

## Section I – Introduction

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NERC developed the *GADS Data Reporting Instructions* to assist utility personnel in reporting information to the Generating Availability Data System (GADS). This reporting system, initiated by the electric utility industry in 1982, expands and extends the data collection procedures begun by the industry in 1963. NERC-GADS is recognized today as a valuable source of reliability, availability, and maintainability (RAM) information. This information, collected for both total-unit and major equipment groups, is used by analysts industry-wide in numerous applications (See Table I-1). GADS maintains complete operating histories on more than 8,000 generating units, representing over 90 percent of the installed generating capacity of the United States and Canada. As of January 1, 2013, GADS became a mandatory industry program for conventional generating units 20 MW and larger. GADS remains open to all non-required participants in the Regional Entities (shown in Table I-2) and any other organization, domestic or international,<sup>1</sup> that operate electric generating facilities willing to follow the GADS mandatory requirements as presented in the document *Final GADSTF Recommendations Report* dated July 20, 2011.

<b>Table I-1: Applications of GADS Data</b>		
<b>New Plants</b>	<b>Plant Strategies</b>	<b>Maintenance Strategies</b>
Design	Load following	Preventive/Predictive
Procurement	Power reductions	Inspection Scheduling
Construction	Goals/benchmarking	Surveillance
	High-impact outages	
<b>System Strategies</b>	<b>Plant Modifications</b>	<b>Outage Planning</b>
Dispatch	Replacement	Critical Items
Maintenance	Reconfiguration	Resource allocation

Utility designers, operating engineers, and system planners developed GADS to meet the information needs of the electric utility industry. For this purpose, they established specific objectives for the GADS program: compilation and maintenance of an accurate, dependable, and comprehensive database capable of monitoring the performance of electric generating units and major pieces of equipment. GADS is not a substitute for the detailed and often unique data systems typically found at power plants or for maintenance data programs that record detailed equipment failures and repair techniques. The objectives of the GADS program can be met through the collective effort of participating GADS members, the cooperation in reporting to GADS, and sharing information with the industry.

With the GADS mandatory program, participating organizations must be prepared to commit the necessary effort needed to provide timely, accurate, and complete data. The *GADS Data Reporting Instructions* detail the data elements collected by GADS, data identified by the industry as being vital to the understanding and interpretation

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<sup>1</sup> NERC management reserves final approval authority for GADS data with international organizations on a case-by-case basis.

of generating unit and major equipment performance. By following the strict guidelines set forth in these instructions, we have found that the industry analysts can best apply the data in the most beneficial manner.

## Industry Development of GADS

Before any data element was included in GADS, an industry committee determined its applicability to utility operation and RAM analyses scrutinized it. A series of industry meetings were held to discuss the analytical usefulness of each element and to determine if utilities could reasonably provide that data to GADS. Consequently, the only data requested in the *GADS Data Reporting Instructions* meet industry-prescribed needs. In reviewing this document, you will find that most, if not all, of the requested data elements are already being collected in your utility's plant-specific data system.

The industry also realized a need to include standardized terminology in the GADS program if it were to function on an international scale. As a result, the definitions promulgated by the Institute of Electrical and Electronic Engineers' (IEEE) Standard 762, "Definitions for Reporting Electric Generating Unit Reliability, Availability and Productivity" were incorporated.

Utilities started their reporting using the GADS guidelines on January 1, 1982. GADS superseded the earlier data collection procedures begun by the Edison Electric Institute (EEI), a program started in the mid-1960s. GADS contains many of the same elements previously collected by EEI in addition to the many new data items. This seeming duplication of data was created intentionally: the EEI information can be derived from GADS so analyses that include data from earlier than 1982 can be completed.

## Unit Boundaries and Problems Outside Plant Control

A number of generating companies have been deregulated over the last several years. As a result, part of the GADS database contains deregulated units and regulated units. As more and more electric utilities divide into generating companies (GO and GOP), transmission companies (TO and TOP) and distribution companies, GADS must also make changes to accommodate industry needs. To do so, we must determine where the GENCO responsibilities end and the TRANSCO take over.

Based on research by the IEEE 762 committee, the boundary between the GO and TO is as follows: "A generating unit includes all equipment up to (in preferred order) (1) the high-voltage terminals of the generator step-up (GSU) transformer and the station service transformers; (2) the GSU transformer (load) side of the generator-voltage circuit breakers; or (3) at such equipment boundary as may be reasonable considering the design and configuration of the generating unit."

Not all plants have the high-voltage terminals of the generator step-up (GSU) transformer and the station service transformers as shown in (1) above. Therefore, the boundaries are shown in preferred order based on unit design. If (1) is not applicable, then (2); if not (2) then (3).

GADS will continue to collect all problems that prevent the generating facility from providing electrical power to the customer. However, there are additional guidelines provided by IEEE 762. In Appendix K of this manual "Outside Plant Management Control" are guidelines to determine what is and is not within the plant management responsibilities. As a result, new equations are introduced for measuring plant performance. For further details, refer to Appendix F of this manual.

Table I-2: Regional Entities	
<b>FRCC</b> <a href="#">Florida Reliability Coordinating Council</a>	<b>SERC</b> <a href="#">SERC Reliability Corporation</a>
<b>MRO</b> <a href="#">Midwest Reliability Organization</a>	<b>SPP</b> <a href="#">Southwest Power Pool</a>
<b>NPCC</b> <a href="#">Northeast Power Coordinating Council</a>	<b>TRE</b> <a href="#">Texas Regional Entity</a>
<b>RF</b> <a href="#">ReliabilityFirst</a>	<b>WECC</b> <a href="#">Western Electricity Coordinating Council</a>

## Arrangement of Data Reporting Instructions

The *GADS Data Reporting Instructions* document details the procedures, format, and frequency to follow when reporting data to GADS.

This document has several sections, and each section treats a particular area of data to report to GADS. Section II describes the three general types of data to be reported to GADS: event, performance, and design. Sections III and IV provides the details for the event and performance reporting requirements, respectively. Section V describes the format and procedure to follow when reporting design data to GADS.