Stockton Power Plant
Major Rehabilitation Closeout

Southwestern Federal Hydropower Meeting
Branson, MO

[redacted]

Kansas City District

17 June 2015

US Army Corps of Engineers
BUILDING STRONG®

General Plant Information

- Before rehab
  - Rate at 45 MW and operated at 50 MW
  - Single vertical axis Kaplan with 6 blades
  - Rough zone operation between 25 MW – 40 MW
  - 90% Efficiency
- After rehab:
  - Rated and operated at 52 MW
  - Single vertical axis Kaplan with 7 blades
  - Smooth operation from 20 MW – 52 MW
  - 93.6% Efficiency

General Plant Information

- Placed in service in 1973. Rehabilitated plant placed in service on 15 Jan 2015
- Remote operated from Truman Power Plant
- Peaking plant
- Average annual energy production: 55,000,000 KWH
- Original plant placed in service in 1973
- Located on the Sac River near Stockton, MO

Contracts

Contract	Amount	Funding
Blade Recovery	$69,487	ARRA
IG/DTB HSS Insp/Repair	$1,156,834	ARRA
In-place Blade Repair	$1,134,857	ARRA
Blade Return	$13,520	ARRA
AC/DC Preferred Systems Replacement	$469,964	ARRA
13.8 kV GM Brkr/Station Service Xfmr Repl	$334,850	ARRA
Main Power Transformer Pad and Containment	$527,554	ARRA
Main Power Xfmr	$1,134,560	ARRA
Generator Rewind/Turbine/Gov/Excitation Repl	$31,658,307	ARRA
Transformer/ Emergency Generator Install	$1,691,601	Customer
Asbestos Abatement	$221,177	Customer
Total	**$38,412,711**	

Labor

- Total labor cost to date: $6,966K
- Includes Design, EDC, and S&A

Customer Funding Summary

Project	Amount
Asbestos Abatement	$250K
EDC/S&A for Power Generation Contract (Voith Hydro Contract)	$1,500K
Emergency Diesel Generator Replacement	$340K
Transformer/Bus System Installation	$1,600K
Rotor Pole Refurbishment	$2,430K
Total	**$6,120K**

Generator Rewind, Turbine Runner, Governor, and Exciter Replacement

- Contract Awarded: 8 Apr 2010
- Contractor: Voith Hydro, Inc
- Current Contract Amount: $31,692,841
- 72-hour Run Started: 23 Nov 2014
  (166 days past the required delivery date)
- 13 Modifications, increased original contract value by $873,901 (2 more in progress) = Cost Growth of 2.8%
- Plant On-line: 15 Jan 2015
- Design/EDC/S&A Labor: $4,146,000
- As-built Drawings and O&M Manuals under review
- Goal is to close-out contract by 30 Sep 2015

Transformer/Emergency Generator Installation Contract

- Contract Awarded: 7 Feb 2013
- Contractor: Yellowstone Electric Company
- Current Contract Amount: $1,591,601 (cost growth = 6.3%)
- Overhead Cable Installation Completed: 20 Feb 2014
- 500 kW Emergency Generator Commissioned: 6 Mar 2014
- Transformer Energized: 17 June 2014
- Contract extended to accommodate Voith Hydro's Contract, due to transformer oil sampling requirements
- Design/EDC/S&A Labor: $456,000 (Transformer labor is skewed due to multiple contracts, i.e. Xfmr Supply, Xfmr Pad/Containment contracts)
- As-built Drawings and O&M Manuals under review

Asbestos Abatement Contract

- Contract Awarded: December 2012 (extended for other contracts)
- Contractor: Coastal Environmental, Inc.
- Current Contract Amount: $221K
- Contract primarily supported the Generator Rewind/Turbine/Governor/Excitation System Replacement and Main Power Transformer/Emergency Generator Installation Contracts
- Asbestos sampling availability. Asbestos Containing Materials (ACM) removed to date:
  - 4,500 LF of wire coated with ACM
  - 320 LF of pipe insulation
  - Wipe down of generator housing
- Transported ACM rotor poles to Del Star (Canada).
- Removed 66 glove bags of friable asbestos from the original emergency generator's 8 inch exhaust piping
- Contract closeout activities ongoing

After Action Review & Lessons Learned

- AAR completed on 11 March 2015
- Purpose was to gather feedback and identify processes to sustain or improve
- Team addressed the following questions:
  - What should NWK learn from this experience?
  - What should we do differently in the future?
  - Who else needs to know these lessons/conclusions?
  - Who will take on the recommended changes?
  - Are there any recommendations to make to higher leadership?
- AAR findings will be summarized in a final report

Questions?