

NERC

NORTH AMERICAN ELECTRIC
RELIABILITY CORPORATION

Geomagnetic Disturbance Data System

User Guide

January 2021

RELIABILITY | RESILIENCE | SECURITY



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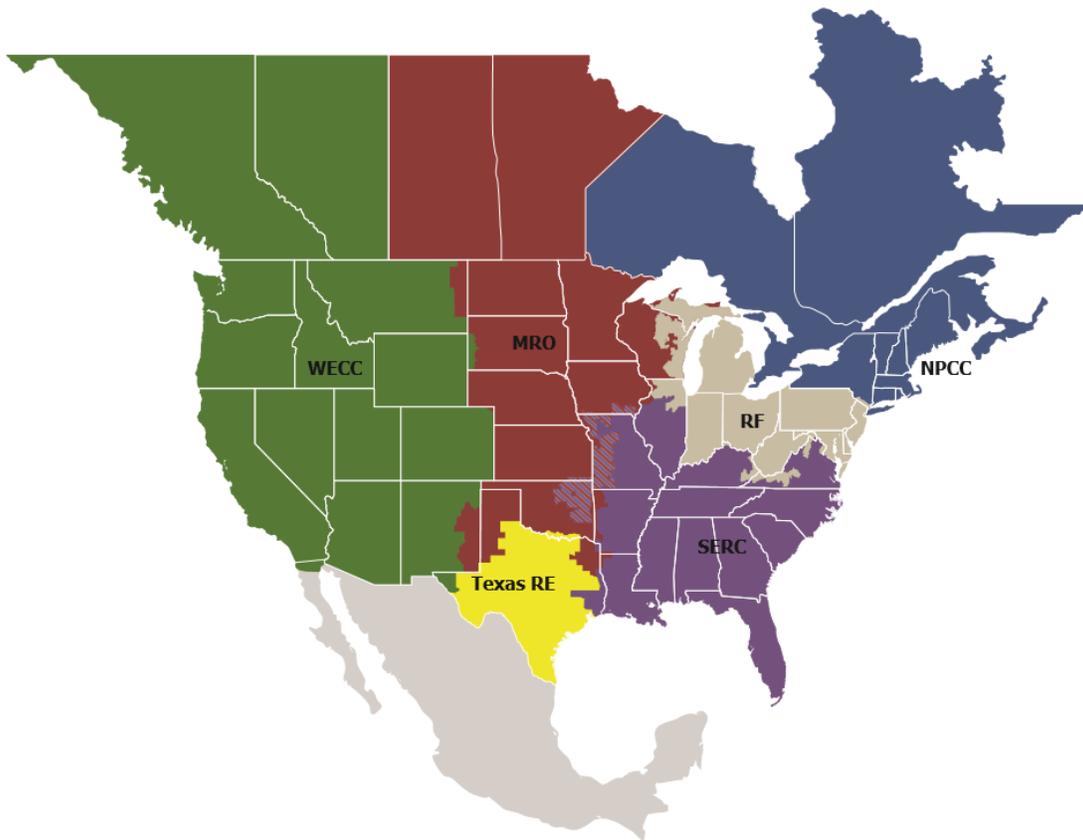
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Preface

Electricity is a key component of the fabric of modern society and the Electric Reliability Organization (ERO) Enterprise serves to strengthen that fabric. The vision for the ERO Enterprise, which is comprised of the North American Electric Reliability Corporation (NERC) and the six Regional Entities (REs), is a highly reliable and secure North American bulk power system (BPS). Our mission is to assure the effective and efficient reduction of risks to the reliability and security of the grid.

Reliability | Resilience | Security
Because nearly 400 million citizens in North America are counting on us

The North American BPS is made up of six RE boundaries as shown in the map and corresponding table below. The multicolored area denotes overlap as some load-serving entities participate in one RE while associated Transmission Owners (TOs)/Operators (TOPs) participate in another.

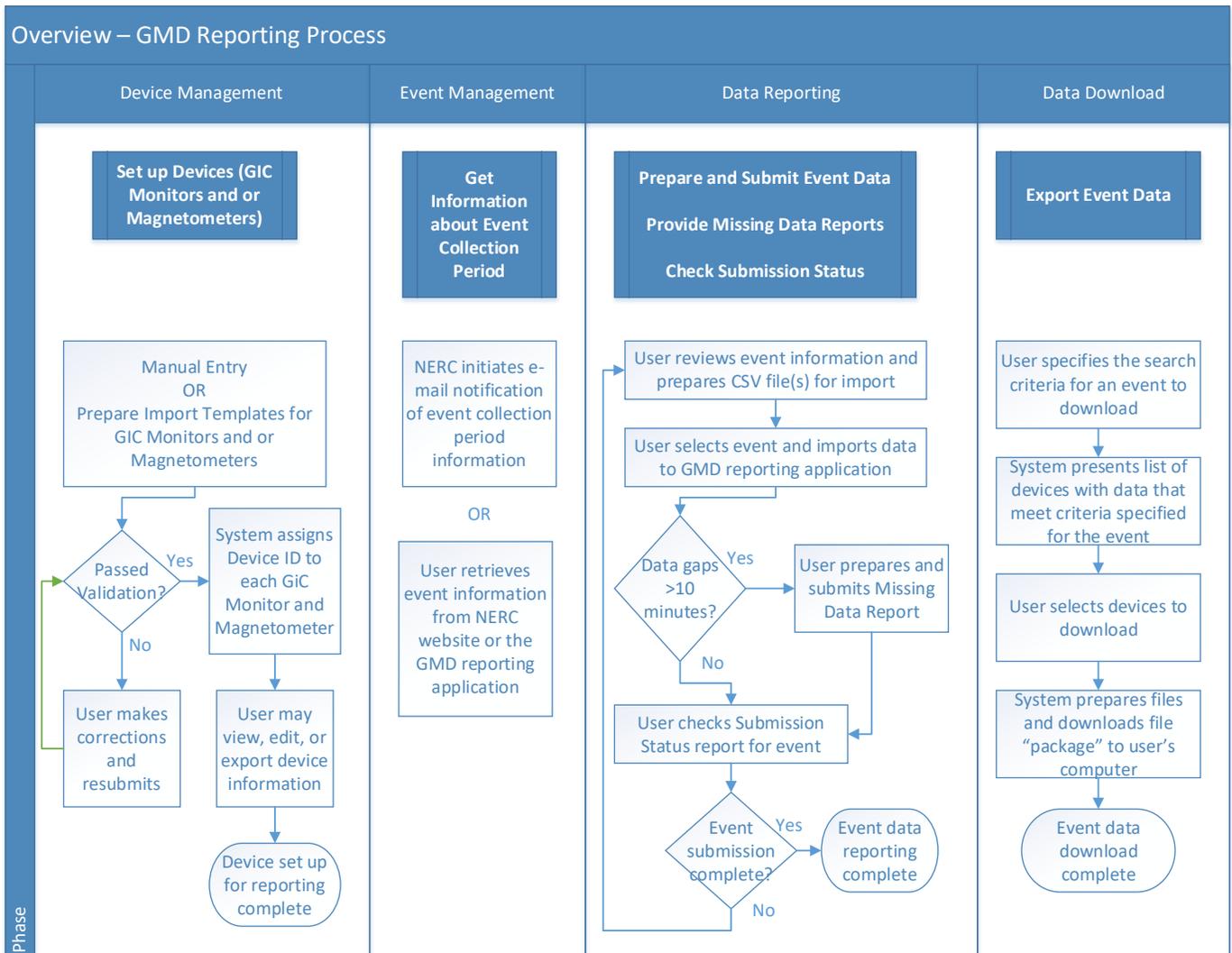


MRO	Midwest Reliability Organization
NPCC	Northeast Power Coordinating Council
RF	ReliabilityFirst
SERC	SERC Reliability Corporation
Texas RE	Texas Reliability Entity
WECC	WECC

Overview

This document is the Geomagnetic Disturbance (GMD) Portal’s user guide and provides extensive instructions on the various functionality that is available. This document does not instruct users how to gather or document information relating to GMD events. For additional information on NERC’s reporting requirements for GMD, refer to the [GMD Data Reporting Instructions](#) available on nerc.com

Please email GMD@nerc.net with any questions that you are unable to answer using this document or if any of the information within this document needs updating.



Please note: All information relating to any given entity or company shown within this document exists only within the staging environment of the GMD Portal. It does not reflect actual information of any entity or company.

Chapter 1: User Setup

Creating an ERO Portal Account

An ERO Portal account is required for access to the GMD reporting application.

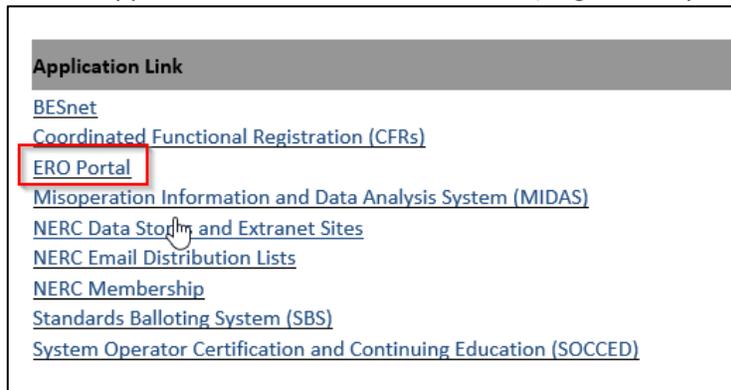
1. Navigate to [NERC.com](http://www.nerc.com)



2. In the upper right, click "Account Log-In/Register"



3. Under "Application Link", Click "ERO Portal" (or go directly to <https://eroportal.nerc.net>)



4. In the upper right, click "Register"



5. Complete the required fields and click “Register”

Register for a new account

* First Name

* Last Name

* Email

* Confirm Email

* Username

* Password

- Minimum of 10 characters long.
- Must Contain at least 1 number, 1 lowercase letter, 1 uppercase letter, and 1 special character (!,@,#,\$,%,&,*).

* Confirm Password



* Captcha

6. Look for the email that will come from NERC to confirm the account.

Confirm Registration

You will receive an email shortly with instructions on how to complete the registration process.

If you do not receive an email, please click [here](#) to resend.

If the problem continues, please contact the NERC Helpdesk by opening a ticket at: [NERC Helpdesk](#).

7. Click “Confirm Your Email” to verify the account.

Thanks so much for registering for access to the ERO Portal. To continue with your registration, you just need to confirm that we got your email right.

[Confirm Your Email](#)

Link not working? Try pasting this link into your browser:

8. Click “Continue” once the window is open on the screen.

Email Confirmation

Your email address was successfully confirmed. Please click 'Continue' to complete your registration!

[Continue](#)

9. Click “Start setup” to setup the two-factor authentication.

The screenshot shows a web page from NERC (North American Electric Reliability Corporation). At the top left is the NERC logo. Below it, the text reads: "For security reasons, we require additional information to verify your account". The main content area is titled "Protect Your NERC - External Clients Account". It contains two paragraphs: "Two-factor authentication enhances the security of your account by using a secondary device to verify your identity. This prevents anyone but you from accessing your account, even if they know your password." and "This process will help you set up your account with this added layer of security." At the bottom of this content area is a green button labeled "Start setup". On the left side of the content area, there are two links: "What is this?" and "Need help?".

10. Choose the preferred device type and click “Continue”.

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[What is this?](#) [Need help?](#)

What type of device are you adding?

Mobile phone RECOMMENDED

Tablet (iPad, Nexus 7, etc.)

Landline

Continue

11. Enter the preferred phone number, confirm the phone number and click “Continue”. Choose the phone type.

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[What is this?](#) [Need help?](#)

Enter your phone number

United States

+1

Example: (201) 234-5678

You entered [] is this the correct number?

Back **Continue**

12. Install DUO Mobile, then click “I have Duo Mobile”.

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[What is this?](#) [Need help?](#)

Install Duo Mobile for iOS

1. Launch the App Store app and search for "Duo Mobile".

2. Tap "Get" and then "Install" to download the app.

Back **I have Duo Mobile**

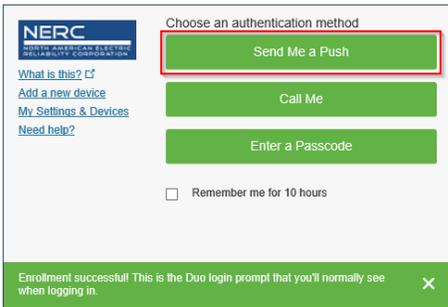
13. Open the app and tap the “+” button and scan the barcode, then click “Continue”.



14. Click “Continue to Login”.



15. Click “Send Me a Push” and follow the instructions that are sent to the phone to continue.



16. At a minimum, complete the required fields (First Name, Last Name, and Business Phone) for personal information.

17. Click “Next”.

Personal

Salutation	First Name *
<input type="text"/>	<input type="text" value="MIDAS"/>
Job Title	Middle Name
<input type="text"/>	<input type="text"/>
Business Phone *	Last Name *
<input type="text" value="770-777-7777"/>	<input type="text" value="Example User"/>
Fax	Mobile Phone
<input type="text"/>	<input type="text"/>



18. Complete at least the required fields (Street 1, City, State/Province, ZIP/Postal Code, Country) for work address information

19. Click “Next”.

My Work Address

Street 1 * 3353 Peachtree Road	City * Atlanta
Street 2 	State/Province * Georgia
	ZIP/Postal Code * 30326
	Country * USA

Previous **Next**

20. Click the magnifying icon.

Company

Company



21. Choose the company:

- Type the company’s name¹ in the search bar
- Click the magnifying glass or enter
- Click the company²,
- Click “Select”.

¹ If reporting for multiple companies, select the primary company. An account may be associated with additional companies later in the process.

² If the company is not found, click “Cancel” and select “No” under “Did you find your company?” Complete the form on the screen that appears and click “Next”.



The screenshot shows a table with two columns: 'Name' and 'Created On'. The first row is highlighted in light blue. A search box at the top right contains the text 'NERC' and has a magnifying glass icon. A red box labeled 'a' highlights the search box, and a red box labeled 'b' highlights the magnifying glass icon. A red box labeled 'c' highlights the 'Name' column header. A red box labeled 'd' highlights the 'Select' button in the table's action column.

✓ Name	Created On
✓ NERC Temp Account	1/20/2017 4:38 PM
NERC Tester	1/20/2017 4:38 PM
NERCSolutions.net	1/20/2017 4:38 PM



The screenshot shows a 'Remove Value' button on the left and a 'Select' button on the right. A red box labeled 'd' highlights the 'Select' button. A 'Cancel' button is also visible to the right of the 'Select' button.

22. Click "Next"

Company

Company

Did you find your company?
 No Yes

Previous **Next**

23. Create two security questions then click "Save"

Security

Security Question 1 *

Security Answer 1 *

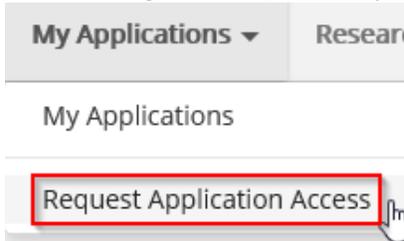
Security Question 2 *

Security Answer 2 *

Previous **Save**

Requesting Access to GMD Data System

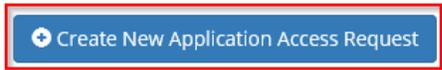
1. On the navigation bar, click “My Applications”, then click “Request Application Access”.



2. Click “Create New Application Access Request”.

Application Access Requests

Below is the list of submitted application requests. To request access to an ERO Portal application, please use the link below to submit your access request information. Your request will be submitted to the corresponding entity administrator for approval.



3. Click the search icon for the Entity field.



4. Choose the company:
 - a. Type the company's name in the search bar
 - b. Click the magnifying glass or enter
 - c. Click the company,
 - d. Click "Select".

Search bar: Test

Entity Name ↑	NERC Number ↑	Status	Address 1: City	Address 1: State/Province
Test Entity	VR000006	Active	Atlanta	GA
Testing Company Name Update, LLC	NCR55555	Active	Salt Lake City	UT

Buttons: Remove Value, Select, Cancel

5. Click the arrow for the Requested Application Role field.

Requested Application Role *

6. Choose "GMD User" (or "GMD Read-Only" if read-only access is what is needed) from the dropdown.

Requested Application Role *

- CORES User
- Entity Admin
- GMD Read-Only
- GMD User**
- MIDAS Read-Only
- MIDAS User

7. Add any comments that will be sent to the Entity Administrator (who will approve the request).

Requester Comments

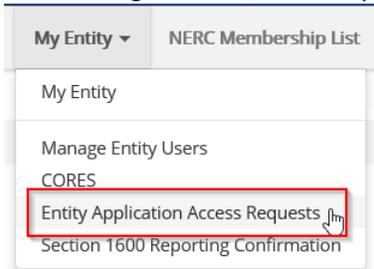
8. Confirm the information then click "Submit".

Chapter 2: Entity Administrators Only

Review Access Requests and Manage User Permissions

Approve Access Requests

1. In the navigation bar, click “My Entity”, then click “Entity Application Access Requests”.



2. Review the pending Application Requests on the Application Access Requests home page.

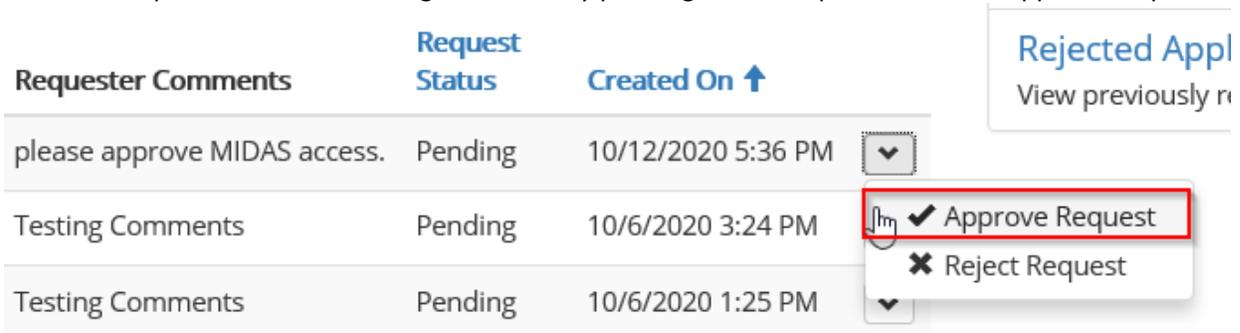
Application Access Requests

The following are the current application access requests for your registered entity. To approve or reject a request, select "Manage Access Request" from the item menu. When rejecting an access request, you must provide a reason for denying a request.

You can also view and manage all users for your entity on the [Manage Entity Page](#).

Requested By	Email Address	Phone	Requested Application Role	Requester Comments	Request Status	Created On ↑
Rachel Rieder	Rachel.Rieder@nerc.net	4044462567	MIDAS User	please approve MIDAS access.	Pending	10/12/2020 5:36 PM
Kwame Jones	kwame.jones@nerc.net		GMD User	Testing Comments	Pending	10/6/2020 3:24 PM
Kwame Jones	kwame.jones@nerc.net		GMD Read-Only	Testing Comments	Pending	10/6/2020 1:25 PM

3. Click the dropdown arrow on the right side of any pending access request and click “Approve Request”.



4. Add any comments if needed, then click “Approve Request”. The user will immediately receive access to the selected entity for the requested application.

 Edit

Entity *

Testing Company Name Update, LLC

Request Status *

Approved

Requester Comments

Can you please provide me GMD User access?

Comments

You have been approved.



- View any previously accepted requests by clicking “Approved Application Requests” in the Menu.
- ### Application Access Requests

The following are the current application access requests for your registered entity. To approve or reject a request, select "Manage Access Request" from the item menu. When rejecting an access request, you must provide a reason for denying a request.
 You can also view and manage all users for your entity on the [Manage Entity Page](#).

Requested By	Email Address	Phone	Requested Application Role	Requester Comments	Request Status	Created On ↑
Rachel Rieder	Rachel.Rieder@nerc.net	4044462567	MIDAS User	please approve MIDAS access.	Pending	10/12/2020 5:36 PM
Kwame Jones	kwame.jones@nerc.net		GMD User	Testing Comments	Pending	10/6/2020 3:24 PM
Kwame Jones	kwame.jones@nerc.net		GMD Read-Only	Testing Comments	Pending	10/6/2020 1:25 PM

Menu

- Approved Application Access Requests**
View previously approved application access requests
- Rejected Application Access Requests
View previously rejected application access requests

Reject Access Requests

- In the navigation bar, click “My Entity”, then click “Entity Application Access Requests”.

My Entity ▾ NERC Membership List

- My Entity
- Manage Entity Users
- CORES
- Entity Application Access Requests**
- Section 1600 Reporting Confirmation

- Review the pending Application Requests on the Application Access Requests home page.

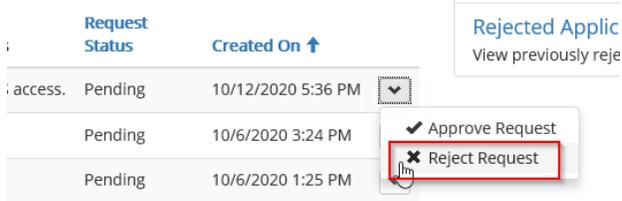
Application Access Requests

The following are the current application access requests for your registered entity. To approve or reject a request, select "Manage Access Request" from the item menu. When rejecting an access request, you must provide a reason for denying a request.

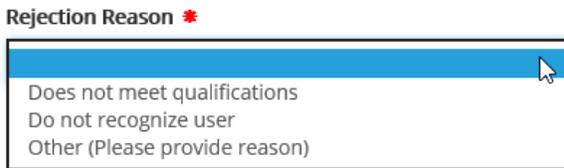
You can also view and manage all users for your entity on the [Manage Entity Page](#).

Requested By	Email Address	Phone	Requested Application Role	Requester Comments	Request Status	Created On ↑
Rachel Rieder	Rachel.Rieder@nerc.net	4044462567	MIDAS User	please approve MIDAS access.	Pending	10/12/2020 5:36 PM
Kwame Jones	kwame.jones@nerc.net		GMD User	Testing Comments	Pending	10/6/2020 3:24 PM
Kwame Jones	kwame.jones@nerc.net		GMD Read-Only	Testing Comments	Pending	10/6/2020 1:25 PM

- Click the dropdown arrow on the right side of any pending access request and click “Reject Request”.



- Click the dropdown arrow for “Rejection Reason” and select one of the three available options.



- If the selected Rejection Reason is “Other”, additional details in the “Reasons for Rejecting Request” box are required.

To reject the application access request, you must provide a reason in the comments section below. A notification will be sent to the requester upon denying the request.

Requested By * Rachel Rieder	Request Status * Rejected
Entity * ReliabilityFirst Corporation (RFC)	Rejection Reason * Other (Please provide reason)
Requested Application Role * GMD User	Reasons for Rejecting Request I am unsure as to why you need access. Please email me to provide further details.
Requester Comments	

- Once all applicable fields are filled in, click “Reject Request”.

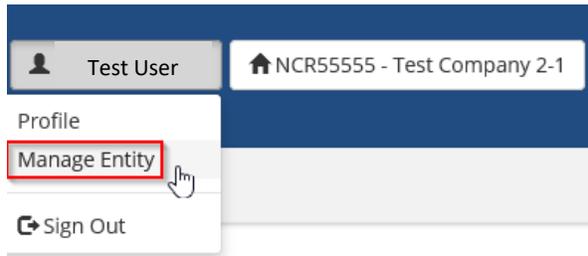


Add Users

- Check to ensure the correct company is selected in the top right corner.



- Click the user name button to the left of the entity, then click “Manage Entity”.



- To add a **new** contact, click “Add User”.
Manage Entity Users

Entity Name	NERC Number
Test Company 2-1	NCR55555

Entity Users

The following users are associated with this entity.

Add User

- Select the user
 - In the search bar, type the email address of the user to be vetted
 - Click “Search Contacts”
 - Click the user’s contact information
 - Click “Submit”

Add Contact to Entity

Enter the email address of the contact you are adding to your entity

test@test.com Search Contacts

Show entries

First Name	Last Name	Email Address	Phone	Company	City	State
test	test	test@test.com				

Showing 1 to 1 of 1 entries 1 row selected Previous **1** Next

Submit

- Under “Permissions User Has”, click “Edit”.

Permissions User Has

Edit

Role	Entity	NERC Number (Portal User Parent Account)	Created On ↑
------	--------	--	--------------

- Select permissions the user should have then click “Submit”
User Permissions

Manage User Permissions for: **Test User**

- CORES User
- GMD User
- GMD Read-Only
- MIDAS User
- MIDAS Read-Only
- Entity Admin
- Align Registered Entity Editor
- Align Registered Entity Reader
- Align Registered Entity Submitter

Submit

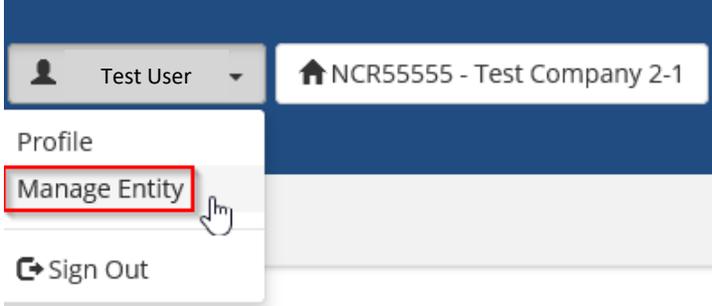
Note: GMD Read-Only only allows the user to view records and reports, it does not allow the user to create or modify records. GMD User allows the user to view, create, and edit records and reports.

Edit Existing Users

1. Check to ensure the correct company is selected in the top right corner.



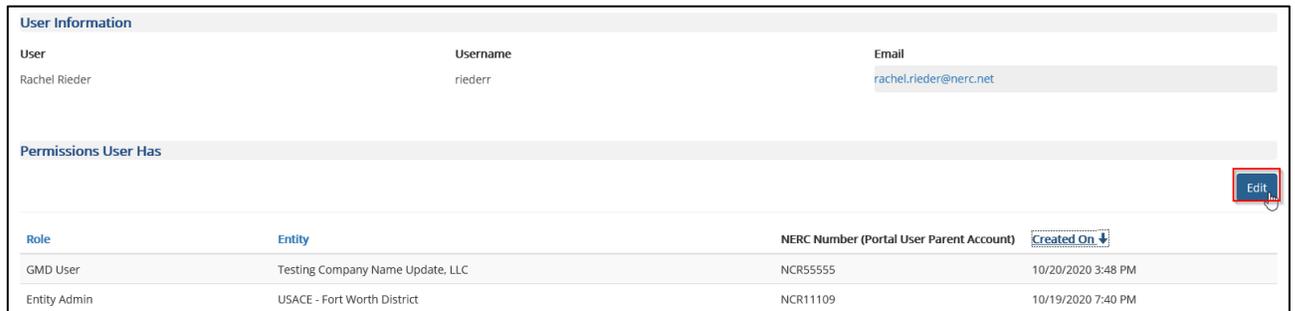
2. Click the user name button to the left of the entity, then click "Manage Entity".



3. Click the name of the user to edit.



4. Click "Edit".



5. Check any new permissions to add and uncheck any permissions to remove. Click "Submit".

User Permissions

Manage User Permissions for: **Test User**

- CORES User
- GMD User
- GMD Read-Only
- MIDAS User
- MIDAS Read-Only
- Entity Admin
- Align Registered Entity Editor
- Align Registered Entity Reader
- Align Registered Entity Submitter

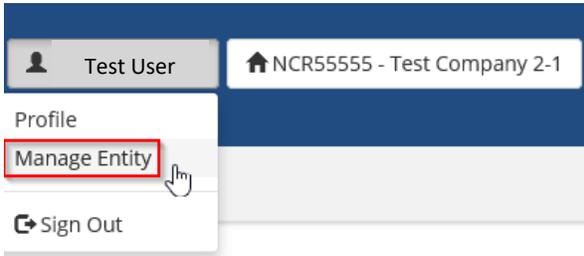
[Submit](#)

Remove Users

1. Check to ensure the correct company is selected in the top right corner.



2. Click the user name button to the left of the entity, then click "Manage Entity".



3. Find the user to remove.
 4. Click "Remove User".
- Manage Entity Users

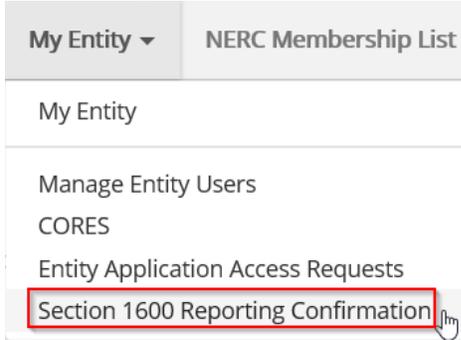
Entity Name	NERC Number
Testing Company Name Update, LLC	NCR55555

Entity Users					
The following users are associated with this entity:					
User	City	State	Phone	E-mail Address	Action
Buzz GaTech	atlanta			margaretpate1@mailinator.com	Remove User
Jack Norris	Hometown			JackNorris2@mailinator.com	Remove User

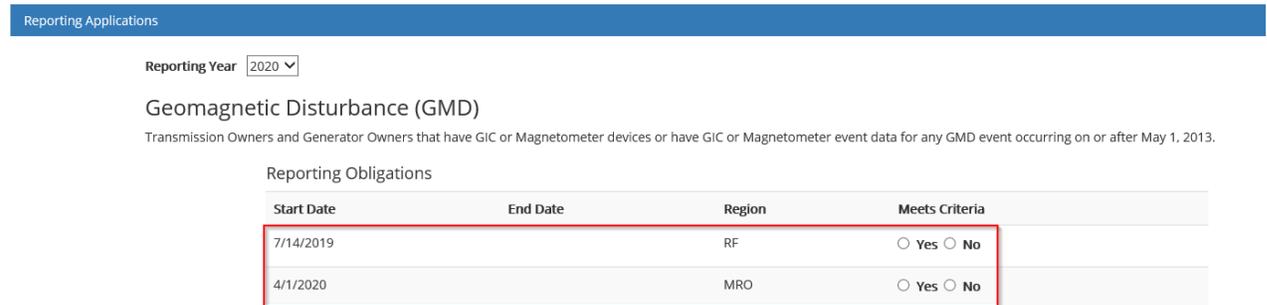
Section 1600 Reporting Confirmation

The Entity Administrator is responsible for filling out the Section 1600 Reporting Confirmation each year for all applicable Section 1600 applications.

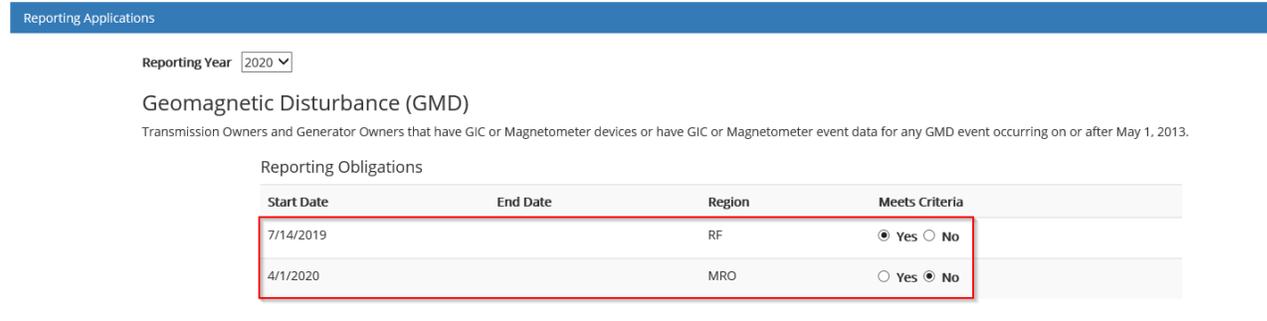
1. In the navigation bar, click “My Entity”, then click “Section 1600 Reporting Confirmation”.



2. Any Generator Owner or Transmission Owner scope for an entity will be listed in the Section 1600 Reporting Confirmation for GMD.



3. Select either “Yes” or “No” for each entity scope depending on the setup of the scope. Once all rows are completed, click “Submit”.

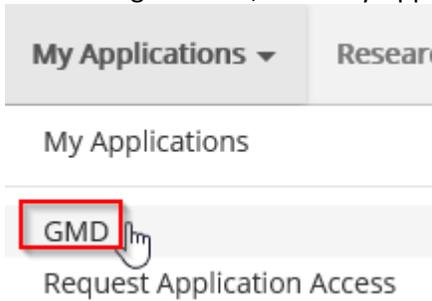


On December 1 of each year, the following year’s Reporting Obligation will be available to be completed.

Note: The Section 1600 Reporting Confirmation may have more applications listed on the screen. All applications for which the entity has a qualifying scope are displayed. All rows must be completed before clicking the Submit button.

Chapter 3: Access the GMD Portal

1. Navigate to the NERC ERO Portal (<https://eroportal.nerc.net/>) and login.
2. In the navigation bar, click “My Applications”, then click “GMD”.



A link to the [GMD Portal](#) is also available on the [GMD page](#) of nerc.com

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Home > Program Areas & Departments > Reliability Assessment and Performance Analysis > Geomagnetic Disturbance Data (GMD)

Geomagnetic Disturbance Data

NERC’s GMD data collection program supports ongoing research and analysis of GMD risk. GMD events are caused by the ejection of charged material from the sun and the interaction of this material with space around the earth (atmosphere and magnetosphere). The resulting disturbances in earth’s magnetic field have the potential to disrupt operations or cause damage to critical infrastructure, including power systems. Extremely strong GMD events, though rare, can induce strong quasi-dc currents in the electric power grid that could affect system voltages, relay and protection system performance, and the operation and health of some large power transformers.

Through the GMD data collection program, NERC is collecting GIC and magnetometer data from reporting entities for designated strong GMD events (Kp = 7 and greater). As specified in FERC Order No. 830, NERC will make collected GIC and magnetometer data available to support ongoing research and analysis.

For more information about GMD, please contact gmd@nerc.net

[Click here to report GMD Data: GMD Reporting Application](#)

GMD Events						
Event ID Number	Kp	Start Date	Start Time (UTC)	End Date	End Time (UTC)	
2013E01	7	05/31/2013	15:00	06/01/2013	15:00	
2013E02	8	10/02/2013	00:00	10/03/2013	03:00	
2015E01	8	03/17/2015	03:00	03/18/2015	06:00	
2015E02	8	06/22/2015	03:00	06/23/2015	15:00	
2015E03	7	09/11/2015	03:00	09/11/2015	18:00	
2015E04	7	09/19/2015	18:00	09/20/2015	18:00	
2015E05	7	10/06/2015	18:00	10/09/2015	09:00	
2015E06	7	12/20/2015	03:00	12/21/2015	09:00	
2017E01	7	05/27/2017	15:00	05/28/2017	15:00	
2017E02	8	09/07/2017	21:00	09/09/2017	03:00	
2017E03	7	09/27/2017	15:00	09/29/2017	00:00	
2018E01	7	08/25/2018	18:00	08/27/2018	00:00	

Chapter 4: Manual Device Entry

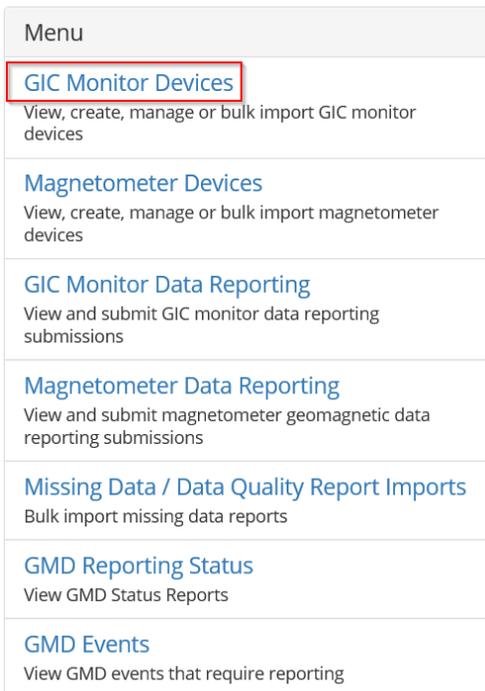
GIC Monitors

GIC Monitor device details may be entered manually or through an import using the templates available on the GMD page of nerc.com

The GIC Monitor device details must be created in the GMD Portal before any GMD event data may be reported for the device.

View GIC Monitors

1. Under the “Menu”, click “GIC Monitor Devices”.



The screenshot shows a vertical menu with several options. The option 'GIC Monitor Devices' is highlighted with a red rectangular box. Below it, the text 'View, create, manage or bulk import GIC monitor devices' is visible. Other menu items include Magnetometer Devices, GIC Monitor Data Reporting, Magnetometer Data Reporting, Missing Data / Data Quality Report Imports, GMD Reporting Status, and GMD Events.

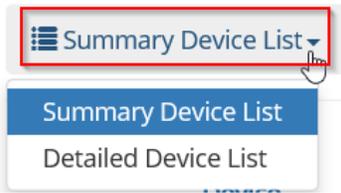
2. From this page, the user is able to create, view, edit or export any GIC Monitors associated with the selected registered entity.



The screenshot shows the 'Summary Device List' page. At the top right, there are two buttons: 'Create GIC Monitor' and 'Export', both highlighted with red boxes. Below the buttons is a table with columns: Device ID ↑, Device Status, Device Serial Number, Geographic Latitude (North), Geographic Longitude (West), and Status Effective Date. The table contains three rows of data. A context menu is open over the first row (Device ID 10058), with 'View Details' and 'Edit' options highlighted by red boxes.

Device ID ↑	Device Status	Device Serial Number	Geographic Latitude (North)	Geographic Longitude (West)	Status Effective Date
10058	AV	s-125	20.0	120.0	10/14/2020
10057	AV	serial.12	12.0	112.0	10/14/2020
10054	AV	s-test	75.0	121.0	10/10/2020

- The user has the option to view the Summary Device List or Detailed Device List.



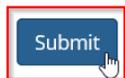
Create a GIC Monitor

- Click the “Create GIC Monitor” button.



- The user must fill in all fields marked with a red asterisk. Then, click “Submit”.

Entity NCR55555	Initial Operating Date (MM/DD/YYYY) * 1/1/2001
Device Manufacturer * FLEX - FLEX-CORE, Inc.	Installation Type * 1 - Separate
Device Model Number * m-0987	Connection * 2 - Common neutral of three (3) single-phase transformers
Device Serial Number * s-0987	Fastest Data Sampling Rate Capable (0.01 - 10.0) * 10
Geographic Latitude (Between 0.1 and 90.0) * 50	Peak Value in Measurement Range (Up to 10,000A) * 1000
Geographic Longitude (Between 60.0 and 135.0) * 100	Minimum Value in Measurement Range (0.01A - 2.00A) * 1



- If the new device contains any errors, the system will display them in a red box at the top of the page.

i The form could not be submitted for the following reasons:

Geographic Latitude (Between 0.1 and 90.0) must have a value between 0.1 and 90.0.
 Geographic Longitude (Between 60.0 and 135.0) must have a value between 60.0 and 135.0.
 Fastest Data Sampling Rate Capable (0.01 - 10.0) must have a value between 0.0100 and 10.0000.

- If the new device is valid, the system will add it to the list on the “GIC Monitor Devices” page with a system-generated Device ID.

Device ID ↑	Device Status	Device Serial Number	Geographic Latitude (North)	Geographic Longitude (West)	Status Effective Date
10059	AV	s-09172	80.0	100.0	10/20/2020
10058	AV	s-125	20.0	120.0	10/14/2020
10057	AV	serial.12	12.0	112.0	10/14/2020
10054	AV	s-test	75.0	121.0	10/10/2020

Edit a GIC Monitor

If the information provided has changed or was entered incorrectly, the GIC Monitor device record may be edited. Some fields may not be edited because they link the device to other data in the GMD Portal.

- Click the dropdown arrow on the record and click “Edit”.

Device ID ↑	Device Status	Device Serial Number	Geographic Latitude (North)	Geographic Longitude (West)	Status Effective Date
10059	AV	s-09172	80.0	100.0	10/20/2020
10058	AV	s-125	20.0	120.0	10/14/2020
10057	AV	serial.12	12.0	112.0	10/14/2020
10054	AV	s-test	75.0	121.0	10/10/2020

- Edit the necessary fields. (If any non-editable fields need to be changed, please email gmd@nerc.net)
- After editing all necessary fields, enter a new Status Effective Date and click “Submit”.

Initial Operating Date (MM/DD/YYYY) * <input type="text" value="6/29/1995"/>	Status Effective Date (MM/DD/YYYY) * <input type="text"/>
Created By Rachel Rieder	Modified By
Created On <input type="text" value="10/14/2020 13:04"/>	Modified On <input type="text" value="10/14/2020 13:04"/>

Deactivate a GIC Monitor

When a device is taken out of service for a period, retired, or replaced, the existing device must be deactivated. Two active devices of the same type may not have the same coordinates.

1. Click the dropdown arrow on the record and click "Edit".

Device ID ↑	Device Status	Device Serial Number	Geographic Latitude (North)	Geographic Longitude (West)	Status Effective Date	
10059	AV	s-09172	80.0	100.0	10/20/2020	▼
10058	AV	s-125	20.0	120.0	10/14/2020	▼
10057	AV	serial.12	12.0	112.0	10/14/2020	▼
10054	AV	s-test	75.0	121.0	10/10/2020	▼

View Details

Edit

2. Change the Device Status value from "AV" (Active) to "IV" (Inactive) and enter a new Status Effective Date. Then, click "Submit".

Geographic Longitude (West) *

120.0

Initial Operating Date (MM/DD/YYYY) *

6/29/1995

Created By

Rachel Rieder

Created On

10/14/2020 13:04

Device Status *

IV

Status Effective Date (MM/DD/YYYY) *

10/20/2020

Modified By

Modified On

10/14/2020 13:04

Submit

Reactivate a GIC Monitor

If a device has been taken out of service and deactivated, it may be reactivated, provided another device has not been installed to replace it.

1. Click the dropdown arrow on the record and click "Edit".

Device ID ↑	Device Status	Device Serial Number	Geographic Latitude (North)	Geographic Longitude (West)	Status Effective Date	
10059	AV	s-09172	80.0	100.0	10/20/2020	▼
10058	AV	s-125	20.0	120.0	10/14/2020	▼
10057	AV	serial.12	12.0	112.0	10/14/2020	▼
10054	AV	s-test	75.0	121.0	10/10/2020	▼

View Details

Edit

2. Change the Device Status value from "IV" (Inactive) to "AV" (Active) and enter a new Status Effective Date. Then, click "Submit".

Geographic Longitude (West) * 120.0	Device Status * AV
Initial Operating Date (MM/DD/YYYY) * 6/29/1995	Status Effective Date (MM/DD/YYYY) * 10/20/2020
Created By Rachel Rieder	Modified By
Created On 10/14/2020 13:04	Modified On 10/14/2020 13:04

[Submit](#)

Magnetometers

Magnetometer device details may be entered manually or through an import using the templates available on the GMD page of nerc.com

The Magnetometer device details must be created in the GMD Portal before any GMD event data may be reported for the device.

View Magnetometers

1. Under the “Menu”, click “Magnetometer Devices”.

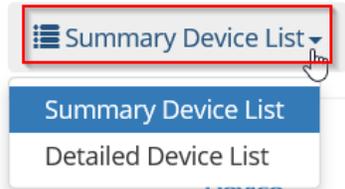
Menu
GIC Monitor Devices View, create, manage or bulk import GIC monitor devices
Magnetometer Devices View, create, manage or bulk import magnetometer devices
GIC Monitor Data Reporting View and submit GIC monitor data reporting submissions
Magnetometer Data Reporting View and submit magnetometer geomagnetic data reporting submissions
Missing Data / Data Quality Report Imports Bulk import missing data reports
GMD Reporting Status View GMD Status Reports
GMD Events View GMD events that require reporting

2. From this page, the user is able to create, view, edit or export any Magnetometers associated with the selected registered entity.

Summary Device List
+ Create Magnetometer
Export

Device ID ↑	Device Status	Geographic Latitude (North)	Geographic Longitude (West)	Status Effective Date ↑	
50070	AV	65.0	120.0	10/14/2020	<div style="border: 1px solid red; padding: 2px;"> View Details Edit </div>
50069	AV	29.0	129.0	10/14/2020	
50067	AV	44.0	100.0	10/10/2020	

3. The user has the option to view the Summary Device List or Detailed Device List.



Create a Magnetometer

1. Click the “Create Magnetometer” button.



2. The user must fill in all fields marked with a red asterisk. Then, click “Submit”.

Entity *
NCR55555

Device Manufacturer *
CPI - Computational Physics, Inc

Initial Operating Date (MM/DD/YYYY) *
2/2/2002

Geographic Latitude (Between 0.1 and 90.0) *
75

Fastest Data Sampling Rate Capable (0.01 - 10.0) *
10

Geographic Longitude (Between 60.0 - 135.0) *
80

Magnetometer Orientation *
1 - Geographic



3. If the new device contains any errors, the system will display them in a red box at the top of the page.

The form could not be submitted for the following reasons:

Geographic Latitude (Between 0.1 and 90.0) must have a value between 0.1 and 90.0.

Geographic Longitude (Between 60.0 and 135.0) must have a value between 60.0 and 135.0.

Fastest Data Sampling Rate Capable (0.01 - 10.0) must have a value between 0.0100 and 10.0000.

4. If the new device is valid, the system will add it to the list on the “Magnetometer Devices” page with a system-generated Device ID.

Device ID ↑	Device Status	Geographic Latitude (North)	Geographic Longitude (West)	Status Effective Date ↑
50071	AV	75.0	80.0	10/20/2020
50070	AV	65.0	120.0	10/14/2020
50069	AV	29.0	129.0	10/14/2020
50067	AV	44.0	100.0	10/10/2020

Edit a Magnetometer

If the information provided has changed or was entered incorrectly, the Magnetometer device record may be edited. Some fields may not be edited because they link the device to other data in the GMD Portal.

1. Click the dropdown arrow on the record and click “Edit”.

Device ID ↑	Device Status	Geographic Latitude (North)	Geographic Longitude (West)	Status Effective Date ↑
50071	AV	75.0	80.0	10/20/2020
50070	AV	65.0	120.0	10/14/2020
50069	AV	29.0	129.0	10/14/2020
50067	AV	44.0	100.0	10/10/2020

View Details
Edit

2. Edit the necessary fields. (If any non-editable fields need changed, please email gmd@nerc.net)
3. After editing all necessary fields, enter a new Status Effective Date and click “Submit”.

Initial Operating Date (MM/DD/YYYY) *

Status Effective Date (MM/DD/YYYY) *

Created By

Rachel Rieder

Modified By

Created On

10/14/2020 13:04

Modified On

10/14/2020 13:04

Submit

Deactivate a Magnetometer

When a device is taken out of service for a period, retired, or replaced, the existing device must be deactivated. Two active devices of the same type may not have the same coordinates.

1. Click the dropdown arrow on the record and click “Edit”.

Device ID ↑	Device Status	Geographic Latitude (North)	Geographic Longitude (West)	Status Effective Date ↑
50071	AV	75.0	80.0	10/20/2020
50070	AV	65.0	120.0	10/14/2020
50069	AV	29.0	129.0	10/14/2020
50067	AV	44.0	100.0	10/10/2020

View Details
Edit

- Change the Device Status value to “IV” (“Inactive”) and enter a new Status Effective Date. Then, click “Submit”.

Geographic Longitude (West) *
120.0

Initial Operating Date (MM/DD/YYYY) *
6/29/1995

Created By
Rachel Rieder

Created On
10/14/2020 13:04

Device Status *
IV

Status Effective Date (MM/DD/YYYY) *
10/20/2020

Modified By

Modified On
10/14/2020 13:04



Reactivate a Magnetometer

If a device has been taken out of service and deactivated, it may be reactivated, provided another device has not been installed to replace it.

- Click the dropdown arrow on the record and click “Edit”.

Device ID ↑	Device Status	Geographic Latitude (North)	Geographic Longitude (West)	Status Effective Date ↑	
50071	AV	75.0	80.0	10/20/2020	▼
50070	AV	65.0	120.0	10/14/2020	▼
50069	AV	29.0	129.0	10/14/2020	▼
50067	AV	44.0	100.0	10/10/2020	▼

View Details

Edit

- Change the Device Status value from “IV” (Inactive) to “AV” (Active) and enter a new Status Effective Date. Then, click “Submit”.

Geographic Longitude (West) *
120.0

Initial Operating Date (MM/DD/YYYY) *
6/29/1995

Created By
Rachel Rieder

Created On
10/14/2020 13:04

Device Status *
AV

Status Effective Date (MM/DD/YYYY) *
10/20/2020

Modified By

Modified On
10/14/2020 13:04



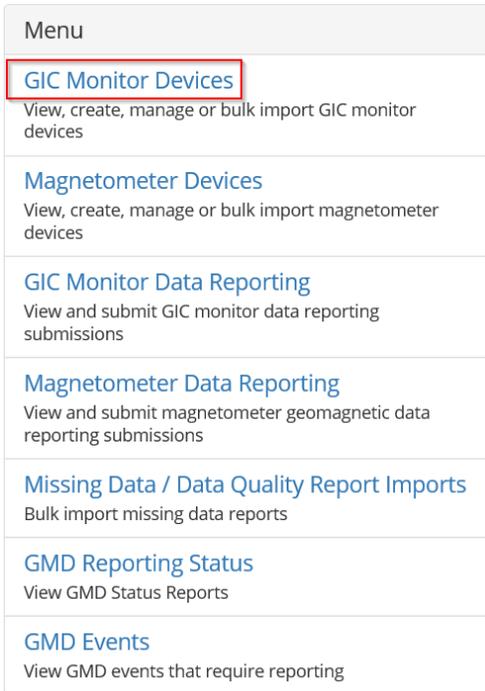
Chapter 5: Device Bulk Import

GIC Monitors

The bulk import feature allows multiple devices to be imported at one time. Import templates are available on the GMD page of nerc.com. Multiple NCR IDs may be included on the same device import templates, provided the user has permission to report for those NCR IDs.

View GIC Monitor Bulk Imports

1. Under the “Menu”, click “GIC Monitor Devices”.



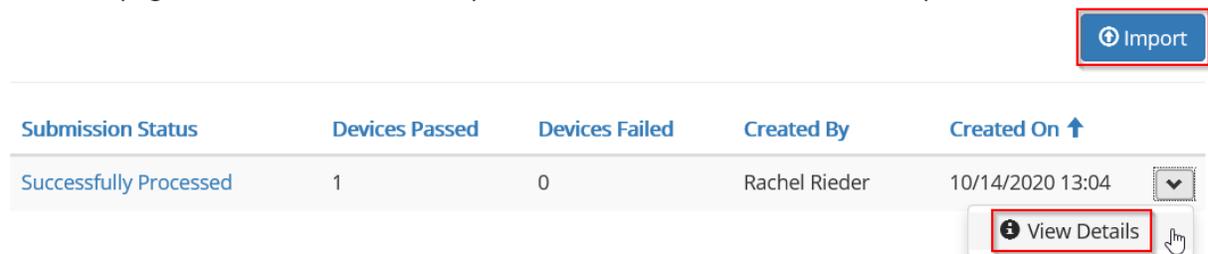
A screenshot of a web application menu. The menu is titled "Menu" and contains several items. The item "GIC Monitor Devices" is highlighted with a red box. Below it, the text "View, create, manage or bulk import GIC monitor devices" is visible. Other items include "Magnetometer Devices", "GIC Monitor Data Reporting", "Magnetometer Data Reporting", "Missing Data / Data Quality Report Imports", "GMD Reporting Status", and "GMD Events".

2. From the sub-menu, click “GIC Monitor Device Imports”.



A screenshot of a sub-menu. The menu is titled "Menu" and contains one item, "GIC Monitor Device Imports", which is highlighted with a red box. Below it, the text "View and manage GIC monitor bulk device imports" is visible.

3. From this page, the user is able to view previous bulk submission details or import new GIC Monitors.



A screenshot of a web application interface. At the top right, there is a blue button with a plus icon and the text "Import". Below this is a table with the following columns: "Submission Status", "Devices Passed", "Devices Failed", "Created By", and "Created On". The table has one row with the following data: "Successfully Processed", "1", "0", "Rachel Rieder", and "10/14/2020 13:04". To the right of the table, there is a dropdown menu with a downward arrow. Below the table, there is a button with an information icon and the text "View Details".

Submission Status	Devices Passed	Devices Failed	Created By	Created On ↑
Successfully Processed	1	0	Rachel Rieder	10/14/2020 13:04

Import GIC Monitors

- From the “GIC Monitor Device Imports” page, click “Import”.



Submission Status	Devices Passed	Devices Failed	Created By	Created On ↑
Successfully Processed	1	0	Rachel Rieder	10/14/2020 13:04

- Download the GIC Monitor Device template from nerc.com or by clicking the hyperlink labeled “here” on the Bulk Import GIC Monitor Devices page.

Bulk Import GIC Monitor Devices

[← Back to GIC Monitor Bulk Imports](#)

Import a GIC Monitor Device Template with one or more GIC Monitor devices. The template may contain devices for multiple entities.

The GIC Monitor Device Template is available [here](#).

- Fill out all required fields within the GIC Monitor Device template and save it to the computer/drive.
 - To create a new device, the Device ID and Status Effective Date must be blank and the Device Status must be “ID”.

A	B	C	M	N	O
NCRID	GICDeviceID	DeviceManufacturer	MinValueRange	DeviceStatus	StatusEffectiveDate
NCR55555		EPRI	1	ID	

- To edit a device, the Device ID must have the correct system-generated Device ID, the Device Status must be “AV” and the Status Effective Date must not be blank.

A	B	C	M	N	O
NCRID	GICDeviceID	DeviceManufacturer	MinValueRange	DeviceStatus	StatusEffectiveDate
NCR55555	10001	EPRI	1	AV	11/1/2020

- To deactivate a device, the Device ID must have the correct system-generated Device ID, the Device Status must be “IV” and the Status Effective Date must not be blank.

A	B	C	M	N	O
NCRID	GICDeviceID	DeviceManufacturer	MinValueRange	DeviceStatus	StatusEffectiveDate
NCR55555	10202	OTH	1	IV	11/1/2020

- Once the template is complete, click “Browse...” and select the correct file. Then, click “Submit”.

Attach a file *

\\nercdfs01\users\$\riederr\ Browse...



5. The following table displays the possible submission and outcome combinations.

Data Record Submittals	Submission Status	Outcome Export Files	Outcome Action Buttons
Only successful devices	“Successful Processed”	Original Submission	
Some successful devices, some failed devices	“Processing Complete with Errors”	Original Submission Successful Rows Failed Rows	 
Only failed devices	“Processing Complete with Errors”	Original Submission Failed Rows	
Unable to process file	“Processing Failed”	Original Submission	

6. Depending on the GIC Monitor Device Submission Detail status, the user would see one or all of the following items:

a. “View Devices” – shortcut to the GIC Monitor Devices page



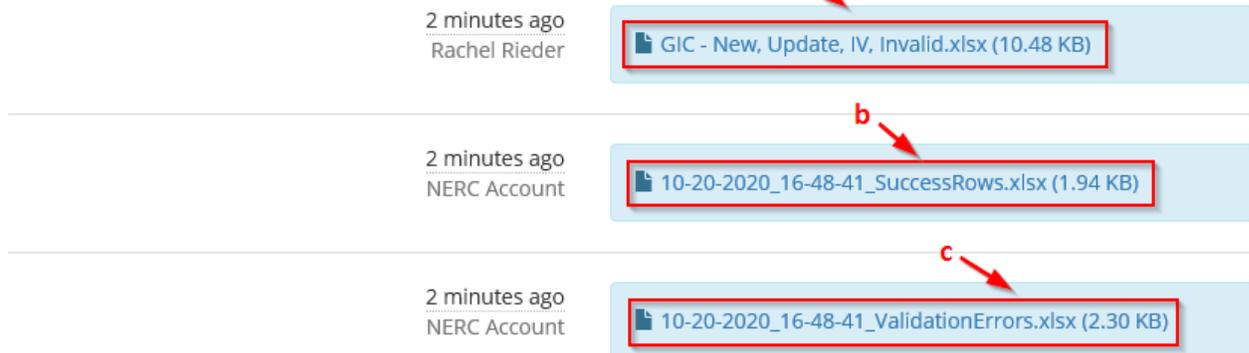
b. “Re-import Data File” – shortcut to Upload GIC Monitor Device Submission page



7. Depending on the submission status, the user would see some or all of the following files:

- a. The original submission file
- b. A file containing the successful rows
- c. A file containing the validation errors

Attachments



2 minutes ago
Rachel Rieder



2 minutes ago
NERC Account



2 minutes ago
NERC Account



8. Depending on the submission status, the user would see all or all of the following items:
 - a. Submission Status
 - b. "View Devices" button – shortcut to the GIC Monitor Device list
 - c. Devices Passed – count of devices that passed validation and are written to the system
 - d. "Re-import Devices" button – shortcut to Import GIC Monitor Device page
 - e. Devices Failed – count of devices that failed validation and are not written to the system
 - f. Validation Errors – same errors as displayed in the file above
 - g. "Export" button – ability to export the Validation Errors

Submission Status * a

Processing Complete with Errors

Devices Passed View Devices b

1 c

Devices Failed Re-import Devices d

3 e

Validation Errors

Export g

Row	Column	Value	Field Required	Validation Error
3	Multiple Columns	Multiple values	True	NCRID 'NCR55555' does not have an GICDeviceID of '10046' assigned to it
3	GICDeviceID	10046	True	GICDeviceID: '10046' is not a valid device id in the GMD system

Magnetometers

The bulk import feature allows multiple devices to be imported at one time. Import templates are available on the GMD page of nerc.com Multiple NCR IDs may be included on the same device import templates, provided the user has permission to report for those NCR IDs.

View Magnetometer Bulk Imports

1. Under the "Menu", click "Magnetometer Devices".

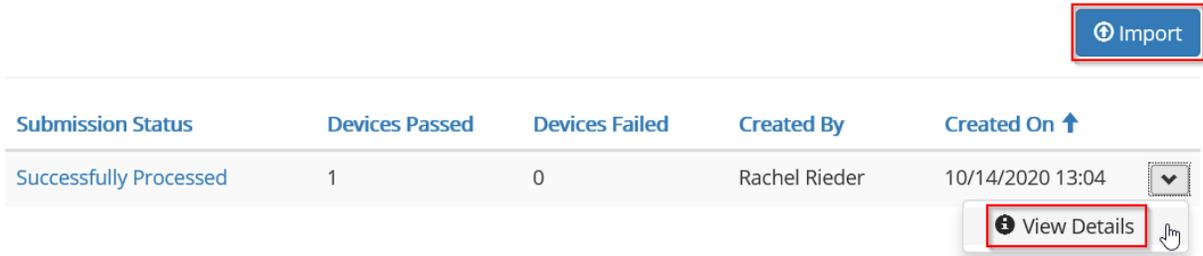
Menu

- GIC Monitor Devices
View, create, manage or bulk import GIC monitor devices
- Magnetometer Devices**
View, create, manage or bulk import magnetometer devices
- GIC Monitor Data Reporting
View and submit GIC monitor data reporting submissions
- Magnetometer Data Reporting
View and submit magnetometer geomagnetic data reporting submissions
- Missing Data / Data Quality Report Imports
Bulk import missing data reports
- GMD Reporting Status
View GMD Status Reports
- GMD Events
View GMD events that require reporting

- From the sub-menu, click “Magnetometer Device Imports”.

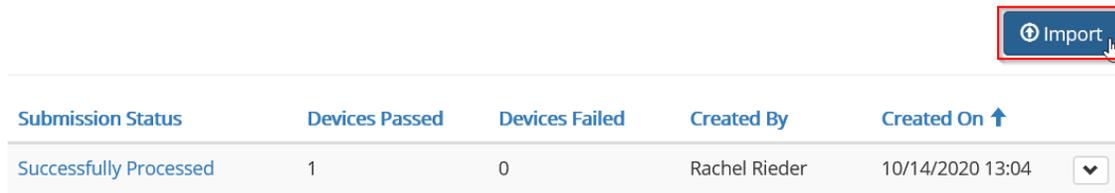


- From this page, the user is able to view previous bulk submission details or import new Magnetometers.



Import Magnetometers

- From the “Magnetometer Device Imports” page, click “Import”.



- Download the Magnetometer Device template from nerc.com or by clicking the hyperlink labeled “here” on the Bulk Import Magnetometer page.

Bulk Import Magnetometers

[← Back to Magnetometer Bulk Imports](#)

Import the Magnetometer Device Template with one or more Magnetometer devices. The template may contain devices for multiple entities.

The Magnetometer Device Template is available [here](#).

- Fill out all required fields within the Magnetometer Device template and save it to the computer/drive.
 - To create a new device, the Device ID and Status Effective Date must be blank and the Device Status must be “ID”.

A	B	C	H	I	J
NCRID	MagnetometerDeviceID	DeviceManufacturer	MagnetometerOrientation	DeviceStatus	StatusEffectiveDate
NCR55555		EPRI	1	ID	

- To edit a device, the Device ID must have the correct system-generated Device ID, the Device Status must be “AV” and the Status Effective Date must not be blank.

A	B	C	H	I	J
NCRID	MagnetometerDeviceID	DeviceManufacturer	MagnetometerOrientation	DeviceStatus	StatusEffectiveDate
NCR55555	50001	EPRI	1	AV	11/1/2020

- c. To deactivate a device, the Device ID must have the correct system-generated Device ID, the Device Status must be “IV” and the Status Effective Date must not be blank.

A	B	C	H	I	J
NCRID	MagnetometerDeviceID	DeviceManufacturer	MagnetometerOrientation	DeviceStatus	StatusEffectiveDate
NCR55555	50202	OTH	1	IV	11/15/2020

4. Once the template is complete, click “Browse...” and select the correct file. Then, click “Submit”.

Attach a file *

\\nercdfs01\users\$\riederr\ Browse...



5. The following table displays the possible submission and outcome combinations.

Data Record Submittals	Submission Status	Outcome Export Files	Outcome Action Buttons
Only successful devices	“Successful Processed”	Original Submission	
Some successful devices, some failed devices	“Processing Complete with Errors”	Original Submission Successful Rows Failed Rows	
Only failed devices	“Processing Complete with Errors”	Original Submission Failed Rows	
Unable to process file	“Processing Failed”	Original Submission	

6. Depending on the GIC Monitor Device Submission Detail status, the user would see one or all of the following items:

- a. “View Devices” – shortcut to the GIC Monitor Devices page



- b. “Re-import Data File” – shortcut to Upload GIC Monitor Device Submission page



7. Depending on the submission status, the user would see some or all of the following files:
 - a. The original submission file
 - b. A file containing the successful rows
 - c. A file containing the validation errors

Attachments

8. Depending on the submission status, the user would see all or all of the following items:
 - a. Submission Status
 - b. “View Devices” button – shortcut to the Magnetometer Device list
 - c. Devices Passed – count of devices that passed validation and are written to the system
 - d. “Re-import Devices” button – shortcut to Import Magnetometer Device page
 - e. Devices Failed – count of devices that failed validation and are not written to the system
 - f. Validation Errors – same errors as displayed in the file above
 - g. “Export” button – ability to export the Validation Errors

Row	Column	Value	Field Required	Validation Error
3	Multiple Columns	Multiple values	True	NCRID 'NCR55555' does not have an MagnetometerDeviceID of '50058' assigned to it
3	MagnetometerDeviceID	50058	True	MagnetometerDeviceID: '50058' is not a valid device id in the GMD system

Chapter 6: Event Management

NERC will send notifications as GMD data collection events occur. NERC’s notifications are for data collection purposes and are not operator alerts. To view the full GMD Data Event Notional Timeline, reference Figure I.1 in the [GMD Data Reporting Instructions \(DRI\)](#).

1. Under the “Menu”, click “GMD Events”.
2. From this page, the user is able to view GMD Events that require reporting.

A screenshot of a web application menu. The menu items are:

- Menu
- GIC Monitor Devices: View, create, manage or bulk import GIC monitor devices
- Magnetometer Devices: View, create, manage or bulk import magnetometer devices
- GIC Monitor Data Reporting: View and submit GIC monitor data reporting submissions
- Magnetometer Data Reporting: View and submit magnetometer geomagnetic data reporting submissions
- Missing Data / Data Quality Report Imports: Bulk import missing data reports
- GMD Reporting Status: View GMD Status Reports
- GMD Events**: View GMD events that require reporting

 The 'GMD Events' item is highlighted with a red rectangular box.

3. From this page, the user is able to view the GMD Event ID, the magnitude of $K_p = 7$ and/or greater of the event and the event collection periods.

A screenshot of the 'GMD Events' page. At the top, the title 'GMD Events' is highlighted with a red box. Below it is a blue button labeled 'GMD Home Page'. A paragraph explains that the table lists GMD events with a magnitude of $K_p = 7$ and greater, with event collection periods defined by start and end dates and times. It also notes that NERC's data collection begins with GMD events occurring in May 2013 or later. Below this text is a table with four columns: 'Event ID ↑', 'Kp', 'Event Start Date and Time', and 'Event End Date and Time'. Each of these column headers is highlighted with a red box. The table contains 11 rows of event data.

Event ID ↑	Kp	Event Start Date and Time	Event End Date and Time
2018E01	7	8/25/2018 18:00	8/27/2018 00:00
2017E03	7	9/27/2017 15:00	9/29/2017 00:00
2017E02	8	9/7/2017 21:00	9/9/2017 03:00
2017E01	7	5/27/2017 15:00	5/28/2017 15:00
2015E06	7	12/20/2015 03:00	12/21/2015 09:00
2015E05	7	10/6/2015 18:00	10/9/2015 09:00
2015E04	7	9/19/2015 18:00	9/20/2015 18:00
2015E03	7	9/11/2015 03:00	9/11/2015 18:00
2015E02	8	6/22/2015 03:00	6/23/2015 15:00
2015E01	8	3/17/2015 03:00	3/18/2015 06:00

4. A user can also view GMD Events on the GMD Page³ on nerc.com.

³ <https://www.nerc.com/pa/RAPA/GMD/Pages/GMDHome.aspx>

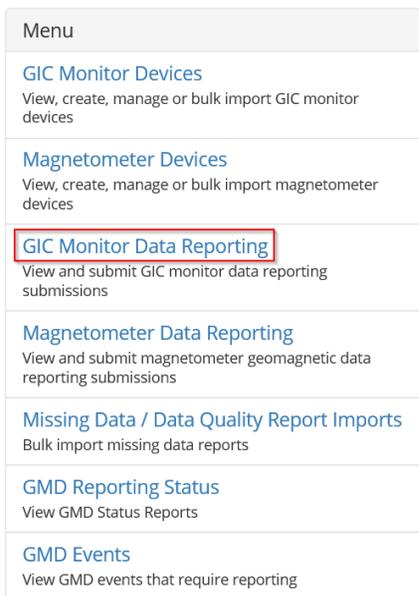
Chapter 7: Event Data Bulk Import

Event data may only be reported through a bulk import. The data must be in Comma-Separated Variable (CSV) format. Event data is reported separately for each event, and may include event measurements from multiple devices of the same type (e.g., GIC Monitors) in the import file.

GIC Monitors

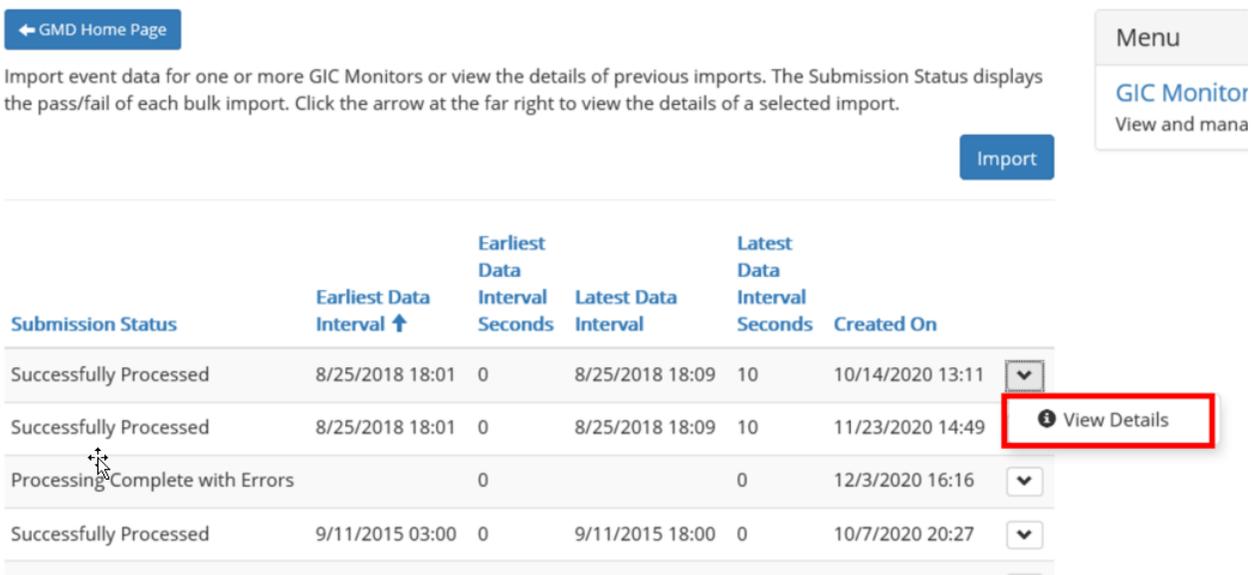
View GIC Monitor Event Data Imports

1. Under the “Menu”, click “GIC Monitor Data Reporting”.



Menu
GIC Monitor Devices View, create, manage or bulk import GIC monitor devices
Magnetometer Devices View, create, manage or bulk import magnetometer devices
GIC Monitor Data Reporting View and submit GIC monitor data reporting submissions
Magnetometer Data Reporting View and submit magnetometer geomagnetic data reporting submissions
Missing Data / Data Quality Report Imports Bulk import missing data reports
GMD Reporting Status View GMD Status Reports
GMD Events View GMD events that require reporting

2. From this page, the user is able to view the details of previous imports of event data. Scroll to the right and select arrow drop-down and click on “view details”



← GMD Home Page

Import event data for one or more GIC Monitors or view the details of previous imports. The Submission Status displays the pass/fail of each bulk import. Click the arrow at the far right to view the details of a selected import.

Menu
GIC Monitor
View and mana

Import

Submission Status	Earliest Data Interval ↑	Earliest Data Interval Seconds	Latest Data Interval	Latest Data Interval Seconds	Created On	
Successfully Processed	8/25/2018 18:01	0	8/25/2018 18:09	10	10/14/2020 13:11	▼
Successfully Processed	8/25/2018 18:01	0	8/25/2018 18:09	10	11/23/2020 14:49	📄 View Details
Processing Complete with Errors		0		0	12/3/2020 16:16	▼
Successfully Processed	9/11/2015 03:00	0	9/11/2015 18:00	0	10/7/2020 20:27	▼

Import GIC Monitor Event Data

From this page, the user is able to view the details of previous imports of event data. Scroll to the right and click on “Import”

GIC Monitor Data Reporting

[← GMD Home Page](#)

Import event data for one or more GIC Monitors or view the details of previous imports. The Submission Status displays the pass/fail of each bulk import. Click the arrow at the far right to view the details of a selected import.



GMD Event ↑	Successful Records	Failed Records	Submission Status	Earliest Data Interval ↑	Earliest Data Interval Seconds	Latest Data Interval	Latest Data Interval Seconds	Created On
2018E01	50	0	Successfully Processed	8/25/2018 18:01	0	8/25/2018 18:09	10	10/14/2020 13:11
2018E01	50	0	Successfully Processed	8/25/2018 18:01	0	8/25/2018 18:09	10	11/23/2020 14:49
2018E01	181	0	Successfully Processed	8/25/2018 18:00	0	8/25/2018 18:30	0	12/21/2020 17:06
2017E01	0	2	Processing Complete with Errors		0		0	12/3/2020 16:16

1. If event measurement data is not already in CSV format, download the GIC Monitor Data template from nerc.com or by clicking “here” on the Upload GIC Monitor Data page.

Upload GIC Monitor Data

Import GIC Monitor event data for a GMD Event. The template may contain event data for multiple devices and/or multiple entities. The GIC Monitor Data template is available [here](#).

Select GMD Event: 2018E01 (08/25/2018 18:00:00 - 08/27/2018 00:00:00)

Select Data Submission File:

2. If using the template, fill out the three required fields for each measurement to be reported and save it to the computer/drive in CSV format.
3. Use the drop down list to select the GMD Event for which event data will be imported
4. Click “Browse...” and select the correct file. Then, click “Submit.”

Upload GIC Monitor Data

Import GIC Monitor event data for a GMD Event. The template may contain event data for multiple devices and/or multiple entities. The GIC Monitor Data template is available [here](#).

Select GMD Event: 2018E01 (08/25/2018 18:00:00 - 08/27/2018 00:00:00)

Select Data Submission File:

5. The following table displays the possible submission and outcome combinations.

Data Record Submittals	Submission Status	Outcome Export Buttons	Outcome Action Buttons
Successful data records only	“Successful Processed”	 	
Partial Successful data records and Partial Failed data records	“Processing Complete with Errors”	  	
Failed data records only	“Processing Complete with Errors”	 	
Unable to process file	“Processing Complete with Errors”	 	

6. Depending on the GIC Monitor Data Submission Detail status, the user would see one or all of the following items:

- a. “Download Submission Status” – Export the data submission that was uploaded

- b. “Export Successful Records” – Export the records that successfully passed validation

- c. “Export Failed Records” – Export the records that failed validation and their associated validation errors

- d. “Re-import Data File” – shortcut to Upload GIC Monitor Event Data Submission page


Magnetometers

Due to the volume of data that will be reported, event data may only be reported through a bulk import. The data must be in Comma-Separated Variable (CSV) format.

Event data is reported separately for each event and may include event measurements from multiple devices in the import file.

View Magnetometer Event Data Imports

1. Under the “Menu”, click “Magnetometer Data Reporting”.

Menu
GIC Monitor Devices View, create, manage or bulk import GIC monitor devices
Magnetometer Devices View, create, manage or bulk import magnetometer devices
GIC Monitor Data Reporting View and submit GIC monitor data reporting submissions
Magnetometer Data Reporting View and submit magnetometer geomagnetic data reporting submissions
Missing Data / Data Quality Report Imports Bulk import missing data reports
GMD Reporting Status View GMD Status Reports
GMD Events View GMD events that require reporting

Import Magnetometer Event Data

From this page, the user is able to view the details of previous imports of event data. Scroll to the right and click “Import”.

Magnetometer Data Reporting

[← GMD Home Page](#)

Import event data for one or more Magnetometers or view the details of previous imports. The Submission Status displays the pass/fail of each bulk import. Click the arrow at the far right to view details of a selected import.

[Import](#)

GMD Event ↑	Successful Records	Failed Records	Submission Status	Earliest Data Interval ↑	Earliest Data Interval Seconds	Latest Data Interval	Latest Data Interval Seconds
2015E03	10,802	0	Successfully Processed	9/11/2015 03:00	0	9/11/2015 18:00	0
2015E03	5,401	0	Successfully Processed	9/11/2015 03:00	0	9/11/2015 18:00	0
2015E03	5,401	0	Successfully Processed	9/11/2015 03:00	0	9/11/2015 18:00	0
2015E03	5,401	0	Successfully Processed	9/11/2015 03:00	0	9/11/2015 18:00	0
2015E03	5,401	0	Successfully Processed	9/11/2015 03:00	0	9/11/2015 18:00	0

< [Progress Bar] >

1. If event measurement data is not in CSV format, download the Magnetometer Data template from nerc.com or by clicking “here” on the Upload Magnetometer Data page.

Upload Magnetometer Data

Import Magnetometer event data for a GMD Event. The template may contain event data for multiple devices and/or multiple entities. The Magnetometer Data template is available [here](#).

Select GMD Event

Select Data Submission File

2. If using the template, fill out the three required fields for each measurement to be reported and save it to the computer/drive in CSV format.
3. Use the drop down list; select the GMD Event for which event data will be imported.
4. Click "Browse..." and select the correct file. Then, click "Submit"

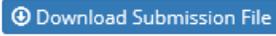
Upload Magnetometer Data

Import Magnetometer event data for a GMD Event. The template may contain event data for multiple devices and/or multiple entities. The Magnetometer Data template is available [here](#).

Select GMD Event

Select Data Submission File

5. The following table displays the possible submission and outcome combinations.

Data Record Submittals	Submission Status	Outcome Export Buttons	Outcome Action Buttons
Successful data records only	“Successful Processed”	 	
Partial Successful data records and Partial Failed data records	“Processing Complete with Errors”	  	
Failed data records only	“Processing Complete with Errors”	 	
Unable to process file	“Processing Complete with Errors”	 	

6. Depending on the Magnetometer Data Submission Detail status, the user would see one or all of the following items:

- a. “Download Submission Status” – Export the data submission that was uploaded

- b. “Export Successful Records” – Export the records that successfully passed validation

- c. “Export Failed Records” – Export the records that failed validation and their associated validation errors

- d. “Re-import Data File” – shortcut to Upload Magnetometer Event Data Submission page

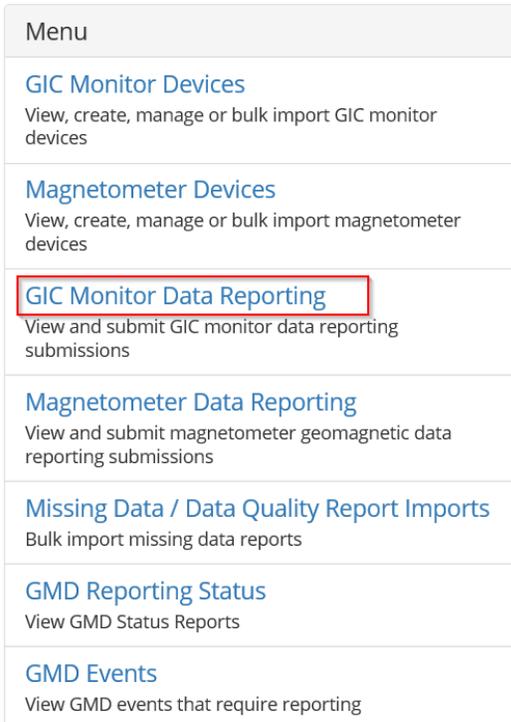

Chapter 8: Manual Entry of a Missing Data/Data Quality Report

GIC Monitor Missing Data/Data Quality Reports

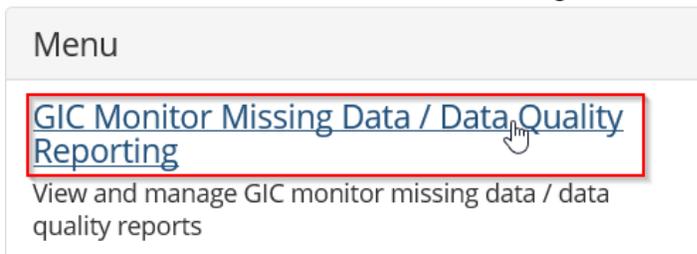
Reports for missing data are required when a gap of more than ten (10) minutes occurs during an event. They can also be submitted by an entity to indicate when a measuring device is providing suspect or spurious measurements during an event. These reports may be entered manually or through an import using the templates available on the GMD page of nerc.com.

View GIC Monitor Missing Data/Data Quality Reports

1. Under the “Menu”, click “GIC Monitor Data Reporting”.



2. From the sub-menu, click “GIC Monitor Missing Data/Data Quality Reporting”.



3. From this page, the user is able to create, view, edit, deactivate or export any GIC Monitor Missing Data/Data Quality Reports associated with the selected registered entity.

Active GIC Missing Data / Data Quality Reports Create GIC Monitor Missing Data / Data Quality Report Export

GMD Event ↑	Device ID (GIC Monitor)	Missing / Quality Start Date and Time (UTC) ↑	Missing / Quality Start Seconds	Missing / Quality End Date and Time (UTC)	Missing / Quality End Seconds	Missing / Quality Reason	Created On
2018E01	10123	8/26/2018 00:00	0	8/27/2018 00:00	0	6-Data Quality (narrative required)	4/7/2021 16:43
2018E01	10054	8/26/2018 00:00	0	8/27/2018 00:00	0	1-GIC Monitor Malfunction	
2018E01	10123	8/26/2018 00:00	0	8/27/2018 00:00	0	6-Data Quality (narrative required)	
2018E01	10122	8/25/2018 20:00	0	8/25/2018 21:00	0	1-GIC Monitor Malfunction	2/22/2021 15:12

Create GIC Monitor Missing Data/Data Quality Report

1. Click the “Create GIC Monitor Missing Data/Data Quality Report” button.



2. The user must fill in all fields marked with a red asterisk then click “Submit”. All GIC Monitor devices associated with the selected entity will be available in the “GIC Monitor” dropdown list. The Missing/Quality Start/End Times must contain a leading “0” if the hour is a single digit.

GIC Monitor *

Missing / Quality Reason *

Missing / Quality Start Date and Time (UTC) *

Missing / Quality Start Seconds *

Missing / Quality End Date and Time (UTC) *

Missing / Quality End Seconds *

Narrative



3. If the user selects “5-Other” as the Missing/Quality Reason, the user must also enter an explanation in the Narrative field.

Missing / Quality Reason *

5-Other (narrative required)

Narrative

The GIC Monitor continues to have hour long mishaps.

- If the user selects “6-Data Quality” as the Missing/Quality Reason, the user must also enter an explanation in the Narrative field.

Missing / Quality Reason *

6-Data Quality (narrative required)

Narrative

The first 2 hours of the data submission produced obvious errors.

- If the new missing data/data quality report contains any errors, the system will display them in a red box at the top of the page.

ⓘ The form could not be submitted for the following reasons:

There are no events associated with the missing data report range entered.
 Since you selected 'other' for the missing data reason, you must provide a text narrative in the narrative field.

- If the new missing data/data quality report passes validation, the system will add it to the list on the “GIC Monitor Missing Data/Data Quality Reports”.

GMD Event ↑	Device ID (GIC Monitor)	Missing / Quality Start Date and Time (UTC) ↑	Missing / Quality Start Seconds	Missing / Quality End Date and Time (UTC)	Missing / Quality End Seconds	Missing / Quality Reason	Created On	
2018E01	10123	8/26/2018 00:00	0	8/27/2018 00:00	0	6-Data Quality (narrative required)	4/7/2021 16:43	<input type="button" value="v"/>
2018E01	10054	8/26/2018 00:00	0	8/27/2018 00:00	0	1-GIC Monitor Malfunction	10/14/2020 13:17	<input type="button" value="v"/>
2018E01	10123	8/26/2018 00:00	0	8/27/2018 00:00	0	6-Data Quality (narrative required)	4/8/2021 15:20	<input type="button" value="v"/>

Edit GIC Monitor Missing Data/Data Quality Report

If the information provided has changed or was entered incorrectly, a Missing Data/Data Quality Report may be edited.

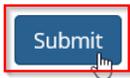
- Click the dropdown arrow on the Missing Data/Data Quality Report record for the specific GIC monitor and click “Edit”.

GMD Event ↑	Device ID (GIC Monitor)	Missing / Quality Start Date and Time (UTC) ↑	Missing / Quality Start Seconds	Missing / Quality End Date and Time (UTC)	Missing / Quality End Seconds	Missing / Quality Reason	Created On	
2018E01	10123	8/26/2018 00:00	0	8/27/2018 00:00	0	6-Data Quality (narrative required)	4/7/2021 16:43	▼
2018E01	10054	8/26/2018 00:00	0	8/27/2018 00:00	0	1-GIC Monitor Malfunction		View Details Edit Deactivate
2018E01	10123	8/26/2018 00:00	0	8/27/2018 00:00	0	6-Data Quality (narrative required)		
2018E01	10122	8/25/2018 20:00	0	8/25/2018 21:00	0	1-GIC Monitor Malfunction	2/22/2021 15:12	▼

2. Edit the necessary fields and click “Submit”.

Missing / Quality End Date and Time (UTC) *

Missing / Quality End Seconds *



Deactivate GIC Monitor Missing Data/Data Quality Report

A user can deactivate a Missing Data/Data Quality Report if event data later becomes available or if a Missing Data/Data Quality Report was created erroneously.

1. Click the dropdown arrow on the record and click “Deactivate”.

GMD Event ↑	Device ID (GIC Monitor)	Missing / Quality Start Date and Time (UTC) ↑	Missing / Quality Start Seconds	Missing / Quality End Date and Time (UTC)	Missing / Quality End Seconds	Missing / Quality Reason	Created On	
2018E01	10123	8/26/2018 00:00	0	8/27/2018 00:00	0	6-Data Quality (narrative required)	4/7/2021 16:43	▼
2018E01	10054	8/26/2018 00:00	0	8/27/2018 00:00	0	1-GIC Monitor Malfunction		View Details Edit Deactivate
2018E01	10123	8/26/2018 00:00	0	8/27/2018 00:00	0	6-Data Quality (narrative required)		
2018E01	10122	8/25/2018 20:00	0	8/25/2018 21:00	0	1-GIC Monitor Malfunction	2/22/2021 15:12	▼

2. To view the Inactive Missing Data/Data Quality Report, switch the view to “Inactive GIC Monitor Missing Data/Data Quality Reports”.

Inactive GIC Monitor Missing Data / Data Quality Reports

Create GIC Monitor Missing Data / Data Quality Report Export

Active GIC Missing Data / Data Quality Reports

Inactive GIC Monitor Missing Data / Data Quality Reports

GMD Event ↑	Device ID (GIC Monitor)	Missing / Quality Start Date and Time (UTC) ↑	Missing / Quality Start Seconds	Missing / Quality End Date and Time (UTC)	Missing / Quality End Seconds	Missing / Quality Reason	Created On	
2018E01	10123	8/26/2018 00:00	0	8/27/2018 00:00	0	6-Data Quality (narrative required)	4/7/2021 16:43	▼
2017E03	10054	9/27/2017 18:00	0	9/27/2017 19:00	0	1-GIC Monitor Malfunction	11/23/2020 15:28	▼

Magnetometer Missing Data/Data Quality Reports

Reports for missing data are required when a gap of more than ten (10) minutes occurs during an event. They can also be submitted by an entity to indicate when a measuring device is providing suspect or spurious measurements during an event. These reports may be entered manually or through an import using the templates available on the GMD page of nerc.com.

View Magnetometer Missing Data/Data Quality Reports

- Under the “Menu”, click “Magnetometer Data Reporting”.

A screenshot of a web application menu. The menu items are:

- Menu
- GIC Monitor Devices: View, create, manage or bulk import GIC monitor devices
- Magnetometer Devices: View, create, manage or bulk import magnetometer devices
- GIC Monitor Data Reporting: View and submit GIC monitor data reporting submissions
- Magnetometer Data Reporting**: View and submit magnetometer geomagnetic data reporting submissions (highlighted with a red box)
- Missing Data / Data Quality Report Imports: Bulk import missing data reports
- GMD Reporting Status: View GMD Status Reports
- GMD Events: View GMD events that require reporting

- From the sub-menu, click “Magnetometer Missing Data/Data Quality Reporting”.

A screenshot of a sub-menu. The menu items are:

- Menu
- Magnetometer Missing Data / Data Quality Reporting**: View and manage magnetometer geomagnetic missing data / data quality reports (highlighted with a red box)

- From this page, the user is able to create, view, edit, deactivate or export any Magnetometer Missing Data/Data Quality Reports associated with the selected registered entity.

A screenshot of the 'Active Magnetometer Missing Data / Data Quality Reports' page. At the top right, there are two buttons: 'Create Magnetometer Missing Data / Data Quality Report' and 'Export', both highlighted with red boxes. Below is a table with the following columns: GMD Event, Device ID (Magnetometer), Missing / Quality Start Date and Time (UTC), Missing / Quality Start Seconds, Missing / Quality End Date and Time (UTC), Missing / Quality End Seconds, Missing / Quality Reason, and Created On. A dropdown menu is open for the first row, showing 'View Details', 'Edit', and 'Deactivate' options, all highlighted with red boxes.

GMD Event	Device ID (Magnetometer)	Missing / Quality Start Date and Time (UTC)	Missing / Quality Start Seconds	Missing / Quality End Date and Time (UTC)	Missing / Quality End Seconds	Missing / Quality Reason	Created On
2018E01	50080	8/26/2018 00:00	0	8/27/2018 00:00	0	6-Data Quality (narrative required)	4/7/2021 16:50
2018E01	50067	8/26/2018 00:00	0	8/27/2018 00:00	0	5-Other (narrative required)	1
2018E01	50079	8/25/2018 20:00	0	8/25/2018 21:00	0	2-Magnetometer Malfunction	2
2018E01	50076	8/25/2018 19:11	0	8/25/2018 20:11	0	2-Magnetometer Malfunction	12/21/2020 17:12

Create Magnetometer Missing Data/Data Quality Report

1. Click the “Create Magnetometer Missing Data/Data Quality Report” button.



2. The user must fill in all fields marked with a red asterisk then click “Submit”. All Magnetometer devices associated with the selected entity will be available in the “Magnetometer” dropdown list. The Missing/Quality Start/End Times must contain a leading “0” if the hour is a single digit.

<p>Magnetometer</p> <input type="text" value="Magnetometer #50067"/>	<p>Missing / Quality Reason *</p> <input type="text" value="2-Magnetometer Malfunction"/>
<p>Missing / Quality Start Date and Time (UTC) *</p> <input type="text" value="12/20/2015 06:00"/>	<p>Narrative</p> <input type="text"/>
<p>Missing / Quality Start Seconds *</p> <input type="text" value="30"/>	
<p>Missing / Quality End Date and Time (UTC) *</p> <input type="text" value="12/20/2015 08:00"/>	
<p>Missing / Quality End Seconds *</p> <input type="text" value="50"/>	



3. If the user selects “5-Other” as the Missing/Quality Reason, the user must also enter an explanation in the Narrative field.

<p>Missing / Quality Reason *</p> <input type="text" value="5-Other (narrative required)"/>
<p>Narrative</p> <input type="text" value="The Magnetometer continues to have hour long mishaps."/>

4. If the new missing data/data quality report contains any errors, the system will display them in a red box at the top of the page.

i The form could not be submitted for the following reasons:

There are no events associated with the missing data report range entered.

Since you selected 'other' for the missing data reason, you must provide a text narrative in the narrative field.

- If the new missing data report passes validation, the system will add it to the list on the “Magnetometer Missing Data/Data Quality Reports”.

GMD Event ↑	Device ID (Magnetometer)	Missing / Quality Start Date and Time (UTC) ↑	Missing / Quality Start Seconds	Missing / Quality End Date and Time (UTC)	Missing / Quality End Seconds	Missing / Quality Reason	Created On
2018E01	50080	8/26/2018 00:00	0	8/27/2018 00:00	0	6-Data Quality (narrative required)	4/7/2021 16:50
2018E01	50067	8/26/2018 00:00	0	8/27/2018 00:00	0	5-Other (narrative required)	10/14/2020 13:17

Edit Magnetometer Missing Data/Data Quality Report

If the information provided has changed or was entered incorrectly, a Missing Data/Data Quality Report may be edited.

- Click the dropdown arrow on the record and click “Edit”.

GMD Event ↑	Device ID (Magnetometer)	Missing / Quality Start Date and Time (UTC) ↑	Missing / Quality Start Seconds	Missing / Quality End Date and Time (UTC)	Missing / Quality End Seconds	Missing / Quality Reason	Created On
2018E01	50080	8/26/2018 00:00	0	8/27/2018 00:00	0	6-Data Quality (narrative required)	4/7/2021 16:50
2018E01	50067	8/26/2018 00:00	0	8/27/2018 00:00	0	5-Other (narrative required)	
2018E01	50079	8/25/2018 20:00	0	8/25/2018 21:00	0	2-Magnetometer Malfunction	
2018E01	50076	8/25/2018 19:11	0	8/25/2018 20:11	0	2-Magnetometer Malfunction	12/21/2020 17:12

- Edit the necessary fields and click “Submit”.

Missing / Quality End Date and Time (UTC) *

Missing / Quality End Seconds *

Deactivate Magnetometer Missing Data/Data Quality Report

A user can deactivate a Missing Data/Data Quality Report if event data later becomes available or if a Missing Data/Data Quality Report was created erroneously.

- Click the dropdown arrow on the record and click “Deactivate”.

GMD Event ↑	Device ID (Magnetometer)	Missing / Quality Start Date and Time (UTC) ↑	Missing / Quality Start Seconds	Missing / Quality End Date and Time (UTC)	Missing / Quality End Seconds	Missing / Quality Reason	Created On
2018E01	50080	8/26/2018 00:00	0	8/27/2018 00:00	0	6-Data Quality (narrative required)	4/7/2021 16:50
2018E01	50067	8/26/2018 00:00	0	8/27/2018 00:00	0	5-Other (narrative required)	
2018E01	50079	8/25/2018 20:00	0	8/25/2018 21:00	0	2-Magnetometer Malfunction	
2018E01	50076	8/25/2018 19:11	0	8/25/2018 20:11	0	2-Magnetometer Malfunction	12/21/2020 17:12

- To view the Inactive Missing Data/Data Quality Report, switch the view to “Inactive GIC Monitor Missing Data/Data Quality Reports”.

The screenshot shows a web interface with a dropdown menu at the top left. The dropdown is currently open, showing two options: "Active Magnetometer Missing Data / Data Quality Reports" and "Inactive Magnetometer Missing Data / Data Quality Reports". The second option is selected and highlighted with a red box. To the right of the dropdown are two buttons: "Create Magnetometer Missing Data / Data Quality Report" and "Export". Below the dropdown is a table with the following columns: "GMD Event", "Device ID (Magnetometer)", "Missing / Quality Start Date and Time (UTC)", "Quality Start Seconds", "Missing / Quality End Date and Time (UTC)", "Quality End Seconds", "Missing / Quality Reason", and "Created On". The first row of the table is highlighted with a red box. The data in the first row is: "2018E01", "50080", "8/26/2018 00:00", "0", "8/27/2018 00:00", "0", "6-Data Quality (narrative required)", and "4/7/2021 16:50". The second row of the table is: "2015E06", "50070", "12/20/2015 06:00", "30", "12/20/2015 08:00", "50", "2-Magnetometer Malfunction", and "10/22/2020 16:40".

GMD Event	Device ID (Magnetometer)	Missing / Quality Start Date and Time (UTC)	Quality Start Seconds	Missing / Quality End Date and Time (UTC)	Quality End Seconds	Missing / Quality Reason	Created On
2018E01	50080	8/26/2018 00:00	0	8/27/2018 00:00	0	6-Data Quality (narrative required)	4/7/2021 16:50
2015E06	50070	12/20/2015 06:00	30	12/20/2015 08:00	50	2-Magnetometer Malfunction	10/22/2020 16:40

Chapter 9: Missing Data/Data Quality Report Bulk Import

The bulk import feature allows missing data/data quality reports for multiple devices to be imported at one time. Import templates are available on the GMD page of nerc.com Multiple NCR IDs may be included on the import template, provided the user has permission to report for those NCR IDs.

View Missing Data/Data Quality Report Bulk Imports

1. Under the menu, click “Missing Data/Data Quality Report Imports”.

Menu
GIC Monitor Devices View, create, manage or bulk import GIC monitor devices
Magnetometer Devices View, create, manage or bulk import magnetometer devices
GIC Monitor Data Reporting View and submit GIC monitor data reporting submissions
Magnetometer Data Reporting View and submit magnetometer geomagnetic data reporting submissions
Missing Data / Data Quality Report Imports Bulk import missing data reports
GMD Reporting Status View GMD Status Reports
GMD Events View GMD events that require reporting

2. From this page, the user is able to view the submission details of previous uploads. Scroll to the right and select arrow drop-down and click on “view details”

Missing Data / Data Quality Report Imports

[GMD Home Page](#)

Import Missing Data / Data Quality Reports for GIC Monitors and/or Magnetometers or view the submission details of previous uploads. The Submission Status displays the pass/fail of each bulk import.

[Import](#)

Name	Submission Status	GIC Missing / Quality Reports Created	GIC Missing / Quality Reports Failed	Mag Missing / Quality Reports Created	Mag Missing / Quality Reports Failed	Created By Portal User	Created On ↑
Missing Data Report Import 4/8/2021 6:16 PM	Successfully Processed	1	0	1	0	Rachel Rieder	4/8/2021 18:16
Missing Data Report Import 4/8/2021 6:07 PM	Processing Complete with Errors	0	4	0	2	Rachel Rieder	4/8/2021 18:07

[View Details](#)

Import Missing Data/Data Quality Report

From this page, the user is able to view the details of previous imports of missing data/data quality reports for GIC Monitors and/or Magnetometers. Scroll to the right and click on “Import”

Missing Data / Data Quality Report Imports

[GMD Home Page](#)

Import Missing Data / Data Quality Reports for GIC Monitors and/or Magnetometers or view the submission details of previous uploads. The Submission Status displays the pass/fail of each bulk import.

[Import](#)

Name	Submission Status	GIC Missing / Quality Reports Created	GIC Missing / Quality Reports Failed	Mag Missing / Quality Reports Created	Mag Missing / Quality Reports Failed	Created By Portal User	Created On ↑
Missing Data Report Import 4/8/2021 6:16 PM	Successfully Processed	1	0	1	0	Rachel Rieder	4/8/2021 18:16
Missing Data Report Import 4/8/2021 6:07 PM	Processing Complete with Errors	0	4	0	2	Rachel Rieder	4/8/2021 18:07

1. Download the Missing Data/Data Quality Report template from [nerc.com](#) or by clicking “here”.

Bulk Import Missing Data / Data Quality Reports

[Back to Missing Data / Data Quality Report Imports](#)

Import Missing Data / Data Quality Reports for one or more GIC Monitors and/or Magnetometers.

The Missing Data / Data Quality Report template is available [here](#).

Attach a file *

[Browse...](#)

[Submit](#)

2. Fill out the four required fields within the Missing Data/Data Quality Report template and save it to the computer/drive in CSV format.
3. Click “Browse...” and select the correct file. Then, click “Submit”

Attach a file *

[Browse...](#)

[Submit](#)

4. The following table displays the possible submission and outcome combinations.

Data Record Submittals	Submission Status	Outcome Export Files	Possible Outcome Buttons
Only successful reports	“Successfully Processed”	Original Submission	 
Some successful reports, some failed reports	“Processing Complete with Errors”	Original Submission Successful Rows Failed Rows	  
Only failed reports	“Processing Complete with Errors”	Original Submission Failed Rows	
Unable to process file	“Processing Failed”	Original Submission	

5. Depending on the Missing Data/Data Quality Submission Detail status, the user would see one or all of the following items:

- a. “View GIC Missing Data Reports” – shortcut to the GIC Monitor Missing Data/Data Quality Reports page



- b. “View Magnetometer Missing Data Reports” – shortcut to the Magnetometer Missing Data/Data Quality Reports page



- c. “Re-import Missing Data Report File” – shortcut to Import Missing Data/Data Quality Report page



6. Depending on the submission status, the user would see some or all of the following files:

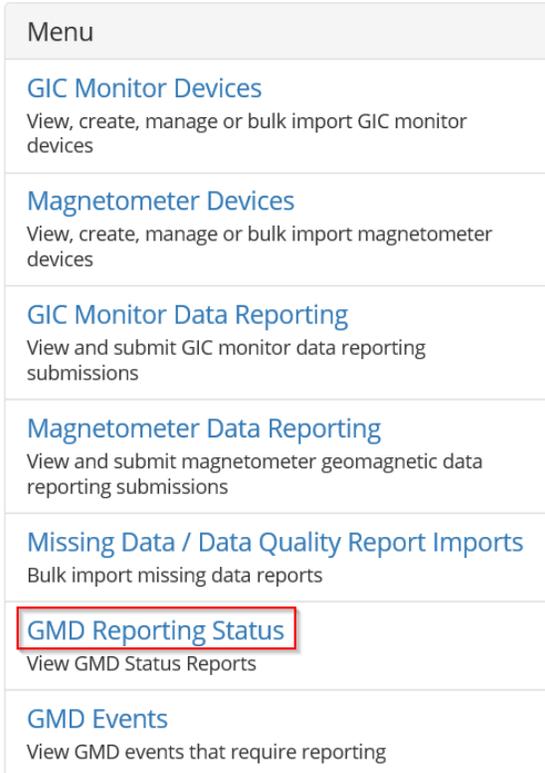
- a. The original submission file
- b. A file containing the successful rows
- c. A file containing the validation errors



Chapter 10: Submission Status Report

The Submission Status Report provides a list of all devices and the reporting status of each device for the selected event (or timeframe). The user may enter or select criteria to filter the results displayed in the report.

1. From the “Menu”, click “GMD Reporting Status”.



The screenshot shows a vertical menu with the following items:

- Menu
- GIC Monitor Devices
View, create, manage or bulk import GIC monitor devices
- Magnetometer Devices
View, create, manage or bulk import magnetometer devices
- GIC Monitor Data Reporting
View and submit GIC monitor data reporting submissions
- Magnetometer Data Reporting
View and submit magnetometer geomagnetic data reporting submissions
- Missing Data / Data Quality Report Imports
Bulk import missing data reports
- GMD Reporting Status** (highlighted with a red box)
View GMD Status Reports
- GMD Events
View GMD events that require reporting

2. The user must select a filter in order to create a Submission Status Report.

GMD Reporting Status

The GMD Submission Status Report provides information about whether data was reported for each device by Event, Calendar Year, or Reporting Collection Period (April - March).

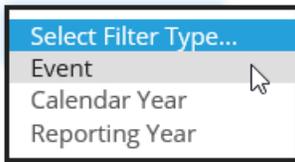
Filter By



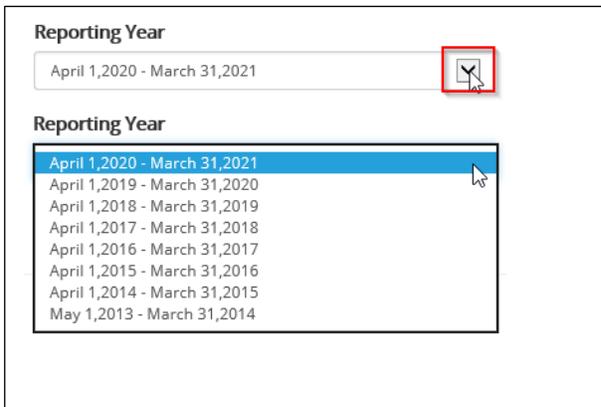
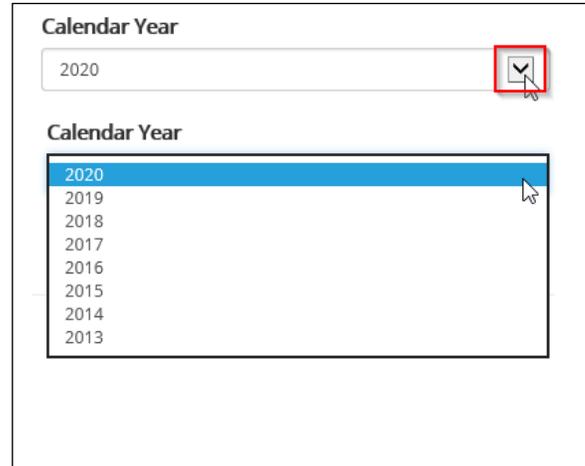
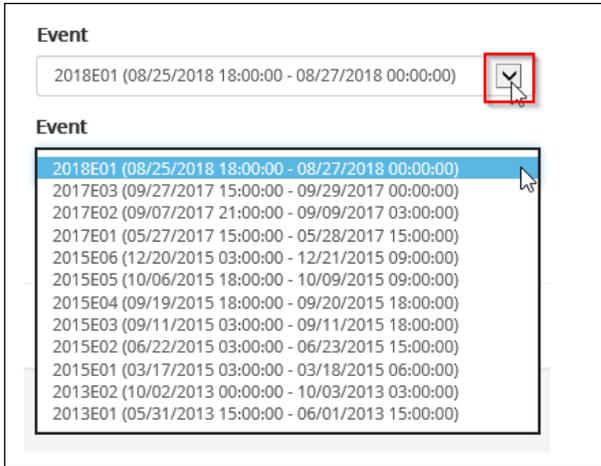
Select Filter 

3. Select one of the filter options:
 - a. Event – one of the GMD Events for which reporting was required
 - i. This selection will provide results for a single GMD event.
 - b. Calendar Year – Any year from 2013 to the current year
 - i. This selection will provide results for all events within the selected calendar year.
 - c. Reporting Year – April 1, 20XX through March 31, 20XX
 - i. This selection will provide results for all events within a reporting year, from the beginning of the reporting year, April 1, through the end of the reporting year, March 31.

Filter By

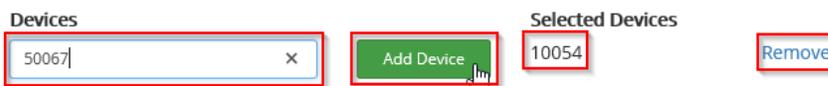


4. Depending on the selected filter type, a dropdown of Events, Calendar Years or Reporting Years will appear.



5. The user has the option to specify Device IDs to show in the results. The IDs of GIC Monitors and Magnetometers may be entered into this field. To obtain a list of available device IDs, see Chapter 4 of this user guide.

If no Device IDs are specified, the Submission Status Report will display all devices to which the user has access.



6. How to read the Submission Status Report:
 - a. Filled in Start/End Dates/Times – shows the start and end times for which data has been reported for the specified device
 - b. Empty Start/End Dates/Times – no data is in the system for the specified device and time period

- c. Has Missing Data/Data Quality Report?
 - i. "Yes" – a Missing Data/Data Quality Report exists for the specified device and time period
 - ii. "No" – a Missing Data/Data Quality Report does not exist for the specified device and time period
- d. Is Data Complete?
 - i. "Yes" – data exists for the first interval through the last interval for the specified device and time period; any gaps would be indicated by the status of the Missing Data/Data Quality Report field
 - ii. "No" – data exists for portion of the event for the specified device and time period; any gaps would be indicated by the status of the Missing Data/Data Quality Report field
- e. Export Button – ability to export all rows in the current Submission Status Report

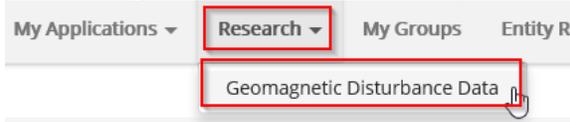
Device ID	Event ID	Data Start Date and Time	Data End Date and Time	Has Missing Data / Data Quality Report?	NCR	Is Data Complete?
10054	2015E03	09/11/2015 03:00:00	09/11/2015 18:00:00	No	NCR55555	Yes
10057	2015E03			Yes	NCR55555	No
10058	2015E03	09/11/2015 03:00:00	09/11/2015 03:08:10	No	NCR55555	No
10060	2015E03	09/11/2015 03:00:00	09/11/2015 03:08:10	Yes	NCR55555	No
10061	2015E03	09/11/2015 03:00:00	09/11/2015 03:08:10	No	NCR00901	No
50067	2015E03	09/11/2015 03:00:00	09/11/2015 18:00:00	No	NCR55555	Yes
50069	2015E03			No	NCR55555	No
50070	2015E03	09/11/2015 03:00:00	09/11/2015 18:00:00	No	NCR55555	Yes
50073	2015E03	09/11/2015 03:00:00	09/11/2015 18:00:00	No	NCR00901	Yes

Chapter 11: Data Search and Download

Event and device data reported to the GMD Portal may be exported for research and analysis.

Access the Data Search & Download Portal

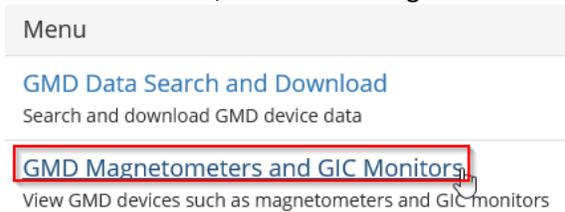
1. Navigate to the NERC ERO Portal (<https://eroportal.nerc.net/>) and login.
2. In the navigation bar, click “Research”, then click “Geomagnetic Disturbance Data”.



Device Lists

For a list of devices and their characteristics, the device lists may be viewed or exported.

1. From the “Menu”, click “GMD Magnetometers and GIC Monitors”.



2. Use the tabs at the top of the page to toggle back and forth between the lists of GIC Monitors and Magnetometers.



3. Click “Export” on each of the views to export the GIC Monitor and Magnetometer lists.



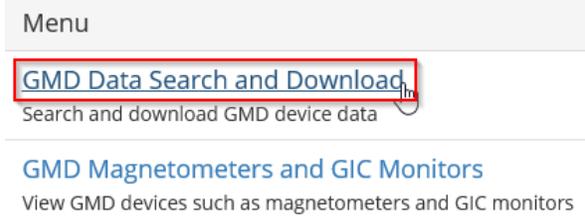
Data Search and Download

To obtain GMD event data, the user may enter or select criteria to filter the results of the event data to export.

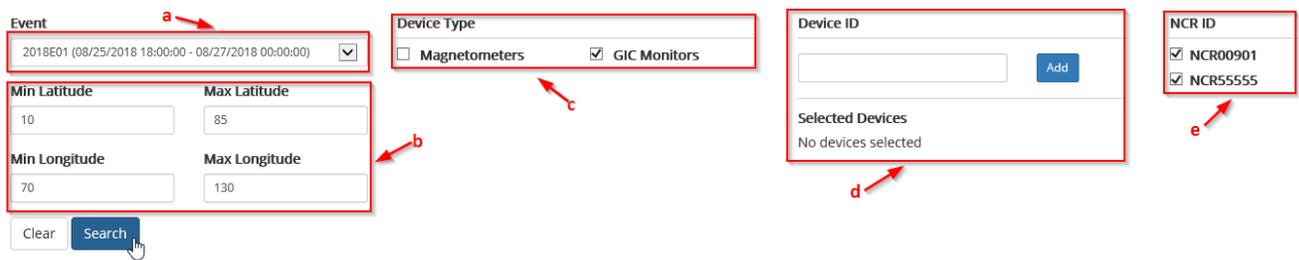
The data search is event-specific. The results of the search are presented to the user in summarized form. The user may download all results or further refine selection from the search results.

The selected search results of the Data Search and Download are compiled into a data package that includes compressed data files, lists of devices with installation and location characteristics, and missing data/data quality reports, if applicable.

1. From the “Menu”, click “GMD Data Search and Download”.



2. The user has the ability to use any of the following filters:
 - a. Event ID – required – user must select from the list of events in the dropdown
 - b. Location – optional – user may specify latitude and longitude ranges
 - i. A user may select a minimum and/or maximum value for latitude or longitude. Any entries for location will limit the devices and data provided.
 - c. Device Type – optional – user may specify Magnetometers or GIC Monitors
 - i. When left unchecked, both device types will display in results
 - d. Device ID – optional – user may specify Device IDs
 - i. When specific Device IDs are entered, other filters are disabled.
 - e. NCR ID – default for GMD Users is set to select all associated NCR IDs
 - i. When unchecked, all Devices will be displayed regardless of NCR ID. Only NCR IDs for which the user has permission to access will include the NCR ID.



3. If the user specifies a Device ID(s), all other filters will be disabled.



4. Once the user has specified all desired criteria, click “Search”.



5. Data Package Search Results

The results of the search are provided in tabular form as shown below. Based on the information provided, the user may further refine the data that will be included in the download package by checking the box in the first column of each row. To select all rows, click the box in the first column of the first row.

- a. NCR ID – if NCR ID is blank, then the user does not have permission to view the entity information for that device
- b. Number of Records – Total number of rows that exist for the device for the selected event
- c. Start/End Dates/Times – The first and last date/time of the first and last interval of data available for the device for the selected event
- d. Missing Data/Data Quality Report – If “Yes”, then the device has one or more Missing Data/Data Quality Reports for the event
- e. Modified On – If filled in, then the event data has been modified since creation

<input type="checkbox"/>	Event Name	NCR	Device Type	Device ID	Number of Data Records	Latitude	Longitude	Data Sample Start Date and Time	Data Sample End Date and Time	Missing Data / Data Quality Report	Created On	Modified On
<input type="checkbox"/>	2015E03	NCR55555	Magnetometer	50067	5401	44.00	100.00	09/11/2015 03:00:00	09/11/2015 18:00:00	No	10/07/2020 16:35:05	
<input type="checkbox"/>	2015E03		Magnetometer	50068	5401	55.00	65.00	09/11/2015 03:00:00	09/11/2015 18:00:00	No	10/07/2020 16:35:06	
<input type="checkbox"/>	2015E03	NCR55555	Magnetometer	50070	5401	65.00	120.00	09/11/2015 03:00:00	09/11/2015 18:00:00	No	10/14/2020 09:20:08	
<input type="checkbox"/>	2015E03	NCR00901	Magnetometer	50073	5401	11.00	111.00	09/11/2015 03:00:00	09/11/2015 18:00:00	No	10/23/2020 11:30:06	
<input type="checkbox"/>	2015E03	NCR55555	Magnetometer	50075	5401	10.00	101.00	09/11/2015 03:00:00	09/11/2015 18:00:00	No	10/26/2020 12:10:03	
<input type="checkbox"/>	2015E03	NCR55555	GIC Monitor	10054	5401	75.00	121.00	09/11/2015 03:00:00	09/11/2015 18:00:00	No	10/07/2020 16:30:04	
<input type="checkbox"/>	2015E03		GIC Monitor	10055	5401	33.00	133.00	09/11/2015 03:00:00	09/11/2015 18:00:00	No	10/07/2020 16:30:05	
<input type="checkbox"/>	2015E03	NCR55555	GIC Monitor	10058	50	20.00	120.00	09/11/2015 03:00:00	09/11/2015 03:08:10	No	10/23/2020 11:30:04	10/23/2020 12:40:02
<input type="checkbox"/>	2015E03	NCR55555	GIC Monitor	10060	50	60.00	121.00	09/11/2015 03:00:00	09/11/2015 03:08:10	Yes	10/23/2020 11:30:05	10/23/2020 12:40:02
<input type="checkbox"/>	2015E03	NCR00901	GIC Monitor	10061	50	55.00	125.00	09/11/2015 03:00:00	09/11/2015 03:08:10	No	10/23/2020 11:30:05	10/23/2020 12:40:03

6. Check desired data packages and click “Download Selected Files”.

<input checked="" type="checkbox"/>	2015E03	NCR55555	Magnetometer	50075	5401	10.00	101.00	09/11/2015 03:00:00	09/11/2015 18:00:00	No	10/26/2020 12:10:03	
<input type="checkbox"/>	2015E03	NCR55555	GIC Monitor	10054	5401	75.00	121.00	09/11/2015 03:00:00	09/11/2015 18:00:00	No	10/07/2020 16:30:04	
<input checked="" type="checkbox"/>	2015E03		GIC Monitor	10055	5401	33.00	133.00	09/11/2015 03:00:00	09/11/2015 18:00:00	No	10/07/2020 16:30:05	
<input checked="" type="checkbox"/>	2015E03	NCR55555	GIC Monitor	10058	50	20.00	120.00	09/11/2015 03:00:00	09/11/2015 03:08:10	No	10/23/2020 11:30:04	10/23/2020 12:40:02
<input type="checkbox"/>	2015E03	NCR55555	GIC Monitor	10060	50	60.00	121.00	09/11/2015 03:00:00	09/11/2015 03:08:10	Yes	10/23/2020 11:30:05	10/23/2020 12:40:02
<input type="checkbox"/>	2015E03	NCR00901	GIC Monitor	10061	50	55.00	125.00	09/11/2015 03:00:00	09/11/2015 03:08:10	No	10/23/2020 11:30:05	10/23/2020 12:40:03



7. Data Download Details

- a. Event Data – a data package for each device will be in a separate compressed file
- b. GIC Monitor and Magnetometer lists –all selected devices included in the requested download
- c. Missing Data/Data Quality Reports – any existing Missing Data/Data Quality Reports associated with selected devices in the requested download

