

Changes to GADS Data Reporting Instructions

Effective January 1, 2012 (Revised February 7, 2012)

Section I – Introduction

GADS is not a voluntary data-collection program starting January 1, 2012 for conventional generating units 50 MW and larger. The following was removed:

GADS is a voluntary industry program, open to all participants in the Regional Entities (shown in Figure I-2) and any other organization (domestic or international) that operate electric generating facilities.

Its replacement is

GADS is a mandatory industry program for conventional generating units 50 MW and larger starting January 1, 2012 and 20 MW and larger starting January 1, 2013. GADS remains open to all non-required participants in the Regional Entities (shown in Figure I-2) and any other organization (domestic or international) that operate electric generating facilities who is willing to follow the GADS mandatory requirements as presented in the document *Final GADSTF Recommendations Report* dated July 20, 2011 at <http://www.nerc.com/filez/gadstf.html>.

The sentence “Although GADS is a voluntary program, participating organizations...” is replaced with “With GADS a mandatory program, participating organizations ...”

Replace: **Princeton office:**

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Section II – Data Scope and Transmittal

Page II-1:

The old sentence “Design data, detailed in Section V, must be submitted before reporting any event or performance data to NERC.” is replaced with “The nine mandatory design data fields shown in Section V must be submitted before reporting any event or performance data to NERC. All other design appendices in Appendix E are voluntary but encouraged information for GADS work.”

Page II-2:

The following paragraph was added to help clarify which units are clarified at Miscellaneous conventional units as required for mandatory GADS reporting:

Miscellaneous units — Miscellaneous conventional generating units are all other units (including variable fuel – biomass, landfill gases, etc) used to generate electric power for the grid. They are similar in design and operation as the units shown above and as defined by the GADS Data Reporting Instructions. Groups of units using the same electric meter are also in the miscellaneous category. For example, if you have five hydro units of 5 MW each and they all have the same common revenue meter (measuring the electric output of the five units combined), then this block of hydro units would be considered a 25 MW miscellaneous unit.

Page II-2:

The following paragraph is removed from Section II:

Reporting event and performance data prior to either of the above dates is required for those organizations who wish to report data to GADS. **GADS is still a voluntary database and it is not required by the industry or by law to report unit data to GADS.** However, it is required to report to GADS if your organization owns generating facilities and wants information from GADS (special reports, pc-GAR, etc. See *Appendix I – GADS Data Release Guidelines* for details).

The replacement paragraph is:

The nine required design fields must be reported to GADS prior to reporting event and performance data. Your generating company is required to report to GADS if your organization owns generating facilities and is listed on the NERC Compliance Registry (NCR) at <http://www.nerc.com/page.php?cid=3|25>. This requirement applies to generator within North America only and for 50 MW and larger conventional generating units starting January 1, 2012 and 20 MW and larger starting January 1, 2013. All other generating units by non-registered generating companies or units smaller than the required MW size are invited to participate in GADS on a voluntary basis.

Page II-2:

The sentence starting with “*Figure II-1* indicates the type of data each utility should report ...” has been modified to “*Figure II-1* indicates the type of data each utility are invited to report on a voluntary basis (not required) ...”

Page II-3:

Figure II-1 outlined the general required event, performance and design data for each type of generating unit. With the passage of the mandatory GADS requirements, the table was modified to show what is required starting January 1, 2012. At that time, conventional generating units 50 MW and larger are required reporting. In 2013 version of the Data Reporting Instructions, the Figure will show 20 MW and larger.

For now, the following Figure II-1 has been modified to:

Figure II-1

Reporting Requirements vs. Unit Type/Size Effective January 1, 2012

Unit		Reporting Requirements		
Type	Size (MW)	Event (07 format)	Performance (05 format)	Design
Nuclear	50+	Required	Required	9 Fields
Fossil (Steam)	50+	Required	Required	9 Fields
Hydro & Pumped Storage	50+	Required	Required	9 Fields
Gas Turbines/Jet Engines	50+	Required	Required	9 Fields
Combined Cycle/Cogeneration	50+	Required	Required	9 Fields
Diesel	50+	Required	Required	9 Fields
Fluidized Bed Combustion	50+	Required	Required	9 Fields
Miscellaneous	50+	Required	Required	9 Fields

Page II-4:

Starting with the collection of 2012 data, GADS will be moving away from collecting event and performance data by sending files to NERC. NERC has signed a contract with Open Access Technology International, Inc. (OATI) to collect and edit GADS event and performance information for NERC use. Therefore, the following paragraphs and Figure have been modified to:

All data for the years 2011 and older should be submitted electronically as shown in *Figure II-2*. When submitting data, please indicate the number of records being submitted in your transmittal letter to assure all data is properly retrieved.

**Figure II-2
Data Reporting Formats**

Media	Specifications
E-mail:	<ul style="list-style-type: none"> • Text format (.txt). To improve transmission times your data files may be submitted as compressed (.zip) files. • Submit your data within 30-days after the end of every calendar quarter. • E-mail your data to: gads@nerc.com

All data for the years 2012 and after will be sent to GADS using the new data submittal program operated by Open Access Technology International, Inc. (OATI) starting the first quarter of 2012. More information on the process, data upload training, and other matters will be provided in March 2012.

Section III – Event Reporting

Starting January 1, 2012, all conventional generating units 50 MW and larger are required to report to GADS. The approved GADS mandatory report outlined which event data fields are required and which are voluntary reporting fields. Each event reporting data field is now marked as either required and voluntary data reporting.

Page III-1:

The following paragraph is removed from the introduction to this section:

Participation in the GADS program is voluntary, but once committed, each utility should report as much detailed information as it can. Reporting the level of detail requested in these *GADS Data Reporting Instructions* enables you and other industry analysts to perform detailed, useful analyses. *Figure III-1*, below, suggests the classes of events utilities should report for different types and sizes of conventional, non-renewable generating units. For renewable generating plants (wind), please see the [GADS Wind Turbine Generation Data Reporting Instructions](#).

The following paragraph is added to the introduction:

Participation in the GADS program is now mandatory reporting for all conventional units 50 MW and larger starting January 1, 2012. Reporting the level of detail requested in these *GADS Data Reporting Instructions* enables you and other industry analysts to perform detailed, useful analyses. *Figure III-1*, below, presents the classes of events generating companies must report for different types and sizes of conventional, non-renewable generating units. For renewable generating plants (wind), please see the [GADS Wind Turbine Generation Data Reporting Instructions](#).

Table III-1 has been updated to reflect the new requirements. The word “Optional” was replaced with the word “Voluntary” as follows:

Figure III-1

Event Reporting Requirements vs. Unit Type/Size Effective January 1, 2012

Unit		Event Classifications			
Type	Size (MW)	Outage	Derating	Reserve Shutdown	Non-curtailing
Fossil (Steam)	50+	Required	Required	Required	Voluntary
Nuclear	50+	Required	Required	Required	Voluntary
Hydro & Pumped Storage (with automatic data recording equipment)	50+	Required	Required	Required	Voluntary
Hydro & Pumped Storage (without automatic data recording equipment)	50+	Required	Required	Voluntary	Voluntary
Gas Turbines/Jet Engines	50+	Required	Required	Required	Voluntary
Combined Cycle/Co-generators	50+	Required	Required	Required	Voluntary
Diesel	50+	Required	Required	Required	Voluntary
Fluidized Bed Combustion	50+	Required	Required	Required	Voluntary
Miscellaneous - including multi-boiler/multi-turbine, geothermal, other miscellaneous conventional generating units (such as variable fuel – biomass, landfill gases, etc) used to generate electric power for the grid and similar in design and operation as the units shown above.	50+	Required	Required	Required	Voluntary

Page III-2:

The following paragraph was changed from:

All units except hydro and pumped storage units without automatic data recording equipment, no matter its size or technology, are required to report reserve shutdown events. GADS encourages that all events (forced, maintenance, and planned) for all units be reported for providing complete reporting. GADS interprets this as 1 MW or larger with other sizes optional.

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All units except hydro and pumped storage units without automatic data recording equipment are required to report reserve shutdown events. All other events (forced, maintenance, and planned) must be reported.

Page III-2:

The following paragraphs are now removed:

***Note:** As of January 1, 2010, GADS will only accept the new (07) format. There was a need by several Independent System Operators (ISO) groups to collect derating data on units smaller than 1 MW in size. Therefore, the GADS database expanded the Gross Available Capacity (GAC) and Net Available Capacity (NAC) to include two decimal places.*

We are not asking for generating units of 0.01 MW size to report to GADS. Historically speaking, the smallest units reported to GADS are 1 MW. With the introduction of the 07 format, GADS can accept deratings smaller than 1 MW for units less than 1 MW in size.

Page III-2:

The following paragraph is added:

All conventional generating units less than 50 MW are invited to report to GADS on a voluntary basis. Units 20 MW and large are not required to report to GADS until January 1, 2013.

Page III-3 to III-38:

Throughout the event record document, the “required” and “voluntary” data fields are marked as shown in the mandatory GADS report.

Page III-10

The requirement for mandatory reporting of events coming from in-service (breakers closed) to U1 was not very clear. It has been revised as follows:

If the U1 is not a trip but the result of a change of state (from planned outage to U1, for example), then the amplification code can be any appropriate amplification code if the reporter chooses to report amplification codes.

Starting January 1, 2011, the need to report T1 or T2 for events coming from in-service to U1 will be mandatory to pass GADS edits.

Page III-17:

The following sentence was added to the third paragraph under the title of outages:

“The unit is not on RS during startup unless the unit was on RS prior to startup.”

In the 2011 GADS Data Reporting Instructions, Cause Code Amplification Codes were required for D1 events. Those requirements were removed from reporting in August 2011. ***The following paragraphs are now removed from the Instructions:***

Just like the modifications to U1 on Page III-9, GADS will collect automatic component trips. It will be collected using D1 with the existing amplifications codes 82 and 83. The description of amplification codes 82 and 83 focus on derating, not outages. The same general description is used to separate automatic component trips from manual, operator initiated component trips.

82 - Tripped/shutdown component — automatic controls

83 - Tripped/shutdown component — manual

If the cause of the trip is not known, then you can use amplification code 84 but it must be changed to the appropriate amplification code before the end of the year to be acceptable by GADS.

84 - Unknown – investigation underway (change this code once failure mechanism is determined)

If the D1 is not a trip but the result of a change of state (from planned derate to D1, for example), then the amplification code can be any other amplification code. There should be an amplification code reported for each D1 event.

Starting January 1, 2011, the need to report 82, 83 or other amplification codes will be mandatory to pass GADS edits. For a complete list of the amplification codes see *Appendix J* of these data reporting instructions.

Section IV – Performance Reporting

Starting January 1, 2012, all conventional generating units 50 MW and larger are required to report to GADS. The approved GADS mandatory report outlined which event data fields are required and which are voluntary reporting fields. Each event reporting data field is now marked as either required and voluntary data reporting.

Page IV-1:

The following paragraph was added to the introduction of this section:

Participation in the GADS program is now mandatory reporting for all conventional units 50 MW and larger starting January 1, 2012. Reporting the level of detail requested in these *GADS Data Reporting Instructions* enables you and other industry analysts to perform detailed, useful analyses. *Figure III-1* presents the classes of events generating companies must report for different types and sizes of conventional, non-renewable generating units. For renewable generating plants (wind), please see the [GADS Wind Turbine Generation Data Reporting Instructions](#).

Page IV-2-3:

The following paragraphs are now removed:

Note: *As of January 1, 2010, GADS only accepts the new (05) format. There was a need by several Independent System Operators (ISO) groups to collect data on units smaller than 1 MW in size. There is also a need to collect and report generation smaller than 1 MWh. Therefore, the GADS database expanded the Gross Maximum Capacity (GMC), Gross Dependable Capacity (GDC), Net Maximum Capacity (NMC) and Net Dependable Capacity (NDC) to include two decimal places. GADS also expanded the Gross Actual Generation (GAG) and Net Actual Generation (NAG) to allow two decimal places.*

We are not asking for generating units of 0.01 MW size to report to GADS. Historically speaking, the smallest units reported to GADS are 1 MW. With the introduction of the 05 format, GADS can accept smaller units but units less than 1 MW are optional reporting.

Page IV-1:

The following paragraph is added:

All conventional generating units less than 50 MW are invited to report to GADS on a voluntary basis. Units 20 MW and large are not required to report to GADS until January 1, 2013.

Page IV-3 to IV-16:

Throughout the performance record document, the “required” and “voluntary” data fields are marked as shown in the mandatory GADS report

Page IV-8:

The following is added to clarify the description of attempted starts:

- Repeated failures for the same cause without attempted corrective actions are considered a single start.
- Repeated initiations of the starting sequence without attempting corrective repairs are counted as a single attempt.

Also, on the same page,

If Attempted Unit Starts are calculated, then the Attempted Unit Starts are greater than Actual Unit Starts by the number of Startup Failures (SF) events reported.

$$\text{Actual Unit Starts} + \text{Startup Failure Events} = \text{Attempted Unit Starts}$$

Section V – Design Data Reporting

In August 2011, the NERC Board of Trustees approved the proposal to make GADS mandatory reporting for units 50 MW and larger starting January 1, 2012 and 20 MW and larger starting January 1, 2013. (See Final GADSTF Recommendations Report at <http://www.nerc.com/filez/qadstf.html> for full details.) On page 21 of that report, it lists nine design items that are required reporting for all conventional units. The design characteristics shown in Appendices E are now voluntary reporting to GADS. Therefore, the following changes were made to Section V:

Page V-1: *The following paragraph is added to Section V as an introduction:*

“In the approved recommendations by the NERC Board of Trustees, nine design data fields must be submitted for all units being reported to the GADS database. These required design data must be reported to GADS before submitting GADS event and performance data. These nine required design data fields are:

- GADS utility code (assigned by GADS Services)
- GADS unit code (assigned by the reporting company following the guidelines in Appendix C of the GADS Data Reporting Instructions.)
- NERC Regional entity where the unit is located
- Name of the unit
- Commercial operating date
- Type of generating unit (fossil, combined cycle, etc.)
- MW size (nameplate)
- State or province location of the unit.
- Energy Information Administration (EIA) Plant number (US units only).

“The required nine design items can be sent to GADS in an email, using a spreadsheet or any other convenient way the reporter wishes to use.”

Page V-1: The remainder of Section V is modified to explain any voluntary design data submittals and how they will be handled by the GADS staff. The modifications and new paragraphs are:

“For years, GADS has been collect additional design information using the forms in Appendices E of the Data Reporting Instructions. These data provide information regarding installed equipment design and operating characteristics of a unit and are used in special analyses as sorting criteria. Submittal of the additional design data is solely voluntary. If you wish to send GADS the additional design data, complete the design data forms, which apply to the type of unit you are reporting, as detailed in *Figure V-1*. The appropriate design data forms for each unit type are found in *Appendix E*.”

**Figure V-1
Location of Design Data Forms for Voluntary Design Reporting**

Unit Type	Pages
Fossil (Steam)	E-FS-1 – 38
Fluidized Bed Combustion	E-FB-1 – 48
Nuclear	E-NU-1 – 8
Diesel	E-DI-1 – 4
Hydro/Pumped Storage	E-HY-1 – 6
Gas Turbine or Jet Engine	E-GT-1 – 6
Combined Cycle and Co-generation Blocks	E-CC-1 – 24
Miscellaneous	E-MS-1 – 6

“In 2011, GADS introduced an design data collection software to easy the collection of voluntary design data. The software, Unit Design Entry, has all the information in Appendices E with drop-down options and other features. For more information on the software, go to <http://www.nerc.com/page.php?cid=4|43|46>. Contact a GADS staff member for a list of your own units to view the design data already in GADS.”

Appendix A – Change of Unit Status Report Form

The change forms should be sent to Mike Curley at mike.curley@nerc.net instead of Joanne Rura.

Appendix B – System/Component Cause Codes

The following cause codes were added by each unit type:

Fossil Steam Units

ADD the following cause code:

0129 – Other Coal Processing System Problems
4445 – Steam Reheater
9031 – Tornado
9616 – CO stack emissions

Fluidized Bed Fossil Steam Units

ADD the following cause code:

0129 – Other Coal Processing System Problems
4445 – Steam Reheater
9031 – Tornado
9616 – CO stack emissions

Nuclear Units

ADD the following cause code:

3811 – Service Water Piping
3880 – Seal Air Fan
3881 – Seal Air Fan Drive – Motor
3882 – Seal Air Control Dampers and Drives
3883 – Seal Air Filters
3889 – Other Seal Air Fan System Problems
4310 – Steam Turbine Control System - Data Highway
4311 – Steam Turbine Control System - Hardware Problems
4312 – Steam Turbine Control System-internal And Termin..
4313 – Steam Turbine Control System - Logic Problems
4314 – Steam Turbine Control System-upgrades
4445 – Steam Reheater
9031 – Tornado
9150 – Labor Strikes Company-wide Problems Or Strikes
9151 – Labor Strikes Direct Plant Management Grievances

Gas Turbine Units

ADD the following cause code:

3802 – Open Cooling Water Valves
9031 – Tornado
9616 – CO stack emissions

Jet Engine Units

ADD the following cause code:

3802 – Open Cooling Water Valves
9031 – Tornado
9616 – CO stack emissions

Diesel Units

ADD the following cause code:

3632 – 400-700-volt Conductors and Buses
3673 – 12-15kv Insulators
3730 – Transmission Equip Beyond 1st Substation
9031 – Tornado
9036 – Storms (ice; Snow; Etc)
9150 – Labor Strikes Company-wide Problems Or Strikes O..
9151 – Labor Strikes Direct Plant Management Grievances..
9616 – CO stack emissions

Multi-boiler Multi-turbine Fossil Units

ADD the following cause code:

0129 – Other Coal Processing System Problems
4445 – Steam Reheater
9031 – Tornado
9616 – CO stack emissions

Combined Cycle Blocks and CC Components Units

ADD the following cause code:

4445 – Steam Reheater

9031 – Tornado
9616 – CO stack emissions

Co-generator Blocks and CG Components Units

ADD the following cause code:

4445 – Steam Reheater
9031 – Tornado
9616 – CO stack emissions

Hydro-Pumped Storage Units

ADD the following cause code:

9345 - Pumped Storage Operations

Miscellaneous Units

ADD the following cause code:

9031 – Tornado
9616 – CO stack emissions

Appendix C – Utility and Unit Identification Codes

Added or modified names or GADS utility codes to each Regional member as needed.

Appendix E – Unit Design Data Forms

Only the nine design fields approved by the NERC Board of Trustees is required under the mandatory GADS umbrella. All other design fields are voluntary reporting. As part of that work, the following is added to all Appendices E in 2012:

- *The phase “(VOLUNTARY REPORTING)” is added to the Appendix title.*
- *The following statement is added at the front of each Appendix E document:*

(Note: The NERC Board of Trustees approved the GADS Task Force report (dated July 20, 2011 - <http://www.nerc.com/filez/gadstf.html>) which states that design data collection outside the required nine fields is solely voluntary. However, the GADS staff encourages that reporters report and update GADS design data frequently. This action can be completed by 1) sending in this form or 2) using the design data entry software located at <http://www.nerc.com/page.php?cid=4|43|46>. GADS staff encourages using the software for design entry and updating.)

Appendix J – Cause Code Amplification Codes

Appendix J was modified to add limits to specific amp codes. Some amp codes are applicable to all event types and some are limited to specific events types. Therefore, the following was added to Appendix J: “There are a few cases where the amplification code is limited to specific event types or conditions. The table below captures the specific limits. “None” means that the amplification codes can be used with any event types.”

New Cause Codes Amplification Codes are:

- NF – No fuels
- ST – Steam transfer
- 73 – Stress corrosion cracking
- H0 – Temperature – high, not within limits

Appendix M – Differences Between GADS and ISO Data Collection Systems (Removed from the DRI starting January 2012)

GADS Services and the various ISO organizations have resolved the differences between the reporting systems and resolved them. We are in harmony now. Therefore, Appendix M is no longer needed in the GADS Data Reporting Instructions.