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PROFESSIONAL EXPERIENCE

Signal Hydropower Consultants, LLC

January 2013 to Present, President and Consultant

In this role, examples of professional services:

- Led the development of the National Hydropower Association's Operational Excellence Program and continues to provide technical support to this program and to member companies on as needed basis.
- Provided technical support in the areas of hydropower plant operations and maintenance to two Federal government research organizations and utilities as requested.
- Acted as a third party reviewer of operations and maintenance expenses and capital investments of a hydropower plant fleet to an international investment firm.
- Provided support to the Electric Utility Cost Group's Hydroelectric Productivity Committee, new member support, and acted as a third party for surveys such as staffing, safety metrics and condition monitoring
- Conducted Human Performance training to hydropower plant and central office staffs.

Tennessee Valley Authority (TVA)

January 2000 to January 2013, Project Manager - Hydro, River Operations

The prime responsibility of this position provided operational support to hydro plant staffs and managing special projects. Key assignments included:

- Served as a Subject Matter Expert (SME) for two North American Electric Reliability Corporation (NERC) reliability standards in SERC Reliability Corporation's audit of TVA's compliance in May 2010. Also, oversaw the gathering of evidence from Hydro Operations' documentation for this audit.

- Served as a reserve SME for the May 2012 SERC Reliability Corporation's audit and directed the preparation of new SMEs
- Provided analysis of the plants' maintenance program through performance indicators
- Recommended future targets for various operational performance indicators for the River Operations business plan
- Represented TVA with the Navigant Consulting Company GKS Hydro Benchmarking Studies and on the Electric Utility Cost Group (EUCG) Hydroelectric Performance Committee (HPC). Since 2008 served as HPC chairman and EUCG board member.
- Directed and reviewed the financial and operational data for benchmarking studies
- Served as the point of contact for operational issues with TVA's transmission organization [Power System Operations - PSO]
- Performed audits and assessments of operational and maintenance procedures
- Investigated operational failures through root cause analysis methods
- Developed operational procedures for plant staffs
- Provided training on safety and operational processes to plant staffs

Previous assignments included the following:

- Managed the corrective maintenance backlog reduction program funds [\$1.3M annual budget for three year period] for hydro plants which resulted in a reduction of backlog work orders by 25%
- Directed the initial development in the Standardized Maintenance Program for Hydro Operations. These projects included all twenty-nine conventional and the single pump storage plant within TVA's fleet.
- Coordinated the training for Corps of Engineers navigation lock personnel in spillway gate operation for emergency situations in 2005
- Negotiated and coauthored the Intergroup Agreement between River Operations (RO) and Power System Operations (PSO). Served as the RO point of contact for all program interface issues.
- Assisted with the implementation of the Corrective Action Program in River Operations and provided the training to plant staffs which included human performance fundamentals

July 1996 - December 1999, Project Manager – Machine Condition Monitoring Consortium, LLC. (MCM)

This position was a high-profile senior management position leading, developing strategy, tactical planning, and overseeing the development of knowledge-based

condition monitoring system for hydroelectric generating units. The US\$3.2M development project was managed through a limited liability company and was sponsored by: B. C. Hydro, Bonneville Power Administration, Electric Power Research Institute (EPRI), Idaho Power Company, Manitoba Hydro, and TVA. The prime contractor for the project was VA TECH HYDRO, a global electrical and mechanical equipment systems supplier to the electric industry. The duties included:

- Managed the investor's technical committee
- Developed the project budget and schedule and reported progress on a monthly basis to the board of managers
- Prepared of the contracts for development work and provided oversight of prime contractor and other software suppliers
- Represented the consortium with industry organizations

September 1993 – June 1996, Technical Manager-Hydro Operations

The principal responsibility was to keep current on new and developing technologies, which could be successfully integrated in hydroelectric generating stations. These also included:

- Drafted strategic direction recommendations to the management team on technologies for TVA's hydroelectric generating stations which could help meet the business and performance goals in the Hydro Operations Business Plan.
- Managed a comprehensive conceptual study by an outside engineering company on the automation of TVA's 29 conventional hydroelectric generating stations over a twelve- month period. This included coordination with various stakeholder TVA organizations, presentation to TVA management and led to a capital project that was completed in 2003
- Served on a benchmarking team, as one of the TVA representatives to the 11th Joint Working Session with the Electric Power Development Corporation of Japan, and a member of the Hydroelectric Productivity Committee of the EUCG.
- Participated as a member on the TVA Strategy Development Team. This team examined TVA's strengths and weaknesses in a competitive and deregulated environment and made recommendations to the TVA Board of Directors.

- Established a strategic direction for hydro-related research projects as the Hydro Lead in the Generation Technology Improvement Group.

September 1988 - September 1993, Plant Manager-Chickamauga Plants

This position was responsible for the management of all operation and maintenance activities at the Chickamauga, Nickajack, and Tims Ford hydroelectric plants. These plants constitute 270 MW of generating capacity in nine units located 80 miles apart with 32 employees. Notable achievements were:

- Obtained an excellent Forced Outage Rate with only one forced outage event of 4 hours with the nine generating units in 1993
- Managed an annual budget of \$1.4 M
- Met all spillway gate operation requirements and environmental commitments
- Planned long range maintenance activities for generating and spillway gate equipment and the budget request
- Managed major repairs to the Chickamauga powerhouse crane
- Recognized as “Best Hydro Plant” in 1992

December 1986 - September 1988, Plant Manager-Fort Loudoun Plants

This position included management of the operation and maintenance activities at the Fort Loudoun, Fontana, and Melton Hill hydro plants. These plants constitute 497 MW of generating capacity in ten units and 35 employees. Also included in this responsibility was the Tellico Dam on the Little Tennessee River which was used for flood control. Accomplishments were:

- Achieved an excellent safety record with no lost time injuries - Fort Loudoun Plant Group was named as “Safest Hydro Plant” in 1988.
- Completed the total overhaul of two units at Fort Loudoun
- Managed substantial repairs were performed on Fontana Units 1 and 2
- Managed the annual budget of \$1.5 Million
- Met all spillway gate operations requirements and environmental commitments
- Planned long range maintenance activities for generating and spillway gate equipment and the budget request

November 1982 - December 1986, Assistant Plant Manager-Chickamauga Plants

Served the plant manager, responsibilities included:

- Directed the operation and maintenance at each of the three assigned plants: Chickamauga, Nickajack and Tims Ford Hydro Plants [270 MW capacity] in an environmentally responsible and safe manner
- Developed and managed major maintenance projects for generating and spillway equipment
- Managed the plant workforce of 31 employees which included salaried and trades and labor positions
- Performed employee performance service reviews and implemented corrective measures for employee discipline
- Provided onsite supervision of 13 kV generator lead replacement at Nickajack Hydro Plant

May 1976 - November 1982, Electrical Engineer-Electrical Equipment Group

Assignments included:

- Specified and directed special maintenance activities on unit governors, power transformers, generators, power circuit breakers at TVA's generating plants
- Performed diagnostic testing on the Kaplan-type hydro turbines.
- Managed the Hydro Generator Stator Rewind Program as the lead engineer
- Investigated generator and power transformer problems and recommended solutions
- Performed inspections and witnessed tests of generators and transformers
- Managed the on-site repairs to fossil and hydroelectric generators

September 1975 - May 1976, Engineering Aide-Electrical Equipment Group

The responsibility of this position was to provide support of section engineers.

This work included:

- Drafted electrical drawing revisions
- Performed material specification research

- Assisted with electrical equipment tests
- Performed test data processing.

TECHNICAL PAPERS AUTHORED

"Chickamauga Unit 3 Generator-Correction of Shifting Stator Iron", 1982 Electric Power Research Institute, Hydro Operations and Maintenance Workshop, Atlanta, GA., November 1982

"Correction of Water Leak in Rotor Windings-Raccoon Mountain Pumped Storage Plant", Doble Engineering Company, Annual Conference, Boston, MA, March 1982.

"Integration of Hydro Machine Condition Monitoring with Plant Controls" IEEE-Power Engineering Society Winter Meeting, New York, January 1995

"Chickamauga Hydro Unit 3 - History of Problems, Application of New Technology and Correction Actions", L. J. Miller and David Thompson, ASCE-WaterPower 1995, San Francisco, California, July 1995

"Concept for Automation of Hydroelectric Generating Plants in the Tennessee Valley Authority", L. J. Miller III and Dejan R. Ostojic, IEEE-Power Engineering Society Summer Meeting, Denver, CO, July 1996

"An Overall Concept for Condition Monitoring in Plants", Peter Salzer and L. J. Miller III, 12th CEPSI Conference, Pattaya, Thailand, November 1998

"Monitoring and Diagnosis: An Overall Concept for Power Stations ", Jay Laakso and L. J. Miller III, Doble Engineering Company, Annual Conference, Boston, MA, April 1999.

PROFESSIONAL & OTHER ACTIVITIES

Electric Utility Cost Group

Member of Hydroelectric Productivity Committee (HPC) – 1993 to 1996,
2006 - January 2013, Served as Chair 2008 to 2013

HPC Chairman and Board Member, March 2008 to January 2013

IEEE Power Engineering Society

Hydro MCM Working Group for Standards P1438 and P1437 (1993 to 1999)

HydroVision 96, Member of Conference Steering Committee

Tennessee Valley Railroad Museum, Inc.
Vice President and Member of the Board of Directors

PROFESSIONAL TRAINING

Kepner Tregoe Problem Solving and Decision Making

Human Performance

Root Cause Analysis

Total Quality Management

Project Management Skills Training

Various TVA Management Training

EDUCATION

Bachelor of Science, Engineering, University of Tennessee, 1976

Executive Development Program, Vanderbilt University, October, 1996 to June, 1997

OTHER EXPERIENCE

Chattanooga Electric Power Board, Summer Engineering Student, 1971-1975

Tennessee Air National Guard, 1971-1977, Communications Engineer

