California Boiler Inspectors Association

2016 San Diego Conference

May 24, 2016

Quality Update

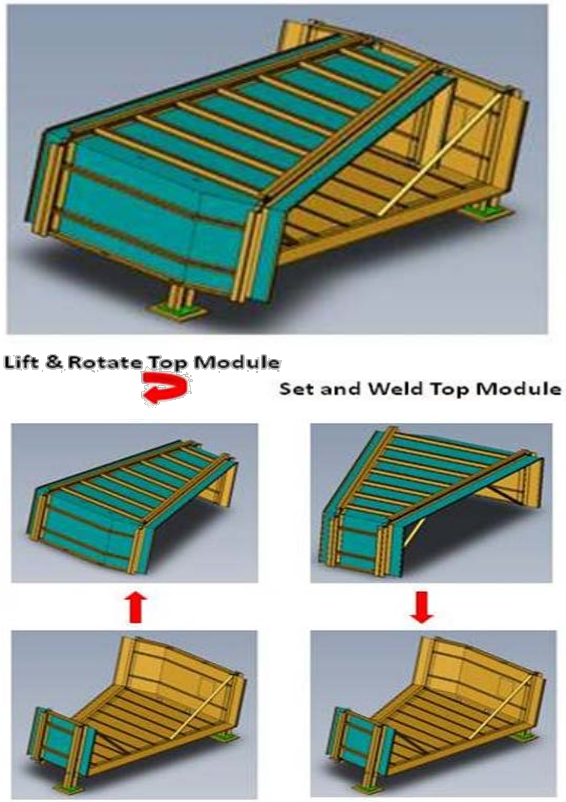
Integration of Safety and Quality Principles
- Adoption of INPO Principles
- Culture as a means of sustained improvement

Corrective Action Program
- Implemented new electronic program in 2013
- Combined with existing lessons learned database
- Feedback from Customers and Program Managers
- Share CARs with customers

Continuous Improvement – OpEx Program
- Black Belts: 10 active, 9 reintegrated
- Yellow Belts: 121 participated and trained
- 25 projects in process

Supplier Control
- Qualification Process – audits, surveys, first article
- Monitor Performance – quality, drawings, delivery, safety, relationship
- Quality oversight – sample over-inspection, corrective action implementation

C-Modules Nested for Shipping



Next Level of Focus: Learning Organization

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B&W Holds First Two Certificates of Authorization Ever Issued by ASME

CERTIFICATE OF AUTHORIZATION

PP

The American Society of Mechanical Engineers

The named company is authorized by the American Society of Mechanical Engineers (ASME) for the scope of activity shown below in accordance with the applicable rules of the ASME Boiler and Pressure Vessel Code. The use of the certification mark and the authority granted by this Certificate of Authorization are subject to the provisions of the agreement set forth in the application. Any construction stamped with this certification mark shall have been built strictly in accordance with the provisions of the ASME Boiler and Pressure Vessel Code.

COMPANY: Babcock & Wilcox Power Generation Group, Inc.
20 South Van Buren Avenue
Barberton, Ohio 44203

SCOPE: Fabrication and assembly of pressure piping at the above location and field sites controlled by the above location

AUTHORIZED: December 12, 2012
EXPIRES: January 4, 2016
CERTIFICATE NUMBER: 254

CERTIFICATE OF AUTHORIZATION

S

The American Society of Mechanical Engineers

The named company is authorized by the American Society of Mechanical Engineers (ASME) for the scope of activity shown below in accordance with the applicable rules of the ASME Boiler and Pressure Vessel Code. The use of the certification mark and the authority granted by this Certificate of Authorization are subject to the provisions of the agreement set forth in the application. Any construction stamped with this certification mark shall have been built strictly in accordance with the provisions of the ASME Boiler and Pressure Vessel Code.

COMPANY: Babcock & Wilcox Power Generation Group, Inc.
20 South Van Buren Avenue
Barberton, Ohio 44203

SCOPE: Manufacture and assembly of power boilers at the above location and field sites controlled by the above location

AUTHORIZED: December 12, 2012
EXPIRES: January 4, 2016
CERTIFICATE NUMBER: 002

Vice President, Conformity Assessment

Director, Conformity Assessment

THE NATIONAL BOARD OF BOILER & PRESSURE VESSEL INSPECTORS

Certificate of Authorization

NB

This is to certify that
BABCOCK & WILCOX POWER GENERATION GROUP, INC.
20 SOUTH VAN BUREN AVENUE
BARBERTON, OH 44203

is authorized to apply the "NB" mark and register boilers, pressure vessels, or other pressure retaining items with the National Board in accordance with its provisions.
The scope of Authorization is limited to items manufactured in accordance with:

ASME Stamp(s): PP S U

ISSUE DATE: January 4, 2013
EXPIRATION DATE: January 4, 2016

Executive Director

CERTIFICATE OF AUTHORIZATION

U

The American Society of Mechanical Engineers

The named company is authorized by the American Society of Mechanical Engineers (ASME) for the scope of activity shown below in accordance with the applicable rules of the ASME Boiler and Pressure Vessel Code. The use of the certification mark and the authority granted by this Certificate of Authorization are subject to the provisions of the agreement set forth in the application. Any construction stamped with this certification mark shall have been built strictly in accordance with the provisions of the ASME Boiler and Pressure Vessel Code.

COMPANY: Babcock & Wilcox Power Generation Group, Inc.
20 South Van Buren Avenue
Barberton, Ohio 44203

SCOPE: Manufacture of pressure vessels at the above location and field sites controlled by the above location (This authorization does not cover impregnated graphite)

AUTHORIZED: December 12, 2012
EXPIRES: January 4, 2016
CERTIFICATE NUMBER: 813

THE NATIONAL BOARD OF BOILER & PRESSURE VESSEL INSPECTORS

Certificate of Authorization

R

This is to certify that
BABCOCK & WILCOX POWER GENERATION GROUP, INC.
20 SOUTH VAN BUREN AVENUE
BARBERTON, OHIO 44203
UNITED STATES

is authorized to use the "R" SYMBOL in accordance with the provisions of the National Board.
The scope of Authorization is limited as follows:
METALLIC REPAIRS AND/OR ALTERATIONS AT THE ABOVE LOCATION AND EXTENDED FOR FIELD REPAIRS AND/OR ALTERATIONS CONTROLLED BY THIS LOCATION

CERTIFICATE NUMBER: R-6364
ISSUE DATE: DECEMBER 5, 2012
EXPIRATION DATE: JANUARY 4, 2016

Executive Director

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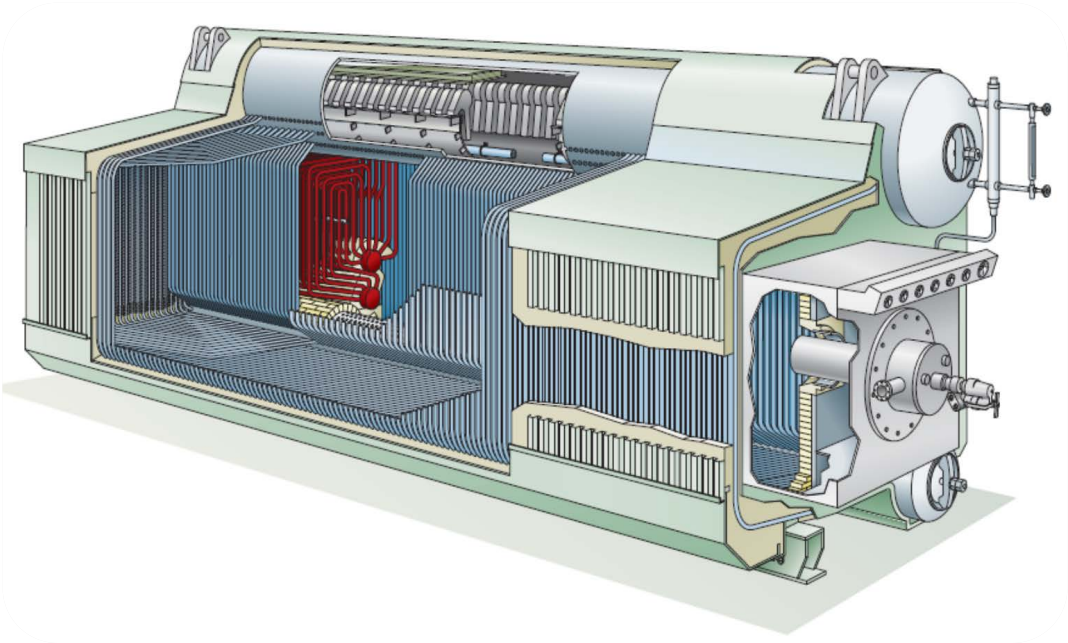
FM Model Package Boiler



- **Steam Capacity:** **10 to 300 kpph**
- **Design Press:** **250 to 1250 psig**
- **Max Temp:** **850F on gas**
- **Typical Fuels:**
  - **Natural Gas**
  - **Fuel Oil**
  - **Refinery Gas**
  - **Coke Oven Gas**
  - **Landfill Gas**
  - **Digester Gas**

The FM D-type water tube Package boiler is B&W's most used Package boiler design. With the large furnace wall tube diameter and small 1" membrane between tubes, the FM boiler offers a large heat transfer area and water volume in the furnace section. This allows the FM boiler to be a very rugged and long-life boiler that fits most industrial boiler applications.

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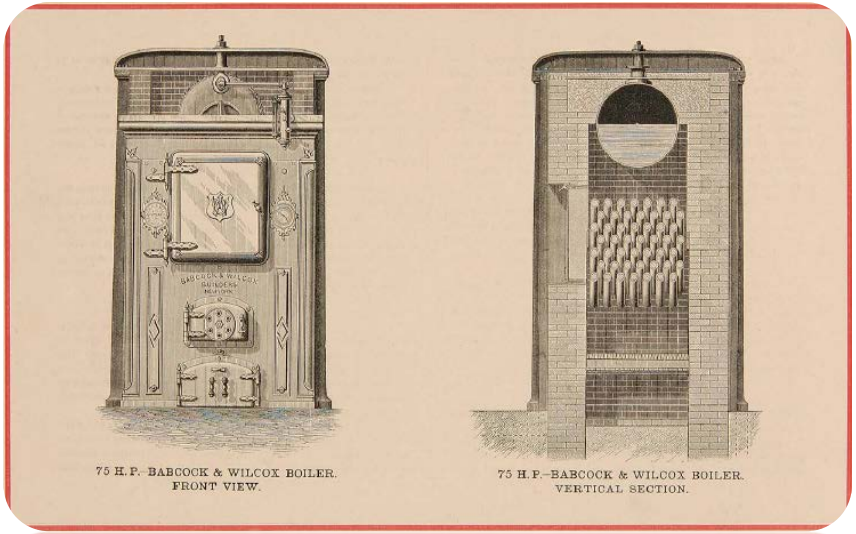
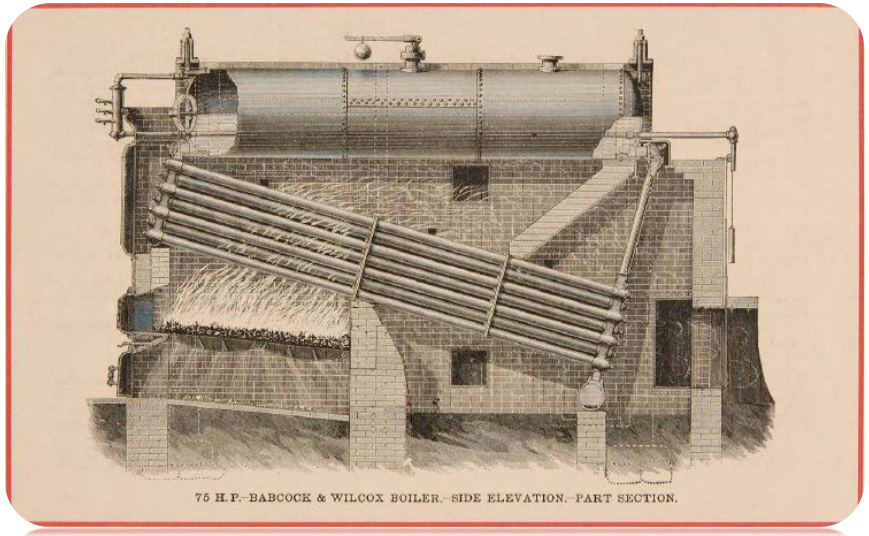
Water Tube Boiler Origin





In 1856, Stephen Wilcox and O.M. Stillman, a relative of George Babcock, patented a water tube boiler, the forerunner of the model seen above which was used to launch Babcock, Wilcox and Company in 1867.

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