

Ronald M. “Ron” Fluegge

Senior Consultant – Power Generation

Ron has more than 45 years’ experience in the electric power generation area, possessing a wide array of consulting experiences ranging from generating unit startup, operations, and NERC GADS data management, analysis, and application to nuclear unit design and reliability. He also created software that provided monitoring and oversight of nuclear unit operations and maintenance. Additionally, his career touched on rate and fuel reconciliation cases, and cost and reliability benchmarking studies for fossil-steam, hydro, and combustion turbine generating units.

Throughout his extensive career, Ron noticed the lack of appropriate tools needed to produce the desired results, whether recommendations to management or detailed data analysis. The needs of the industry, coupled with his experience, started Ron down the path of development of multiple GADS-related software tools to acquire and manage data with the ability to report it to management in a consistent format. Ron has more than 15 years of practical experience in the design, development, and application of analytical, reporting, and benchmarking tools that have been widely accepted in the power generation industry. Based on his extensive analytical, operational, and software solutions-based development experience, Ron is the principal developer for the GADS Open Source™ software.

Ron was the Electric Reliability Council of Texas’ (ERCOT) representative on the North American Electric Reliability Council’s Regional Advisory Working Group (RAWG) that established and reviewed the national reporting standards for the Generating Availability Data System (GADS) used by the electric utilities the United States, Canada, and northern Mexico. He is currently a member of the NERC Generating Availability Data System Working Group (GADSWG). The purpose of the GADSWG is to implement a uniform approach to reporting and measuring North American generating plant availability, performance and other related reliability data. The GADSWG reviews and recommends new generation availability data that should be subject to mandatory collection by NERC; reviews additions and changes to the GADS Data Reporting Instructions (DRI); and analyzes, assesses and reports on trends and risks to reliability from generator availability and performance.

Ron has served as Chair of the ASME Reliability, Availability and Maintainability (RAM) Committee of the ASME Power Division. The RAM Committee directs attention to the reliability, availability and maintainability of electric power generation equipment and systems in both the utility and independent power environments.

Experience

2011–present GADS Open Source Project; Dallas, Texas Coordinator

Project management responsibilities for the GADS Open Source suite of products and services. Chief architect and head of technical team developing GADS/OS product line. Head of training for all GADS/OS products and services. GADS/OS allows electric generating companies to collect and report validated GADS performance data and event data.

- 2004–2011** **HSB Solomon Associates LLC; Dallas, Texas**
Director, NxL Product Development
- Project management responsibilities for the GADS NxL and 762 NxL suite of products and services. Chief architect and head of technical team developing Profile NxL product line and associated offerings to aid in the collection, analysis, and application of generating data. Head of training for all NxL products and services.
- 2001–2004** **Fluegge Consulting Group; Dallas, Texas**
Owner
- Developed analytical tools and industry best practices to create the GADS Next Generation Data Entry™ and GADS Next Generation™ Analysis & Reporting software suite to collect and report reliability data, as well as benchmark performance. As a member of the working group responsible for rewriting IEEE Standard 762, wrote portions of the proposed IEEE Standard submitted to the international community for approval and adoption. Worked with clients to produce custom software solutions to fit their corporate needs. Additionally, conducted corporate and national training seminars on NERC GADS-related issues.
- 1998–2001** **Navigant Consulting, Inc.; Chicago, Illinois**
Principal
- As a Principal, served as the sole developer of the Generation Knowledge System (GKS) used to perform generating unit benchmarking. Through planning and working with clients beginning in 1987, developed industry-accepted analytical tools using information technology and industry best practices. The result of these efforts was the MicroGADS software suite that was developed prior to joining Navigant Consulting in 1998 and that was installed at 150 electric utilities and generating companies in the United States and Canada. MicroGADS was also the software engine for Navigant Consulting's GKS product.
- 1986–1998** **Texas Utilities/TU Electric; Dallas, Texas**
Manager of Availability Support
- Responsible for the Generation Planning Center; coordination of testimony in rate case, fuel reconciliation cases, and other legal matters for the Fossil Generation division; and operation and maintenance of the NERC GADS for Fossil and Nuclear Generation (9 lignite-fired and 46 gas/oil-fired steam cycle units, 2 nuclear-fueled units, and 15 simple cycle combustion turbine units), as well as six combined-cycle cogeneration facilities.
- Additionally, responsible for developing long- and short-range maintenance schedules for all company generating units; coordinating short-supply and weather-related operations; and coordinating with Generation Planning, Power Supply Operations, and Fuel Planning.
- Performed cost and reliability benchmarking studies for Fossil Generation and reported generating unit performance to NERC GADS, Federal and State agencies, and TXU Electric management.

Major Software Applications/Systems Integration Projects

- As author of the GADS NxL Data Entry and GADS NxL Analysis & Reporting software, responsibilities included support and development of both programs, including user training and custom report development for clients. The software allowed users to report Generating Availability Data System (GADS) event and performance data to the North American Electric Reliability Council (NERC), PJM, the New England ISO, and the New York ISO; and was used by client utilities to calculate performance and reliability measurements from the GADS data for their own electric generating units. In 2011, HSB Solomon Associates LLC transferred their GADS NxL™ software, including the source code, to the GADS Open Source Project.
- As author of the GADS Next Generation Data Entry and GADS Next Generation Reporting & Analysis software, and the MicroGADS Data Entry and Edit and MicroGADS Reporting and Analysis software, responsibilities also included the support and development of the programs, including user training and custom report development for clients. At one time, MicroGADS software was used by more than 75% of the electric utilities in the United States and Canada. This software was used to report GADS event and performance data to NERC, the New England ISO, and the New York ISO; and was used by client utilities to calculate performance and reliability measurements from the GADS data for their own electric generating units.

Major Management Information Systems Projects

- Responsible for the development and support of electronic benchmarking systems (Navigant's GKS and Solomon's Profile systems), which based on design data, calculated generating unit reliability data using NERC GADS event and performance data and generating unit operations, maintenance and fuel cost data at the major equipment group detail level. The software suite was a unique, integrated compilation of engineering design, operating history, plant characteristic, cost, and performance data for fossil-fueled, nuclear-fueled and hydroelectric generating units. It provided the basis for models and their analytic and predictive capabilities (i.e., generation benchmarking), containing the following data:
 - Design characteristics (NERC GADS design data)
 - Operational characteristics
 - Cost characteristics (generating unit activity-based cost accounts by major equipment group)

Software Patents Related to Generating Unit O&M Cost and GADS Reliability Benchmarking

U.S. Patent 7,447,611 - Power Generation Performance Analysis System and Method

A system and method is described herein that includes a software-based functionality to assess the relationship between reliability, operational, maintenance and plant betterment activities and to determine the frontier of efficient spending and other measures of performance to achieve a level of reliability that is based on data from units of similar design and performance.

U.S. Patent 7,941,296 - Benchmarking and Gap Analysis System and Method

A computer-implemented method is provided for creating a peer unit and comparing that peer unit to a target unit in order to determine the difference in performance between the target unit and a peer unit. The peer unit is a hypothetical construct of user-defined performance variables whose values are determined based on outstanding performing units in a user-defined group. This comparison allows the user to assess what parameters of the target unit should be changed in order to improve overall performance.

U.S. Patent 8,050,889 - Performance Analysis System and Method

A system and method is described herein that includes a software-based functionality to assess the relationship between reliability, operational, maintenance and plant betterment activities and to determine the frontier of efficient spending and other measures of performance to achieve a level of reliability that is based on data from units of similar design and performance.

U.S. Patent 8,055,472 - Performance Analysis System and Method

A system and method is described herein that includes a software-based functionality to assess the relationship between reliability, operational, maintenance and plant betterment activities and to determine the frontier of efficient spending and other measures of performance to achieve a level of reliability that is based on data from units of similar design and performance.

U.S. Patent 8,060,341 - Performance Analysis System and Method

A system and method is described herein that includes a software-based functionality to assess the relationship between reliability, operational, maintenance and plant betterment activities and to determine the frontier of efficient spending and other measures of performance to achieve a level of reliability that is based on data from units of similar design and performance.

Publications

IEEE Standard Definitions for Use in Reporting Electric Generating Unit Reliability, Availability, and Productivity (IEEE Standard 762™-2006)

The Institute of Electrical and Electronics Engineers, Inc.

Secretary of the Working Group that created the 2006 revision

IEEE Standard 762™-2006 provides a methodology for the interpretation of electric generating unit performance data from various systems and to facilitate comparisons among different systems. It also standardizes terminology and indexes for reporting electric generating unit reliability, availability, and productivity performance measures. This standard is intended to aid the electric power industry in reporting and evaluating electric generating unit reliability, availability, and productivity while recognizing the power industry's needs, including marketplace competition. Included are equations for equivalent demand forced outage rate (EFORd), newly identified outage states, discussion of commercial availability, energy weighted equations for group performance indexes, definitions of outside management control (OMC), pooling methodologies, and time-based calculations for group performance indexes.

Member of the current 2016 Working Group responsible for modifying the 2006 revision to include wind and solar generating units

BENCHMARKING IN TODAY'S COMPETITIVE ENVIRONMENT, American Society of Mechanical Engineers - PWR-Vol. 34, Proceedings of the 1999 International Joint Power Generation Conference - Power, Volume 2, ASME 1999, July 28, 1999

Tutorial: The ABCs of RAM Improvement - Methods and Data, ASME International Joint Power Generation Conference & Exposition, July 25, 2000

Tutorial: Use of Reliability Data and Processes in the Competitive Power Marketplace, ASME 2001 International Joint Power Generation Conference & Exposition, June 6, 2001

As change comes to the power generation industry, an engineered approach to reliability is more important than ever, Energy-Tech Magazine, June 1, 2010

RELIABILITY REPORTING: Understanding NERC Requirements for Hydro Reliability Reporting, HYDRO REVIEW, 07/01/2009

Education

Bachelor of Science in Nuclear Engineering (1970)

University of Missouri – Rolla

Rolla, Missouri