

---

***WeldTech Services Corp. – Showcase Project Report***  
***MIDWEST UTILITY***  
***Boiler Tube Butt Welding – April 2010***

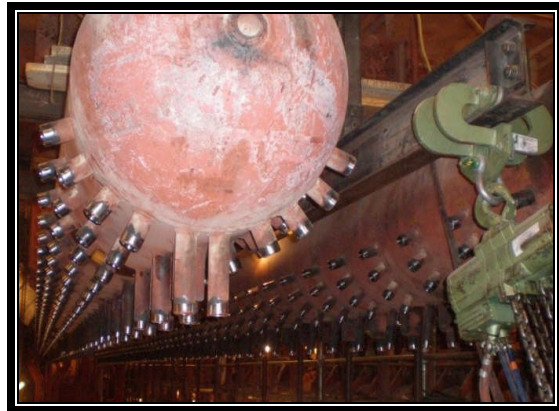
---

***Project Description***

A utility in the Midwest contracted WeldTech Services Corp. (WeldTech) to replace the boiler tubes in the reheat inlet header crossover and the economizer sections of their boiler. The work scope was to be completed during an aggressive (21) day schedule utilizing a combination of machine boiler tube butt-welding (BTBW) and manual welding. Working jointly with the utility and the on site general contractor (GC), WeldTech provided union specialty welding personnel to complete the prep, final fit, tacking and welding. Prior to the outage workscope, machine-beveled inserts (supplied specifically for this project) were tacked on to the new tubes. All welds were made under WeldTech's Welding Program and using its Quality Assurance Program.



**Restricted Access in the Economizer Section**



**Headers Prior to Welding**

***Project Challenges***

- An aggressive critical path welding schedule of (40) shifts
- A less than successful attempt at a similar scope by another orbital welding contractor two years prior
- A tremendous amount of in-parallel work being performed by the general contractor requiring careful coordination
- A large number of other craft personnel that created congestion and safety concerns exacerbated by schedule limitations and work at multiple work locations
- Restricted access, especially in the bird cage section of the economizer
- Hydraulic pumps and wooden spacers were needed to spread the tubes in the economizer
- Limited craft available from the local hall to support the outage

### ***WeldTech Approach***

The utility and GC were concerned with availability of quality boilermaker welders due to the size of this outage. They were looking for assurances that all workscopes could be completed during the short outage with first time x-ray quality welds. WeldTech offered a specialty mechanical workforce including highly experienced welders to machine-weld the tube joints. WeldTech worked under the Boiler Tube Butt Welding Agreement to complete this work and conducted proficiency training and welder qualification for the craft prior to mobilization to site. This repair work was conducted in accordance with the ASME Section I and the NBIC Codes. Travelers, weld data sheets, welding procedures (WPSs and PQRs) and welder qualifications (WPQs), were completed and presented to the Authorized Inspector (AI) for review and approval throughout the project execution.



**Machine Beveled Insert (Fit and Tacked)**



**First Time Quality Production Welding**

The welding schedule was two (2), eleven (11) hour shifts, six (6) days per week for forty (40) shifts with frequent hot turnovers. The WeldTech crew consisted of forty-two (42) personnel including site superintendents, foremen, boilermaker machine welders, local boilermaker foreman, local boilermakers to assist with fit up, equipment technicians and quality control inspectors.

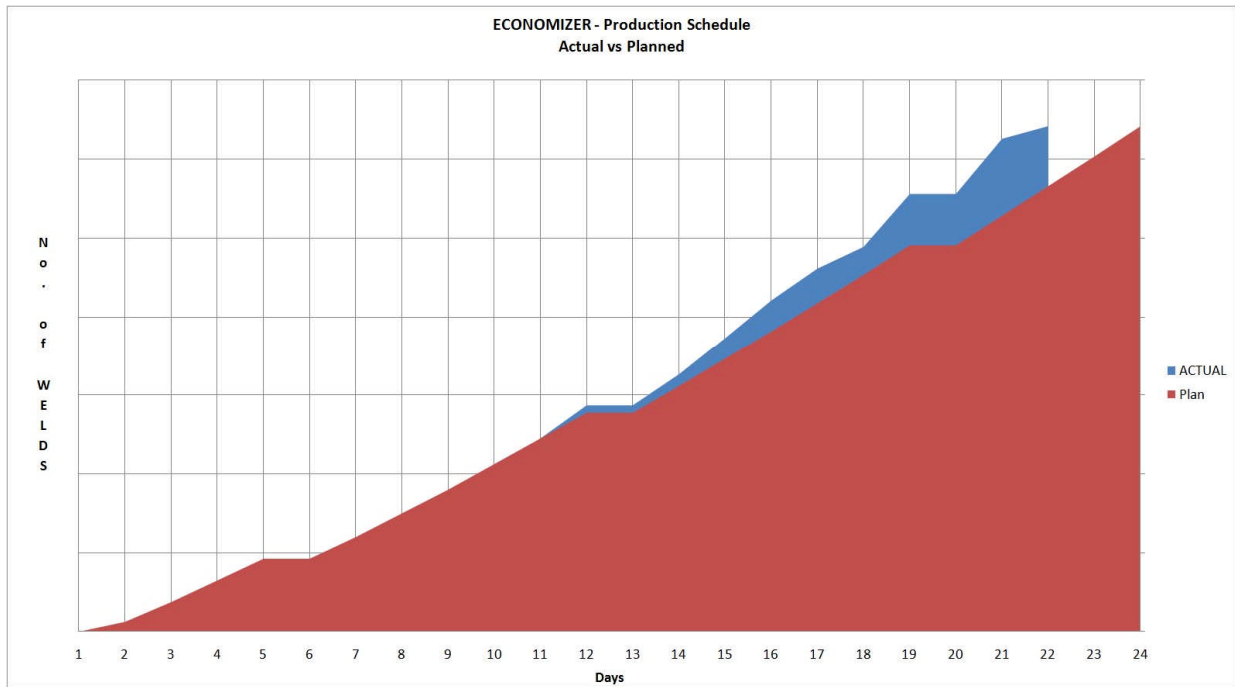
The up-front project planning consisted of several pre-outage discussions and meetings for planning purposes with the site outage planners and technical specialist personnel along with the general contractor. The WeldTech Project Manager, Site Supervisor, Foremen, and Quality Control Supervisor with a small crew arrived prior to project start to coordinate activities with the GC to set up work areas and to receive and stage welding and machining equipment. They also completed the prepping of the tubes and tacking of the machine-beveled inserts.

***Project Challenges Resolved***

Multiple pre-outage planning sessions took place to identify responsibilities and to review and update the schedule. The plan was carefully laid out, and except for a few minor modifications that were jointly evaluated and overcome, WeldTech successfully completed:

- 1070 - 2.0” OD, 0.205” WT, T22 reheat inlet header crossover section tube welds
- 1284 - 1.75” OD, 0.240” WT, SA210 economizer section tube welds

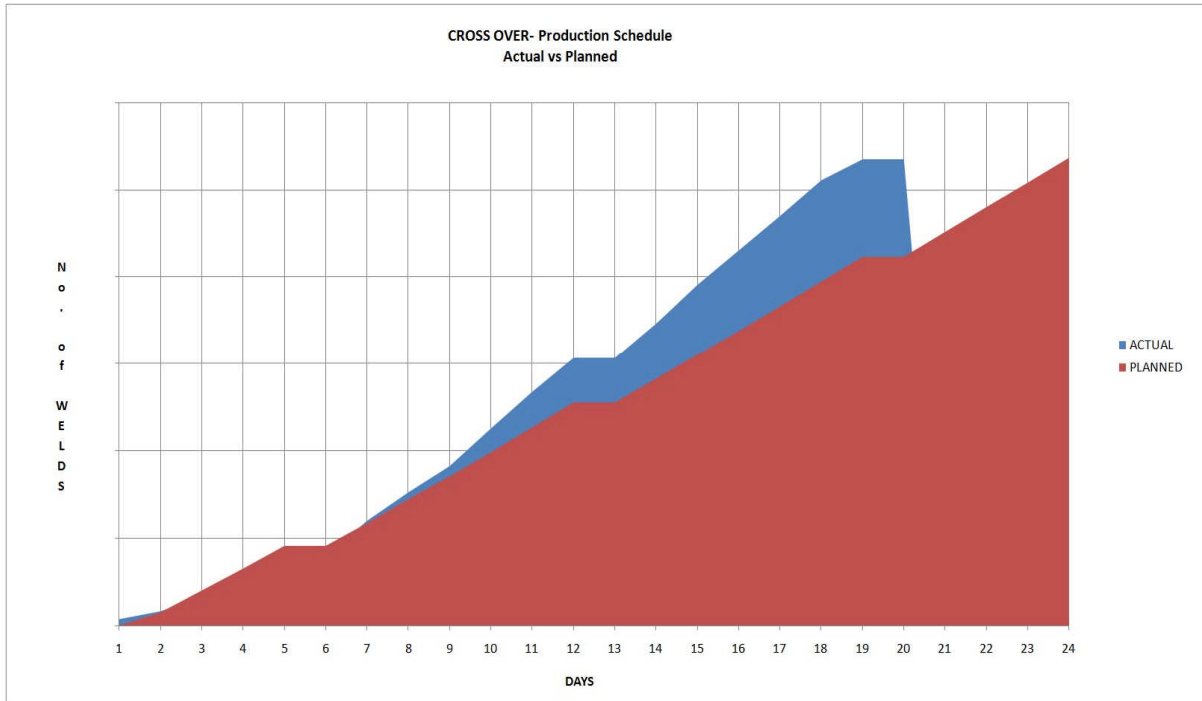
Work was completed four (4) shifts ahead of schedule for the economizer and five (5) shifts ahead of schedule for the inlet header crossover section. The completed weld quality was excellent, with an overall 99.8% first time X-ray weld acceptance rate. Safety performance was excellent, with no recordable incidents or lost time accidents. Both the utility and the general contractor indicated that WeldTech was a valuable partner in the success of this project. WeldTech has been requested to partner with the utility on future projects with similar scope challenges.



**WeldTech specialty welders completed the economizer work ahead of schedule with 99.92% weld quality.**

**“Part of WeldTech’s success was the result of proficiency training and upfront planning with both the Utility and the General Contractor.”**

WeldTech VP of Field Operation



**WeldTech specialty welders completed the crossover work ahead of schedule with 99.6% weld quality.**

### **Customer's Decision Process:**

*Before the Project* – The utility had concerns that completion with such an aggressive schedule would be a challenge due to:

- The sheer magnitude of overall outage worksopes and the number of x-ray quality welds to be completed
- Difficult access to the welding areas
- The possibility of rework that could impact the project critical schedule
- Limited local labor and welding support
- Sequencing and schedule limitation

*After the Project* –The utility and general contracting personnel were both very pleased with WeldTech's performance resulting in:

- A strong safety performance (no OSHA recordable injuries or lost time accidents)
- Extremely high weld production rates
- A high acceptance rate of first-time quality welds
- Project performance within budget

Constant communication, teamwork, experience-based production techniques and a “Can Do” attitude contributed to WeldTech's success formula. This marked a second recent project success where WeldTech partnered with the utility and GC for a project of this complexity and magnitude.