

# **PROJECT ENGINEERING SUCCESSSES**

## **RECENT SUCCESSSES BY SCOTT ZINKHAM'S PROJECT ENGINEERING TEAM**

### **DUKE-BRUNSWICK NUCLEAR PLANT**

#### **Condensate Margin Improvement Projects -40 Million Dollars 2012-2016**

Responsible Project Engineer for 40+ million dollars of Condensate Margin Improvement projects for Brunswick Units 1 and 2. Margin improvement project involved reconfiguration of 36" Condensate suction pump header to improve NPSHa. The header modification involved significant plant piping, support, and 3' thick concrete wall penetration modifications in the Condenser Bay and Condensate Pump Pit areas. Successfully implemented the Unit 1 and 2 Margin Improvements allowing for 2 Condensate Pump Operation under transient conditions at 100% Power Operation.

#### **EDG Governor Replacement and Margin Improvement Projects -120 Million Dollars 2011-2016**

Responsible Project Engineer for replacement of Four Emergency Diesel Generators obsolete Woodward Model EGB-35C Governor actuators and EGA Governor control-systems with Woodward model EGB-35P Governor actuators and 2301A Governor control-systems. Wrote the Safety Related Governor Control system procurement specification. Completed Governor Replacement design with added margin improvements. Implemented 2 of 4 Diesel Generator replacements including margin improvements with successful test results in exceeding NRC SG 9 Licensing and TS regulatory requirements.

### **FP&L- NEXTERA – POINT BEACH UNIT 2**

#### **Main Feedwater Regulating Valve with Digital Controller Upgrade – 20+ Million Dollars – 2010-2011**

Responsible Project Engineer for Unit 1 and 2 EPU mechanical modifications and structural reviews of EPU modifications for NEXTERA- Point Beach Nuclear Plant Extended Power Upgrade project Main Feed Regulating Valve designs and installations including addition of new Yokogawa digital feedwater controller. Provided engineering change revisions and project design oversight of third party SME team to revise A/E design packages to allow for analog-to-digital conversion for existing AOV controller to operate digital valve positioner. Provided oversight during factory acceptance tests and plant installation tests to assure required Safety Related design operational valve closure times were met.

## **New Main Feedwater Isolation Valve Addition -40+ Million Dollars-2010-2011**

Responsible Project Engineer for Unit 1 and 2 EPU mechanical modifications and structural reviews of EPU modifications for NEXTERA- Point Beach Nuclear Plant Power Up-rate project Main Feedwater Isolation Valve (MFIV) – Provided design reviews and necessary corrective actions and upgrades for new AOV dual piston operator addition 16” MFIV. Provided significant oversight and necessary modification changes for installation of safety related nitrogen air tanks, AOV control logic, MFIV performance closure time testing, and required seismic safety related piping and piping support modifications performed by Bechtel construction.

## **XCEL ENERGY - MONTICELLO NUCLEAR PLANT EPU PROJECTS**

### **Condensate Pump Replacement EC Package Development – 8+ Million Dollars -2009-2011**

Responsible Project Engineer for A/E Design oversight of three condensate pump replacements to support 20% Extended Power Upgrade. Completed owner’s review through approval of A/E design packages, specifications, calculations, and installation details.

### **Reactor Feedwater Pump Replacement EC Package Development – 12+ Million Dollars -2009-2011**

Responsible Project Engineer for A/E design oversight of 2 reactor feed-pump replacement EC packages to support 20% extended power upgrade. Completed owner’s reviews through approval of A/E design packages, specifications, calculations, and installation details.

### **Third, Fourth, and Fifth Point Feedwater Heater Replacement EC Package Development – 20+ Million Dollars - 2009-2011**

Responsible Project Engineer for A/E design oversight of 2 reactor feed-pump replacement EC packages to support 20% Extended Power Upgrade. Completed owner’s reviews of A/E design packages, specifications, calculations, and installation details. Reviewed required guaranteed heat balance GE calculations, Holtec thermal performance heat transfer/flow calculations, required connection and rigging details, and plant heater installation strategy.