RAS K-180

Gary A. Bell
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EXPERIENCE

Shaw AREVA MOX Services; Aiken, SC
Software Design Manager (Jan 2002 to Present)

- Responsible for the development of the normal control (non-safety) automation software for the MOX Fuel Fabrication Facility including programmable logic controllers, operator graphic user interfaces, manufacturing management information system, and the laboratory management information system.
- Responsible for the development of the safety control system (safety) automation software for the MOX Fuel Fabrication Facility.
- Responsible for the computer security of the MOX Fuel Fabrication Facility process and utility control networks and computer equipment.
- Interface with the US NRC on licensing of MOX Fuel Fabrication Facility Software.

Shaw AREVA MOX Services; Aiken, SC
Lead Electrical and I&C Engineer (March 1999 to Dec 2001)

- Responsible for the preliminary design of the MOX Fuel Fabrication Facility Electrical System and Instrument and Control System design for the facility, excluding process equipment.
- Responsibilities included oversight of the MC&A group including integration of the MC&A design features in the process equipment and the initial development of the Fundamental Nuclear Material Control Plan.
- Responsibilities included oversight of the Physical Security group including definition of security features incorporated in the initial design of the facility and development of the initial security vulnerability assessments.

Stone & Webster Engineering; Denver, CO
Project Manager, National Renewable Energy Laboratory, Dynamometer and Spin Test Facility (July 1998 To March 1999)

- Responsible for the design (Title II design) and construction (Title III) support for the $3,000,000 Dynamometer and Spin Test Facility
- Directed the preparation and issuance of civil, structural, architectural, machine design, mechanical, and electrical final design documents for construction of the 2500 kW dynamometer facility.
- Acted as the lead electrical engineer preparing contract electrical drawings and specifications.

Stone & Webster Engineering; Denver, CO
Lead Electrical Engineer, US Department of Energy Actinide Packaging and Storage Facility (Jan 1997 To March 1999)

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- Responsible for the electrical distribution, communications, and security system design of the Actinide Packaging and Storage Facility which would provide facilities for stabilization, repackaging, and interim-term storage of special nuclear material.
- The electrical distribution system was designed as an IEEE Class 1E system, providing power to safety class components and systems.
- Communications included integration of the facility into the site telephone and data communications network.
- The facility security system included access control, intrusion detection, assessment capability, and delay features.

Stone & Webster Engineering; Denver, CO
Project Manager, Pit 9 Retrieval and Processing, Lockheed Martin Environmental Services Technologies (Nov 1995 to 1997)

- Provided management and project controls services for Stone & Webster Consulting Services contract with Lockheed Martin.
- Stone & Webster provides specific technical services in the fields of structural, HVAC, and process engineering as well as some engineering management support.

Stone & Webster Engineering; Richland, WA
Project Manager, Electrical Engineer Support Contract, Westinghouse Hanford Company (Feb 1994 to Jan 1997)

- Responsible for engineering services contract for electrical, instrumentation, and controls engineering support for Westinghouse Hanford. This project is a task order type agreement with each individual task authorized, funded, and managed as a separate project. The scope of service includes simulation, automation, and robotics as well as general electrical and I&C engineering. The tasks performed under this contract were:
  - Development of a handheld data collection system for the waste instrumentation control system project
  - Evaluation of West Tank Farms Electrical/I&C Safety Issues
  - Master equipment list walk down for the water plant facilities
  - Evaluation of Building 291Z 480 Volt Distribution
  - Develop Functional Design Criteria for Building 291Z 480 Volt Electrical Distribution
  - Provide Operational Readiness Review Services
  - Software Support for the Tank Farms
  - Handheld Data Acquisition System
  - Elimination of 4160 B Distribution at K-East and K-West Reactors
  - Evaluation of the Special Materials Facility Gamma Scan System at Pacific National Laboratories
  - Tank Level Instrumentation Interactive Data Recall System Development
  - Graphical Interfaces and Access to Tank Farm Operation, Maintenance, and Design Databases

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Stone & Webster Engineering; Denver, CO
Lead Engineer, Services Contract to United States Army Corps of Engineers
Portland District (Feb 1996 to Jan 1997)

- Prepare procurement specification and preliminary drawings to replace the hydro generator excitation systems with new solid state digital based systems for the hydro generators at Dalles Dam on the Columbia River and the Jim Woodruff Dam on the Chatenochee River in Florida.

Stone & Webster Engineering; Denver, CO
Support Engineer American Telephone and Telegraph, Portland, Oregon (Feb 1994)

- Participated in a Value Engineering study of options to upgrade or replace the electrical distribution system of this facility. The study identified numerous alternatives and recommended three alternatives that provide technically acceptable solutions with the lowest life cycle cost.

Stone & Webster Engineering; Denver, CO
Support Engineer, Salt River Project, Navajo Scrubber Project (July 1994 to Dec 1995)

- Responsible for preparation of procurement documents, bid evaluations, and vendor submittal review for the replacement of twelve induced draft fan motors. The ID fan motors were 8,000 hp, 13.2 kV TEWAC motors specially designed to replace existing 5500 hp air-cooled motors.
- Responsible for preparation of procurement documents, bid evaluations, and vendor submittal review for the replacement of three new unit auxiliary transformers. The unit auxiliary transformers were also specially designed so that the new 75/100 MVA OA/FA, three winding transformers are transportable and fit on the same foundation as the existing 60 MVA OA two winding transformers.
- Participated in the preparation of pre-operational and start-up test procedures for the modified portions of the existing plant electrical distribution system and new distribution equipment.

Stone & Webster Engineering; Denver, CO
Support Engineer, Blue River Hydroelectric Plant , Eugene Water and Electric Board (June 1993 to Sept 1993)

- Developed the plant's main and auxiliary electrical distribution one line diagrams, including station protection. This project is unique in that the main generator frequency is variable to provide optimum hydraulic efficiency. The design included 2 - 13.8 kV (11 MVA each) frequency converters that provided a 60 Hz output with a 30-59 Hz input.
- Prepared the electrical equipment procurement specifications for both substation (115 kV) and internal plant 13.8 kV, 480 Vac, 120 Vac, and 125 Vac equipment.

Stone & Webster Engineering; Denver, CO
Support Engineer, Thompson Falls Hydroelectric Plant, Montana Power and Light (July 1993)

- Prepared the substation and generator station grounding designs in accordance with IEEE 80 and IEEE 367.

Stone & Webster Engineering; Denver, CO
Support Engineer, Rocky Reach Hydroelectric Facility, Chelan County Public Utility District (Aug 1993 to Dec 1993)

- Prepared life cycle cost evaluations for replacement of the facilities eleven generator setup transformers and the eleven air blast generator circuit breakers. The cost analysis concluded that replacement of this equipment was the most economically attractive alternative.
- Prepared the technical requirements for purchasing new transformers, 15 kV to 230 kV 120 MVA for (7) and 160 MVA (4).
- Prepared the technical specifications for replacement of the existing air blast type generator circuit breakers with the new SF6 type breakers.

Stone & Webster Engineering; Denver, CO
Support Engineer, Healy Clean Coal Project, Alaska Industrial Development and Export Authority (Apr 1993 to July 1993)

- Responsible for procurement of the stack continuous emissions monitoring systems for the fossil-fueled power facility. The system is designed in compliance with the emissions reporting requirements of 40 CPR 60, Standards of Performance for Stationary Services

Stone & Webster Engineering; Denver, CO
Fort Calhoun Nuclear Generating Station, Omaha Public Power District (Jan 1987 to Jan 1994)

- As Project Manager, responsible for all of Stone & Webster's modification activities under the continuing services contract with this client. Fort Calhoun Station is a 500 MWe pressurized water reactor with a Combustion Engineering nuclear steam supply system. Modifications included:
    - Replacement of Process Radiation Monitors
    - Safety Related Circuit Breaker Close Coil Supervision
    - Degrade Voltage Protection System Modifications
    - Evaluation of Environmental Permit Violations
    - Secondary Water Plant Instrumentation Upgrade
- As Project Engineer, responsible for design, schedule, and budget of all of Stone & Webster's modification activities under their continuing services contract with this client. Issued modifications packages include:
    - Evaluation of Increased Power Thermal/Electrical Rating
    - Technical Assistance During NRC Electrical Distribution System Functional Inspection

- Evaluation and Replacement or Raw Water Valves
- Emergency Diesel Generator Static Regulator Replacement
- Additional Instrumentation for Auxiliary Feedwater Pump ISI Testing
- Replacement of EEQ Containment Penetration
- Emergency Diesel Generator Performance Instrument Addition
- Feedwater/Main Steam Pipe Support Upgrades
- Limitorque Motor Operated Valve Improvements
- Addition of a Third (start-up) Auxiliary Controller
- Post Accident Sample System Improvements
- Control Room Annunciator Evaluation and Upgrade

- As Lead Electrical and Controls Engineer, responsible for electrical, instrumentation, and control design for a wide variety of plant modifications at the Fort Calhoun Station. The scope of work for each modification included preparation of design package documents, drawings, installation procedures, test procedures, procurement specifications, and support during installation and start-up. Completed modification packages include:

  - Replacement of Primary System Deaerator Vacuum Pumps
  - Replacement of Main Feedwater Regulating System
  - Replacement of Qualified Long Term Core Cooling Control Relays
  - Containment Sump Temperature Indication
  - Upgrade of Pressurizer Level Indication
  - Replacement of Control Room Air Conditioners
  - Evaluation and Replacement of Process and Area Radiation Monitors

Stone & Webster Engineering; Denver, CO
Lead Electrical and Controls Engineer, N-Reactor Control Room Habitability Upgrade, United States Department of Energy (Oct 1985 to Dec 1986)

- Responsible for the electrical and controls engineering work, equipment procurement, and directing the electrical and instrumentation design for the Control Room Habitability Upgrade.
- This work included electrical distribution, controls, and instrumentation for an HVAC system to meet the requirements of ANSI N509.
- The system includes a complete standby electrical power system, and environmental monitoring instruments to automatically actuate the system.
- The scope of work included preparation of electrical system calculations, system control logic diagrams, valve and pump elementary diagrams, instrument loop diagrams, one-line diagrams, control panel arrangement drawings, electrical and controls construction specifications, and acceptance test procedures.
- Responsible for review and approval of physical conduit plans, wiring diagrams, instrument installation diagrams, and interdisciplinary procurement specifications and design drawings.

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Stone & Webster Engineering; Cedar Rapids, IA
Support Engineer. Duane Arnold Energy Center, Iowa Electric Light & Power Company (Jan 1984 to Sept 1985)

- As Engineer, assigned to the Mechanical/Nuclear Department in the client's office as Task Project Engineer for the design, procurement, and installation of a Safety Parameter Display System.
- This was a lead position having overall responsibility for the design, procurement, installation, and start-up of the system which was based on a DEC VAX-11/750 computer that interfaces with plant safety and non-safety systems via Computer Products, Inc. data acquisition equipment.
- Responsibilities included completing procurement specification, vendor interface for client, coordinating licensing activities, providing technical support during installation, coordinating start-up and testing, and closing out the final design package per the client's procedures. The Safety Parameter Display System provides Duane Arnold Energy Center operations personnel with a user interactive display system that facilitates rapid assessment of the plant safety statutes per Supplement 1 of NUREG 0737.

Stone & Webster Engineering; Cherry Hill, NJ
Support Engineer, River Bend Station, Unit 1, Gulf States Utilities (June 1983 to Dec 1983)

- Performed setpoint calculations for the Category I, Class IE, safety-related instruments. The calculations provided the field construction force with setpoint values which accounted for the electronic, process, and environmental sources for error, as required by Regulatory Guide 1.105.

Stone & Webster Engineering; Denver, CO
Support Engineer, Fort Calhoun Station, Omaha Public Power District (Jan 1980 to May 1983)

- Assisted in the preparation of the environmental qualification equipment list of Critical Quality (Class IE) electrical equipment located in harsh environments as required by "IE Bulletin No. 79-01B-Environmental Qualification of Class IE Equipment".
- Performed a walk down verification of critical P&ID's.
- Responsible for the electrical, control, and instrumentation design of the Post Accident Sampling System, satisfying the NUREG 0737 requirements for a reactor coolant and containment atmosphere.
- Developed the software program for the programmable logic controller used to control the post accident sample system.
- Assigned to the installation of the Emergency Response facility computer system (as specified by NUREG 0696 and Regularity Guide 1.97). Responsibilities included specifying instrument and controls equipment required for interfacing with existing plant systems, writing the design package, writing installation and

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test procedures, and overseeing and approving the electrical design effort for the task.

Westinghouse Electric Corporation, Denver, CO

Sales Assistant (Aug1976 to Dec 1979)

- Assigned to the Industrial Products Division with responsibility for application engineering and sales of transmission, distribution, and control products. Projects included large industrial manufacturing complexes, waste water treatment facilities, commercial buildings, and hospitals.

EDUCATION

Bachelor of Science in Electrical and Computer Engineering, Oregon State University (June 1976)