain the value D2.

Event Transition Workflow

This topic provides a basic workflow for using the Event Transition feature, as well as links to the available procedures, concepts, and reference topics.

1. Add an Event Type for each event in the transition.
2. Create an Event Transition such that:

   - In the From Event Type field, select the value that matches the value in the Event Type Code field in the Event Type of the parent event.
   - In the To Event Type field, select the value that matches the value in the Event Type Code field in the Event Type of the related event.

3. Create an Event record for the parent event. In the Capacity Event Type field, select the value that matches the value in the Event Type Code field in the Event Type of the parent event.
4. Create a Related Event for the parent event. In the Capacity Event Type field, select the value that matches the value in the Event Type Code field in the Event Type of the related event.

   Note: The list of values in the Capacity Event Type field in the related event is filtered based on the value in the Capacity Event Type field in the parent event.

   If you have entered a condition in the Validation Rule field in the Event Transition, then APM determines if the condition is satisfied. If it is not, a message appears below the Capacity Event Type, Cause Code, and Net Derate Amount fields on the Related Event datasheet, specifying the condition that must be satisfied.

Access an Event Transition

Procedure

1. Access the **GAA Administrator** page.
2. Select the **Mappings** tab, and then select **Event Transition**.

   The **Event Transition** subsection appears, displaying the following columns of information:

   - From Event Type
   - To Event Type
   - Validation Rule

3. Locate the row for the Event Transition that you want to access.
4. In the **From Event Type** column, select the link.

   The **Edit Event Transition** window appears, displaying the datasheet of the selected Event Transition.

   Note: As needed, you can modify the values in the available fields, and then select 🖫 to save your changes.

Create an Event Transition

Before You Begin

- Add an Event Type for each event in the transition.

Procedure

1. Access the **GAA Administrator** page.
2. Select the **Mappings** tab, and then select **Event Transition**.

   The **Event Transition** subsection appears.

3. In the upper-left corner of the subsection, select ＋.

   The **Add Event Transition** window appears.
4. As needed, enter values in the available fields.
5. Select 🖫.

   The Event Transition is created.

Delete an Event Transition

Procedure

1. Access the **GAA Administrator** page.
2. Select the **Mappings** tab, and then select **Event Transition**.

   The **Event Transition** subsection appears.
3. Select the row for the Event Transition that you want to delete.
4. In the upper-right corner of the section, select 🗑.

   The **Delete Event Transition** dialog box appears, asking you to confirm that you want to delete the selected Event Transition.
5. Select **Yes**.

   The selected Event Transition is deleted, and the updated list of Event Transitions appears.

Companies

About GAA Company, Plant, and Unit

Before you can begin creating Primary Events, Contributing Events, or Performance records, the following records must exist in your database:

- **GAA Company:** Represents the highest level of organization within your business: the company under which plants and units operate. In general, a GAA Company represents a company that owns the plants and units for which generation data and fuel consumption data will be collected. You must define GAA Company, GAA Plant, and GAA Unit before you can start recording event data. GAA Company is stored in a GAA Company record. You will need to add a GAA Company whenever you want to record data about any company that has not yet been identified within your system. Each GAA Company, however, can be associated with only one functional location and vice versa.
- **GAA Plant:** Represents a plant in which generation units reside. GAA Plants can store information about the plant itself and the company that owns the plant. In addition, GAA Plants determine whether or not Primary Event and Contributing Events associated with those GAA Plants will account for Daylight Saving Time. GAA Plants are linked to GAA Companies and should be created after GAA Company have been created but before you create GAA Units. You will need to add a GAA Plant whenever you want to record data about any plant that has not yet been identified within your system. Each GAA Plant, however, can be associated with only one functional location and vice versa.

- **GAA Unit:** Represents a unit that generates power. A GAA Unit can store information about a unit's power-generation capabilities and the fuel that the unit consumes. Before you can create GAA Units, you must create the GAA Plants to which they will be linked. You will need to add a GAA Unit whenever you want to record data about any unit that has not yet been identified within your system. Each GAA Unit, however, can be associated with only one functional location and vice versa.

Access a GAA Company

Procedure

1. Access the **GAA Administrator** page.
2. In the left pane, select the GAA Company that you want to access.

   The datasheet for the selected GAA Company appears in the workspace. A list of GAA Plants associated with the selected GAA Company appears in the left pane.

   Note: As needed, you can modify the values in the available fields, and then select 🖫 to save your changes.

Add a GAA Company

About This Task

GAA Company represents the highest level of organization within your business and represents the root level of the GAA business hierarchy. Before you can begin adding GAA Plants and GAA Units, you must first add GAA Companies.

Procedure

1. Access the **GAA Administrator** page.
2. In the left pane, select ✛.

   A blank datasheet for GAA Company appears in the workspace.
3. In the **Asset ID** cell, select ⦁⦁⦁.

   The **Asset Finder** window appears.
4. Select the Functional Location to which you want to associate the GAA Company, and then select **Done**.

   The selected Functional Location appears in the **Asset ID** box as a link. You can select the link to access the details of the Functional Location.
5. As needed, enter values in the available fields.
6. In the upper-right corner of the workspace, select **Site:**.

   Note: A user can be assigned to multiple sites. By default, the user's default site appears.
7. Select the site to which you want to assign the GAA Company.

   Note: If the GAA Company is assigned to the default site, then it can be accessed only by users who have been assigned to the same site. The site selector component becomes read-only after it is saved.
8. Select 🖫.

   The GAA Company is saved.

Next Steps

- Add a GAA Plant

Delete a GAA Company

Procedure

1. Access the **GAA Administrator** page.
2. In the left pane, select the GAA Company that you want to delete.

   The datasheet for the selected GAA Company appears in the workspace. A list of GAA Plants associated with the selected GAA Company appears in the left pane.

3. In the left pane, select 🗑.

   The **Delete** dialog box appears, asking you to confirm that you want to delete the selected GAA Company.

4. Select **Yes**.

   The GAA Company is unlinked from the associated functional location and the associated record is deleted from the database.

   Note: You cannot delete a GAA Company if it has an associated GAA Plant.

Plants

Access a GAA Plant

Procedure

1. Access the GAA Company for which you want to access a GAA Plant.
2. In the left pane, select the GAA Plant that you want to access.

   The datasheet for the selected GAA Plant appears in the workspace. A list of GAA Units associated with the selected GAA Plant appears in the left pane.

   Note: As needed, you can modify the values in the available fields, and then select 💾 to save your changes.

Add a GAA Plant

Before You Begin

- Add a GAA Company

Procedure

1. Access the GAA Company to which you want to add a GAA Plant.
2. In the left pane, select ＋.

   A blank datasheet for GAA Plant appears in the workspace.

3. In the **Asset ID** cell, select ᵒᵒᵒ.

The **Asset Finder** window appears.

4. Select the Functional Location to which you want to associate the GAA Plant, and then select **Done**.

    The selected Functional Location appears in the **Asset ID** box as a link. You can select the link to access the details of the Functional Location.

5. As needed, enter values in the available fields.

6. In the upper-right corner of the workspace, select **Site:**.

    Note: A user can be assigned to multiple sites. By default, the user's default site appears.

7. Select the site to which you want to assign the GAA Plant.

    Note: If the GAA Plant is assigned to the default site, then it can be accessed only by users who have been assigned to the same site. The site selector component becomes read only after it is saved.

8. Select 🖫.

    The GAA Plant is saved.

Next Steps

- Add a GAA Unit

Delete a GAA Plant

Procedure

1. Access the GAA Company from which you want to delete a GAA Plant.

    The datasheet for the selected GAA Company appears in the workspace. A list of GAA Plants associated with the selected GAA Company appears in the left pane.

2. In the left pane, select the GAA Plant that you want to delete, and then select 🗑.

    The **Delete** dialog box appears, asking you to confirm that you want to delete the selected GAA Plant.

3. Select **Yes**.

    The GAA Plant is unlinked from the associated functional location and the associated record is deleted from the database.

    Note: You cannot delete a GAA Plant if it has an associated GAA Unit.

Units

About Fuel Codes

In GAA Unit records, the fuel code fields store values that identify the types of fuel used by a given unit. For each unit, the APM system supports defining up to four levels of fuel that will be used, depending on availability.

- **Primary Fuel:** The unit's first choice of fuel types. As long as this type of fuel is available, it will be used. This fuel type represents the fuel code for the fuel that made the greatest contribution to heat generation during the specified period.
- **Secondary Fuel:** The type of fuel that will be used if the primary fuel is not available. This fuel type represents the fuel code for the fuel that made the second greatest contribution to heat generation during the specified period.

- **Tertiary Fuel:** The type of fuel that will be used if the primary and secondary fuels are not available. This fuel type represents the fuel code for the fuel that made the third greatest contribution to heat generation during the specified period.
- **Quaternary Fuel:** The type of fuel that will be used if the primary, secondary, and tertiary fuels are not available. This fuel type represents the fuel code for the fuel that made the fourth greatest contribution to heat generation during the specified period.

In GAA Unit records, fuel types are identified through codes. The APM system supports the use of NERC fuel codes scheme.

In GAA Unit records, fuel types are identified through codes. The APM system supports the use of fuel codes specified by the Regulatory Organization.

Note: Fuel code values are defined in GAA Fuel Types records. To see a list of these records, you can run the query GAA Fuel Types, which is stored in the following Catalog folder: \\Public\Meridium\Modules \Generation Management\Queries.

About Determining When an APM Event is Created

In GAA Unit records, the APM Event Creation field stores a value that determines whether an APM Event will be created when a new Primary Event is created and linked to a given GAA Unit. The APM Event Creation field can be set to:

- **All Primary Capacity Events:** If this option is selected, then an APM Event will be created each time a Primary Event is created and linked to the GAA Unit. The APM Event will be linked automatically to the Primary Event.
- **MWH Loss Exceeds Reference:** If this option is selected, then an APM Event will be created when a Primary Event is created and linked to the GAA Unit if the value in the Total Equivalent Derate MWh w/out Shadowing field of the Primary Event exceeds the value in the APM Event Creation Reference Value field in the GAA Unit. The APM Event will be linked automatically to the Primary Event.
- **Production Loss Exceeds Reference:** If this option is selected, then an APM Event will be created when a Primary Event is created and linked to the GAA Unit if the value in the Total Equivalent Derate Hours w/out Shadowing field in the Primary Event exceeds the value in the APM Event Creation Reference Value field of the GAA Unit. The APM Event will be linked automatically to the Primary Event.

About Populating the Fuel Code Fields

Fuel code fields in GAA Units are populated using values in GAA Fuel Types records, which store information about the various fuels that can be used by units. Each GAA Fuel Types record represents a unique fuel type.

For example, in GAA Unit records, the Primary Fuel Code field will contain a list of values from the Fuel Description fields in GAA Fuel Types records. The following table shows how the lists in the fuel code fields in GAA Units are populated using values in GAA Fuel Types records.

This Field in GAA Unit Records:	…Is Populated Using These Fields and Format in GAA Fuel Types record:
Primary Fuel Code	Fuel Description (Fuel Code)
Quaternary Fuel Code	Fuel Description (Fuel Code)
Secondary Fuel Code	Fuel Description (Fuel Code)
Tertiary Fuel Code	Fuel Description (Fuel Code)

The baseline APM database contains GAA Fuel Types records that are already populated with values that identify fuels as they are defined by the Regulatory Organization. We recommend that you:

- Do not modify the baseline GAA Fuel Types records so that they match what is defined by Regulatory Organization.
- Do not create your own GAA Fuel Types records.

Access a GAA Unit

Procedure

1. Access the GAA Plant for which you want to access a GAA Unit.
2. In the left pane, select the GAA Unit that you want to access.

   The datasheet for the selected GAA Unit appears in the workspace.

   Note: As needed, you can modify the values in the available fields, and then select 🖫 to save your changes.

Access a Reference Document

About This Task

This topic describes how to access the list of reference documents via the **Unit Summary** workspace. You can also access the list of reference documents when accessing a GAA Unit.

Procedure

1. Access the **Unit Summary** workspace for the GAA Unit whose reference documents you want to access.
2. In the pane, select **Reference Documents**.

   The **Reference Documents** workspace appears, displaying a list of reference documents that are linked to the selected GAA Unit.

   Note: The file that was used for importing existing data will be added as reference documents for the selected Unit.

   Tip: For more information, refer to the Manage Reference Documents section of the Record Manager module for additional options when working with reference documents.

Import Existing Data

About This Task

You can import existing Events, Performance, and reporting data, which have been submitted to a supported regulatory organization (NERC or CEA), into a GAA Unit.

Note: If you have a pop-up blocker enabled on your browser, you need to disable it to import data.

Procedure

1. Access the GAA Unit to which you want to import existing data.
2. In the upper-right corner of the workspace, select **Import Data**.

   The **Import Data** window appears.
3. In the **Select the file** box, select the file from which you want to import the data.

4. In the **Select Year** box, select the year for which you want to import the data. By default, the current year is selected in this field.

5. In the **Regulatory Organization** box, select the Regulatory Organization to which the data will be reported. By default, NERC is selected in this field.

   Note: You can import data only for the primary regulatory organization of a unit.

6. In the **Import Type** box, select the type of the record. By default, Event is selected in this field.

   Note:

   When importing data for an Event, Events are considered related events if the following conditions are met:

   - The value in the Event End Date field of an existing Primary Event matches the value in the Event Start Date field of a new Primary Event.
   - There is a valid event transition between the two events.

   During the import, the Start Date and End Date of the events will be considered in the time zone of the GAA plant. The time zone of the GAA Plant and timezone in which you have logged in to APM should be the same while importing existing data.

   You can import the Performance data for a selected GAA Unit only:

   - If all the months, previous years to current year, contain a Performance record. If no Performance record exists for one of the months, the data will not be imported.
   - If, in the current year, all the months to the current month contain a performance record.

7. Select **Start Import**.

   You are redirected to a new tab in the browser. You must navigate back to the APM tab where status and log file is present.

   Note:

   When importing data:

   - For Event records, if the selected GAA Unit has existing Events, a **Delete** dialog box appears, asking you to confirm that you want to delete the existing Events.
   - For Performance records, if the selected GAA Unit has existing Performance records, an **Update** dialog box appears, asking you to confirm that you want to update the existing Performance records.

   The data is imported. A text file is generated containing the details of the log created during data import.

   Note: When importing data for Performance records, if the selected GAA Unit contains existing Events, after importing the data, the Performance reports for months that contain Events will be in OUT OF SYNC status. You can regenerate the Performance record.

Add a GAA Unit

Before You Begin

- Add a GAA Plant

Procedure

1. Access the GAA Plant for which you want to add a GAA Unit.

2. In the left pane, select ╋.

   A blank datasheet for GAA Unit appears in the workspace.

3. In the **Asset ID** cell, select ⚬⚬⚬.

   The **Asset Finder** window appears.

4. Select the Functional Location to which you want to associate the GAA Unit, and then select **Done**.

   The selected Functional Location appears in the **Asset ID** box as a link. You can select the link to access the details of the Functional Location.

5. As needed, enter values in the available fields.

6. In the upper-right corner of the workspace, select **Site:**.

   Note: A user maybe assigned to multiple sites. By default, the user's default site appears.

7. Select the site to which you want to assign the GAA Unit.

   Note: If the GAA Unit is assigned to the default site, then it can be accessed only by users who have been assigned to the same site. The site selector component becomes read-only after it is saved.

8. Select 💾.

   The GAA Unit is saved.

Delete a GAA Unit

Procedure

1. Access the GAA Plant from which you want to delete a GAA Unit.

   The datasheet for the selected GAA Plant appears in the workspace. A list of GAA Units associated with the selected GAA Plant appears in the left pane.

2. In the left pane, select the GAA Unit that you want to delete.

   The datasheet for the selected GAA Unit appears in the workspace.

   Note: You cannot delete a GAA Unit if it has an associated Primary Event or Performance record.

3. In the left pane, select 🗑.

   The **Delete** dialog box appears, asking you to confirm that you want to delete the selected GAA Unit.

4. Select **Yes**.

   The GAA Unit is unlinked from the associated functional location and the associated record is deleted from the database.

Unit Capacity

About GAA Unit Capacity

GAA Unit records contain four fields that define the capacity of the unit:

- Nameplate Gross Dependable Capacity
- Nameplate Gross Maximum Capacity
- Nameplate Net Dependable Capacity
- Nameplate Net Maximum Capacity

The above fields define the default capacity of a GAA Unit. This capacity is the intended full-load sustained output of a GAA Unit under conditions described by the OEM. The actual capacity for a GAA Unit, however, may vary because of the several reasons:

- Actual conditions may not match the design conditions, such as environment, fuel, etc.

- The unit is operating at reduced output for part of the time due to equipment failures or routine maintenance.
- Fuel quality may be different from original recommendation
- May include restrictions or limitations on air permits and limitations on transmission that force the unit to produce reduced output.

Also, the actual capacity typically decreases over a period of time, because of wear and tear of the equipment and other reasons described above.

In GAA, you can define different capacities for different periods of time. By default, when you add a GAA Unit record, a GAA Unit Capacity record is automatically created with the values defined in the capacity related fields in the GAA Unit record. You can modify this record or add new records. When you create a Performance record for a month for the first time, the values defined in the GAA Unit Capacity record are used. After you save the Performance record, you can continue to use the same values or modify them, as needed.

Access a GAA Unit Capacity Record

Before You Begin

- Add a GAA Unit

Procedure

1. Access the GAA Unit for which you want to view the list of GAA Unit Capacity records.
2. Select the **Capacity** tab.

   A list of GAA Unit Capacity records defined for the selected GAA Unit appears, displaying the following columns of information:

   - **Entity ID**
   - **Start Date**
   - **End Date**
   - **Net Maximum Capacity**
   - **Net Dependable Capacity**
   - **Gross Maximum Capacity**
   - **Gross Dependable Capacity**

   Note: As needed, you can modify the values in the available fields by selecting the link in the **Entity ID** column, and then selecting 🖫 to save your changes.

Add a GAA Unit Capacity Record

Before You Begin

- Add a GAA Unit

Procedure

1. Access the GAA Unit for which you want to add a GAA Unit Capacity record.
2. Select the **Capacity** tab.

   A list of GAA Unit Capacity records defined for the selected GAA Unit appears.

Note: When you add a GAA Unit record, a GAA Unit Capacity record is automatically created with the values defined in the capacity related fields in the GAA Unit record. As needed, you can modify the values in the available fields.

3. In the upper-left corner of the **Capacity** section, select ＋.

   The **Add Capacity** window appears.

4. As needed, enter the values in the available fields.

   Note: If you enter values in all the capacity-related fields and save the datasheet, the specified values will be used to perform various calculations in GAA. If you enter a value in Gross Maximum Capacity field only and save the datasheet, the values in other capacity-related fields will be populated as defined by NERC in the GADS DRI and those values will be used to perform various calculations in GAA.

5. In the upper-right corner of the workspace, select **Site:**.

   Note: By default, the site to which the user is assigned appears.

6. Select the site to which you want to assign the GAA Unit Capacity record.

   Note: If the GAA Unit Capacity record is assigned to the default site, it can be accessed only by users who have been assigned to the same site. The site selector component becomes read-only after it is saved.

7. Select 💾.

   Your changes are saved.

Delete a GAA Unit Capacity Record

Procedure

1. Access the GAA Unit for which you want to delete a GAA Unit Capacity record.
2. Select the **Capacity** tab.

   A list of GAA Unit Capacity records defined for the selected GAA Unit appears.

3. Select the row containing the GAA Unit Capacity record that you want to delete.

   Note: You cannot delete a GAA Unit Capacity record if that is the only record in the list.

4. In the upper-right corner of the **Capacity** section, select 🗑.

   The **Delete Capacity** dialog box appears, asking you to confirm that you want to delete the selected GAA Unit Capacity record.

5. Select **Yes**.

   The selected GAA Unit Capacity record is deleted and the updated list of GAA Unit Capacity records appears.

Performance Record and Report Configuration

Access a List of Performance Records and Reports Configured for a GAA Unit

Before You Begin

- Add a GAA Unit

Procedure

1. Access the GAA Unit for which you want to view the list of configured records and reports.
2. Select the **Performance & Reports** tab.

   A list of Performance records and Regulatory reports configured for the selected GAA Unit appears, displaying the following columns of information:

   - **Entity ID**
   - **Is Associated**
   - **Is Report**
   - **Is Default**
   - **Report Name**
   - **Policy ID**
   - **Report Type**
   - **Weightage Type**

Configure a Performance Record or a Regulatory Report

About This Task

This topic describes how to configure the following:

- Performance Record for NERC
- Regulatory Report: You can configure the following regulatory reports:

  - Event Report for NERC
  - Event Report for CEA

Procedure

1. Access the **GAA Administrator** page.
2. Select the **Configurations** tab.

   A list of Performance records and Regulatory reports configured in GAA appears.

3. In the upper-left corner of the **Configurations** section, select $+$.

   The **Add Report** window appears.
4. If you want to configure a Regulatory report, enter the values in the available fields.

   -or-

   If you want to configure a Performance record:

   a. In the **Record Type** box, select **Performance**.
   b. Clear the **Is Report** check box.
      The following fields are enabled:

      - Policy ID
      - Associated Events Catalog Path
      - Performance Type
      - Weightage Type
   c. Enter the values in the remaining fields.

5. Select 🖫.

   The specified record or report is configured.

Modify a Performance Record or a Regulatory Report

Procedure

1. Access the **GAA Administrator** page.
2. Select the **Configurations** tab.

   A list of Performance records and Regulatory reports configured in GAA appears.

3. Navigate to the row containing the record or report that you want to modify.
4. In the **Entity ID** column, select the link.

   The **Edit Report** window appears.

5. As needed, modify the values in the available fields.

6. Select 💾.

   The Performance record or Regulatory report is configured.

Associate a Performance Record or a Regulatory Report with a GAA Unit

Procedure

1. Access the list of records and reports configured for a GAA Unit with which you want to associate a record or a report.
2. Select the row containing the record or report that you want to associate.
3. In the upper-right corner of the **Performance & Reports** section, select **Associate Report**.

   The **Associate Report** dialog box appears, asking you to confirm that you want to associate the selected record or report.
4. Select **Yes**.

   The selected record or report is associated with the GAA Unit.

Disassociate a Performance Record or a Regulatory Report from a GAA Unit

Procedure

1. Access the list of records or reports configured for a GAA Unit from which you want to disassociate a record or a report.
2. Select the row containing the record or report that you want to disassociate.
3. In the upper-right corner of the **Performance & Reports** section, select **Disassociate Report**.

   The **Disassociate Report** dialog box appears, asking you to confirm that you want to disassociate the selected record or report.
4. Select **Yes**.

   The selected record or report is disassociated from the GAA Unit.

Delete a Performance Record or a Regulatory Report

Procedure

1. Access the **GAA Administrator** page.
2. Select the **Configurations** tab.

   A list of Performance records and Regulatory reports configured in GAA appears.
3. Select the row containing the record or report that you want to delete.

   Note: You cannot delete a Performance record if it is associated with a GAA Unit.
4. In the upper-right corner of the **Configurations** section, select 🗑.

   The **Delete Report** dialog box appears, asking you to confirm that you want to delete the selected record or report.
5. Select **Yes**.

   The selected record or report is deleted and the updated list of reports appears.

Chapter

11

Data Loaders

Topics:

About the GAA Data Loaders

GAA provides three data loaders.

- Generation Availability Analysis (GAA) Amplification Codes Data Loader

  This data loader allows you to import the latest Amplification Codes to the APM system to populate the Amplification Codes family.
- Generation Availability Analysis (GAA) Cause Codes Data Loader

  This data loader allows you to import the latest Cause Codes to the APM system to populate the Cause Codes family.
- Generation Availability Analysis (GAA) Events Data Loader

  This data loader allows you to import the primary, related, and contributing Events to APM.

About the GAA Data Loaders Requirements

To use the GAA Amplification Codes Data Loader, GAA Cause Codes Data Loader, and GAA Events Data Loader, your organization must have completed the deployment of the Generation Availability Analysis module.

Security Settings

The Security User performing the data load operation must be associated with either the MI Data Loader User or MI Data Loader Admin Security Role, and must also be associated with the MI GAA Administrator Security Group or a Security Role that is associated with this Security Group.

About the GAA Data Loaders General Loading Strategy

Important: When importing Amplification and Cause Codes using the GAA Data Loaders, you must ensure that the latest Amplification and Cause Codes from the corresponding documentation is used.

Limitations

This section documents a list of the limitations for the GAA Data Loaders:

1. You must use the GAA Amplification Codes Data Loader workbook (Generation Availability Analysis (GAA) Amplification Codes.xlsx), GAA Cause Codes Data Loader workbook (Generation Availability Analysis (GAA) Cause Code.xlsx), and GAA Events Data Loader workbook (Generation Availability Analysis (GAA) Events.xlsx. Any modifications made by the user to the values in column headings in any of the worksheets will not be imported.

   Note: Any column values in a customized format will not be imported by the GAA Amplification Codes Data Loader and the GAA Cause Codes Data Loader.
2. If the user imports the same data multiple times, the most recently imported data is included in the database. If a record currently resides in the database and is then reimported, the newly imported file will replace the existing file in the database. The GAA Data Loader does not append the existing record.

Recommendations

While using the GAA Events Data Loader, we recommend that you:

- Include the primary event and its related and contributing events in the same batch.

- Process only up to 100 records in a batch.
- Modify only the fields that are editable from the APM application.

About the GAA Data Loaders Workbook Layout and Use

To import Amplification codes, Cause codes, and Events, APM provides the GAA Amplification Codes Data Loader workbook (Generation Availability Analysis (GAA) Amplification Codes.xlsx), GAA Cause Codes Data Loader workbook (Generation Availability Analysis (GAA) Cause Code.xlsx), and GAA Events Data Loader workbook (Generation Availability Analysis (GAA) Events.xlsx). These workbooks support baseline GAA in APM. You must use these workbooks to load Amplification Codes, Cause Codes, and Events, respectively.

Tip: You can download the GAA Events data loader template from either the **Download Templates** window of the APM Power Generation category or by selecting the Export button (⤓) in the **Events** section of the **Units Summary** workspace.

GAA Amplification Codes Data Loader

The following table lists the worksheets that are included in the Generation Availability Analysis (GAA) Amplification Codes.xlsx workbook:

Worksheet	Description
Configuration Worksheet	The Configuration worksheet is needed to describe the type of data that you will be loading and how that data should be handled during the data load.
AmplificationCodes Worksheet	The AmplificationCodes Worksheet is used to import the latest Amplification Codes to the APM system to populate the Amplification Code family.

Configuration Worksheet

Field Caption	Field ID	Data Type (Length)	Comments
Data Worksheet ID	DATA_WORKSHEET_ID	Character	This column contains the name of the <data> worksheet where the actual data is located. It needs to have the same name as the <data> worksheet in the data loader workbook.
Batch Size	BATCH_SIZE	Character	Modifying this field is required to determine the number of records processed in each batch. Enter the batch size you want, and the Data Loader will process that many records per batch. For example, if you want to use a batch size of 100, enter 100, and the data loader will process 100 records per batch. **Note:** The recommended batch size is 100. If the **Batch Size** column is removed from the source workbook, the data loader will default to a batch size of 100. In addition to processing the data in batches, the log file reports progress by batch.

Field Caption	Field ID	Data Type (Length)	Comments
Primary Family ID	PRIMARY_FAMILY_ID	Character	Depending on the type of data that you are working with, this will contain the Relationship Family ID or the Entity Family ID. You can also allow the data in source file to determine the Family ID by encapsulating the Field ID that contains the Family ID data in brackets (<>). For example, if in the <data> worksheet, there exists a column with the ID of PRIMARY_FAMILY_ID, where each row contains the corresponding Family ID, then in this column, you should put the value of <PRIMARY_FAMILY_ID>. If the Family ID in the APM metadata contains spaces, then you must use this feature.
Primary Family Key Fields	PRIMARY_FAMILY_KEY_FIELDS	Character	This column contains the Field IDs associated with the Primary Family that are used to uniquely identify a record. If more than one field is to be used, then each Field ID needs to be separated by a	(Pipe) character. In the case where you are loading data into a relationship, if no keys fields exist or are used, use the <none> constant. If the Primary Action is ACTION_INSERTONLY, then no key fields need to be specified, so you can use the <none> constant.
Family Type	FAMILY_TYPE	Character	The value is this column should be Entity or Relationship depending on the type of data that is being loaded.

Field Caption	Field ID	Data Type (Length)	Comments
Predecessor Family ID	PRED_FAMILY_ID	Character	When the Family Type is Relationship, this column will contain the value of the Entity Family ID that is the predecessor in the relationship. Otherwise, it should contain the <none> constant. You can also use the data in each of the rows to determine the Predecessor Family ID.
Predecessor Family Key Fields	PRED_FAMILY_KEY_FIELDS	Character	This column contains the Field ID or IDs associated with the Predecessor Family that are used to uniquely identify the predecessor record. If more than one field is to be used, then each Field ID needs to be separated by a | (Pipe) character. If the Predecessor Action is ACTION_INSERTONLY, then no key fields need to be specified, so you can use the <none> constant.
Successor Family ID	SUCC_FAMILY_ID	Character	When the Family Type is Relationship, this column will contain the value of the Entity Family ID that is the successor in the relationship. Otherwise, it should contain the <none> constant. You can also use the data in each of the rows to determine the Successor Family ID.

Field Caption	Field ID	Data Type (Length)	Comments
Successor Family Key Fields	SUCC_FAMILY_KEY_FIELDS	Character	This column contains the Field ID or IDs associated with the Successor Family that are used to uniquely identify the successor record. If more than one field is to be used, then each Field ID needs to be separated by a | (Pipe) character. If the Successor Action is ACTION_INSERTONLY, then no key fields need to be specified, so you can use the <none> constant.
Primary Action	PRIMARY_ACTION	Character	The value in this column will determine the action that will be applied to the Primary Family records. If the Family Type is Entity, then the possible values are: • ACTION_INSERTONLY • ACTION_INSERTUPDATE • ACTION_UPDATEONLY • ACTION_DELETE • ACTION_PURGE Deleting a record and purging a record will both delete the current record, the difference being that the purge action will delete the record and all of the links or relationships tied to that record. The delete action will simply attempt to delete the record, and if it is related to another record, the delete will fail. If The Family Type is Relationship, then the possible values are: • ACTION_INSERTONLY • ACTION_INSERTUPDATE • ACTION_UPDATEONLY • ACTION_DELETE

Field Caption	Field ID	Data Type (Length)	Comments
Predecessor Action	PRED_ACTION	Character	The value in this column will determine the action that will be applied to the Predecessor Family records. The possible values are: • ACTION_INSERTONLY • ACTION_INSERTUPDATE • ACTION_UPDATEONLY • ACTION_DELETE • ACTION_PURGE • ACTION_LOCATE If The Family Type is Entity then the values needs to be: • ACTION_NONE
Successor Action	SUCC_ACTION	Character	The value in this column will determine the action that will be applied to the Successor Family records. The possible values are: • ACTION_INSERTONLY • ACTION_INSERTUPDATE • ACTION_UPDATEONLY • ACTION_DELETE • ACTION_PURGE • ACTION_LOCATE If The Family Type is Entity then the values needs to be: • ACTION_NONE
Insert with Null Values?	OPTION_INSERT_ON_NULL	Boolean	When setting field values on a new record, if a value coming across is NULL, the field values will be set to NULL if this option is set to True.
Update with Null Values?	OPTION_UPDATE_ON_NULL	Boolean	When setting field values on an existing record, if a value coming across is NULL, the field values will be set to NULL if this option is set to True.

Field Caption	Field ID	Data Type (Length)	Comments
Replace an Existing Link?	OPTION_REPLACE_EXISTING_LINK	Boolean	The Replace Existing Relationship option is used to determine how a relationship is to be maintained by its cardinality definition. For example, the relationship Location Contains Asset that is defined in the Configuration Manager. It has a cardinality defined as Zero or One to Zero or One, has a Location LP-2300, and contains the Asset P-2300. If, in the data load, you assign the Asset P-5000 to be contained in the Location LP-2300, and you have set the Replace Existing Link property to True, then the data loader will link P-5000 to LP-2300 and unlink P-2300 from LP-2300. This assumes that P-5000 is not currently linked to another location. The same is true for a relationship that is defined as Zero or One to Zero or Many, or Zero or Many to Zero or One.
Allow Change of Family?	OPTION_ALLOW_CHANGE_OF_FAMILY	Boolean	Allows the data loader to move an entity from one family to another. For example, this would allow an entity that is currently assigned to the Centrifugal Pump family to be moved to the Reciprocating Pump family. All relationships will be maintained as long as the family to which the entity is being moved allows the same relationships. **Note:** Because of the extra processing required, by selecting this option, the interface performance will decrease.

Amplification Codes Worksheet

Field Caption	Field ID	Data Type (Length)	Comments
Amplification Code	MI_GADS_AMPL_CODE_AMPL_CODE_C	Character (50)	This field is required.
Description	MI_GADS_AMPL_CODE_DESC_C	Character (1000)	This field is required.
Regulatory Organization	MI_GADS_AMP_COD_REG_REP_ORG_C	Character (50)	This field is required.
Event Type	MI_GADS_AMPL_CODE_EVEN_TYPE_C	Character (50)	None
Enterprise Support 1 Code	MI_REF_TABLES_ENTER_SUPPO_1_CODE_CHR	Character (50)	None
Enterprise Support 1 Description	MI_REF_TABLES_ENTER_SUPPO_1_DESCR_CHR	Character (50)	None
Enterprise Support 2 Code	MI_REF_TABLES_ENTER_SUPPO_2_CODE_CHR	Character (50)	None
Enterprise Support 2 Description	MI_REF_TABLES_ENTER_SUPPO_2_DESCR_CHR	Character (50)	None
Enterprise Support 3 Code	MI_REF_TABLES_ENTER_SUPPO_3_CODE_CHR	Character (50)	None
Enterprise Support 3 Description	MI_REF_TABLES_ENTER_SUPPO_3_DESCR_CHR	Character (50)	None
Enterprise Support 4 Code	MI_REF_TABLES_ENTER_SUPPO_4_CODE_CHR	Character (50)	None
Enterprise Support 4 Description	MI_REF_TABLES_ENTER_SUPPO_4_DESCR_CHR	Character (50)	None
Enterprise Support 5 Code	MI_REF_TABLES_ENTER_SUPPO_5_CODE_CHR	Character (50)	None
Enterprise Support 5 Description	MI_REF_TABLES_ENTER_SUPPO_5_DESCR_CHR	Character (50)	None
Enterprise Support 6 Code	MI_REF_TABLES_ENTER_SUPPO_6_CODE_CHR	Character (50)	None
Enterprise Support 6 Description	MI_REF_TABLES_ENTER_SUPPO_6_DESCR_CHR	Character (50)	None
Enterprise Support 7 Code	MI_REF_TABLES_ENTER_SUPPO_7_CODE_CHR	Character (50)	None
Enterprise Support 7 Description	MI_REF_TABLES_ENTER_SUPPO_7_DESCR_CHR	Character (50)	None
Enterprise Support 8 Code	MI_REF_TABLES_ENTER_SUPPO_8_CODE_CHR	Character (50)	None

Field Caption	Field ID	Data Type (Length)	Comments
Enterprise Support 8 Description	MI_REF_TABLES_ENTER_SUPPO_8_DESCR_CHR	Character (50)	None
Unit Type	MI_GADS_AMPL_CODE_UNIT_TYPE_N	Character (50)	None

GAA Cause Codes Data Loader

The following table lists the worksheet that is included in the Generation Availability Analysis (GAA) Cause Code.xlsx workbook:

Worksheet	Description
CauseCode	The CauseCodes worksheet is used to import the latest GADS Cause Codes to the APM system to populate the GADS Cause Code family.
Mapped ID	The Mapped to ID worksheet is used to populate values based on your selection in the Regulatory Reporting Organization in the Cause Codes record.
Unique Key	The Unique Key field is populated and must be in a sequential order. This field is required.

Cause Code Worksheet

Field Caption	Field ID	Data Type (Length)	Comments
Code	MI_CAUSECODE_CODE_C	Character (5)	This field is required.
Unit Type	MI_CAUSECODE_UNITTYPE	Numeric	This field is required.
Cause Code Description	MI_CAUSECODE_DESC	Character (250)	This field is required.
System	MI_CAUSECODE_SYSTEM	Character (50)	This field is required.
Component	MI_CAUSECODE_COMPONENT	Character (50)	This field is required.
Is OMC Event?	MI_CAUSECODE_OMC	Boolean	For an OMC Event, set this field to TRUE. For a non-OMC Event, this field must be blank.
Regulatory Organization	MI_GMGADCAU_REG_REP_ORG_C	Character (50)	This field is required.

GAA Events Data Loader

The following table lists the worksheet that is included in the Generation Availability Analysis (GAA) Events.xlsx workbook.

Worksheet	Description
Primary and Related Events	The Primary and Related Events worksheet is used to import the primary and related events.
Contributing Events	The Contributing Events worksheet is used to import the contributing events that are associated with the primary events.

Primary and Related Events Worksheet

Field Caption	Field ID	Data Type (Length)	Comments
Batch Number	BATCH_NUMBER	Numeric	This field is required. Batch Numbers are used for processing records in batches. Records with the same batch number are processed within a single batch. First, the primary events will be processed and then the related events.
Timezone ID	TIMEZONE_ID	Character	This field is required. The date fields in the worksheet will be considered in the specified timezone.
Unit ID	MI_GMCAPINC_UNIT_ID_C	Character	This field is required. **Note:** You cannot modify the Unit ID of an existing event.
Event ID	MI_EVENT_ID	Character	If an Event ID is provided, the record with the corresponding Event ID will be updated. Otherwise, the import fails. **Note:** You cannot modify the Event ID of an existing event.
Parent Event ID	MI_PARENT_EVENT_ID	Character	If a Parent Event ID is provided, the event will be created or updated as related event to the primary event with Event ID as Parent Event ID.
Capacity Event Type	MI_GMCAPINC_CAP_EVT_TYPE_C	Character	This field is required.
Event Start Date	MI_EVENT_STRT_DT	Date	This field is required.
Event End Date	MI_EVENT_END_DT	Date	None
Cause Code	MI_GMCAPINC_CAUSE_CD_C	Character	None
Amplification Code	MI_GMCAPINC_AMPLI_CD_C	Character	None
Is Dominant Derate	MI_GMPRIINC_DOM_DRT_F	Boolean	None

Field Caption	Field ID	Data Type (Length)	Comments
Work Started Date	MI_GMCAPINC_WORK_STRT_D	Date	None
Work Ended Date	MI_GMCAPINC_WORK_ENDED_D	Date	None
Verbal Description	MI_EVENT_SHRT_DSC_CHR	Character	None
Revision	MI_GMCAPINC_REV_N	Numeric	This field is required.
Gross Derate Amount	MI_GMCAPINC_G_DERAT_AMOUN_N	Numeric	This field is required.
Net Derate Amount	MI_GMCAPINC_N_DERAT_AMOUN_N	Numeric	This field is required.

Contributing Events Worksheet

Important: You can create a contributing event only for a primary event that is associated with a GAA Unit for which the primary regulatory body is North American Electric Reliability Corporation (NERC).

Field Caption	Field ID	Data Type (Length)	Comments
Batch Number	BATCH_NUMBER	Numeric	This field is required. Batch Numbers are used for processing records in batches. Records with the same batch number are processed within a single batch.
Timezone ID	TIMEZONE_ID	Character	This field is required. The date fields in the worksheet will be considered in the specified timezone.
Event ID	MI_EVENT_ID	Character	If an Event ID is provided, the record with the corresponding Event ID will be updated. Otherwise, the import fails. **Note:** You cannot modify the Event ID of an existing event.
Parent Event ID	MI_PARENT_EVENT_ID	Character	This field is required. The event will be created or updated as a contributing event to the primary event with Event ID as Parent Event ID. **Note:** If no parent level event exists for a contributing event, the contributing event is not created.

Field Caption	Field ID	Data Type (Length)	Comments
Cause Code	MI_GMCAPINC_CAUSE_CD_C	Character	None
Work Started Date	MI_GMCAPINC_WORK_STRT_D	Date	None
Work Ended Date	MI_GMCAPINC_WORK_ENDED_D	Date	None
Man-hours Worked	MI_GMCAPINC_MANH_WORKE_N	Numeric	None
Event Contribution Code	MI_GMCAPINC_EVT_CONTR_CD_C	Character	None
Problem Alert	MI_GMCAPINC_PROBLEM_ALERT_F	Boolean	None
Verbal Description	MI_EVENT_SHRT_DSC_CHR	Character	None
Revision	MI_GMCAPINC_REV_N	Numeric	This field is required.

About the GAA Data Loaders Load Verification

About This Task

A successful data import can be verified using one of the following methods:

- On the **Data Loaders** page, view the value in the **Status and Log** column. If the value Complete appears in the **Status and Log** column, then the data has been loaded successfully.
- On the **Data Loaders** page, select the hyperlink in the **Job ID** column to access the Interface Log datasheet, and then view the value in the Status field. If the value Complete appears in the Status field, then the data has been loaded successfully.
- Navigate to the Primary Event datasheet and view the fields that belong to the GADS Amplification Codes and GADS Cause Codes families. If you can populate the fields using values available in the drop-down lists on this datasheet, then the data has been loaded successfully.
- In the **Unit Summary** workspace, select the **Events** tab to view the list of events. If the imported events appear and the fields of the existing events are updated, the data has been loaded successfully.

Chapter

12

Deployment and Upgrade

Topics:

-

Deployment

Deployment

Refer to the deployment information here Deploy GAA for the First Time.

Upgrade

Upgrade

Refer to the upgrade information here Upgrade or Update GAA to V5.1.4.0.0.

Chapter

13

Reference

Topics:

General Reference

GAA Data Model

The following diagram shows how the families used in GAA are related to one another.
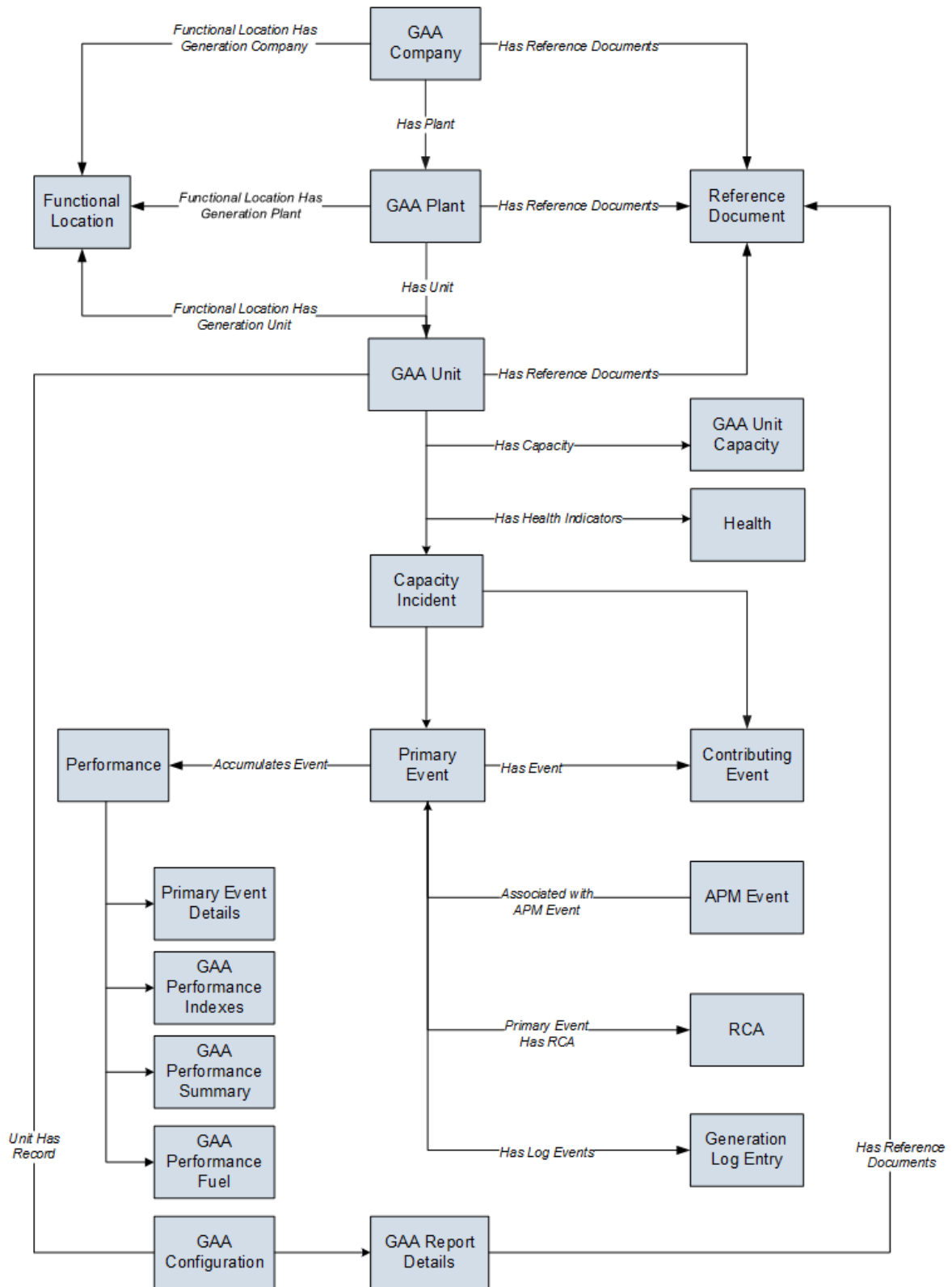
Note: In the diagram, boxes represent entity families and arrows represent relationship families that are configured in the baseline database. You can determine the direction of the each relationship definition

from the direction of the arrowhead: the box from which the arrow originates is the predecessor, and the box to which the arrowhead points is the successor.

In addition to the families shown in the GAA data model, the following additional families are used for GAA reference:

- Amplification Codes
- Cause Codes
- GAA Code Mapping
- GAA Event Categories
- GAA Event Transition
- GAA Event Types
- GAA Fuel Types
- GAA Supported Organizations
- GAA Unit Types

GAA 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
MI GAA Viewer	MI APM Viewer MI GAA Administrator MI GAA Analyst MI GAA Operator MI GAA Supervisor
MI GAA Administrator	MI GAA Administrator
MI GAA Analyst	MI GAA Analyst MI GAA Operator MI GAA Supervisor

Note:

To access the Health Summary page for an Asset, you must be member of one of the following Asset Health Manager Security Groups:

- MI AHI Administrator
- MI AHI User
- MI AHI Viewer

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

Family	MI GAA Viewer	MI GAA Administrator	MI GAA Analyst
Entity Families			
Amplification Codes	View	View, Update, Insert, Delete	View, Update, Insert
APM Event	View	View, Update, Insert, Delete	View, Update, Insert
Capacity Incident	View	View, Update, Insert, Delete	View, Update, Insert
Cause Codes	View	View, Update, Insert, Delete	View
Contributing Event	View	View, Update, Insert, Delete	View, Update, Insert
GAA Code Mapping	View	View, Update, Insert, Delete	View
GAA Company	View	View, Update, Insert, Delete	View
GAA Configuration	View	View, Update, Insert, Delete	View
GAA Event Categories	View	View, Update, Insert, Delete	View
GAA Event Transition	View	View, Update, Insert, Delete	View
GAA Event Types	View	View, Update, Insert, Delete	View, Update, Insert
GAA Fuel Types	View	View, Update, Insert, Delete	View, Update, Insert
GAA Performance	View	View, Update, Insert, Delete	View, Update, Insert
GAA Performance Fuel	View	View, Update, Insert, Delete	View, Update, Insert
GAA Performance Indexes	View	View, Update, Insert, Delete	View, Update, Insert
GAA Performance Summary	View	View, Update, Insert, Delete	View, Update, Insert
GAA Plant	View	View, Update, Insert, Delete	View
GAA Report Details	View	View, Update, Insert, Delete	View, Update, Insert
GAA Supported Organizations	View	View, Update, Insert, Delete	View
GAA Unit	View	View, Update, Insert, Delete	View
GAA Unit Capacity	View	View, Update, Insert, Delete	View
GAA Unit Types	View	View, Update, Insert, Delete	View
GAA Unit States	View	View, Update, Insert, Delete	View
Generation Pool	View	View, Update, Insert, Delete	View
Primary Event	View	View, Update, Insert, Delete	View, Update, Insert
Primary Event Details	View	View, Update, Insert, Delete	View, Update, Insert, Delete
Primary Event History	View	View, Update, Insert, Delete	View, Insert
RCA Analysis	View	View	View
Reference Document	View	View, Update, Insert, Delete	View, Update, Insert
Relationship Families			
Associated with APM Event	View	View, Update, Insert, Delete	View, Update, Insert, Delete

Family	MI GAA Viewer	MI GAA Administrator	MI GAA Analyst
Functional Location Has Generation Company	View	View, Update, Insert, Delete	View
Functional Location Has Generation Plant	View	View, Update, Insert, Delete	View
Functional Location Has Generation Unit	View	View, Update, Insert, Delete	View
Has Capacity History	View	View, Update, Insert, Delete	View, Update, Insert, Delete
Has Incident	View	View, Update, Insert, Delete	View, Update, Insert, Delete
Has Plant	View	View, Update, Insert, Delete	View
Has Reference Documents	View	View, Update, Insert, Delete	View, Update, Insert, Delete
Has Unit	View	View, Update, Insert, Delete	View
Log has Events	View	View, Update, Insert, Delete	View, Update, Insert
Primary Incident Has RCA Analysis	View	View, Update, Insert, Delete	View, Update, Insert, Delete
Unit Has Records	View	View, Update, Insert, Delete	View

GAA URLs

There is one URL route associated with Generation Availability Analysis: **gaa**. The following table describes the various paths that build on the route, and the elements that you can specify for each.

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

Element	Description	Accepted Value(s)	Notes
gaa/dashboard/0: Displays the **GAA Overview** page.			
gaa/<UnitKey>/performance/0 : Displays the **Performance & Reports** workspace for the specified GAA Unit.			
<UnitKey>	Specifies the GAA Unit for which you want to access the Performance records and Reports.	Any numeric Unit Key that corresponds to an existing GAA Unit.	Opens the workspace in a new tab.
gaa/<UnitKey>/unitsummary/0: Displays the **Unit Summary** workspace for the specified GAA Unit.			
<UnitKey>	Specifies the GAA Unit whose summary you want to view.	Any numeric Unit Key that corresponds to an existing GAA Unit.	Opens the workspace in a new tab.
gaa/<PrimaryEventKey>/primaryevent/null/null/0: Displays the Event datasheet in **Events** workspace for the specified Primary Event.			
<PrimaryEventKey>	Specifies the Primary Event whose datasheet you want to view.	Any numeric Primary Event Key that corresponds to an existing Primary Event.	Opens the workspace in a new tab.

Element	Description	Accepted Value(s)	Notes
gaa/<UnitKey>/null/null/eventlists: Displays the list of Events in the **Events** workspace for the specified GAA Unit.			
<UnitKey>	Specifies the GAA Unit for which you want to access the list of Events.	Any numeric Unit Key that corresponds to an existing GAA Unit.	Opens the workspace in a new tab.

Example URLs

Example URL	Destination
gaa/dashboard/0	The **GAA Overview** page.
gaa/64256144022/ performance/0	The **Performance & Reports** workspace for the specified GAA Unit with Unit Key 64256144022
gaa/64256144022/ unitsummary/0	The **Unit Summary** workspace for the specified GAA Unit with Unit Key 64256144022
gaa/64256144030/ primaryevent/null/null/0	The Event datasheet in **Events** workspace for the specified Primary Event with Primary Event Key 64256144030
gaa/64256133930/null/null/ eventlists	The list of Events in the **Events** workspace for the specified GAA Unit with Unit Key 64256133930

GAA System Code Tables

The following table lists the System Code Tables that are used by Generation Availability Analysis:

Table ID	Table Description	Function
MI_GAA_COMMON_MODE_OUTAGE_TYPES	Holds values for types of Common Mode Outage.	Populates the Common Mode Outage field in the Primary Event record.
MI_GAA_EVENT_CONTR_CODE	Event Contribution Code.	Populates the Event Contribution Code field in the Contributing Event record.
MI_GAA_MODULE_TYPE	Holds values for types of GAA Company.	Populates the GAA Type field.
MI_GAA_REVIS_N	Revision number.	Populates the Revision field in the Primary Event record.
MI_GAA_UNIT_APM_EVENT_CRT	Holds values for APM Events.	Populates the APM Event Creation field in the Unit record.
MI_GAA_UNIT_DRT_CALCU_METH	Holds values for Calculation Method.	Populates the Derating Calculation Method field in the Unit record.

Table ID	Table Description	Function
MI_GAA_UNIT_GENER_COST_MODEL	Holds values for Cost Model.	Populates the Generation Cost Model field in the Unit record.
MI_GAA_UNIT_RPT_CAP_DATA	Holds values for reporting the capacity data.	Populates the Report Capacity Data field in the Unit record.
MI_GM_FAILURE_MECHANISM	Holds values for Failure Mechanism.	Populates the Failure Mechanism code field in the Primary Event record.
MI_GM_NERC_REPORT_FORMAT	Holds values for Report Format.	Populates the Report Format field in GAA Report records.
MI_GM_NERC_REPORT_TYPE	Holds values for Report Type.	Populates the Report Type field in GAA Report records.
MI_GM_POWER_PRICE_ZONE	Holds values for Zone.	Populates the Zone field in GAA Unit records.
MI_GM_POWER_REGION	Holds values for Region.	Populates the Region field in GAA Unit records.
MI_GM_POWER_SUBREGION	Holds values for Subregion.	Populates the Subregion field in GAA Unit records.
MI_GM_STATE	Holds values for State.	Populates the State field in the following records: • GAA Company • GAA Plant
MI_GM_UNIT_LOADING	Holds values for Default Unit Loading.	Populates the Default Unit Loading field in GAA Unit records.

GAA State Management for Primary Events

When you are working with Primary Event records, you can use state management to facilitate a workflow that tracks the progress of the events. When you access a Primary Event, options appear that you can use to manage the states for Primary Events. You can follow the standard procedure for managing record states. The following baseline record states are configured for the Primary Event family:

- **New:** Indicates that a new Primary Event is created. You can modify or delete a Primary Event that is in this state.
- **In Progress:** Indicates that the Primary Event is ready to be proposed to the supervisor. You can modify or delete a Primary Event that is in this state.
- **Pending Review:** Indicates that the Primary Event needs to be reviewed. You can modify or delete a Primary Event that is in this state.
- **Reviewed:** Indicates that the Primary Event has been reviewed and is awaiting Unit approval. You can modify or delete a Primary Event that is in this state.
- **Unit Approved:** Indicates that all the data in a GAA Unit associated with the Primary Event has been approved. You can modify or delete a Primary Event that is in this state.
- **Approved:** Indicates that the Primary Event has been approved and is ready to be submitted to NERC. After the state of a Primary Event is changed to Approved, you cannot modify or delete the Primary Event.

Illustration of Primary Events State Configuration
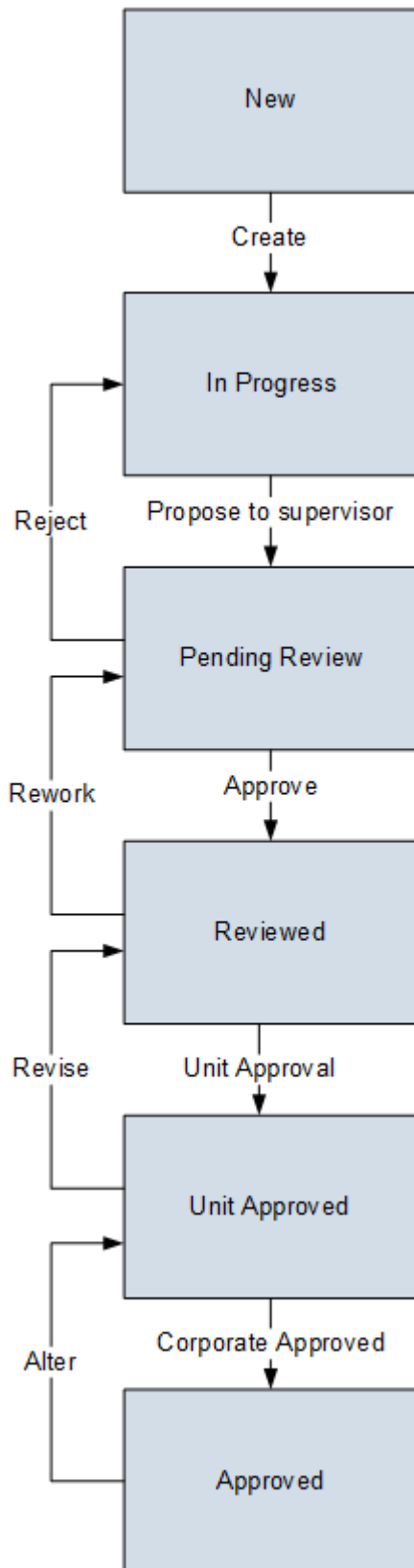
Reserved States and Operations

The following table lists the baseline states and operations and indicates which of these states and operations are reserved. You cannot remove or modify reserved states or operation. You can, however, add your own states and operations to the State Configuration.

State	Is Reserved?
New	No
In Progress	Yes
Pending Review	No
Reviewed	No
Unit Approved	Yes
Approved	Yes

Operation	Is Reserved?
Create	Yes
Propose to Supervisor	Yes **Note:** You can rename the Propose to Supervisor operation but cannot remove it.
Reject	Yes **Note:** You can rename the Reject operation but cannot remove it.
Approve	No
Rework	No
Unit Approval	Yes
Revise	Yes **Note:** You can rename the Revise operation but cannot remove it.
Corporate Approved	Yes
Alter	Yes

State Configuration Roles

The following table lists the baseline states and indicates which State Configuration Roles are assigned to each state and corresponding operation:

State	Operation	Primary Role	Optional Role
New	Create	MI GAA Operator	MI GAA Supervisor MI GAA Analyst MI GAA Administrator
In Progress	Propose to Supervisor	MI GAA Operator	MI GAA Supervisor MI GAA Analyst MI GAA Administrator
Pending Review	Approve	MI GAA Supervisor	MI GAA Analyst MI GAA Administrator
	Reject	MI GAA Operator	
Reviewed	Unit Approval	MI GAA Analyst	MI GAA Administrator
	Rework	MI GAA Supervisor	
Unit Approved	Corporate Approved	MI GAA Administrator	N/A
	Revise	MI GAA Analyst	
Approved	Alter	MI GAA Administrator	N/A

GAA State Management for Performance Records

When you are working with Performance records, you can use state management to facilitate a workflow that tracks the progress of the Performance records. When you access a Performance record, options appear that you can use to manage the states for Performance records. You can follow the standard procedure for managing record states. The following baseline record states are configured for the GAA Performance family:

- **New:** Indicates that a new Performance record is created. You can modify or delete a Performance record that is in this state.
- **In Progress:** Indicates that the Performance record is ready to be sent for Unit Approval. You can modify or delete a Performance record that is in this state.
- **Unit Approved:** Indicates that all the data in a GAA Unit associated with the Performance record has been approved. This record can now be sent for Corporate Approval. You can modify or delete a Performance record that is in this state.
- **Approved:** Indicates that the Performance record has been approved and is ready to be submitted to NERC. After the state of a Performance record is changed to Approved, you cannot modify or delete the Performance record.

Illustration of Performance Records State Configuration
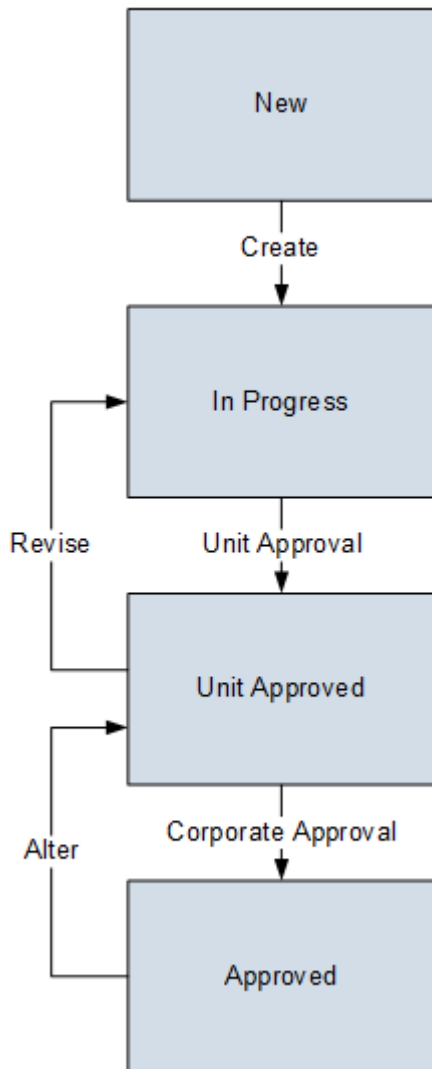
Reserved States and Operations

The following table lists the baseline states and operations and indicates which of these states and operations are reserved. You cannot remove or modify reserved states or operation. You can, however, add your own states and operations to the State Configuration.

State	Is Reserved?
New	No
In Progress	Yes
Unit Approved	Yes
Approved	Yes

Operation	Is Reserved?
Create	Yes
Unit Approval	Yes
Revise	Yes **Note:** You can rename the Revise operation but cannot remove it.
Corporate Approval	Yes
Alter	Yes

State Configuration Roles

The following table lists the baseline states and indicates which State Configuration Roles are assigned to each state and corresponding operation:

State	Operation	Primary Role	Optional Role
New	Create	MI GAA Analyst	MI GAA Administrator
In Progress	Unit Approval	MI GAA Analyst	MI GAA Administrator
Unit Approved	Revise	MI GAA Analyst	N/A
	Corporate Approval	MI GAA Administrator	
Approved	Alter	MI GAA Administrator	N/A

GAA Site Filtering

Site filtering in GAA is achieved by specifying a Site Reference Key for a record. Users must have privileges for the relevant site to access records for the specified site. Users can be assigned to one or many sites. They will be able to see only the records that are assigned to their site(s) or that are global records.

Site filtering is enabled for the following families:

- **Contributing Event:** A new Contributing Event record will inherit the site from the associated Primary Event and GAA Unit. After a Contributing Event record is created, you cannot modify the site assigned to the Contributing Event record.
- **GAA Company:** You can assign any site to GAA Company record from the available sites. After you save the changes, you cannot modify the site.
- **GAA Performance:** A new Performance record will inherit the site from the associated GAA Unit. After a Performance record is created, you cannot modify the site assigned to a Performance record.
- **GAA Plant:** You can assign any site to GAA Plant from the available sites. This site could be different than the site assigned to a GAA Company record. After you save the changes, you cannot modify the site.
- **GAA Report Details:** A new record will inherit the site from the associated GAA Unit. After a record is created, you cannot modify the site assigned to the record.
- **GAA Unit:** You can assign any site to GAA Unit from the available sites. This site could be different than the site assigned to a GAA Company record or a GAA Plant record. After you save the changes, you cannot modify the site.

- **GAA Unit Capacity:** A new Unit Capacity record will inherit the site from the associated GAA Unit. After a Unit Capacity record is created, you cannot modify the site assigned to the Unit Capacity record.
- **Primary Event:** A new Primary Event record will inherit the site from the associated GAA Unit. After a Primary Event record is created, you cannot modify the site assigned to the Primary Event record.
- **Primary Event History:** The information that appears on the **Revision History** page will inherit the site from the associated GAA Unit.
- **Primary Event Details:** The information that appears in the **Unit Summary** workspace will inherit the site from the associated GAA Unit.
- **Reference Document:** A new Regulatory Report record will inherit the site from the associated GAA Unit. After a record is created, you cannot modify the site assigned to the record.

Site filtering is not enabled for the following families. The records in these families are considered as Global records.

- GAA Configuration
- Amplification Code
- Cause Code
- GAA Fuel Types

Consider an organization that has three sites, Site X, Site Y, and Site Z and contains the following records:

- Event 1: Assigned to Site X
- Event 2: Assigned to Site Y
- Event 3: Assigned to Site Z

Scenario 1: User assigned to only Site X

When this user accesses the GAA Overview page, the user will be able to see the records that are assigned to Site X:

- Event 1: Assigned to Site X

Scenario 2: User assigned to both Site X and Site Y

When this user accesses the GAA Overview page, the user will be able to see the records that are assigned to Site X and Site Y:

- Event 1: Assigned to Site X

- Event 2: Assigned to Site Y

Scenario 3: Super User

When this user accesses the summary of a GAA Unit, the user will be able to see the records that are assigned to any of the sites:

- Event 1: Assigned to Site X
- Event 2: Assigned to Site Y
- Event 3: Assigned to Site Z

Family Field Descriptions

Amplification Codes Records

Amplification Codes records store information about the fields in the Amplification Codes family that are used to populate the Amplification Code field in a Primary Event record. This topic provides an alphabetical list of the fields that exist for the Amplification Code family and describes how the fields will be used to populate the Amplification Code field in an Event record. The information in the table reflects the baseline state and behavior of these fields. This list is not comprehensive.

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
Amplification Code	Character	Identifies the cause of an outage and is used to populate the Amplification Code field in the Event record.	By default, this field is populated with the Amplification Codes included in the Amplification Codes family. You can use the GAA Data Loaders to import the latest Amplification Codes. This value is defined by NERC in the GADS DRI and CEA in the Generation Equipment Status ERIS.
Description	Character	Describes the type of Amplification Code.	You can enter a value manually.
Event Type	Character	Indicates the type of event associated with the Amplification Code.	A baseline rules exists to populate this field from the GAA Event Types family.
Regulatory Organization	Character	Identifies the council to which data will be reported.	A baseline rule exists to populate this field with a list of the following values: • Canadian Electricity Association (CEA) • North American Electric Reliability Corporation (NERC) This field is required.
Unit Type	Character	Identifies the type of unit associated with the Regulatory Organization.	A baseline rules exists to populate this field from the GAA Unit Types family.

APM Event Records

APM Event records store information about the fields that are defined for the APM Event family in the baseline APM database. This topic provides an alphabetical list and description of the fields that exist for the APM Event family and appear on the APM Event datasheet. 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
APM Event Date	Date	Indicates when the event began.	This field is populated automatically using the value in the Event Start Date field in the Primary Event record that is linked to the APM Event record. This field is required.
APM ID	Character	Indicates a value that identifies the APM Event.	This field is populated automatically using the following template: **APM~<Unit Name>~<Event Start Date>** where: • <Unit Name> is the value in the Unit ID field in the GAA Unit record that is linked to the Primary Event record for which the APM Event record exists. • <Event Start Date> is the value in the Event Start Date field in the Primary Event record that is linked to the APM Event record. The value in the Description field describes the APM event. You can enter a description into this field.
Critical Event Flag	Boolean	Indicates if the event was a critical event.	If the value in this field is True, the event was a critical event. If the value in this field is False, the event was not a critical event.

Field	Data Type	Description	Behavior and Usage
Plant ID	Character	Indicates the plant in which the event occurred.	This field is populated automatically with the value in the Plant ID field in the GAA Plant that is linked to the GAA Unit that is linked to the Primary Event for which the APM Event exists. The value in the Description field describes the name of Plant in which the event occurred. This field is populated automatically with the value in the Plant name field in the GAA Plant that is linked to the GAA Unit that is linked to the Primary Event for which the APM Event exists.
Primary Cause	Character	A value that indicates the cause code for the event.	This field is populated automatically with the value in the Cause Code field in the Primary Event record that is linked to the APM Event record. The value in the Description field describes the cause code for the event. This field is populated automatically with the value in the Cause Code Description field in the Primary Event that is linked to the APM Event.

Field	Data Type	Description	Behavior and Usage
Primary Contact	Character	Indicates the person responsible for information about the APM event.	You can enter an alphanumeric value into this field.
Unit ID	Character	Indicates the unit to which the event occurred.	This field is populated automatically with the value in the Unit ID field in the GAA Unit record that is linked to the Primary Event for which the APM Event exists. This field is required. The value in the Description field describes the name of Unit in which the event occurred. This field is populated automatically with the value in the Unit Name field in the GAA Unit that is linked to the Primary Event for which the APM Event exists.

Cause Codes Records

Cause Codes records store information about the fields in the Cause Codes family that are used to populate the Cause Code field in a Primary Event record. This topic provides an alphabetical list of the fields that exist for the Cause Codes family and describes how the fields will be used to populate the Cause Code field in an Event record. The information in the table reflects the baseline state and behavior of these fields. This list is not comprehensive.

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
Code	Character	Used to populate the Cause Code field in the Event record.	This value is defined by NERC in the GADS DRI and CEA in the Generation Equipment Status ERIS.
Code Description	Character	Used to populate the Cause Code and Cause Code Description fields in the Event record.	This value is defined by NERC in the GADS DRI and CEA in the Generation Equipment Status ERIS.

Field	Data Type	Description	Behavior and Usage
Component	Character	Used to populate the Cause Code Component field and to restrict the list in the Cause Code field to values in Cause Codes records that contain a value in this field that matches the value in the Cause Code Component field in the Event.	This value is defined by NERC in the GADS DRI and CEA in the Generation Equipment Status ERIS.
OMC Code	Character	Used to set the value in the OMC Event field automatically.	In an Event, when you set the value in the Cause Code field, if the value in this field is: • True, the APM system will automatically set the value in the OMC Event field to True. • False, the APM system will automatically set the value in the OMC Event field to False.
Record Number	Numeric	Indicates the record number based on the Cause Code and the Component.	This value is defined by NERC in the GADS DRI and CEA in the Generation Equipment Status ERIS.
Regulatory Organization	Character	Identifies the council to which data will be reported.	A baseline rule exists to populate this field with a list of the following values: • Canadian Electricity Association (CEA) • North American Electric Reliability Corporation (NERC) This field is required.

Field	Data Type	Description	Behavior and Usage
System	Character	Used to populate the Cause Code System field and to restrict the list in the Cause Code Component and Cause Code fields to values in Cause Codes records that contain a value in this field that matches the value in the Cause Code System field in the Event.	This value is defined by NERC in the GADS DRI and CEA in the Generation Equipment Status ERIS.
Unit Type	Character	Used to restrict the list in the Cause Code System, Cause Code Component, and Cause Code fields to values in Cause Codes records that contain a value in this field that matches the value in the GADS Unit Type field in GAA Unit record with which the Event is associated.	This value is defined by NERC in the GADS DRI and CEA in the Generation Equipment Status ERIS.

Event Records

Event records store information about the fields that are defined for the Primary Event and Contributing Event families in the baseline APM database. This topic provides an alphabetical list and description of the fields that exist for the Primary Event and Contributing Event families and appear on the Event datasheet. The information in the table reflects the baseline state and behavior of these fields. The values in these fields are defined by NERC in the GADS DRI and CEA in the Generation Equipment Status ERIS. This list is not comprehensive.

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
Ambiguous Date and Time Preference	Character	Identifies whether the date and time entered in the **Event Start Date** field occurred before or after the clock was reset.	This field is disabled by default. This field is enabled and required when you enter an ambiguous date and time in one of the following fields: • Event Start Date • Event End Date • Work Started • Work Ended You can select one of following values in this field: • **First Occurrence:** Select this option if the date and time that you entered in the Event Start Date field occurred before the clock was reset. • **Second Occurrence:** Select this option if the date and time that you entered in the Event Start Date field occurred after the clock was reset. This field exists in the Primary Event family but not the Contributing Event family.

Field	Data Type	Description	Behavior and Usage
Amplification Code	Character	Identifies the failure mode of the event.	This field is enabled only when the Cause Code field is populated with a value. A baseline rule exists to populate this field with a list of values from the Amplification Code field in the Amplification Codes records.
			Note: Consider the following when the Primary Event is associated with a GAA Unit in which the value in the Primary Regulatory Body field is North American Electric Reliability Corporation (NERC):
			• If you set the Capacity Event Type field to U1, the Amplification Code field contains only the following values:
			◦ T1
			◦ T2
			◦ 84
			◦ 53
			• If you set Amplification Code as 84, a message appears asking you to select T1 or T2 when you have a confirmed cause of event.
			• If you set the Capacity Event Type field to D1, D2, D3, D4, PD, DP, or DM, the Amplification Code field can be set to 82 or 83 only.
			• If you set the Capacity Event Type field to U1, D1, D2, D3, D4, PD, DP, or DM, the Amplification Code field becomes a mandatory field.
			This field is required when the Primary Event is in the Unit Approved state. However, if the Capacity Event Type is set to U1, this field is required for all states.
			Note: In the Primary Event datasheet, this field is no longer a required field for the CEA Event Types 11-1,11-2,14,14-1,14-2.
			Note: In the Primary Event datasheet, this field is no longer a required field for all the NERC Event Types except U1.
			This field is included in NERC event reports.

Field	Data Type	Description	Behavior and Usage

Capacity Event Type	Character	Identifies the type of event.	For NERC,
			
			• For a Primary Event, this field contains a list of values defined in the GAA Event Types records.
			
			   ◦ If the value of Unit State field in the GAA Unit record is set to Active, the Capacity Event Type field contains a list of types of events associated with the Active state.
			   ◦ If the value of Unit State field in the GAA Unit record is set to Inactive, the Capacity Event Type field contains a list of types of events associated with the Inactive state.
			
			• For a Contributing Event, this field is disabled and populated automatically with the value in the Capacity Event Type field in the Primary Event to which it is linked.
			
			For CEA, this field contains a list of values defined in the GAA Event Types records.
			
			• If the value of Unit State field in the GAA Unit record is set to Commercial Service (CS), the Capacity Event Type field contains a list of types of events associated with the Available state for a GAA Unit that reports to CEA.
			
			• If the value of Unit State field in the GAA Unit record is set to Not In Commercial Service (NICS), the Capacity Event Type field contains a list of types of events associated with the Not Available state for a GAA Unit that reports to CEA.
			
			This field excludes the Event Types based on the Unit Types that you selected in the Excluded Unit Type field in the GAA Event Types record.
			
			This field is included in NERC event reports.
			
			This field is required.

Cause Code	Character	Identifies the cause code of the cause for the event.	A baseline rule exists to populate this field with a list of values in fields in Cause Codes records using the format Cause Code (Cause Code Description). This field is required when the Primary Event is in the Unit Approved state. **Note:** In the Primary Event datasheet, this field is no longer a required field for the CEA Event Types 11-1,11-2,14,14-1,14-2.
Cause Code Component	Character	Identifies the cause code component for the cause of the event.	A baseline rule exists to populate this field with a list of values in the Component field in Cause Codes records. This field is required when the Primary Event is in the Unit Approved state. **Note:** In the Primary Event datasheet, this field is no longer a required field for the CEA Event Types 11-1,11-2,14,14-1,14-2.

Field	Data Type	Description	Behavior and Usage
Cause Code Description	Character	Identifies the description of the cause code associated with the cause of the event.	A baseline rule exists to populate this field with a list of values in the Cause Code Description field in Cause Codes records. This value is defined by NERC in the GADS DRI and CEA in the Generation Equipment Status ERIS. This field is required when the Primary Event is in the Unit Approved state.
Cause Code System	Character	Identifies the system for the cause code associated with the event.	A baseline rule exists to populate this field with a list of values in the System field in Cause Code records. This field is required when the Primary Event is in the Unit Approved state. **Note:** In the Primary Event datasheet, this field is no longer a required field for the CEA Event Types 11-1,11-2,14,14-1,14-2.
Common Mode Outage	Character	Indicates whether an event is a common mode outage.	A baseline rule exists to populate this field with a list of System Codes in the MI_GAA_COMMON_MODE_OUTAGE_TYPES System Code Table. This field exists in the Primary Event family but not in the Contributing Event family.
Cost Calculation Status	Character	Indicates the status of the cost calculation.	This field is populated automatically with information regarding the status of the calculation performed in the Capacity Incident Cost field. This field exists in the Primary Event family but not in the Contributing Event family.
Count of Contributing Events	Character	Indicates the number of Contributing Events that exist for the Primary Event.	This field is disabled and populated automatically with a value that indicates the number of Contributing Events that are linked to the Primary Event. The value in this field is updated each time you link a new Contributing Event to the Primary Event and each time you unlink a Contributing Event from the Primary Event. This field exists in the Primary Event family but not the Contributing Event family.
Cumulative Engine Starts at Time of Event	Character	Identifies the total number of engine starts the unit had experienced at the time the event occurred.	This field is available in the **Additional Reporting** section for a Primary Event.
Cumulative Fired Hours at Time of Event	Character	Identifies the total cumulative number of hours the unit spent generating power at the time the event occurred.	This field is available in the **Additional Reporting** section for a Primary Event.

Field	Data Type	Description	Behavior and Usage
Dominant Derate	Boolean	Indicates whether the Event represents a dominant derate event.	This field is enabled only when the Capacity Event Type field contains a value that identifies the event as a derate event. If the value in this field is: • True, the Event represents the dominant derate event. • False, the Event does not represent the dominant derate event. This field exists in the Primary Event family but not in the Contributing Event family.
End Date is Estimated?	Boolean	Indicates whether the value in the Event End Date field is an estimate.	Select this check box when the value in the Event End Date field represents an estimate of when the event ended or will end. Clear this check box if the value in the Event End Date field represents the actual time that the event ended. **Note:** This check box is selected automatically if you enter a future date in the Event End Date field. This field exists in the Primary Event family but not in the Contributing Event family. For events that span across multiple years, when you enter a value between 31-12-YYYY, 23:59:00 and 31-12-YYYY, 23:59:59 in the Event End Date field and select this checkbox, the Event End Date field value sets automatically to 31-12-YYYY, 23:59:59. This avoids gaps in the Event data.
Event Contribution Code	Character	Indicates how the incident contributed to the event.	A baseline rule exists to populate this field with a list of System Codes in the MI_GAA_EVENT_CONTR_CODE System Code Table. You can change the value by selecting one of the following options: • **2-Contributed to Primary Cause:** Indicates that the event represents a secondary cause that contributed to the primary cause of the event. • **3-Work done during the event:** Indicates that the event represents work that was done during the event. • **5-After startup, delayed unit from reaching load point:** Indicates that the event delayed the unit from reaching its dependable capacity after startup and prevented the unit from filling its load requirement. This value is included in the NERC event reports. This field exists in the Contributing Event family but not in the Primary Event family.
Event Duration	Character	Indicates how long the event lasted.	This field is disabled and calculated automatically using the following formula: **Event End Date - Event Start Date** The Event Duration takes into account any existing Daylight Saving Time Reference records for the time period between the Event Start date and Event End date.

Field	Data Type	Description	Behavior and Usage
Event End Date	Date	Indicates the date and time that the event ended.	• For a Primary Event, if you enter an ambiguous date and time in this field: A message will appear indicating that the value is not valid. The Ambiguous Date and Time Preference field will be enabled and required. You cannot specify a value in the Event End Date field with a year that is different from the year in the value in the Event Start Date field. • For a Contributing Event, this field is disabled and is populated automatically with the value in the Event End Date field from the Primary Event to which it is linked. This value is included in NERC event reports.
Event ID	Character	• For a Primary Event, this value identifies the event with a value that is unique to all Primary Events associated with a given GAA Unit. • For a Contributing Event, this value identifies the Primary Event for which the Contributing Event exists.	This field is disabled and populated automatically.
Event Number	Numeric	Indicates the order in which the event occurred with respect to other events that exist for the same unit.	• For a Primary Event, the value indicates the chronological order in which the event took place. When you create a Primary Event, this field is populated automatically. For example, when you create the third Primary Event for a given GAA Unit for a given reporting month and year, this field will be populated automatically with the value 3 (three). • For a Contributing Event, this field is populated automatically with the value in the Event Number field in the Primary Event to which it is linked. This field does not appear on the datasheet.
Event Start Date	Date	Indicates the date and time that the event began.	• If you enter an ambiguous date and time in this field: A message will appear indicating that the value is not valid. The Ambiguous Date and Time Preference field will be enabled and required. You cannot specify a value in the Event Start Date field with a year that is different from the year in the value in the Event End Datefield. • For a Contributing Event, this field is disabled and is populated automatically with the value in Event Start Date field in the Primary Event to which it is linked. This value is included in NERC event reports. This field is required.

Field	Data Type	Description	Behavior and Usage
Failure Mechanism Code	Character	Indicates the manner in which the component failed.	A baseline rule exists to populate this field with a list of System Codes in the MI_GM_FAILURE_MECHANISM System Code Table. This field exists in the Primary Event family but not the Contributing Event family. This field is available in the **Additional Reporting** section for a Primary Event.
Gross Available Capacity	Character	Identifies the gross available generation capacity of the unit during the event.	• This field is only enabled for a Reserve Shutdown event. This field contains a value that is calculated depending on the value in the Capacity Event Type field. If the value in the Capacity Event Type field contains a value that identifies the event as: ◦ A derate event, this field will become required, and the value must be less than the value in the Gross Dependable Capacity field. This field is cleared and becomes required when the Gross Derate Amount field contains no value or the value 0 (zero). If the Gross Derate Amount field contains a value other than 0 (zero), this field will be populated automatically using the following formula: Gross Dependable Capacity - Gross Derate Amount ◦ An outage event, this field will become disabled and populated with the value 0 (zero). • For a Contributing Event, this field is disabled and populated automatically with the value in the Gross Available Capacity field in the Primary Event to which it is linked.
Gross Dependable Capacity	Character	Identifies the gross dependable generation capacity of the unit at which the event occurred.	This field is populated automatically with the value in the Gross Dependable Capacity field in the Unit Capacity record for a GAA Unit based on the start date of the Primary Event. This field exists in the Primary Event family but not the Contributing Event family.

Field	Data Type	Description	Behavior and Usage
Gross Derate Amount	Character	Indicates the gross amount of generation capacity that was lost during the event.	• This field is only enabled for Derate events. This value is used to calculate the value in the Gross Available Capacity field. The default value is 0 (zero). If the value in the Capacity Event Type field contains a value that identifies the event as: ◦ A derate event, this field will be required. The value must be greater than 0. If this field contains a value other than 0 (zero), the value in the Gross Available Capacity field will be disabled and populated automatically using the following formula: **Gross Dependable Capacity - Gross Derate Amount** ◦ An outage event, this field will become disabled and populated with the value in the Gross Dependable Capacity field. ◦ For Reserve Shutdown and Noncurtailing events, this field is disabled and populated with the value 0 (zero). • For a Contributing Event, this field is disabled and populated automatically with the value in the Gross Derate Amount field in the Primary Event for which the Contributing Event exists.
Gross Maximum Capacity	Character	Identifies the gross maximum generation capacity of the unit.	This field is populated automatically with the value in the Gross Maximum Capacity field in the Unit Capacity record for a GAA Unit based on the start date of the Primary Event. This field does not appear on the datasheet.
Man-hours Worked	Numeric	Identifies the number of man hours that were worked correcting the cause of the event or repairing the unit.	You can enter a value manually.

Field	Data Type	Description	Behavior and Usage
Net Available Capacity	Character	Identifies the net available capacity of the unit during the event.	• This field is only enabled for Reserve Shutdown events. This field contains a value that is calculated depending on the value contained in the Capacity Event Type field. If the value in the Capacity Event Type field contains a value that identifies the event as: ◦ A derate event, this field will become required, and the value must be less than the value in the Net Dependable Capacity field. This field is cleared and becomes required when the Net Derate Amount field contains no value or the value 0 (zero). If the Net Derate Amount field contains a value, this field will be populated automatically using the following formula: Net Dependable Capacity - Net Derate Amount ◦ An outage event, this field will become disabled and populated with the value 0 (zero). • For a Contributing Event, this field is disabled and populated automatically with the value in the Net Available Capacity field in the GAA Unit that contains a value in the Unit ID field that matches the value in the Unit ID field in the Event.
Net Dependable Capacity	Character	Identifies the net dependable generation capacity of the unit at which the event occurred.	This field is populated automatically with the value in the Net Dependable Capacity field in the Unit Capacity record for a GAA Unit based on the start date of the Primary Event. This field exists in the Primary Event family but not the Contributing Event family.
Net Derate Amount	Character	Indicates the net amount of generation capacity that was lost during the event.	• This field is only enabled for Derate events. This value is used to calculate the value in the Net Available Capacity field. The default value is 0 (zero). If the value in the Capacity Event Type field contains a value that identifies the event as: ◦ A derate event, this field is a required field. The value must be greater than 0. If this field contains a value other than 0 (zero), the value in the Net Available Capacity field will be disabled and populated automatically using the following formula: **Net Dependable Capacity - Net Derate Amount** ◦ An outage event, this field will become disabled and populated with the value in the Net Dependable Capacity field. ◦ For Reserve Shutdown and Noncurtailing events, this field is disabled and populated with the value 0 (zero). • For a Contributing Event, this field is disabled and populated automatically with the value in the Net Derate Amount field in the Primary Event for which the Contributing Event exists.

Field	Data Type	Description	Behavior and Usage
Net Maximum Capacity	Character	Identifies the net maximum generation capacity of the unit at which the event occurred.	This field is populated automatically with the value in the Net Maximum Capacity field in the Unit Capacity record for a GAA Unit based on the start date of the Primary Event. This value is defined by NERC in the GADS DRI. This field does not appear on the datasheet.
OMC Event	Boolean	Indicates whether the event occurred for reasons that are outside of management control, such as a flood or lightning.	This field is disabled and populated automatically based on the value selected in cause code. If the value in this field is: • True, the event is considered outside of management control. • False, the event is considered to be within management control.
Potential Capacity Incident Cost	Character	Identifies the potential cost of the event.	This field is disabled and populated automatically with the calculated event cost, if a cost has been calculated. This field exists in the Primary Event family but not in the Contributing Event family.
Primary Incident ID	Character	Identifies the Primary Event for which the Contributing Event exists.	This field is disabled and populated automatically with the value in the Event ID field in the Primary Event to which the Contributing Event is linked. This field exists in the Contributing Event family but not the Primary Event family.
Problem Alert	Boolean	Indicates whether the problem that caused the event is the result of a design flaw or standard operating practices.	If the value in this field is: • True, the problem was the result of a design flaw or standard operating practices. • False, the problem was the result of another cause.
Refresh Incident Cost	Boolean	Indicates whether the APM system should refresh the cost calculation for the Primary Event.	When you save the Primary Event, if the value in this field is: • True, the APM system will update the value in the Capacity Incident Cost field and then save the new value, along with any other changes that you made the Primary Event. • False, the APM system will save any changes that you made to the Primary Event but will not update the value in the Capacity Incident Cost field. This field exists in the Primary Event family but not the Contributing Event family.
Regulatory Organization	String	Identifies the council to which the data will be reported.	A baseline behavior exists to populate this field with a list of the following values: • CEA (CEA) • NERC (NERC) This field is disabled and populated based on the Regulatory Organization value for the selected Unit.

Field	Data Type	Description	Behavior and Usage
Reporting Month	Character	Identifies the month for which the data in the Primary Event should be reported.	This field is disabled and populated automatically with the month indicated by the value in the Event Start Date field. This field exists in the Primary Event family but not the Contributing Event family.
Reporting Year	Numeric	Identifies the year for which the data in the Primary Event should be reported.	This field is disabled and populated automatically with the year indicated by the value in the Event Start Date field. This field exists in the Primary Event family but not the Contributing Event family.
Revision	Numeric	Identifies the revision number of the Event and should be incremented each time you re-submit a report which includes information in the Event to a Regulatory Organization.	By default, for an Event submitted to the regulatory organization for the first time, the value in this field is set to 0. You must increase the value in this field each time you submit a report to the Regulatory Organization.
Start Date is Estimated?	Boolean	Indicates whether the value in the Event Start Date field is an estimate.	Select this check box when the value in the Event Start Date field represents an estimate of when the event ended or will end. Clear this check box if the value in the Event Start Date field represents the actual time that the event ended. This field exists in the Primary Event family but not the Contributing Event family.
Trip Mechanism	Character	Indicates how the unit was shut down during the event.	This field contains no value by default, and a baseline rule exists to populate this field with a list of the following values: • **A - Automatic:** The unit shut down automatically. • **M - Manual:** The unit was shut down manual by an operator. After you select a value in this field and save the Event record, you will not be able to clear the field. This field is available in the **Additional Reporting** section for a Primary Event.
Unit ID	Character	Identifies the Unit ID of the GAA Unit record with which the Event is associated.	• For a Primary Event, a baseline rule exists to populate this field with a list of values from the Unit ID and Unit Name fields in all GAA Unit records that you have permission to modify using the formula Unit ID (Unit Name). This field is required when the Primary Event is in the Unit Approved state. • For a Contributing Event, this field is disabled and populated automatically with the value in the Unit ID field in the Primary Event for which the Contributing Event exists.
Unit Name	Character	Identifies the name of the unit to which the event occurred.	This field is disabled and populated automatically using values from Performance or GAA Unit records.

Field	Data Type	Description	Behavior and Usage
Validate Incident	Boolean	Indicates whether the APM system will validate the record against all other existing Primary Events.	When you save the Primary Event, if the value in this field is: • True, the APM system will check all other Primary Events to validate any sequential event pairs of which the Primary Event is a part, update the value in the Incident Validation Status field if necessary, and then save the Primary Event to the database. • False, the APM system will save any changes that you made to the record, but will not validate the Primary Event against any other Primary Events. This field exists in the Primary Event family but not the Contributing Event family.
Verbal Description	Character	Describes the event.	This field can be used to store any information about the event that is not captured in the other fields in the Event record. When you create a Primary Event, you can enter a verbal description of up to 255 characters. When you generate a NERC Event Report, the verbal description in the generated report will display only the first 84 characters of the description that you entered in the Verbal Description field. This field is required when the Primary Event is in Unit Approved state. **Note:** In the Primary Event datasheet, this field is no longer a required field for the CEA Event Types 11-1,11-2,14,14-1,14-2.
Work Duration	Character	Indicates the duration of the work that was completed as a result of the event.	This field is disabled and populated automatically using the following formula: **Work Started + Work Ended**
Work Ended	Date	Indicates the date and time when work on the unit ended as a result of the event.	If you enter an ambiguous date and time in this field, a message will appear and the Ambiguous Date and Time Preference field will be enabled and required. This value is included in NERC event reports.
Work Started	Date	Indicates the date and time when work on the unit started as a result of the event.	If you enter an ambiguous date and time in this field, a message will appear and the Ambiguous Date and Time Preference field will be enabled and required. This value is included in NERC event reports.

GAA Code Mapping Records

GAA Code Mapping records store information about fields that are defined for the GAA Code Mapping family in the baseline APM database. This topic provides an alphabetical list and description of the fields that exist for the GAA Code Mapping family and appear on the datasheet. The information in the table reflects the baseline state and behavior of these fields. This list is not comprehensive.

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
CEA Amplification Code	Character	Indicates the CEA Amplification Code for the selected Unit type.	This field is populated using the following format: **<AmplificationCode>(<Description>)** Where, • **<Description>** is the value in the Description field in the Amplification Code record, which has Regulatory Organization field set to Canadian Electricity Association (CEA). • **<AmplificationCode>** is the value in the Amplification Code field in the Amplification Code record, which has Regulatory Organization field set to Canadian Electricity Association (CEA). You can select a value from the available CEA Amplification Codes for the selected Unit Type. The available values appear in this field only after you select a value in the CEA Unit Type field.

Field	Data Type	Description	Behavior and Usage
CEA Cause Code	Character	Indicates the CEA Outage Code for the selected Unit type.	This field is populated using the following format: **<Code> ~ <Code Description>** Where, • **<Code>** is the value in the Code field in the Cause Code record. • **<Code description>** is the value in the Code Description field in the Cause Code record. You can select value (s) from the available CEA Outage Codes for the selected Unit Type. The available values appear in this field only after you select a value in the CEA Unit Type field. This field is required.
CEA Unit Type	Character	Indicates the type of Unit available for CEA.	You can select a type of Unit from the list of available options. This field is required.

Field	Data Type	Description	Behavior and Usage
NERC Amplification Code	Character	Indicates the NERC Amplification Code for the selected Unit type.	This field is populated using the following format: **<AmplificationCode>(<Description>)** Where, • **<Description>** is the value in the Description field in the Amplification Code record, which has Regulatory Organization field set to North American Electric Reliability Corporation (NERC). • **<AmplificationCode>** is the value in the Amplification Code field in the Amplification Code record, which has Regulatory Organization field set to North American Electric Reliability Corporation (NERC). You can select a value from the available NERC Amplification Codes for the selected Unit Type.

Field	Data Type	Description	Behavior and Usage
NERC Cause Code	Character	Indicates the NERC Cause Code for the selected Unit type.	This field is populated using the following format: **<Code> ~ <Code Description>** Where, • **<Code>** is the value in the Code field in the Cause Code record, which has Regulatory Organization field set to North American Electric Reliability Corporation (NERC). • **<Code description>** is the value in the Code Description field in the Cause Code record, which has Regulatory Organization field set to North American Electric Reliability Corporation (NERC). You can a select value from the available NERC Cause Code for the selected Unit Type. This field is required.

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 **Identification** and **References** sections of the GAA Company datasheet. The information in the table reflects the baseline state and behavior of these fields. This list is not comprehensive.

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
Address 1	Character	Identifies the first line of the address of the Company.	This field appears in the **Identification** section. You can enter a value in this field.
Address 2	Character	Identifies the second line of the address of the Company.	This field appears in the **Identification** section. You can enter a value in this field.
Asset ID	Character	Identifies the Functional Location associated with the Company.	This field appears in the **Identification** section. It is required. You can select a Functional Location to associate with the Company.
City	Character	Identifies the city where the Company resides.	This field appears in the **Identification** section. You can enter a value in this field.
Company Country	Character	Indicates the country where the Company is based.	This field appears in the **Identification** section. You can enter a value in this field.
Company Group 1	Character	Identifies the first group of persons for additional data analysis.	This field appears in the **References** section. You can enter a value in this field.
Company Group 2	Character	Identifies the second group of persons for additional data analysis.	This field appears in the **References** section. You can enter a value in this field.
Company ID	Character	Identifies the Company.	This field appears in the **Identification** section. It is required. You can enter a value in this field.
Company Name	Character	Indicates the full name of the Company.	This field appears in the **Identification** section. It is required. You can enter a value in this field.

Field	Data Type	Description	Behavior and Usage
Company Web Site Address	Character	Identifies the URL of the corporate website of the Company.	This field appears in the **References** section. You can enter a value in this field.
Contact	Character	Identifies the name of a person within the Company to contact for reporting.	This field appears in the **Identification** section. You can enter a value in this field.
Council	Character	Indicates the Regulatory Council to which the Company belongs.	This field appears in the **Identification** section. It is populated by the MI_GM_POWER_REGION System Code Table.
Email Address	Character	Identifies the email address of the Contact.	This field appears in the **Identification** section. You can enter a value in this field.
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 Power. This field does not appear in the datasheet.
Keyword	Character	Identifies the Regulatory Organization keyword for the Company.	This field appears in the **Identification** section. You can enter a value in this field.
Phone Fax	Numeric	Identifies the fax number of the Contact.	This field appears in the **Identification** section. You can enter a value in this field.
Phone Voice	Character	Identifies the phone number of the Contact.	This field appears in the **Identification** section. You can enter a value in this field.

Field	Data Type	Description	Behavior and Usage
Primary Regulatory Organization	Character	Identifies the primary council to which the data will be reported.	This field appears in the **Identification** section. It is populated by a baseline rule with the following values: • Canadian Electricity Association (CEA) • North American Electric Reliability Corporation (NERC) This field is required and automatically populated with the value North American Electric Reliability Corporation (NERC).
Primary Utility Code	Character	Identifies the code assigned to the Company by the Primary Regulatory Organization.	This field appears in the **Identification** section. You can enter a value in this field. The Primary Utility Code for NERC must be three characters whereas that for CEA must be two characters.
Secondary Regulatory Organization	Character	Identifies the secondary council to which the data will be reported.	This field appears in the **Identification** section. It is populated by a baseline rule with the following values: • Canadian Electricity Association (CEA) • North American Electric Reliability Corporation (NERC) If the value in the Primary Regulatory Organization field is North American Electric Reliability Corporation (NERC), this field is disabled. If the value in the Primary Regulatory Organization field is Canadian Electricity Association (CEA), the value in this field is North American Electric Reliability Corporation (NERC) and the field is disabled.

Field	Data Type	Description	Behavior and Usage
Secondary Utility Code	Character	Identifies the code assigned to the Company by the Secondary Regulatory Organization.	This field appears in the **Identification** section. You can enter a value in this field. The Secondary Utility Code for NERC must be three characters whereas that for CEA must be two characters.
State	Character	Identifies the state or province where the Company is based.	This field appears in the **Identification** section. It is populated by the MI_GM_STATE System Code Table.
Zip Code	Character	Identifies the zip code of the location where the Company is based.	This field appears in the **Identification** section. You can enter a value in this field.

GAA Event Categories Records

GAA Event Categories records store information about the fields that are defined for the GAA Event Categories family in the baseline APM database. This topic provides an alphabetical list and description of the fields that exist for the GAA Event Categories family and appear on the GAA Event Categories datasheet. 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
Associated Event Types	Character	Indicates the Event Types associated with the selected Regulatory Organization.	A baseline rule exists to populate this field with a list of values based on your selection of Regulatory Organization.
Color Code	Character	Indicates the color that represents the Event Category.	A baseline rule exists to assign a hexadecimal color code for each of the Event Categories. When you add a new Event Category, by default, the hexadecimal color code (#000000) corresponding to black color is specified in this field. • You can enter the hexadecimal color code corresponding to a desired color manually. -Or- • You can save the record with the default value, and then in the **Color Code** column, select the desired color from the grid. The value in this field will be used to identify color code to be used for the Event Category in the graphs in **GAA Overview** page and in **GAA Unit Summary** page.
Entity ID	Character	Indicates the ID of the Event Category record.	A baseline rule exists to populate this field based on your selection of Event Category Code and Regulatory Organization. **<Event Category Code>~<Regulatory Organization>** Where, each of the variable represents the value in the corresponding field in this record. This field does not appear on the datasheet.
Event Category Code	Character	Identifies the category of an Event.	You can enter a value manually. This field is required.

Field	Data Type	Description	Behavior and Usage
Event Category Description	Character	Describes the category of an Event.	You can enter a value manually.
Mapped ID	Character	Indicates the Cause Codes mapped to Regulatory Organization.	A baseline rule exists to populate this field based on your selection in the Regulatory Organization. If you selected North American Electric Reliability Corporation (NERC) in the Regulatory Organization field, this field is disabled. If you selected Canadian Electricity Association (CEA) in the Regulatory Organization field: • Value corresponding to NERC is populated. • This field is required.
Regulatory Organization	Character	Identifies the council to which the data will be reported.	A baseline rule exists to populate this field with a list of the following values: • Canadian Electricity Association (CEA) • North American Electric Reliability Corporation (NERC) This field is required.

GAA Event Transition Records

GAA Event Transition records store information about the fields that are defined for the GAA Event Transition family in the baseline APM database. This topic provides an alphabetical list and description of the fields that exist for the GAA Event Transition family. 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
From Event Type	Character	The type of the parent event between the two events in transition.	A value is required. This field appears as a list that is populated by values in the Event Type Code field in each GAA Event Type record.
To Event Type	Character	The type of the related event between the two events in transition.	A value is required. This field appears as a list that is populated by values in the Event Type Code field in each GAA Event Type record. The value in this field is used to populate the Capacity Event Type field in the related event based on the value in the Capacity Event Type, Cause Code, and Net Derate Amount fields in the parent event.
Validation Rule	Character	The rule that should be applied for the two events to be in transition. As per Canadian Electricity Association (CEA) guidelines, events of certain event types can be in transition only if certain conditions are satisfied.	APM validates if the condition that you enter in this field is satisfied. If not, a message appears below the **Capacity Event Type** box on the Related Event datasheet specifying the condition that must be satisfied.

GAA Event Types Records

GAA Event Types records store information about the fields that are defined for the GAA Event Types family in the baseline APM database. This topic provides an alphabetical list and description of the fields that exist for the GAA Event Types family. The information in the table reflects the baseline state and behavior of these fields. This list is not comprehensive.

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	Identifies the color code for the Event Type.	A baseline rule exists to assign a hexadecimal color code for each of the Event Type. When you add a new Event Type, by default, the hexadecimal color code (#000000) corresponding to black color is specified in this field. • You can enter the hexadecimal color code corresponding to a desired color manually. -Or- • You can save the record with the default value, and then in the **Color Code** column, select the desired color from the grid. The value in this field will be used to identify color code to be used for the Event Type in the graphs in **GAA Overview** page and in **GAA Unit Summary** page.
Event Type Code	Character	Identifies the event type.	You can enter a value manually. This field, along with the Event Type Description field, populates the Capacity Event Type field in the Primary Event records. This field is required.
Event Type Description	Character	Describes the type of event.	You can enter a value manually. This field, along with the Event Type Code field, populates the Capacity Event Type field in Event records. This field is required.

Field	Data Type	Description	Behavior and Usage
Excluded Unit Type	Character	Indicates the Unit Type for the GAA Unit whose associated Event Types will be excluded in the available options in the Capacity Event Type field in the Event record.	This list of available values in this field are populated only if you select a value in the Regulatory Organization field. For an existing Primary Event, you must not exclude Unit Type for the associated GAA Unit. If you do so, the Capacity Event Type field in the Event record will be cleared.
Is Extension	Logical	Indicates whether the Event Type is an extension event.	If this field is selected, it indicates that the Event Type is an extension of another event. If the field is cleared, it indicates that the Event Type is not an extension event.
Mapped ID	Numeric	Indicates the Cause Codes mapped to Regulatory Organization.	A baseline rule exists to populate this field based on your selection in the Regulatory Organization. If you selected North American Electric Reliability Corporation (NERC) in the Regulatory Organization field, this field is disabled. If you selected Canadian Electricity Association (CEA) in the Regulatory Organization field: • Value corresponding to NERC is populated. • This field is required.
Regulatory Organization	Character	Identifies the council to which the data will be reported.	A baseline rule exists to populate this field with a list of the following values: • Canadian Electricity Association (CEA) • North American Electric Reliability Corporation (NERC) This field is required.

Field	Data Type	Description	Behavior and Usage
State Code	Character	Indicates the state of the GAA Unit during the Event.	This field is used by a GAA Unit that reports to CEA. You can enter a value manually.
Unit State	Character	Indicates the state of the GAA Unit.	A baseline rule exists to populate this field based on your selection in the Regulatory Organization. This field is required.

GAA Fuel Types Records

GAA Fuel Types records store information about the fields in the family that are used to populate fuel code fields in GAA Unit, Performance, and fuel report records. This topic provides an alphabetical list and description of the fields that exist for the GAA Fuel Types family and appear on the GAA Fuel Types datasheet. The information in the table reflects the baseline state and behavior of these fields. This list is not comprehensive.

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
Fuel Code	Character	Identifies the fuel code for the fuel based on the Regulatory Organization.	You can enter a value manually. This value is defined by the Regulatory Organization. This field is required.
Fuel Description	Character	Describes the fuel as defined by the Regulatory Organization.	You can enter a value manually. This value is defined by the Regulatory Organization. This field is required.
Fuel Unit of Measure	Character	Identifies the unit of measure associated with the fuel.	You can enter a value manually.
Heat Content High	Character	Identifies the highest potential heat content of the fuel.	You can enter a value manually. This value is defined by the Regulatory Organization.
Heat Content Low	Character	Identifies the lowest potential heat content of the fuel.	You can enter a value manually. This value is defined by the Regulatory Organization.

Field	Data Type	Description	Behavior and Usage
Mapped ID	Character	Indicates the mapped Fuel Code and Fuel Description based on the Regulatory Organization.	A baseline rule exists to populate this field with a list of the values using the following format: **<RegulatoryOrganization> ~ <FuelCode> ~ <FuelDescription>** Where, • **<RegulatoryOrganization>** is the value in the Regulatory Organization field. • **<FuelCode>** is the value in the Fuel Code field. • **<FuelDescription>** is the value in the Fuel Description field. If you selected North American Electric Reliability Corporation (NERC) in the Regulatory Organization field, this field is disabled. If you selected Canadian Electricity Association (CEA) in the Regulatory Organization field: • Value corresponding to NERC is populated. • This field is required.
Regulatory Organization	Character	Identifies the council to which data will be reported.	A baseline rule exists to populate this field with a list of the following values: • Canadian Electricity Association (CEA) • North American Electric Reliability Corporation (NERC) This field is required.

GAA Performance & Report Records

GAA Performance & Report records store information about the fields that are defined for the GAA Configuration family in the baseline APM database. This topic provides an alphabetical list and description of the fields that exist for the GAA Configuration family and appear on the Default tab. The information in the table reflects the baseline state and behavior of these fields. This list is not comprehensive.

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 Events Catalog Path	Character	Indicates the catalog path based on which the Event List column will be populated.	This field is enabled when the value in Record Type field is Performance, and the Is Report field is cleared. This field is required.
Description	Character	Describes the record that you want to configure for the selected GAA Unit.	You can enter a value manually.
Entity ID	Character	Indicates the ID of the record or report configured for the selected GAA Unit.	This field is populated using the following format: **<Record Name>** ~ **<Record Type>** ~ **<Report Format>** ~ **<Performance Type>** Where, each of the variable represents the value in the corresponding field in this record. This field does not appear on the datasheet.
Is Default	Logical	Indicates whether this report will be configured for any new GAA Unit.	This field is cleared by default.
Is Linked	Logical	Indicates whether the regulatory report is associated with the GAA Unit.	This field is selected if the report is associated with the GAA Unit. This field does not appear on the datasheet.

Field	Data Type	Description	Behavior and Usage
Is Report	Logical	Indicates whether the record represents a Report record or a Performance record.	This field is selected by default. If you clear this check box, and the value in the Record Type field is Performance then the Report Format and Report Query fields are disabled and the following fields are enabled: • Policy ID • Associated Events Catalog Path • Performance Type • Weightage Type
Performance Type	Character	Indicates whether the Performance record will contain all Primary Events including OMC Events or not.	This field is enabled when the value in Record Type field is Performance, and the Is Report field is cleared. You can select one of the following options: • **AllEvents:** Select this option if you want to configure the Performance record to contain all Primary Events including OMC • **Excluding OMC:** Select this option if you want to configure the Performance record to contain all Primary Events excluding OMC
Policy ID	Character	Indicates the name of the design policy that is used to regenerate a Performance record.	This field is enabled when the value in Record Type field is Performance, and the Is Report field is cleared. This field is required.

Field	Data Type	Description	Behavior and Usage
Report Format	Character	Indicates the format of the Regulatory report.	This field is enabled only when the Is Report field is selected. A baseline rule exists to populate this field with a list of the following values based on the type of report that you selected in the Report Type field: • If Report Type is Event, you can select 07 in this field. • If Report Type is Performance, you can select 05 in this field. This field is required.
Record Name	Character	Identifies the full name of the record that you want to configure for the selected GAA Unit.	You can enter a value manually. This field is required.
Record Type	Character	Indicates the type of Performance record or Regulatory report that the record represents.	A baseline rule exists to populate this field with a list of the following values: • Event • Performance This field is required.

Field	Data Type	Description	Behavior and Usage
Report Query	Character	Indicates the query that is used to create the Regulatory report.	This field is enabled only when the Is Report field is selected. A baseline rule exists to populate this field with a list of queries that exist in the Catalog folder \\Public\Meridium\Modules\Generation Management\Queries\NERC Queries. You must select the query that corresponds to the value you selected in the Report Format field. This field is required.
Weightage Type	Character	Indicates the capacity type for the selected GAA Unit.	This field is enabled when the value in Record Type field is Performance, and the Is Report field is cleared. You can select multiple capacity types simultaneously from the following options: • NMC • GMC This field is required.

GAA Performance Fuel Records

GAA Performance Fuel records store information about the fields that are defined for the GAA Performance Fuel family in the baseline APM database. This topic provides an alphabetical list and description of the fields that exist for the GAA Performance Fuel family and appear on the Fuel datasheet. The information in the table reflects the baseline state and behavior of these fields. The values in these fields are defined by NERC in the GADS DRI and CEA in the Generation Equipment Status ERIS. This list is not comprehensive.

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.

Note: Wherever we refer to the unit, we mean the unit represented by the GAA Unit record to which the Performance record is linked.

Field	Data Type	Description	Behavior and Usage
Ash Softening Temperature	Numeric	Indicates the ash softening temperature for a primary or secondary fuel.	You can enter a value manually.
Average Heat Content	Numeric	For a primary fuel, indicates the heat content in BTUs per unit of measure stored in the corresponding Quantity Burned Unit of Measure field.	You can enter a value manually.
Fuel Code	Character	Indicates the fuel code for the fuel used by the GAA Unit.	This field is populated automatically with the value in the Primary or Secondary Fuel Code field in the GAA Unit record. Based on the Regulatory Organization to which the data will be reported, the GAA Unit record is linked to the Performance record. This field is required.
Grindability Index	Numeric	Indicates the grindability index of a given fuel type.	You can select a value from the drop-down list. For NERC, this field is enabled only if the value in the Fuel Code field indicates coal, peat, or lignite as the fuel.
Percent Alkalines	Numeric	Indicates the average sodium and potassium content for a given fuel type.	This field is enabled only if the value in the Fuel Code field indicates coal, peat, or lignite as the fuel.
Percent Ash	Numeric	Indicates the average ash content for a fuel.	This field is enabled only if the value in the Fuel Code field indicates coal, peat, or lignite as the fuel.
Percent Moisture	Numeric	Indicates the average moisture content for a fuel.	This field is enabled only if the value in the Fuel Code field indicates coal, peat, or lignite as the fuel.
Percent Sulfur	Numeric	Indicates the average sulfur content for a fuel.	This field is enabled only if the value in the Fuel Code field indicates coal, peat, or lignite as the fuel.

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Field	Data Type	Description	Behavior and Usage
Quantity Burned	Numeric	For fuel, indicates the amount of fuel that was consumed by the unit during the month for which the Performance record stores generation data.	The value in this field is used to calculate the value in the Energy Source Consumption field in GAA Fuel Report records that are linked to the Performance record.
Type of Performance	Character	Indicates whether the Performance record includes OMC events or not	This field does not appear on the datasheet.

GAA Performance Indexes Records

GAA Performance Indexes records store information about the fields that are defined for the GAA Performance Indexes family in the baseline APM database. This topic provides an alphabetical list and description of the fields that exist for the GAA Performance Indexes family and appear on the datasheet. The information in the table reflects the baseline state and behavior of these fields. The values in these fields are defined by NERC in the GADS DRI and CEA in the Generation Equipment Status ERIS. This list is not comprehensive.

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.

Note: Wherever we refer to the unit, we mean the unit represented by the GAA Unit record to which the Performance record is linked.

Field	Data Type	Description	Behavior and Usage
Capacity Factor	Numeric	Indicates the energy that was produced by a Generating Unit in a given period as a fraction of the Maximum Generation. Maximum Generation is the period hours (PH) times the Maximum Capacity.	This field is disabled and populated automatically using the following formula: **[Actual Generation / (Period Hours X Maximum Capacity)] X 100%** **Note:** Capacity Factor calculated using this equation can be negative during a period when the unit is shut down.
D1 Equivalent Unplanned Derate MWH	Numeric	Indicates the amount of capacity lost (in Mega Watt hours) when the unit cannot reach its full capacity due to Unplanned Derating (D1).	This field is disabled and populated automatically using the following formula: Net Maximum Capacity x Equivalent Unplanned Derated hours (D1)

Field	Data Type	Description	Behavior and Usage
D2 Equivalent Unplanned Derate MWH	Numeric	Indicates the amount of capacity lost (in Mega Watt hours) when the unit cannot reach its full capacity due to Unplanned Derating (D2).	This field is disabled and populated automatically using the following formula: Net Maximum Capacity x Equivalent Unplanned Derated hours (D2)
D3 Equivalent Unplanned Derate MWH	Numeric	Indicates the amount of capacity lost (in Mega Watt hours) when the unit cannot reach its full capacity due to Unplanned Derating (D3).	This field is disabled and populated automatically using the following formula: Net Maximum Capacity x Equivalent Unplanned Derated hours (D3)
D4 Equivalent Maintenance Derate MWH	Numeric	Indicates the amount of capacity lost (in Mega Watt hours) when the unit cannot reach its full capacity due to Unplanned Derating (D4).	This field is disabled and populated automatically using the following formula: Net Maximum Capacity x Equivalent Unplanned Derated hours (D4)
Equivalent Availability Factor	Numeric	Indicates the fraction of Maximum Generation that could be provided if limited only by outages and deratings.	This field is disabled and populated automatically using the following formula: [(Available Hours - Equivalent Planned Derated Hours – Equivalent Unplanned Derated Hours - Equivalent Seasonal Derated Hours) / Period Hours] X 100%

Field	Data Type	Description	Behavior and Usage
Equivalent Forced Derated Hours During Reserve Shutdown	Numeric	Indicates the number of hours the unit will be inactive when the unit cannot reach its full capacity due to Forced Derating (D1, D2, D3) or portion of any Forced derating which occurred during a Reserve Shutdown (RS). Each individual Forced Derating or the portion of any Forced derating which occurred during a Reserve Shutdown is transformed into equivalent full outage hour(s).	This field is disabled and populated automatically using the following formula: **(Derating Hours x Size of Reduction) / NMC** Where, Derating Hours are the sum of individual Forced Derating hours (D1, D2, D3) or the portion of any Forced derating hours which occurred during a Reserve Shutdown (RS). Size of Reduction is calculated by subtracting the Net Available Capacity (NAC) from the Net Dependable Capacity (NDC). For multiple deratings, the Size of Reduction of each derating will be calculated by the difference in the Net Available Capacity of the unit before the derating and the reported Net Available Capacity after the derating. This value is defined by NERC in the GADS DRI.
Equivalent Forced Outage Factor	Numeric	Indicates the fraction of a given operating period in which a Generating Unit is not available due to forced outages and forced deratings.	This field is disabled and populated automatically using the following formula: [(Forced Outage Hours + Equivalent Forced Derated Hours) / Period Hours] X 100 %
Equivalent Forced Outage Rate	Numeric	A measure of the probability that a GAA Unit will not be available due to forced outages or forced deratings.	This field is disabled and populated automatically using the following formula: [(Forced Outage Hours + Equivalent Forced Derated Hours) / (Forced Outage Hours + Service Hours + Synchronous Hours + Pumping Hours + Equivalent Forced Derated Hours During Reserve Shutdown)] X 100 %

Field	Data Type	Description	Behavior and Usage
Equivalent Forced Outage Rate Demand	Numeric	Indicates the portion of time a unit is in demand, but is unavailable due to a forced outage.	This field is disabled and populated automatically using the following formula: [(Forced Outage Hours Demand + Equivalent Forced Derated Hours Demand) / (Service Hours + Forced Outage Hours Demand)] X 100 %
Equivalent Maintenance Derated Hours	Numeric	Indicates the number of hours the unit will be inactive when the unit cannot reach its full capacity due to Maintenance Derating (D4, DM). Each individual Maintenance Derating is transformed into equivalent full outage hour(s).	This field is disabled and populated automatically using the following formula: **(Derating Hours x Size of Reduction) / NMC** Where, Derating Hours are the sum of individual Maintenance Derating hours (D4, DM). Size of Reduction is calculated by subtracting the Net Available Capacity (NAC) from the Net Dependable Capacity (NDC). For multiple deratings, the Size of Reduction of each derating will be calculated by the difference in the Net Available Capacity of the unit before the derating and the reported Net Available Capacity after the derating. This value is defined by NERC in the GADS DRI.

Field	Data Type	Description	Behavior and Usage
Equivalent Maintenance Derated Hours During Reserve Shutdown	Numeric	Indicates the number of hours the unit will be inactive when the unit cannot reach its full capacity due to Maintenance Derating (D4) or the portion of any Maintenance derating which occurred during a Reserve Shutdown (RS). Each individual Maintenance Derating (D4) or the portion of any Maintenance derating which occurred during a Reserve Shutdown is transformed into equivalent full outage hour(s).	This field is disabled and populated automatically using the following formula: **(Derating Hours x Size of Reduction) / NMC** Where, Derating Hours are the sum of individual Maintenance Derating hours (D4) or the portion of any Maintenance derating hours which occurred during a Reserve Shutdown (RS). Size of Reduction is calculated by subtracting the Net Available Capacity (NAC) from the Net Dependable Capacity (NDC). For multiple deratings, the Size of Reduction of each derating will be calculated by the difference in the Net Available Capacity of the unit before the derating and the reported Net Available Capacity after the derating. This value is defined by NERC in the GADS DRI.
Equivalent Maintenance Outage Factor	Numeric	Indicates the fraction of a given operating period in which a Generating Unit is not available due to maintenance outages and maintenance deratings	This field is disabled and populated automatically using the following formula: **[(Maintenance Outage Hours + Equivalent Maintenance Derated Hours) / Period Hours] X 100 %**
Equivalent Maintenance Outage Rate	Numeric	A measure of the probability that a GAA Unit will not be available due to maintenance outages or maintenance deratings.	This field is disabled and populated automatically using the following formula: [(Maintenance Outage Hours + Equivalent Maintenance Derated Hours) / Σ (Maintenance Outage Hours + Service Hours + Synchronous Hours + Pumping Hours + Equivalent Maintenance Derated Hours During Reserve Shutdowns)] X 100%

Field	Data Type	Description	Behavior and Usage
Equivalent Planned Derated Hours	Numeric	Indicates the amount of capacity lost (in Mega Watt hours) when the unit cannot reach its full capacity due to Planned Deratings (PD, DP). Each individual Planned Derating is transformed into equivalent full outage hour(s).	This field is disabled and populated automatically using the following formula: Net Maximum Capacity x Equipment Planned Derate hours This value is defined by NERC in the GADS DRI.
Equivalent Planned Derate and Extension Hours	Numeric	Indicates the number of hours the unit will be inactive when the unit cannot reach its full capacity due to Planned Deratings (PD, DP). Each individual Planned Derating is transformed into equivalent full outage hour(s).	This field is disabled and populated automatically using the following formula: **(Derating Hours x Size of Reduction) / NMC** Where, Derating Hours are the sum of individual Planned Derating hours (PD, DP). Size of Reduction is calculated by subtracting the Net Available Capacity (NAC) from the Net Dependable Capacity (NDC). For multiple deratings, the Size of Reduction of each derating will be calculated by the difference in the Net Available Capacity of the unit before the derating and the reported Net Available Capacity after the derating. This value is defined by NERC in the GADS DRI

Field	Data Type	Description	Behavior and Usage
Equivalent Planned Derated Hours During Reserve Shutdown	Numeric	Indicates the number of hours the unit will be inactive when the unit cannot reach its full capacity due to Planned Derating (PD) or the portion of any Planned derating which occurred during a Reserve Shutdown (RS). Each individual Planned Derating or the portion of any Planned derating which occurred during a Reserve Shutdown is transformed into equivalent full outage hour(s).	This field is disabled and populated automatically using the following formula: **(Derating Hours x Size of Reduction) / NMC** Where, Derating Hours are the sum of individual Planned Derating (PD) or the portion of any Planned derating which occurred during a Reserve Shutdown (RS). Size of Reduction is calculated by subtracting the Net Available Capacity (NAC) from the Net Dependable Capacity (NDC). For multiple deratings, the Size of Reduction of each derating will be calculated by the difference in the Net Available Capacity of the unit before the derating and the reported Net Available Capacity after the derating. This value is defined by NERC in the GADS DRI.
Equivalent Planned Derate MWH	Numeric	Indicates the amount of capacity lost (in Mega Watt hours) when the unit cannot reach its full capacity due to Planned Deratings (PD, DP). Each individual Planned Derating is transformed into equivalent full outage hour(s).	This field is disabled and populated automatically using the following formula: Net Maximum Capacity x Equipment Planned Derate hours
Equivalent Planned Outage Factor	Numeric	Indicates the fraction of a given operating period in which a generating unit is not available due to planned outages and planned deratings.	This field is disabled and populated automatically using the following formula: [(Planned Outage Hours + Equivalent Planned Derated Hours) / Period Hours] X 100 %

Field	Data Type	Description	Behavior and Usage
Equivalent Planned Outage Rate	Numeric	A measure of the probability that a GAA Unit will not be available due to planned outages or planned deratings.	This field is disabled and populated automatically using the following formula: [(Planned Outage Hours + Equivalent Planned Derated Hours) / (Planned Outage Hours + Service Hours + Synchronous Hours + Pumping Hours + Equivalent Planned Derated Hours During Reserve Shutdowns)] X 100%
Equivalent Scheduled Derated Hours	Numeric	Indicates the number of hours the unit will be inactive when the unit cannot reach its full capacity due to Planned Derating (PD, DP) and Maintenance Derating (D4, DM). Each individual Planned Derating and Maintenance Derating is transformed into equivalent full outage hour(s).	This field is disabled and populated automatically using the following formula: **(Derating Hours x Size of Reduction) / NMC** Where, Derating Hours are the sum of individual Planned Derating hours (PD, DP) and Maintenance Derating hours (D4, DM). Size of Reduction is calculated by subtracting the Net Available Capacity (NAC) from the Net Dependable Capacity (NDC). For multiple deratings, the Size of Reduction of each derating will be calculated by the difference in the Net Available Capacity of the unit before the derating and the reported Net Available Capacity after the derating. This value is defined by NERC in the GADS DRI.
Equivalent Scheduled Outage Factor	Numeric	Indicates the fraction of a given operating period in which a Generating Unit is not available due to scheduled outages and scheduled deratings	This field is disabled and populated automatically using one of the following formula: [(Scheduled Outage Hours + Equivalent Scheduled Derated Hours) / Period Hours] X 100 %

Field	Data Type	Description	Behavior and Usage
Equivalent Seasonal Derated Hours	Numeric	Indicates the number of hours the unit will be inactive when the unit cannot reach its full capacity due to seasonal outages.	This field is disabled and populated automatically using the following formula: (Net Maximum Capacity (NMC) - Net Dependable Capacity (NDC) x Available Hours (AH)) / Net Maximum Capacity (NMC). ((NMC - NDC) x AH) / NMC This value is defined by NERC in the GADS DRI.
Equivalent Unplanned Derated Hours	Numeric	Indicates the number of hours the unit will be inactive when the unit cannot reach its full capacity due to Unplanned Deratings (D1, D2, D3, D4, DM). Each individual Unplanned Derating is transformed into equivalent full outage hour(s).	This field is disabled and populated automatically using the following formula: **(Derating Hours x Size of Reduction) / NMC** Where, Derating Hours are the sum of individual Unplanned Derating hours (D1, D2, D3, D4, DM) and Unplanned Deratings (D1, D2, D3, D4, DM) during Reserve Shutdowns (RS). Size of Reduction is calculated by subtracting the Net Available Capacity (NAC) from the Net Dependable Capacity (NDC). For multiple deratings, the Size of Reduction of each derating will be calculated by the difference in the Net Available Capacity of the unit before the derating and the reported Net Available Capacity after the derating.
Equivalent Unavailability Factor	Numeric	Indicates the fraction of Maximum Generation that could not be produced due to unit deratings and planned and unplanned outages.	This field is disabled and populated automatically using the following formula: [(Unplanned Outage Hours + Planned Outage Hours + Equivalent Unplanned Derated Hours + Equivalent Planned Derated Hours) / Period Hours] X 100%

Field	Data Type	Description	Behavior and Usage
Equivalent Unplanned Outage Factor	Numeric	Indicates the fraction of a given operating period in which a generating unit is not available due to forced and maintenance outages and forced and maintenance deratings.	This field is disabled and populated automatically using one of the following formula: [(Unplanned Outage Hours + Equivalent Unplanned Derated Hours) / Period Hours] X 100% **Note:** The Equivalent Unplanned Outage Factor is identical to the Unit Capability Loss Factor except this equation includes all events, including those outside plant management control.
Equivalent Unplanned Outage Rate	Numeric	A measure of the probability that a GAA Unit will not be available due to unplanned outages or unplanned deratings.	This field is disabled and populated automatically using the following formula: [(Unplanned Outage Hours + Equivalent Unplanned Derated Hours) / Unplanned Outage Hours + Service Hours + Synchronous Hours + Pumping Hours + Equivalent Unplanned Derated Hours During Reserve Shutdowns)] X 100%
Extended Maintenance Derate Equivalent MWH	Numeric	Indicates the amount of capacity lost (in Mega Watt hours) when the unit cannot reach its full capacity due to extension of a Maintenance Derating beyond its estimated completion date.	This field is disabled and populated automatically using the following formula: Net Maximum Capacity x Extended Maintenance Equivalent hours
Extended Planned Derate Equivalent MWH	Numeric	Indicates the amount of capacity lost (in Mega Watt hours) when the unit cannot reach its full capacity due to extension of a Planned Derating beyond its estimated completion date.	This field is disabled and populated automatically using the following formula: **Net Maximum Capacity x Extended Planned Derate Equivalent hours**
Forced Outage MWH	Numeric	Indicates the amount of capacity lost (in Mega Watt hours) when the unit was inactive due to immediate, delayed, and postponed outages and startup failure outages.	This field is disabled and populated automatically using the following formula: Net Maximum Capacity x Forced Outage hours

Field	Data Type	Description	Behavior and Usage
Maintenance and Extension Outage MWH	Numeric	Indicates the amount of capacity lost (in Mega Watt hours) when the unit was inactive due to Maintenance Outages (MO) and Maintenance Outage Extensions (ME) of any Maintenance Outages (MO). This also includes the extension of a Maintenance Outage beyond its estimated completion date.	This field is disabled and populated automatically using the following formula: Net Maximum Capacity x Maintenance and Extended Outage hours
Maintenance Outage MWH	Numeric	Indicates the amount of capacity lost (in Mega Watt hours) when the unit was inactive due to maintenance outages. This includes all the hours experienced during Maintenance Outages (MO).	This field is disabled and populated automatically using the following formula: Net Maximum Capacity x Maintenance Outage hours
Maintenance Outage Scheduled Extension MWH	Numeric	Indicates the amount of capacity lost (in Mega Watt hours) when the unit was scheduled to be inactive due to extension of a Maintenance Outage beyond its estimated completion date.	This field is disabled and populated automatically using the following formula: Net Maximum Capacity x Maintenance Outage Scheduled Extension hours
Non Curtailing Event MWH	Numeric	Indicates the amount of capacity lost (in Mega Watt hours) when the unit was inactive due to removal of an equipment or a major component from service for maintenance, testing, or other purposes that did not result in a unit outage or derating.	This field is disabled and populated automatically using the following formula: Net Maximum Capacity x Number of Non Curtailing Events

Field	Data Type	Description	Behavior and Usage
Output Factor	Numeric	Indicates the Capacity Factor when the period is applicable only to the in service state.	This field is disabled and populated automatically using the following formula: **[Actual Generation / (Service Hours X Maximum Capacity)] X 100 %** If you selected Net Maximum Capacity (NMC) in the weightage type in the GAA Unit record, the value in this field will based on the net values. If you selected Gross Maximum Capacity (GMC) in the weightage type in the GAA Unit record, the value in this field will based on the gross values.
Planned and Extension Outage MWH	Numeric	Indicates the amount of capacity lost (in Mega Watt hours) when the unit was inactive due to Planned Outages (PO) and Planned Outage Extensions (PE) of any Planned Outages (PO). This also includes the extension of a Planned Outage beyond its estimated completion date.	This field is disabled and populated automatically using the following formula: Net Maximum Capacity x Planned and Extension Outage hours
Planned Outage MWH	Numeric	Indicates the amount of capacity lost (in Mega Watt hours) when the unit was inactive due to planned outages. This includes all the hours experienced during Planned Outages (PO).	This field is disabled and populated automatically using the following formula: Net Maximum Capacity x Planned Outage hours
Planned Outage Scheduled Extension MWH	Numeric	Indicates the amount of capacity lost (in Mega Watt hours) when the unit was inactive due to extension of a Planned Outage beyond its estimated completion date.	This field is disabled and populated automatically using the following formula: Net Maximum Capacity x Planned Outage Scheduled Extension hours
Reserve Shutdown MWH	Numeric	Indicates the amount of capacity lost (in Mega Watt hours) when the unit was available, but was not in service.	This field is disabled and populated automatically using the following formula: Net Maximum Capacity x Reserve Shutdown hours

Field	Data Type	Description	Behavior and Usage
Seasonal Derating Factor	Numeric	Indicates the fraction of Maximum Generation that could not be produced due to seasonal deratings.	This field is disabled and populated automatically using the following formula: **(Equivalent Seasonal Derated Hours / Period Hours) X 100%**
Startup Failure MWH	Numeric	Indicates the amount of capacity lost (in Mega Watt hours) when the unit was unable to start within a specified startup time.	This field is disabled and populated automatically using the following formula: Net Maximum Capacity x Startup Failure hours
Total Equivalent Derate MWH	Numeric	Indicates the amount of capacity lost (in Mega Watt hours) when the unit will be inactive when the unit cannot reach its full capacity due to any of the derates.	This field is disabled and populated automatically using the following formula: Net Maximum Capacity x Total Equivalent Derate hours
U1 Unplanned Outage MWH	Numeric	Indicates the amount of capacity lost (in Mega Watt hours) when the unit was inactive due to U1 unplanned outages.	This field is disabled and populated automatically using the following formula: Net Maximum Capacity x U1 Unplanned Outage hours
U2 Unplanned Outage MWH	Numeric	Indicates the amount of capacity lost (in Mega Watt hours) when the unit was inactive due to U2 unplanned outages.	This field is disabled and populated automatically using the following formula: Net Maximum Capacity x U2 Unplanned Outage hours
U3 Unplanned Outage MWH	Numeric	Indicates the amount of capacity lost (in Mega Watt hours) when the unit was inactive due to U3 unplanned outages.	This field is disabled and populated automatically using the following formula: Net Maximum Capacity x U3 Unplanned Outage hours
Unit Derating Factor	Numeric	Indicates the fraction of Maximum Generation that could not be produced due to unit deratings.	This field is disabled and populated automatically using the following formula: [(Equivalent Planned Derated Hours + Equivalent Unplanned Derated Hours) / Period Hours] X 100%

GAA Performance Summary Records

GAA Performance Summary records store information about the fields that are defined for the GAA Performance Summary family in the baseline APM database. This topic provides an alphabetical list and

description of the fields that exist for the GAA Performance Summary family and appear on the datasheet. The information in the table reflects the baseline state and behavior of these fields. The values in these fields are defined by NERC in the GADS DRI. This list is not comprehensive.

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.

Note: Wherever we refer to the unit, we mean the unit represented by the GAA Unit record to which the Performance record is linked.

Field	Data Type	Description	Behavior and Usage
Actual Unit Starts	Numeric	Indicates the number of actual times the unit started within a given month and year.	This field is disabled and is populated automatically when the value in the Reporting Status field is set to Unit Level Approval, validation is performed on this field to ensure that the value is equal to the number of Attempted Unit Starts minus the number of Startup Failures. This field is required.
Attempted Unit Starts	Numeric	Indicates the number of attempted starts for the unit within a given month and year.	This field is disabled and is populated automatically when the value in the Reporting Status field is set to Unit Level Approval, validation is performed on this field to ensure that the value is equal to the number of outage events that occurred within the month that the Performance record represents. This field is required.
Available Hours	Numeric	Indicates the total number of hours in which the unit was available.	This field is disabled and populated automatically as the sum of Pumping Hours, Reserve Shutdown Hours (RSH), Service Hours (SH), and Synchronous Condensing Hours. This field is required. This value is defined by NERC in the GADS DRI and included in NERC performance reports.

Field	Data Type	Description	Behavior and Usage
Availability Factor	Numeric	Indicates the fraction of a given operating period in which a Generating Unit is available without any outages	This field is disabled and populated automatically using the following formula: **(Available Hours / Period Hours) × 100%** This value is defined by NERC in the GADS DRI.
Average Run Time	Numeric	Indicates the average number of hours a unit runs and produces power.	This field is disabled and populated automatically using the following formula: **(Service Hours / Actual Unit Starts) × 100%** This value is defined by NERC in the GADS DRI.
Common Mode Outage Event Hours	Numeric	Indicates the total number of hours a unit was under Common Mode Outage.	This field is disabled and populated automatically as the sum of all hours spent in Common Mode Outage events.
Extension of Scheduled Outage Hours	Numeric	Indicates the number of hours that the unit was scheduled to be inactive.	This field is disabled and populated automatically as the sum of Planned Extension Outage Hours and Maintenance Extension Outage Hours. This field is required.
Forced Outage Hours	Numeric	Indicates the number of hours the unit was inactive due to immediate, delayed, and postponed outages and startup failure outages.	This field is disabled and populated automatically as the sum of all hours experienced during Forced Outages (U1, U2, U3) and Startup Failures (SF). This field is required.
Forced Outage Factor	Numeric	Indicates the fraction of a given operating period in which a Generating Unit is not available due to forced outages.	This field is disabled and populated automatically using the following formula: (Forced Outage Hours / Period Hours) × 100% This value is defined by NERC in the GADS DRI.

Field	Data Type	Description	Behavior and Usage
Forced Outage Rate	Numeric	A measure of the probability that a GAA Unit will not be available due to forced outages.	This field is disabled and populated automatically using the following formula: [Forced Outage Hours / Σ (Service Hours + Synchronous Hours + Pumping Hours)] × 100% This value is defined by NERC in the GADS DRI.
Forced Outage Rate Demand	Numeric	A measure of the probability that a GAA Unit will not be available due to forced outages when there is demand on the unit to generate.	This field is disabled and populated automatically using the following formula: **[Forced Outage Hours Demand / (Σ Forced Outage Hours Demand + Service Hours)] × 100%** This value is defined by NERC in the GADS DRI.

Field	Data Type	Description	Behavior and Usage
Gross Actual Generation (G)	Numeric	Indicates the actual gross generation of the unit during the month for which the Performance record stores generation data.	This field is disabled and populated automatically using the following formula: Gross Actual Generation = Max Generation (G) - Unavailable Generation Where, • Max Generation (G) = Period Hours × Gross Max Capacity • Unavailable Generation = Σ(All Outage hours + All Equivalent Derate hours + All Reserve Shutdown hours) × Gross Max Capacity This field is used to calculate the value in the Gross Generation of Electricity field in the GAA Fuel Report records that are linked to the Performance record. This field accepts both positive and negative numbers. In some cases, if a unit does not produce power during the month, the equipment in the plant still consumes power, causing a negative Gross Actual Generation value. This field becomes required when the value in the Reporting Status field is set to Unit Level Approval. This value is defined by NERC in the GADS DRI and included in NERC performance reports.

Field	Data Type	Description	Behavior and Usage
Gross Dependable Capacity (G)	Numeric	Indicates the gross dependable capacity of the unit.	This field is populated automatically with the value in the Gross Dependable Capacity field in the Unit Capacity record for a GAA Unit based on the start date of the Performance record. This value is defined by NERC in the GADS DRI and included in NERC performance reports. If you modify the value in this field, a validation message appears indicating that the pumping hours or capacity values have changed and that the performance calculation is being run.
Gross Maximum Capacity (G)	Numeric	Indicates the gross maximum capacity of the unit during the month for which the Performance record stores generation data.	This field is populated automatically with the value in the Gross Maximum Capacity field in the Unit Capacity record for a GAA Unit based on the start date of the Performance record. This value is defined by NERC in the GADS DRI and included in NERC performance reports. If you modify the value in this field, a validation message appears indicating that the pumping hours or capacity values have changed and that the performance calculation is being run.
Inactive Hours	Numeric	Indicates the number of hours the unit was inactive during the month for which the Performance record stores generation data.	This field is disabled and populated automatically with the value from the Event Duration field in the Primary Event record that is linked to the Performance record. This field is populated automatically as the sum of durations of Inactive events (IR, MB, RU). This field is required. This value is defined by NERC in the GADS DR.

Field	Data Type	Description	Behavior and Usage
Maintenance Outage Hours	Numeric	Indicates the number of hours the unit was inactive due to maintenance outages.	This field is disabled and populated automatically as the sum of all hours that occurred during Maintenance Outages (MO) only. This field is required.
Maintenance and Extension Outage Hours	Numeric	Indicates the number of hours the unit was inactive due to maintenance outages and maintenance outage extensions.	This field is disabled and populated automatically as the sum of all hours that occurred during Maintenance Outages (MO) and Maintenance Outage Extensions (ME) of any Maintenance Outages (MO). This field is required.
Maintenance Outage Schedule Extension Hours	Numeric	Indicates the number of hours the unit was inactive due to maintenance outage extensions.	This field is disabled and populated automatically as the sum of all hours that occurred during Maintenance Outage Extensions (ME) only.
Maintenance Outage Factor	Numeric	Indicates the fraction of a given operating period in which a Generating Unit is not available due to maintenance outages.	This field is disabled and populated automatically using the following formula: **(Maintenance Outage Hours / Period Hours) × 100%** This value is defined by NERC in the GADS DRI.
Max Generation (G)	Numeric	Indicates the maximum gross generation that the unit is capable of producing during the month for which the Performance record stores generation data.	This field is disabled and populated automatically using the following formula: Max Generation (G) = Period Hours × Gross Max Capacity
Max Generation (N)	Numeric	Indicates the maximum net generation that the unit is capable of producing during the month for which the Performance record stores generation data.	This field is disabled and populated automatically using the following formula: Max Generation (N) = Period Hours × Net Max Capacity

Field	Data Type	Description	Behavior and Usage
Mean Forced Outage Duration	Numeric	Indicates the average number of hours a unit is unproductive because of forced outage.	This field is disabled and populated automatically using the following formula: Forced Outage Hours which occur from in-service state only / Number of Forced Outages which occur from in-service state only This value is defined by NERC in the GADS DRI.
Mean Maintenance Outage Duration	Numeric	Indicates the average number of hours a unit is unproductive because of maintenance outage.	This field is disabled and populated automatically using the following formula: Forced Outage Hours which occur from in-service state only / Number of Maintenance Outages which occur from in-service state only This value is defined by NERC in the GADS DRI.
Mean Planned Outage Duration	Numeric	Indicates the average number of hours a unit is unproductive because of planned outage.	This field is disabled and populated automatically using the following formula: Planned Outage Hours which occur from in-service state only / Number of Planned Outages which occur from in-service state only This value is defined by NERC in the GADS DRI.
Mean Service Time to Forced Outages	Numeric	Index representing mean service time to in-service forced outages.	This field is disabled and populated automatically using the following formula: Service Hours / Number of (Unplanned) Forced Outages which occur from in-service state only This value is defined by NERC in the GADS DRI.

Field	Data Type	Description	Behavior and Usage
Mean Service Time to Maintenance Outage	Numeric	Index representing mean service time to in-service maintenance outages.	This field is disabled and populated automatically using the following formula: Service Hours / Number of Maintenance Outages which occur from in-service state only This value is defined by NERC in the GADS DRI.
Mean Service Time to Planned Outage	Numeric	Index representing mean service time to in-service planned outages.	This field is disabled and populated automatically using the following formula: Service Hours / Number of Planned Outages which occur from in-service state only This value is defined by NERC in the GADS DRI.
Mean Service Time to Unplanned Outage	Numeric	Index representing mean service time to in-service unplanned outages.	This field is disabled and populated automatically using the following formula: Service Hours / Number of Unplanned Outages which occur from in-service state only This value is defined by NERC in the GADS DRI.
Mean Unplanned Outage Duration	Numeric	Indicates the average number of hours a unit is unproductive because of unplanned outage.	This field is disabled and populated automatically using the following formula: Unplanned Outage Hours which occur from in-service state only / Number of Unplanned Outages which occur from in-service state only This value is defined by NERC in the GADS DRI.

Field	Data Type	Description	Behavior and Usage
Net Actual Generation (N)	Numeric	Indicates the actual net generation of the unit during the month for which the Performance record stores generation data.	This field is disabled and populated automatically using the following formula: Net Actual Generation = Max Generation (N) - Unavailable Generation Where, • Max Generation (N) = Period Hours × Net Max Capacity • Unavailable Generation = Σ(All Outage hours + All Equivalent Derate hours + All Reserve Shutdown hours) × Net Max Capacity This field is used to calculate the value in the Net Generation of Electricity field in the Generation Fuel Report records that are linked to the Performance record. This field accepts both positive and negative numbers. In some cases, if a unit does not produce power during the month, the equipment in the plant still consumes power, causing a negative Net Actual Generation value. This field becomes required when the value in the Reporting Status field is set to Unit Level Approval. This value is defined by NERC in the GADS DRI and included in NERC performance reports.

Field	Data Type	Description	Behavior and Usage
Net Dependable Capacity (N)	Numeric	Indicates the net dependable capacity of the unit.	This field is populated automatically with the value in the Net Dependable Capacity field in the Unit Capacity record for a GAA Unit based on the start date of the Performance record. This field is required. This value is defined by NERC in the GADS DRI and included in NERC performance reports. If you modify the value in this field, a validation message appears indicating that the pumping hours or capacity values have changed and that the performance calculation is being run.
Net Maximum Capacity (N)	Numeric	Indicates the net maximum capacity of the unit during the month for which the Performance record stores generation data.	This field is populated automatically with the value in the Net Maximum Capacity field in the Unit Capacity record for a GAA Unit based on the start date of the Performance record. This field is required. This value is defined by NERC in the GADS DRI and included in NERC performance reports. If you modify the value in this field, a validation message appears indicating that the pumping hours or capacity values have changed and that the performance calculation is being run.
Non Curtailing Event Hours	Numeric	Indicates the number of hours when an equipment or a major component was removed from service for maintenance, testing, or other purposes, and it did not result in a unit outage or derating.	This field is disabled and populated automatically with the sum of all hours when a Non Curtailing Event occurred for a unit.

Field	Data Type	Description	Behavior and Usage
Number of Common Mode Outage Events	Numeric	Indicates the number of Common Mode Outage events that occur in a unit during the specified month.	This field is disabled and populated automatically with the number of Common Mode Outage events that have occurred during the specified month.
Number of Forced Outages	Numeric	Indicates the number of times the unit is inactive due to Forced Outages when the unit is in in-service state.	This field is disabled and populated automatically when each time the state of the unit changes from In-service to Forced Outage, this field is incremented by 1.
Number of Maintenance Outages	Numeric	Indicates the number of times the unit is inactive due to Maintenance Outages when the unit is in in-service state.	This field is disabled and populated automatically when each time the state of the unit changes from In-service to Maintenance Outage, this field is incremented by 1.
Number of Non Curtailing Events	Numeric	Indicates the number of Non Curtailing events that occur in a Unit during the specified month.	This field is disabled and populated automatically when each time an Event occurs with value in the Capacity Event Type field specified as NC (Noncurtailing Event), this field is incremented by 1.
Number of Planned Outages	Numeric	Indicates the number of times the unit is inactive due to Planned Outages when the unit is in the in-service state.	This field is disabled and populated automatically when each time the state of the unit changes from In-service to Planned Outage, this field is incremented by 1.
Number of Unplanned Outages	Numeric	Indicates the number of times the unit is inactive due to Unplanned Outages when the unit is in the in-service state.	This field is disabled and populated automatically when each time the state of the unit changes from In-service to Unplanned Outage, this field is incremented by 1.
Period Hours	Numeric	Indicates the number of hours the unit was active during the month for which the Performance record stores generation data.	This field is disabled and populated automatically. The value in this field is equal to the sum of the values in the Available Hours field and Unavailable Hrs field. This field is required.

Field	Data Type	Description	Behavior and Usage
Plant ID	Character	Identifies the plant in which the unit resides.	This field is disabled and populated automatically with the value in the Plant ID field in the GAA Plant record. The GAA Plant record is linked to the GAA Unit record for an existing Performance record.
Plant Name	Character	Identifies the name of the plant in which the unit resides.	This field is disabled and populated automatically with the value in the Plant Name field in the GAA Plant record. The GAA Plant record is linked to the GAA Unit record for an existing Performance record.
Planned Outage Hours	Numeric	Indicates the number of hours the unit was inactive due to planned outages.	This field is disabled and populated automatically as the sum of all hours experienced during Planned Outages (PO) only. This field is required.
Planned and Extension Outage Hours	Numeric	Indicates the number of hours the unit was inactive due to planned outages and planned outage extensions.	This field is disabled and populated automatically as the sum of all hours experienced during Planned Outages (PO) and Planned Outage Extensions (PE) of any Planned Outages (PO). This field is required.
Planned Outage Schedule Extension Hours	Numeric	Indicates the number of hours the unit was inactive due to planned outage extensions.	This field is disabled and populated automatically as the sum of all hours that occurred during Planned Outage Extensions (PE) only.
Planned Outage Factor	Numeric	Indicates the fraction of a given operating period in which a Generating Unit is not available due to planned outages.	This field is disabled and populated automatically using the following formula: (Planned Outage Hours / Period Hours) × 100% This value is defined by NERC in the GADS DRI.

Field	Data Type	Description	Behavior and Usage
Primary Unit Code	Character	Indicates the unit represented by the GAA Unit record to which the Performance record is linked.	This field is disabled and populated automatically with the value in the Primary Unit Code field in the GAA Unit record that is linked to a Performance record. This field is required. This value is defined by NERC in the GADS DRI and included in NERC performance reports.
Primary Utility Code	Character	Indicates the utility under which the unit represented by the GAA Unit to which the Performance record is linked operates.	This field is disabled and populated automatically with the value in the Primary Utility Code field in the GAA Unit record. This field is required. This value is defined by NERC in the GADS DRI and included in NERC performance reports.
Pumping Hours	Numeric	Indicates the number of hours the unit operated as a pump.	This field is enabled in Performance records that contain the value Pumped Storage/Hydro in the Unit Type field. You can enter a value in this field manually. This field is required. This value is defined by NERC in the GADS DRI. If you modify the value in this field, a validation message appears indicating that the pumping hours or capacity values have changed and that the performance calculation is being run.
Reporting Date	Date	Indicates the date on which the Performance record was approved and reported.	This field is populated automatically with the date when the record was created. This field is disabled when the Performance record is in the Approved state. This field is required.

Field	Data Type	Description	Behavior and Usage
Reporting Month	Character	Indicates the month that the Performance record represents.	The combination of the value in this field and the Reporting Year field represents a unique year and month combination. You can create only one record with this combination for a particular type of Performance. This field is disabled and populated automatically with the month when the record was created. This value is included in NERC performance reports.
Reporting Year	Numeric	Indicates the year that the Performance record represents.	The combination of the value in this field and the Reporting Month field represents a unique year and month combination. You can create only one record with this combination for a particular type of Performance. This field is disabled and populated automatically with the year of the created record. This value is included in NERC performance reports.
Reserve Shutdown Hours	Numeric	Indicates the sum of all the hours that the unit was available, but was not in service.	This field is disabled and populated automatically as the sum of all hours the unit was not in service. This field is required.
Revision	Numeric	Indicates the revision number of the Performance record.	You must increment this number each time you resubmit a report which includes information in the Performance record to NERC or CEA. This value is defined by NERC in the GADS DRI.

Field	Data Type	Description	Behavior and Usage
Scheduled Outage Hours	Numeric	Indicates the number of hours that the unit was scheduled to be inactive.	This field is disabled and populated automatically with the sum of all hours experienced during Planned Outages (PO), Maintenance Outages (MO), and Scheduled Outage Extensions (PE and ME) of any Maintenance Outages (MO) and Planned Outages (PO). This value is defined by NERC in the GADS DRI.
Scheduled Outage Factor	Numeric	Indicates the fraction of a given operating period in which a Generating Unit is not available due to scheduled outages.	This field is disabled and populated automatically using the following formula: **(Scheduled Outage Hours / Period Hours) × 100%** This value is defined by NERC in the GADS DRI.
Service Factor	Numeric	Indicates the fraction of service hours to period hours in a given operating period.	This field is disabled and populated automatically using the following formula: **(Service Hours / Period Hours) × 100%** This value is defined by NERC in the GADS DRI.
Start Reliability	Numeric	Indicates the starting reliability of the unit.	This field is disabled and populated automatically using the following formula: (Actual Unit Starts / Attempted Unit Starts)*100
Synchronous Condensing Hours	Numeric	Indicates the number of hours the unit operated in synchronous condensing mode.	You can enter a value in this field manually. If you modify the value in this field, an informational message appears on saving the datasheet indicating that the synchronous condensing hours or pumping hours have changed and that the performance calculation is being run.

Field	Data Type	Description	Behavior and Usage
Typical Unit Loading Characteristics	Numeric	Indicates the time during which the unit was responsible for generating power.	This field is populated automatically with the value in the Default Unit Loading field in the GAA Unit record to which the Performance record is linked. This value is defined by NERC in the GADS DRI.
Unit ID	Character	Identifies the unit.	This field is disabled and populated automatically with the value in the Unit ID field in the GAA Unit record that is linked to a Performance record.
Unit Name	Character	Identifies the name of the unit.	This field is disabled and populated automatically with the value in the Unit Name field in the GAA Unit record in an existing Performance record.
Unavailable Hours	Numeric	Indicates the number of hours that the unit was unavailable.	This field is disabled and populated automatically as the sum of the Forced Outage Hours (FOH), Maintenance Outage Hours (MOH), and Planned Outage Hours (POH). This value is included in NERC performance reports.
Unplanned Outage Hours	Numeric	Indicates the number of hours that the unit was inactive due to unscheduled outages.	This field is disabled and populated automatically with the sum of all hours experienced during Forced Outages (U1, U2, U3), Startup Failures (SF), Maintenance Outages (MO), and Maintenance Outage Extensions (ME) of any Maintenance Outages (MO).
Unit Type	Character	Identifies the type of the unit.	This field is disabled and populated automatically with the value in the GADS Unit Type field in the GAA Unit record that is linked to a Performance record.

Field	Data Type	Description	Behavior and Usage
Unavailability Factor	Numeric	Indicates the fraction of a given operating period in which a Generating Unit is not available due to outages.	This field is disabled and populated automatically using the following formula: **(Unavailable Hours / Period Hours) × 100%** This value is defined by NERC in the GADS DRI.
Unplanned Outage Factor	Numeric	Indicates the fraction of period a Generating Unit is not available due to unplanned outages.	This field is disabled and populated automatically using the following formula: (Unplanned Outage Hours / Period Hours) × 100% This value is defined by NERC in the GADS DRI.
Verbal Description	Character	Indicates additional information about the GAA Unit record that is linked to the Performance record.	You can manually enter the description in this field. When you create a Performance record, you can enter a verbal description of up to 255 characters. When you generate a NERC Performance Report, the verbal description in the generated report will display only the first 50 characters of the description that you entered in the Verbal Description field.

GAA Plant Records

GAA Plant records store information about the fields that are defined for the GAA Plant family in the baseline APM database. This topic provides an alphabetical list and description of the fields that exist for the GAA Plant family and appear on the **Plant** section. The information in the table reflects the baseline state and behavior of these fields. This list is not comprehensive.

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
Address 1	Character	Identifies the first line of the address of the plant.	You can enter a value manually. We recommend that you use the address that is on file with the Regulatory Organization. This field is available in the **Plant** section.
Address 2	Character	Identifies the second line of the address of the plant.	You can enter a value manually. We recommend that you use the address that is on file with the Regulatory Organization. This field is available in the **Plant** section.
Area	Character	Used to group GAA Plants into an area.	A baseline rule exists to populate this field with a list of each unique value that exists in the Area field in all other GAA Plants. You can enter a value manually. When you enter a value in the Area field for one GAA Plant, the value will be available in the Area drop-down for next plant. This field is available in the **Plant** section.
Asset ID	Character	Identifies the Functional Location associated with the GAA Plant.	You can select a Functional Location to associate with the GAA Plant. This field is required.
City	Character	Identifies the city in which the plant resides.	You can enter a value manually. We recommend that you use the city associated with the address that is on file with the Regulatory Organization. This field is available in the **Plant** section.

Field	Data Type	Description	Behavior and Usage
Company ID	Character	Identifies the company that owns the plant.	When a GAA Plant is created, this field is populated automatically with the value in the Company ID field in the GAA Company to which the GAA Plant is linked. This field is available in the **Plant** section.
Company Name	Character	Identifies the full name of the company that owns the plant.	When a GAA Plant is created, this field is populated automatically with the value in the Company Name field in the GAA Company to which the GAA Plant is linked. This field is available in the **Plant** section.
Country	Character	Indicates the country in which the plant resides.	You can enter a value manually. We recommend that you use the country associated with the address that is on file with the Regulatory Organization. This field is available in the **Plant** section.
Organization	Character	Identifies the organization to which the plant belongs.	You can enter a value manually. After you enter a value in the Organization field for one GAA Plant, the Organization value will be available in the drop-down list for the next plant. Therefore, when you create a new plant, you can either enter a new value or select the Organization value for an existing plant in the list. This field is available in the **Plant** section.
Plant ID	Character	Identifies the plant and is used to populate the Record ID.	This field is required for all GAA Plants. This field is available in the **Plant** section.

Field	Data Type	Description	Behavior and Usage
Plant Name	Character	Identifies the full name of the plant and is used to populate the Record ID.	This is a character field that is required for all GAA Plants. This value is defined by the Regulatory Organization. This field is available in the **Plant** section.
Primary Plant Code	Character	Identifies the code that is assigned to the GAA Plant by the regulatory body selected in the Primary Regulatory Body field of the GAA Company record.	You can enter a value manually. This field is required.
Primary Regulatory Body	Character	Identifies the first council to which data will be reported.	A baseline rule exists to populate this field based on your selection in the Primary Regulatory Body field in the GAA Company record and is disabled. This field is available in the **Plant** section.
Secondary Plant Code	Character	Identifies the code that is assigned to the GAA Plant by the regulatory body selected in the Secondary Regulatory Body field of the GAA Company record.	This field is required only if the Primary Regulatory Organization is CEA and is disabled.
Secondary Regulatory Body	Character	Identifies the second council to which data will be reported.	The Plant family inherits Secondary Regulatory Body field from the Company. This field is available in the **Plant** section.
State	Character	Indicates the state in which the plant resides.	A baseline rule exists to populate this field with a list of System Codes in the MI_GM_STATE System Code Table. We recommend that you use the state associated with the address that is on file with the Regulatory Organization. This field is available in the **Plant** section.

Field	Data Type	Description	Behavior and Usage
Time Zone	Character	Indicates the time zone to which the GAA Plant is associated.	By default, this field is set to Eastern Standard Time. You can select a time zone from the available list of time zones. This field is available in the **Plant** section. This field is required.
Use Daylight Saving Time	Boolean	Indicates whether Daylight Saving Time should be used in records that are associated with the GAA Plant.	If the value in this field is: • True, Daylight Saving Time will be adjusted automatically. • False, Daylight Saving Time will not be adjusted automatically. This field is available in the **Plant** section.
Zip Code	Character	Identifies the zip code of the location of the plant.	You can enter a value manually. We recommend that you use the zip code associated with the address that is on file with the Regulatory Organization. This field is available in the **Plant** section.

GAA Supported Organizations Records

GAA Supported Organizations records store information about the fields that are defined for the GAA Supported Organizations family in the baseline APM database. This topic provides an alphabetical list and description of the fields that exist for the GAA Supported Organizations family. The information in the table reflects the baseline state and behavior of these fields. This list is not comprehensive.

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
Organization Description	Character	Provides a description of the organization.	You can enter a value manually.
Organization ID	Character	Identifies the identification of the Regulatory Organization.	This field is required.

Field	Data Type	Description	Behavior and Usage
Supports Contributing Events	Boolean	Indicates whether the Regulatory Organization supports Contributing Events.	This field is selected by default if the Regulatory Organization is North American Electric Reliability Corporation (NERC).
Supports Related Events	Boolean	Indicates whether the Regulatory Organization supports Related Events.	This field is selected by default if the Regulatory Organization is North American Electric Reliability Corporation (NERC).

GAA Unit Records

GAA Unit records store information about the fields that are defined for the GAA Unit family in the baseline APM database. This topic provides an alphabetical list and description of the fields that exist for the GAA Unit family and appear on the **Unit**, **References**, **Calculation Settings**, **Fuel Data**, **Startup Summary**, and **Operating Notes** sections. The information in the table reflects the baseline state and behavior of these fields. This list is not comprehensive.

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
APM Event Creation	Character	Determines under what conditions APM Events will be created.	A baseline rule exists to populate this field with a list of the following values: • All Primary Events • MWH Loss Exceeds Reference • Production Loss Exceeds Reference This field is available in the Calculation Settings section.
APM Event Creation Reference Value	Numeric	Used to determine when an APM Event will be created.	This field is enabled and required if the value in the APM Event Creation is MWH Loss Exceeds Reference or Production Loss Exceeds Reference. This field is available in the **Calculation Settings** section.
Asset ID	Character	Identifies the Functional Location associated with the GAA Unit.	You can select a Functional Location to associate with the GAA Unit. This field is required.

Field	Data Type	Description	Behavior and Usage
Block Number	Character	Identifies the generation block for the unit.	This field contains a list of all values in the Block Number field in all other GAA Units. Block number typically applies to combined-cycle or co-generation unit types. In Primary Events and Contributing Events that are linked to a GAA Unit that has a value in the Block Number field, the following fields will contain the cause code values that are associated with the value in the Unit Type field of all GAA Units which contain the same value in the Block Number field. • Cause Code System • Cause Code Component • Cause Code fields This field is available in the **References** section. You can enter a value in this field. When you enter a value in the Block Number field for one GAA Unit, the value will be available in the Block Number drop-down for next unit.
Capable of Banking?	Boolean	Indicates whether the GAA Unit is capable of producing required heating output.	If the value in this field is: • True, it indicates that the GAA Unit is able to produce the required heating output. • False, it indicates that the GAA Unit is not able to produce the required heating output. This field is available in the **Startup Summary** section.

Field	Data Type	Description	Behavior and Usage
Capable of Quick Start?	Boolean	Indicates whether the GAA Unit is capable of starting immediately.	If the value in this field is: • True, it indicates that the GAA Unit can start immediately. • False, it indicates that the GAA Unit cannot start immediately. This field is available in the **Startup Summary** section.
Cold Start MMBTU	Numeric	Indicates the fuel consumption of a cold startup in MMBTU.	You can enter a value in this field. This field is available in the **Startup Summary** section.
Company ID	Character	Identifies the company that owns the unit.	When a GAA Unit is first created, this field is disabled and populated automatically with the value in the Company ID field for the GAA Plant to which the GAA Unit is linked. This field is available in the **Unit** section.
Company Name	Character	Identifies the full name of the company that owns the unit.	When a GAA Unit is first created, this field is disabled and populated automatically with the value in the Company Name field in the GAA Plant to which the GAA Unit is linked. This field is available in the **Unit** section.
Create Outside Management Control Statistics?	Boolean	Indicates whether a Performance record will be created to exclude Primary Events and Contributing Events in which the value in the OMC Event field is True.	If the value in this field is: • True, a Performance record will be created to exclude data for OMC events. • False, a Performance record will NOT be created to exclude data for OMC events. This field is available in the **Calculation Settings** section.

Field	Data Type	Description	Behavior and Usage
Default Unit Loading	Character	Indicates the time during which the unit is responsible for generating power.	A baseline rule exists to populate this field with a list of System Codes in the MI_GM_UNIT_LOADING System Code Table based on the value in the Primary Regulatory Body field in GAA Unit record. This field is available in the **Fuel Data** section.
Derating Calculation Method	Character	Used by the History Rollup Query when it rolls up event data in the order that the events occurred based on their start date.	This field is required. You should accept the default value, Event Order Number. You should not select Ranked Masking and All Additives. This field is available in the **Calculation Settings** section.
EUCG Plant Reference	Numeric	Indicates a plant reference number assigned by EUCG. EUCG is a global association of utility professionals and member companies which is recognized as the electric energy industry source for performance information.	You can enter a value in this field. This field is available in the **References** section.
Generation Cost Model	Character	Determines how the Potential Event Cost will be calculated in Primary Events that are linked to the GAA Unit.	This field is available in the **Calculation Settings** section. It is disabled and set to No Cost Calculation by default.
Generation Cost Reference Value	Numeric	Determines the cost of power lost by reduced capacity of the unit.	This field is enabled and required when the value in the Generation Cost Model field is set to Reference Value. This field is available in the **Calculation Settings** section.
Hot Start MMBTU	Numeric	Indicates the fuel consumption for a hot startup in MMBTU.	You can enter a value in this field. This field is available in the **Startup Summary** section.

Field	Data Type	Description	Behavior and Usage
Lock GADS Data	Boolean	Determines whether Primary Event or Performance records that are linked to the GAA Unit can be modified.	If the value in this field is: • True, only a member of the MI GAA Administrator Security Group will be allowed to create Primary Event or Performance records to link to the GAA Unit or modify Primary Events or Performance records that are already linked to the GAA Unit. • False, the ability to create and modify Primary Events and Performance records will be controlled by GAA role-based security. This field is available in the **Unit** section.
Minimum Down Time	Numeric	Indicates the minimum time for which the GAA Unit is shut down and is not producing power.	You can enter a value in this field. This field is available in the **Startup Summary** section.
Minimum Up Time	Numeric	Indicates the minimum time for which the GAA Unit is producing power.	You can enter a value in this field. This field is available in the **Startup Summary** section.
Nameplate Gross Dependable Capacity	Numeric	Identifies the gross dependable electrical generation capacity of the unit.	This field is available in the **Unit** section.
Nameplate Gross Maximum Capacity	Numeric	Identifies the gross maximum electrical generation capacity of the unit.	Either this field or the Nameplate Net Maximum Capacity field must be populated in order to save a GAA Unit. This field is available in the **Unit** section. This field is required.
Nameplate Net Dependable Capacity	Numeric	Identifies the net dependable electrical generation capacity of the unit.	This field is available in the **Unit** section.

Field	Data Type	Description	Behavior and Usage
Nameplate Net Maximum Capacity	Numeric	Identifies the net maximum electrical generation capacity of the unit.	Either this field or the Nameplate Gross Maximum Capacity field must be populated in order to save a GAA Unit. This field is available in the **Unit** section. This field is required.
Net Rating	Numeric	Identifies the manufacturer's official net rating for the unit.	This value is defined by NERC in the GADS DRI and CEA in the Generation Equipment Status ERIS. This field is available in the **References** section.
Percent Generation	Numeric	Represents the percentage of the unit's generation from the unit that belongs to the company represented by the GAA Company that is associated with the GAA Unit.	This field is available in the **Unit** section and is populated with the value 100(PCT) by default.
Percent Operated	Numeric	Represents the percentage of unit operation that belongs to the company represented by the GAA Company that is associated with the GAA Unit.	This field is available in the **Unit** section and is populated with the value 100(PCT) by default.
Percent Owned	Numeric	Represents the percentage of the unit owned by the company represented by the GAA Company that is associated with the GAA Unit.	This field is available in the **Unit** section and is populated with the value 100(PCT) by default.
Plant ID	Character	Identifies the plant in which the unit resides.	When a GAA Unit is created, this field is disabled and populated automatically with the value in the Plant ID field in the GAA Plant to which the GAA Unit is linked. This field is available in the **Unit** section.

Field	Data Type	Description	Behavior and Usage
Plant Name	Character	Identifies the full name of the plant in which the unit resides.	When a GAA Unit is created, this field is disabled and populated automatically with the value in the Plant Name field in the GAA Plant to which the GAA Unit is linked. This field is available in the **Unit** section.
Primary Fuel Code	Character	Identifies the fuel code for the primary fuel used by the GAA unit.	A baseline rule exists to populate this field with values in GAA Fuel Types records. This field is required. This field is available in the **Fuel Data** section.
Primary Regulatory Organization	Character	Identifies the first council to which data will be reported.	A baseline rule exists to populate this field based on your selection in the Primary Regulatory Organization field in the GAA Company record. You can, however, modify the value in this field. If the value in this field is set to North American Electric Reliability Corporation (NERC), the Secondary Regulatory Organization field is disabled. If the value in this field is set to Canadian Electricity Association (CEA) , the value in Secondary Regulatory Organization field is set to North American Electric Reliability Corporation (NERC) and the field is disabled. This field is required. This field is available in the **Unit** section.

Field	Data Type	Description	Behavior and Usage
Primary Unit Code	Numeric	Indicates the code that is assigned to the GAA Unit by the regulatory body selected in the Primary Regulatory Body field.	You can enter a value in this field. The Primary Unit Code for NERC must be three characters. The Primary Unit Code for CEA must be two characters. This field is available in the **References** section. This is a required field. **Note:** If you enter a single digit instead of two digits, the digit entered is prefixed with 0 and appears as two digits in the CEA Event Report.
Primary Utility Code	Numeric	Identifies the utility under which the unit operates.	This value is defined by NERC in the GADS DRI and CEA in the Generation Equipment Status ERIS. This field is required. This field is available in the **References** section.
Quaternary Fuel Code	Character	Identifies the fuel code for the quaternary fuel used by the GAA unit.	A baseline rule exists to populate this field with values in GAA Fuel Types records. This field is available in the **Fuel Data** section.
Quick Start Reserve	Numeric	Indicates that the Unit is not synchronized but can be loaded within the specified time (in minutes). Typical examples are 10 minutes or 30 minutes.	You can enter a value in this field. This field is available in the **Startup Summary** section.

Field	Data Type	Description	Behavior and Usage
Region	Character	Indicates the region code of the plant in which the unit resides.	A baseline rule exists to populate this field with a list of System Codes in the MI_GM_POWER_REGION System Code Table. This value is defined by NERC in the GADS DRI and CEA in the Generation Equipment Status ERIS. This field is required only if the Primary Regulatory Organization is NERC. This field is available in the **References** section.
Report Capacity Data	Character	Specifies how event data should be reported for Primary Events that are linked to the GAA Unit.	A baseline rule exists to populate this field with a list of the following values: NERC, Internal, NERC and Internal, and Do Not Report. This field is available in the **References** section.
Secondary Fuel Code	Character	Identifies the fuel code for the secondary fuel used by the GAA unit.	A baseline rule exists to populate this field with values in GAA Fuel Types records. This field is available in the **Fuel Data** section.

Field	Data Type	Description	Behavior and Usage
Secondary Regulatory Organization	Character	Identifies the second council to which data will be reported.	A baseline rule exists to populate this field based on your selection in the Secondary Regulatory Organization field in the GAA Company record. You can, however, modify the value in this field. If the value in the Primary Regulatory Organization field is set to North American Electric Reliability Corporation (NERC), this field is disabled. If the value in the Primary Regulatory Organization field is set to Canadian Electricity Association (CEA) , the value in this field is set to North American Electric Reliability Corporation (NERC) and the field is disabled. This field is available in the **Unit** section.
Secondary Unit Code	Character	Indicates the code that is assigned to the GAA Unit by the regulatory body selected in the Secondary Regulatory Body field.	You can enter a value in this field. You must enter a value in this field if you have selected a value in the Secondary Regulatory Organization field. The Secondary Unit Code for NERC must be three characters. The Primary Unit Code for CEA must be two characters. This field is available in the **References** section.

Field	Data Type	Description	Behavior and Usage
Secondary Utility Code	Character	Identifies the utility code under which the unit operates.	This value is defined by NERC in the GADS DRI and CEA in the Generation Equipment Status ERIS. If the value in the Primary Regulatory organization field is Canadian Electricity Association (CEA), then the Secondary Utility Code field is enabled and will be required. This field is available in the **References** section.
Subregion	Character	Indicates the subregion of the plant in which the unit resides.	A baseline rule exists to populate this field with a list of the System Codes in the MI_GM_POWER_SUBREGION System Code Table that contain a System Code Reference to the System Code identified by the value in the Region field. This value is defined by NERC in the GADS DRI and CEA in the Generation Equipment Status ERIS. This field is required only if the Primary Regulatory Organization is NERC. This field is available in the **References** section.
Tertiary Fuel Code	Character	Identifies the fuel code for the tertiary fuel used by the GAA unit.	A baseline rule exists to populate this field with values in GAA Fuel Types records. This field is available in the **Fuel Data** section.
Typical Cold Down Time	Numeric	Indicates the minimum time for which the unit is shut down to be classified for cold start.	You can enter a value in this field. This field is available in the **Startup Summary** section.
Typical Cold Start	Numeric	Indicates the time in hours for a unit to start from cold.	You can enter a value in this field. This field is available in the **Startup Summary** section.

Field	Data Type	Description	Behavior and Usage
Typical Hot Down Time	Numeric	Indicates the time for which the unit is shut down to be classified for hot start.	You can enter a value in this field. This field is available in the **Startup Summary** section.
Typical Hot Start	Numeric	Indicates the time in hours for a unit to start from hot.	You can enter a value in this field. This field is available in the **Startup Summary** section.
Unit ID	Character	Identifies the unit and is used to populate the Record ID.	The value in this field should not exceed 50 characters in length. While you can save a GAA Unit that contains more than 50 characters in this field, when you attempt to create a Primary Event for that unit, an error message will be displayed. This field is required. This field is available in the **Unit** section.
Unit Name	Character	Identifies the full name of the unit and is used to populate the Record ID.	This field is required. This field is available in the **Unit** section.
Unit Operating Characteristics	Character	Stores any information about the unit that is not captured in other fields.	This field is available in the **Operating Notes** section.

Field	Data Type	Description	Behavior and Usage

Unit State	Character	Indicates whether the unit represented by the GAA Unit is active.	A baseline rule exists to populate this field with a list of the values based on your selection in the Primary Regulatory Organization field.
			
			If you selected North American Electric Reliability Corporation (NERC) in the Primary Regulatory Organization field, the following options appear in drop-down list box:
			
			• Active (Active)
			• Inactive (Inactive)
			
			  If you select this value, make sure that the GAA Unit has at least one event which meets the following criteria:
			
			  ◦ Capacity Event Type field in the Event record is set to:
			
			    ◦ Reserve Shutdown when the Event Type is IR (Inactive Reserve)
			    ◦ Outage when the Event Type is MB (Mothballed)
			    ◦ Mothball
			
			  ◦ Duration of the Event is more than 60 days
			
			Note: When a GAA Unit is in Inactive state, you cannot have an event associated with the Active state.
			
			If you selected Canadian Electricity Association (CEA) in the Primary Regulatory Organization field, the following options appear in drop-down list box:
			
			• Not In Commercial Service (NICS)
			• Commercial Service (CS)
			
			This field is required.
			
			This field is available in the **Unit** section.

Field	Data Type	Description	Behavior and Usage
Unit Type	Character	Identifies the type of unit.	A baseline rule exists to populate this field based on your selection in the Primary Regulatory Organization field. The value in this field will be used in conjunction with the Nameplate Gross Maximum Capacity or Nameplate Net Maximum Capacity to calculate missing capacity values. This field is required. This field is available in the **References** section.
Verbal Description	Character	Stores a description of the unit.	This field is available in the **Fuel Data** section.
Zone	Character	Identifies the zone in which the unit resides for the purpose of associating Power Price Curves with the GAA Unit.	If the value in the Generation Cost Model field is Price Curve, this field becomes required and the value will be used to associate Power Price Curves with the same Zone with events linked to the GAA Unit. A baseline rule exists to populate this field with a list of System Codes in the MI_GM_POWER_PRICE_ZONE System Code Table. This field is available in the **Calculation Settings** section.

GAA Unit States Records

GAA Unit States records store information about the fields that are defined for the GAA Unit States family in the baseline APM database. This topic provides an alphabetical list and description of the fields that exist for the GAA Unit States family. The information in the table reflects the baseline state and behavior of these fields. This list is not comprehensive.

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
Regulatory Organization	Character	Identifies the council to which data will be reported.	A baseline rule exists to populate this field with a list of the following values: • Canadian Electricity Association (CEA) • North American Electric Reliability Corporation (NERC) This field is required.
State Description	Character	Indicates the state of the GAA Unit.	This field is required.
State ID	Character	Indicates the identification for the state represented by the GAA Unit.	This field is required.

GAA Unit Types Records

GAA Unit Types records store information about the fields that are defined for the GAA Unit Types family in the baseline APM database. This topic provides an alphabetical list and description of the fields that exist for the GAA Unit Types family. The information in the table reflects the baseline state and behavior of these fields. This list is not comprehensive.

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
Regulatory Organization	Character	Identifies the council to which data will be reported.	A baseline rule exists to populate this field with a list of the following values: • Canadian Electricity Association (CEA) • North American Electric Reliability Corporation (NERC) This field is required.
Unit Abbreviation	Character	Indicates the abbreviation for the Unit Type.	You can enter a value manually.
Unit Type Description	Character	Indicates the description of the Unit Type.	This field is required.
Unit Type ID	Character	Indicates the identification of the Unit Type associated with the GAA Unit.	This field is required.

GAA Unit Capacity Records

GAA Unit Capacity records store information about the fields that are defined for the GAA Unit Capacity family in the baseline APM database. This topic provides an alphabetical list and description of the fields that exist for the GAA Unit Capacity family and appear in the **Information** section of the GAA Unit Capacity datasheet. The information in the table reflects the baseline state and behavior of these fields. This list is not comprehensive.

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
End Date	Date	Identifies the end date till when the Unit Capacities will be applicable on the GAA Unit.	If no End Date is defined in a GAA Unit Capacity record, the Start Date of the next GAA Unit Capacity record will be considered as the End Date for this GAA Unit Capacity record.
Entity ID	Character	Identifies the GAA Unit Capacity record.	This field is populated using the following format: <UnitID> ~ <StartDate> ~ <EndDate> Where, • **<UnitID>** is the value in the Unit Id field in the GAA Unit record • **<StartDate>** is the value in the Start Date field in the GAA Unit Capacity record • **<EndDate>** is the value in the End Date field in the GAA Unit Capacity record
Gross Dependable Capacity	Numeric	Identifies the gross dependable electrical generation capacity of the GAA Unit during the specified period.	The value in Gross Dependable Capacity field must be less than the value in Gross Maximum Capacity field.

Field	Data Type	Description	Behavior and Usage
Gross Maximum Capacity	Numeric	Identifies the gross maximum electrical generation capacity of the GAA Unit during the specified period.	You must provide a value in this field or the Net Maximum Capacity field. This field is required if you do not provide a value in the Net Maximum Capacity field. The value in Gross Maximum Capacity field must be greater than the value in Net Maximum Capacity field.
Net Dependable Capacity	Numeric	Identifies the net dependable electrical generation capacity of the GAA Unit during the specified period.	The value in Net Dependable Capacity field must be less than the value in Net Maximum Capacity field.
Net Maximum Capacity	Numeric	Identifies the net maximum electrical generation capacity of the GAA Unit during the specified period.	You must provide a value in this field or the Gross Maximum Capacity field. This field is required if you do not provide a value in the Gross Maximum Capacity field. The value in Net Maximum Capacity field must be less than the value in Gross Maximum Capacity field.
Start Date	Date	Identifies the start date when the Unit Capacities will be applicable on the GAA Unit.	The Start Date of any GAA Unit Capacity record must be a date after the End Date of the previous GAA Unit Capacity record. When you add a GAA Unit record, a GAA Unit Capacity record is automatically created with the values defined in the capacity related fields in the GAA Unit record. In the default GAA Unit Capacity record, the Start Date is set to 01/01/1900 00:00:00 and the End Date is blank. If you want to add an additional GAA Unit Capacity record, you must modify the End Date of the default record and set it to a date before the Start Date of the new record. This field is required.

Primary Event History Records

Primary Event History records store information about the history of a Primary Event. This topic provides an alphabetical list and description of the fields that exist for the Primary Event History family. The information in the table reflects the baseline state and behavior of these fields. This list is not comprehensive.

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
Action on Primary Event	Character	Indicates the type of action taken on the Primary Event.	This field is populated automatically. Depending on the action taken on the Primary Event, the field is populated with either Update or Delete.
Last Updated User	Character	Indicates the name of the user who modified the Primary Event.	This field is populated automatically.
Last Updated State	Character	Indicates which state the Primary Event was in during the modification.	This field is populated automatically with one of the following states: • Approved • In Progress • New • Pending Review • Reviewed • Unit Approved

Catalog Items

Queries Folder

The Catalog folder \\Public\Meridium\Modules\Generation Management\Queries contains the following items.

Query Name	Behavior and Usage
Get Event Types to check required rule for Amplification Code	Returns the list of the NERC Event Types to check whether Amplification Code is a required field during event state transition. **Note:** Currently, the query returns all the NERC Event Types except U1. However, you can modify the query to add or remove any NERC Event Type.
GAA Contributing Events for the given Primary event Datagrid	Returns the list of Contributing Events that are associated with a Primary Event. You cannot modify or delete the Event ID, Primary Event Key, Contributing Event Key, or Hyperlink fields. You can also add a new Hyperlink field.
GAA Event Categories	Returns the list of all the event categories and its associated color codes and events. You can modify the columns for the Event Category grid. You cannot modify the ENTY_ID column. **Note:** When adding or deleting columns, update the required hyperlink URLs.
GAA Event Types	Returns the list of all the event types and its associated color codes and regulatory organizations. You can modify the columns for the Event Type grid. You cannot modify the Event Type Code column. **Note:** When adding or deleting columns, update the required hyperlink URLs.
GAA Mappings list	Returns the list of the mappings between NERC and CEA Codes. You can modify the columns within the Mappings grid. You cannot modify the ENTY_KEY column.
Gaa reports and performance configuration list	Returns a list of all the configuration data. You can modify the Configuration grid. You cannot modify the Entity ID column.
Get Contributing Events for Export	Returns the details of Contributing Events for exporting. You can modify this query to determine the fields of the Contributing Event records that must be exported. **Important:** • Do not delete the columns in this query. • Do not modify the alias and order of columns in this query.

Query Name	Behavior and Usage
Get Event Types to exclude from Required fields check	Returns the list of the CEA Event Types to check whether the following fields, Cause Code System, Cause Code Component, Cause Code, Amplification Code, and Verbal Description are required fields during event state transition. **Note:** Currently, the query returns the following list of CEA Event Types 11-1,11-2,14,14-1,14-2 only. However, you can modify the query to add or remove any CEA Event Type.
Get Primary and Related Events for Export	Returns the details of Primary Events and Related Events for exporting. You can modify this query to determine the fields of the Primary Event and Related Event records that must be exported. **Important:** • Do not delete the columns in this query. • Do not modify the alias and order of columns in this query.
Primary Event Details	Returns the list of all the Primary Events for a GAA Unit, including OMC Events, for the specified period. You cannot modify or delete the Event ID, Primary Event Key, Event Key, or Hyperlink fields.
Primary Event Details Datagrid	Returns the list of all the Primary Events associated with a Performance record for the associated GAA Unit. This query calls the Primary Event Details or Primary Event Details Excluding OMC query based on your selection in the **Performance Records** section in the **Performance & Reports** workspace. You cannot modify or delete the Event ID, Primary Event Key, Event Key, or Hyperlink fields. You cannot modify the Hyperlink column. And you cannot modify the Regulatory and Management reports. You can add a new Hyperlink field. **Note:** When adding or deleting columns, update the required hyperlink URLs.
Primary Event Details DataGrid Excluding OMC	Returns the list of all the Primary Events associated with a Performance record for the associated GAA Unit. This query calls the Primary Event Details or Primary Event Details Excluding OMC query based on your selection in the **Performance Records** section in the **Performance & Reports** workspace. You cannot modify or delete the Event ID, Primary Event Key, Event Key, or Hyperlink fields. You cannot modify the Hyperlink column. You can add a new Hyperlink field.

Query Name	Behavior and Usage
Primary Events for Events List	Returns the list of Primary Events for a GAA Unit during the specified period. **Important:** When using this query, you must not perform the following actions on the query: • Modify or delete the hyperlink and entity key fields. • Modify or delete the Event ID field. • Change the alias of the fields. • Modify the order of fields. However, you can add a new field.
Primary Events for Events List with eLog	Returns the list of Primary Events for a GAA Unit during the specified period. **Important:** When using this query, you must not perform the following actions on the query: • Modify or delete the hyperlink and entity key fields. • Modify or delete the Event ID field. • Change the alias of the fields. • Modify the order of fields. However, you can add a new field.
Primary Events for Events List with RCA	Returns the list of Primary Events for a GAA Unit during the specified period. **Important:** When using this query, you must not perform the following actions on the query: • Modify or delete the hyperlink and entity key fields. • Modify or delete the Event ID field. • Change the alias of the fields. • Modify the order of fields. However, you can add a new field.
Primary Events for Events List with RCA and eLog	Returns the list of Primary Events for a GAA Unit during the specified period. **Important:** When using this query, you must not perform the following actions on the query: • Modify or delete the hyperlink and entity key fields. • Modify or delete the Event ID field. • Change the alias of the fields. • Modify the order of fields. However, you can add a new field.

Query Name	Behavior and Usage
Primary Events Tiles Wrapper Query	Returns the list of Events in the **Event Under Review** and **Approved Events** tabs on the **GAA Overview** page. You must not delete the Event Key and Unit Entity Key fields. You can add a Hyperlink property to a field but you cannot modify or delete a field that contains this property. You can modify the sub query to add more columns and then, as needed, modify this query to add more columns. You must not modify the Even ID and Unit Name columns. **Note:** When adding or deleting columns, update the required hyperlink URLs.
Reports list for Unit Datagrid	Returns the list of Regulatory Reports on the **GAA Administrator** page. You can add a Hyperlink property to a field but you cannot modify or delete a field that contains this property. You cannot modify an existing Key field and the Key column.
Retrieve Capacities for a Unit	Returns the list of the capacities for a Unit. You can modify the columns for the Capacities grid for a specified unit. You cannot modify the ENTY_KEY column. **Note:** When adding or deleting columns, update the required hyperlink URLs.
Retrieve Event Transition Data	Returns the list of the Event Transition data. You can modify the Event Transition grid. You cannot modify the ENTY_KEY column.
Retrieve GAA Amplification Codes	Returns the list of the GAA Amplification Codes. You can modify the columns for the Amplification Codes grid. You cannot modify the ENTY_KEY column. **Note:** When adding or deleting columns, update the required hyperlink URLs.
Retrieve GAA Cause Codes	Returns the list of the GAA Cause Codes. You can modify the columns for the Cause Codes grid. You cannot modify the ENTY_KEY column. **Note:** When adding or deleting columns, update the required hyperlink URLs.
Retrieve GAA Fuel Data	Returns the list of GAA Fuel Code data. You can modify the columns for the Fuel Data grid. You cannot modify the ENTY_KEY column.

Graph Queries Folder

The Catalog folder \\Public\Meridium\Modules\Generation Management\Queries\Graph Queries contains the following items.

Query Name	Behavior and Usage
GAA_Overview - Performance Report Statisitcs	This query is used to populate the Event and Performance Report Statistics section in the **GAA Overview page**. This query cannot be modified in the query designer. The Performance Indexes Based NMC and Performance Records between date ranges sub-queries can be modified to add, delete, or reorder columns. You cannot modify the Unit ID column.

Mappings

Values Mapped from a Primary Event to an RCA

Important: You can view the list of RCAs created from GAA only if the license for Root Cause Analysis is active.

When you create an RCA from a Primary Event, several fields in the RCA are populated automatically with the corresponding value in the Primary Event. The field mappings are listed in the following table:

Primary Event Field	Root Cause Analysis Field
Event ID	Analysis Name
Unit ID, Cause Code, Cause code Component, Cause Code System, Event Type, Event Start, Event End	Analysis Description
Event Start	Start Date

Allowable Event Types in Related Events

Allowable Event Types in Related Events

Use the following table to determine which event types are allowed in subsequent Primary Events in related Primary Event pairs.

Event Type in Preceding Event Record	Allowable Event Types in Subsequent Event Record	Notes
D1 - Immediate	None	IEEE Standard 762 does not recognize transition to/of deratings from/to other event types.
D2 - Delayed	None	IEEE Standard 762 does not recognize transition to/of deratings from/to other event types.
D3 - Postponed	None	IEEE Standard 762 does not recognize transition to/of deratings from/to other event types.
D4 - Maintenance	DM	None
DM - Maintenance Derating Extension	DM	This Capacity Event Type cannot be the first event in a sequence and must follow an existing Primary Event. If it does not follow a Primary Event with an appropriate Capacity Event Type, a warning message appears when you navigate out of the field.
DP - Planned Derating Extension	DP	This Capacity Event Type cannot be the first event in a sequence and must follow an existing Primary Event. If it does not follow a Primary Event with an appropriate Capacity Event Type, a warning message appears when you navigate out of the field.
ME - Maintenance Extension	U1, SF, ME, RS	This Capacity Event Type cannot be the first event in a sequence and must follow an existing Primary Event. If it does not follow a Primary Event with an appropriate Capacity Event Type, a warning message appears when you navigate out of the field.
MO - Maintenance	U1, SF, MO, PO, ME, RS	None
PD - Planned	DP	This Capacity Event Type cannot be the first event in a sequence and must follow an existing Primary Event. If it does not follow a Primary Event with an appropriate Capacity Event Type, a warning message appears when you navigate out of the field.

Event Type in Preceding Event Record	Allowable Event Types in Subsequent Event Record	Notes
PE - Planned Extension	U1, SF, PE, RS	This Capacity Event Type cannot be the first event in a sequence and must follow an existing Primary Event. If it does not follow a Primary Event with an appropriate Capacity Event Type, a warning message appears when you navigate out of the field.
PO - Planned	U1, SF, PO, PE, RS	None
RS - Reserve Shutdown	U1, SF, MO, PO, RS	None
SF - Startup Failure	U1, SF, MO, PO, RS	This Capacity Event Type cannot be the first event in a sequence and must follow an existing Primary Event. If it does not follow a Primary Event with an appropriate Capacity Event Type, a warning message appears when you navigate out of the field.
U1 - Immediate	U1, SF, MO, PO, RS	None
U2 - Delayed	U1, SF, MO, PO, RS	None
U3 - Postponed	U1, SF, MO, PO, RS	None

Fields that can be Populated from one of the Three Related Records

Fields that can be Populated from one of the Three Related Records

When you create a Primary Event record, you will specify, in the Unit ID field, the Unit ID of the GAA Unit record to which the Event record will be linked. When you save the Primary Event record, the APM system will attempt to populate various fields in the Event record with values based on the Unit ID value. These values will not necessarily come directly from the GAA Unit record itself.

1. First, the APM system will attempt to populate each field with the corresponding value in the Performance record that is linked to the specified GAA Unit record for the month in which the event occurred.
2. If the associated Performance record does not exist or does not contain a value in a given field, the APM system will attempt to populate the field with the corresponding value in the GAA Unit record.
3. If the GAA Unit record does not contain a value in a given field, that field will not be populated automatically.

Note that:

- These fields are populated automatically only when a Primary Event record is first created. After the record exists, the Unit ID field is disabled. Since this value cannot be modified, these fields will never be updated automatically.
- Fields in new Contributing Event records are populated using these same rules. In other words, fields in Contributing Event records will not necessarily be populated with the same values that exist in the

Primary Event record. Instead, they will be populated with the values that exist in the Performance and GAA Unit record at the time the Contributing Event record is created.

The following tables provides a list of fields in Event records that are populated in this way and specifies the corresponding fields in Performance and GAA Unit records that will be used to populate them.

Event Record	Performance Record	GAA Unit Record
Cause Code	GADS Unit Code	GADS Unit Code
GADS Unit Type	Unit Type	Unit Type
GADS Utility Code	GADS Utility Code	GADS Utility Code
Gross Dependable Capacity	Gross Dependable Capacity (G)	Gross Dependable Capacity
Gross Maximum Capacity	Gross Max Capacity (G)	Gross Maximum Capacity
Net Dependable Capacity	Net Dependable Capacity (N)	Net Dependable Capacity
Net Maximum Capacity	Net Maximum Capacity (N)	Net Maximum Capacity
Unit Name	Unit Name	Unit Name

Fuel Code Fields

Fuel Code Fields

The fuel code fields in Performance records correspond to the fuel code fields in GAA Unit records and are populated automatically with the corresponding values in the GAA Unit records to which they are linked.

In Performance records, fuel codes are stored within 16 distinct fields. While these fields appear as 16 separate cells on the Performance datasheet, the names of the cells do not correspond exactly to the names of the field captions. Throughout this documentation, we use the field captions when referring to these fields. Therefore, the following table maps the datasheet cell to the field caption.

Field Caption	Datashseet Tab	Datasheet row
Primary Fuel Code	Primary Fuel	Primary Fuel Code
Secondary Fuel Code	Secondary Fuel	Secondary Fuel Code

Fuel Information Fields

Fuel Information Fields

In addition to the fuel code fields, which define the fuel itself, Performance records use several fuel information fields to store information about how a fuel is used. Like fuel code fields, there is a separate set of fuel information fields for each fuel source.

For example, the Primary Quantity Burned field is used to identify how much of the primary fuel was used. Similarly, the Secondary Quantity Burned field identifies how much of the secondary fuel was used.

The following fields in the GAA Performance Fuel records, one for each fuel level, where <Fuel Level> is Primary or Secondary, depending on the fuel level for which the field exists:

- Ash Softening Temperature
- Average Heat Content
- Grindability Index
- Percent Alkalines
- Percent Ash
- Percent Moisture
- Percent Sulfur
- Quantity Burned

When you specify a value in the **Fuel Code** cell, that value will be stored in the Fuel Code field.

The corresponding fuel information fields are also displayed on this tab and contain information about the primary or secondary fuel, which is defined by the value in the Fuel Code field. These fields are not calculated automatically like most of the other fields in Performance records. You will need to collect this information outside of APM and enter the correct values into these fields manually.

Inactive Hours Field

Inactive Hours Field

The APM system calculates the time between the values in the Event Start Date and the Event End Date fields in each Primary Event record and stores it in the Event Duration field of the Primary Event record. The value in the Event Duration field will be used to populate the Inactive Hours field in the Performance record that is linked to the Primary Event record if the Capacity Event Type field in the Primary Event record contains one of the following values:

- IR (Inactive Reserve)
- MB (Mothballed)
- RU (Retired)

If multiple Primary Event records are linked to a Performance record, then the sum of the values in the Event Duration field in all Primary Event records will be used as the total event duration. This calculated value is then used to populate the Inactive Hours field.

Consider the following example.

Event Status	Primary Event - IR (Inactive Reserve)	Primary Event - MB (Mothball)	Primary Event - RU (Retired)
Event Start	01/01/2016 12:00 AM	01/02/2016 12:00 AM	01/03/2016 12:00 AM
Event End	01/02/2016 12:00 AM	01/03/2016 12:00 AM	01/04/2016 12:00 AM

In this example, the event duration for each Primary Event record is 24 hours. In the Performance record for January 2016 for the GAA Unit record to which these three Primary Event records are linked, the Inactive Hours field would contain the sum of the duration of these three events, or 72 hours.

Overlapping between an Outage Event and a Derate Event

Overlapping between an Outage Event and a Derate Event

In Performance records, the Total Eqv Derate Hrs (N) and Total Eqv Derate MWh (N) fields store the sum of the values in the Total Equivalent Derate Hours w/out Shadowing and Total Equivalent Derate MWh

w/out Shadowing fields in all Primary Event records for a given reporting month and year. If an outage event overlaps a derate event, the values in the Total Eqv Derate Hrs (N) and Total Eqv Derate MWh (N) will NOT include derate data for the time during which the outage event was also occurring.

Consider an example of two Primary Event records, Primary Event - Outage and Primary Event - Derate, whose fields are populated as shown in the following table. Assume that both Primary Events records are linked to the GAA Unit record GAA Unit 1, which has a Gross Dependable Capacity of 600 MW and a Net Dependable Capacity of 500 MW.

Fields	Primary Event - Outage	Primary Event - Derate
Capacity Event Type	U1	D1
Event Start	11/1/2016 12:00 PM	11/2/2016 12:00 PM
Event End	11/4/2016 12:00 AM	11/5/2016 12:00 PM
Gross Available Capacity	0	500
Net Available Capacity	0	400
Event Duration	60	72
Total Equivalent Derate Hours w/out Shadowing	0	14.4
Total Equivalent Derate MWh w/out Shadowing	0	7200

The date range established by the values in the Event Start Date and Event End Date fields of the two Primary Event records overlap between 11/02/2016 12:00 P.M. and 11/04/2016 12:00 A.M., or 36 hours. So although the derate event lasted 72 hours total, for 36 of those hours, an outage event was also occurring.

In this example, if the entire derate event were included in the Performance calculations, in the Performance record for November 2016 that is linked to GAA Unit 1, the following values would be calculated and stored in the Performance record:

- **Total Equivalent Derate Hours (N)**: 14.4
- **Total Equivalent Derate MWh (N)**: 7200

Because an outage event was occurring during 36 hours of the derate event, however, half of the derate event is not counted, and the values in the Performance record become:

- **Total Equivalent Derate Hours (N)**: 7.2
- **Total Equivalent Derate MWh (N)**: 3600

Capacity Event Types Affecting Performance Records

Capacity Event Types Affecting Performance Records

In Performance records, the following fields are populated using the sum of the values in the Event Duration field in Primary Event records that are linked to the Performance record:

- **Planned and Ext Outage Hrs**: Populated using the sum of the values in the Event Duration field in Primary Event records in which the value in the Capacity Event Type field is either PE or PO.
- **Ext Sched Outages Hrs**: Populated using the sum of the values in the Event Duration field in Primary Event records in which the value in the Capacity Event Type field is any of the following Capacity Event Types: ME, DM, PE, SE, DE, or DP.
- **Eqv Upl Frcd Derate Hrs RS (G)** and **Eqv Upl Frcd Derate Hrs RS (N)**: Populated with calculated values when the Primary Event records to which it is linked have a Capacity Event Type of D1, D2, D3,

D4, PD, or RS with values entered for both the Gross Derate Amount and the Net Derate Amount in the following cases:

- ◦ If a Reserved Shutdown event occurred during a Derate event.
- ◦ If a Derate event occurred during a Reserved Shutdown event.
- ◦ A Derate event started and ended during a Reserved Shutdown event.
- ◦ A Derate event started during a Reserved Shutdown event but ended after the Event End date of the Reserved Shutdown.
- ◦ A Derate event and a Reserved Shutdown event had the same Event Start and Event End dates.

Note: If none of the following cases have occurred during the month for which the Performance record stores generation data, the Eqv Upl Frcd Derate Hrs RS (G) and Eqv Upl Frcd Derate Hrs RS (N) fields will be populated with the value 0 (zero).