

California Boiler Inspectors Association 2016



Guidelines for Preparing for a Temporary Steam Plant

Nationwide Boiler, Inc.

Agenda

- Level of Preparedness
- Reasons for Temporary Steam Plant
- Planning Stages
- Qualifying a Rental Boiler Company
- Common Questions
- Equipment Offerings
- Site Considerations
- Advantages
- Lessee/Lessor Scope
- 5 - Reasons
- Questions & Answers

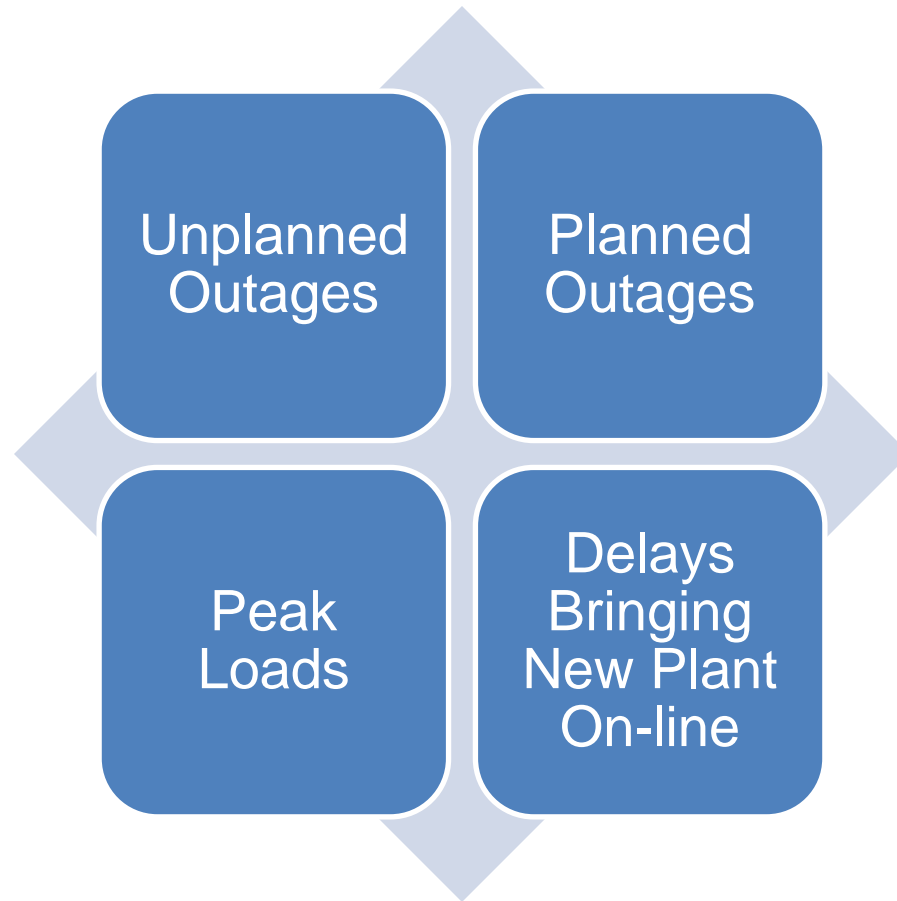


Are You Prepared for Possible Steam Interruptions?

- Management expects 24/7 operations.
- Contingency plans in place?
- Temporary tie-ins installed?
- Adequate insurance coverage?
- What is the loss of production worth?
- How long can operations last without steam?
- Rental boiler company?



Reasons for a Temporary Steam Plant



Unplanned Outage: World Trade Center

- **Reason:** 20" main steam line severed as a result of WTC collapsing.
- **Problem:** Buildings nearby were left without heat.
- **Solution:** 2- 70,000 lb/hr trailer-mounted boilers and 140,000 lb/hr mobile feedwater van.
- **Timing:** Delivered, brought on-line, and operational in a matter of days.



Unplanned Outage: World Trade Center



Unplanned Outage: Ferndale, WA

- **Reason:** Freeze damage to boiler sensing lines and controls.
- **Problem:** Refinery operating with reduced capacity.
- **Solution:** 1- 120,000 lb/hr trailer-mounted boiler.
- **Timing:** 4-day delivery from CA, brought on-line, and operational in 10-days.

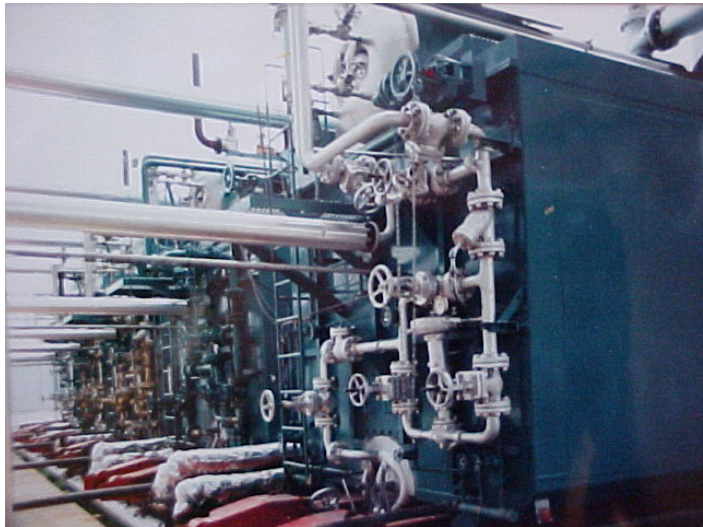




Unplanned Outage: Ferndale, WA



Planned Outages



Planned Outages



Increased Capacity: Seasonal Peak Load

Paper Mill - Pomona, CA

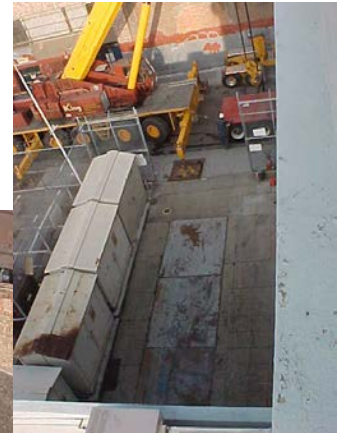
- 120,000 lb/hr Nebraska Boiler
- 400 psi design sat.
- Low NOx Burner
- CataStak™ SCR System
- 5 PPM NOx



Increased Capacity: Seasonal Peal Loads

District Heating - San Francisco, CA

- 70,000 lb/hr Nebraska Boiler
- 400 psi design sat.
- Low NOx Burner
- CataStak™ SCR System
- 5 PPM NOx



New Plant Delays (Antonov Delivery)

- **Reason:** New LNG plant in Australia
- **Problem:** Lost production
- **Solution:** 2 boilers needed for continued process steam
- **Timing:** 3 day delivery on the Antonov aircraft



Planning Stages

1. Identify Steam Requirements

- capacity
- operating press.
- steam temp (saturated or superheat)
- fuel type

2. Rental Duration

- 1 month
- 3 month
- 6 month
- 12 month plus

3. Delivery Timing

- weekday vs. weekend
- winter vs. summer months

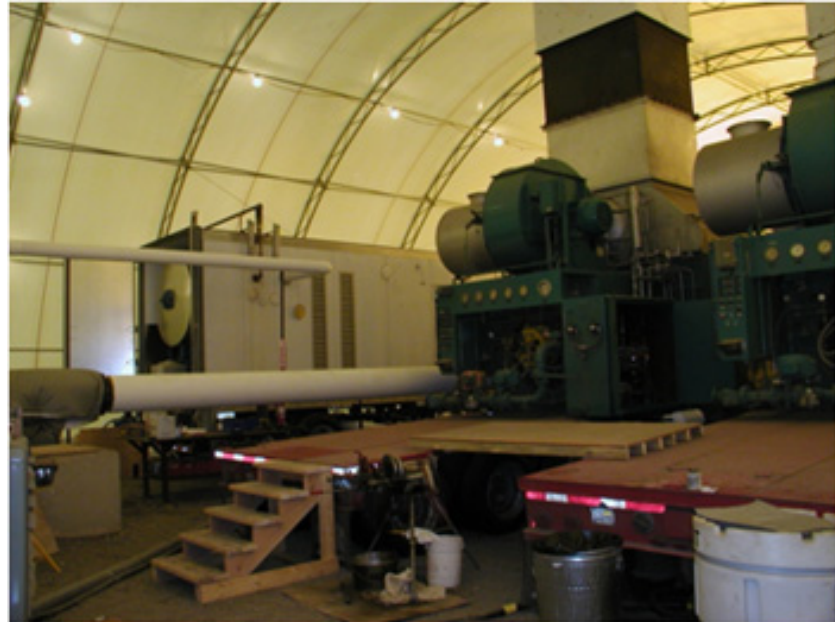




Winter Installation:



Eielson AFB, Fairbanks, AK



140,000 lb/hr Temporary Steam Plant



Planning Stages

4. Locate Utility Tie-ins

- fuel
- treated feedwater
- boiler chemicals
- electrical
- steam
- blow downs
- instrument air

5. Air Permits

- varies with AQMD
- permit to construct
- permit to operate

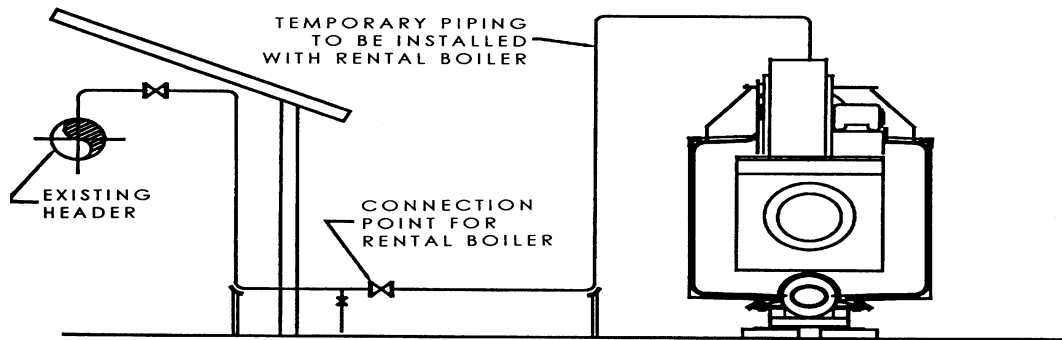
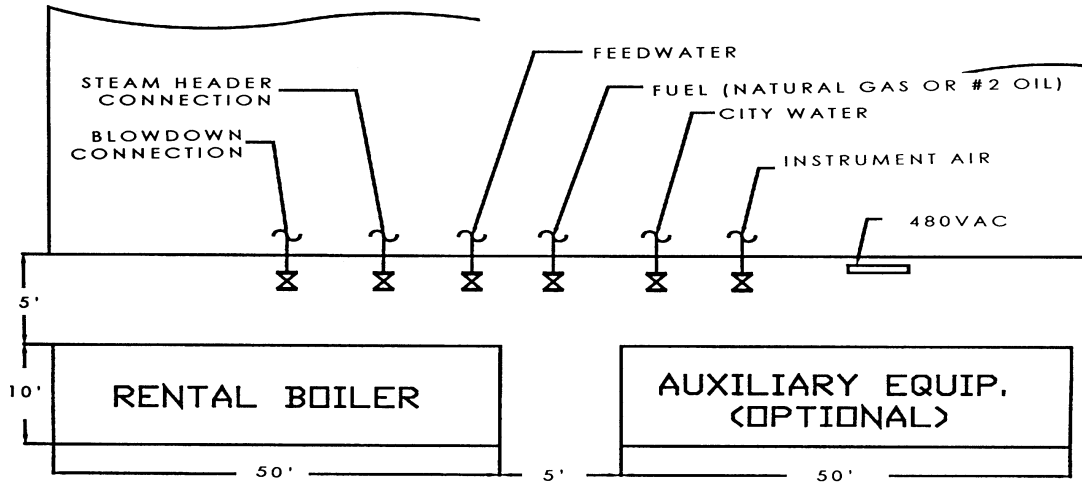
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- permit details:
 - timing
 - cost
 - source test
 - variances





EXISTING STEAM PLANT



TEMPORARY STEAM PLANT
TYPICAL INSTALLATION



Planning Stages

6. Miscellaneous

- boiler placement and foundations
- review and implement a HAZOP procedure

continued

- request descriptions and drawings from equipment supplier

continued

- Implement a Master Rental Agreement between Lessor & Lessee



Qualifying a Rental Boiler Company

How long have they been in business?

Types of boilers offered?

Do they offer rental / purchase / lease-buy?

Availability and when can they deliver?

Rental term / duration (price points)?

Offer ancillary equipment?

Offer turn-key services?



Qualifying a Rental Boiler Company

Ask for references?

Are there guarantees?

Where is the service support out of?

What is the age and condition of the rental boiler?

What is required from the Lessee to obtain a boiler rental?

Do the boilers meet Cal Code and ultra low Nox emission requirements?



Qualifying a Rental Boiler Company

Does the rental company have insurance coverage?

The size of the rental fleet?

What is their safety record?

Do they have any pre-permitted units?

Are renting boilers their primary business, or just a sideline activity?



Common Questions

How long since the boiler was last inspected and tested?

When do rental charges begin and end?

Are rental charges suspended if the boiler fails?

What equipment and supplies are included in rental charges?

Are start up charges included or additional?

Certificates of Insurance?



Common Questions (continued)

Who provides the oil pump/tanks?

Who supplies the gas regulator?

Who provides the forced draft fan?

Who provides the smokestacks / EPA ports?

Who pays the freight?

Who makes freight arrangements?



Common Questions (continued)

Who provides the hookup?

Who supplies the utilities?

What about feedwater treatment?

How should boilers be operated?

How about disconnecting?

How is boiler to be prepared for shipment?

Who pays for the loading / unloading?



Equipment Offerings

- Mobile / Stationary Steam Plants
- Trailer-Mounted Watertube Boilers
- Package Boilers In Stock
- Water Treatment Equipment
- Environmental Solutions
 - CataStak™ SCR Systems
- Heat Recovery Solutions
 - EconoStak Economizers



Equipment Offerings (continued)



Equipment Offerings (continued)



World's Largest Trailer-Mounted Boiler



Equipment Offerings (continued)

- Deaerators
- Feedwater Pumps
- Demineralizers, Water Softeners, Chemical FS
- Blowdown Tanks
- Diesel Generators
- Air Compressors
- Valves
- Controls
- Potable Hot Water Systems



Site Considerations

- Personnel Protection:
Hot Piping
- Freeze Protection
- Fencing / Barriers

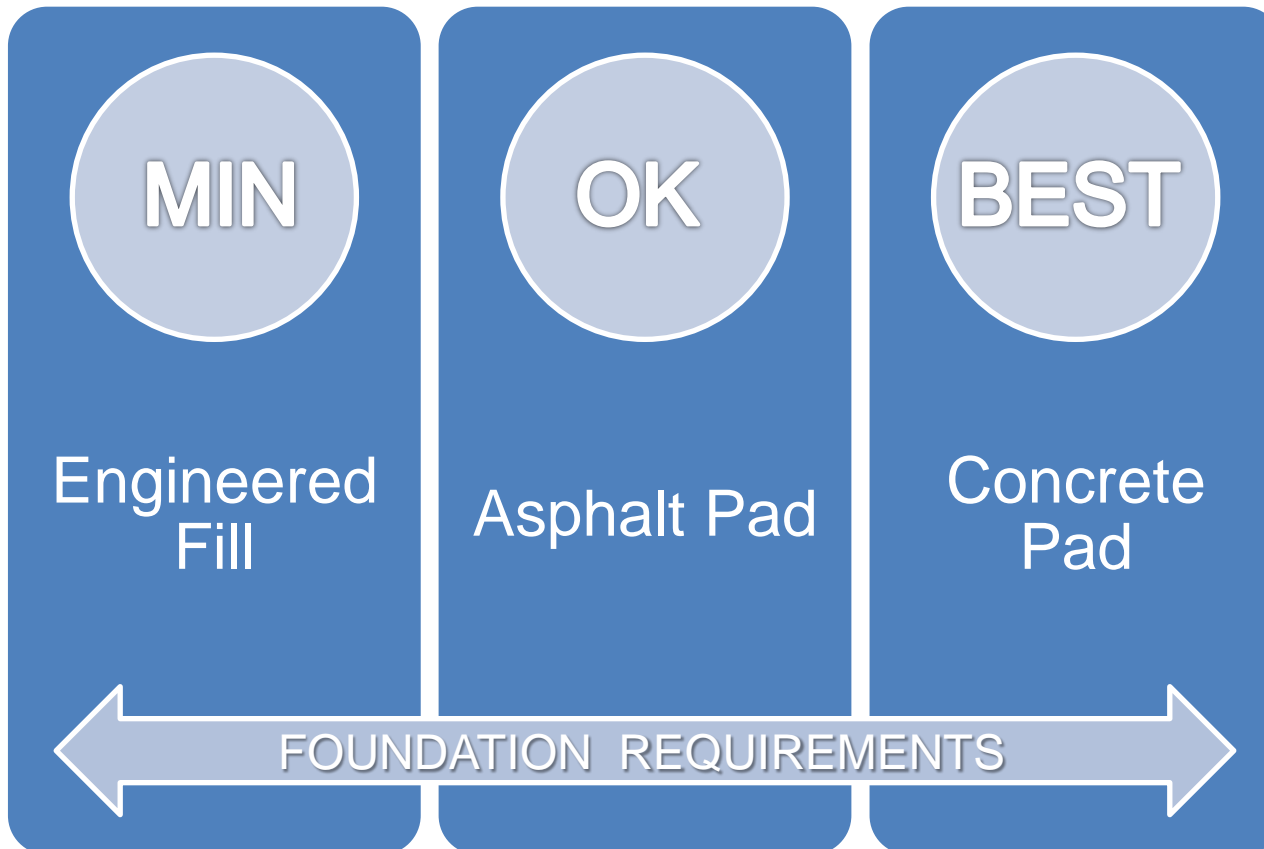


Site Considerations (continued)

Capacity	Ship. Dims.	Ship. Wt.	Oper. Wt.
100 HP	8' x 14' x 30'	30K lbs	45K lbs
200-300 HP	8' x 14' x 30'	45K lbs	60K lbs
350-600 HP	8' x 14' x 30'	50K lbs	65K lbs
20-40K lb/hr	10' x 14' x 50'	60K lbs	80K lbs
40-60K lb/hr	10' x 14' x 50'	80K lbs	100K lbs
75-100K lb/hr	12' x 14' x 30'	100K lbs	125K lbs
150K lb/hr	10' x 16' x 40'	130K lbs	160K lbs
250K lb/hr	13' x 18' x 50'	255K lbs	302K lbs



Site Considerations (continued)



Site Considerations (continued)



engineered fill &
concrete




asphalt



concrete



Site Considerations (continued)



*All weight must be
off running gear on
mobile boiler rooms
and trailer-mounted
boilers during
operation!*

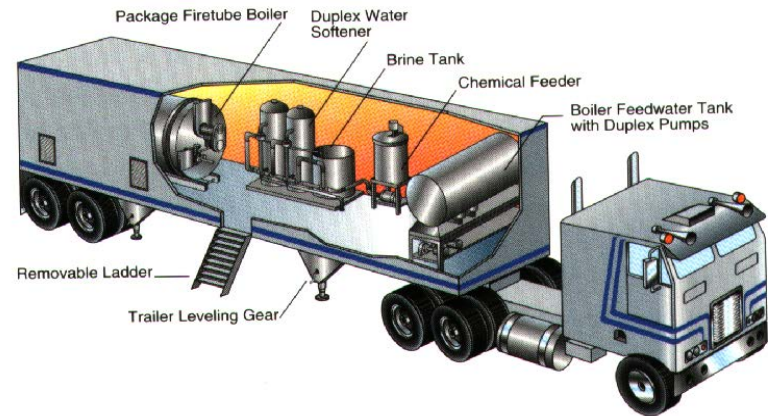


*NOTE: some sites require
seismic tie-downs.*



Advantages of Trailer-Mounted Boilers

- Up to 1,000 HP
- Self-contained
- Fast, easy hook-up
- Secure
- Aesthetical pleasing
- Convenient



Advantages of Trailer-Mounted Boilers

- Up to 125,000 lb/hr
- Quick response
- No cranes or rigging required
- Simple to position/install
- Fast, easy start-up



Advantages of Trailer-Mounted Boilers

- Faster delivery vs. rail car shipments
- Removable gooseneck
- Hydraulic ram / foot for assisting in leveling and blocking



70,000 lb/hr Trailer-Mounted Boiler Front Tow End



Advantages of Trailer-Mounted Boilers

- Removable 3-axle deck to shorten boiler foot print.
- Or rear deck can be utilized for an operator platform.
- Rear air-bags: leveling



70,000 lb/hr Trailer-Mounted Boiler Rear Deck



Advantages of Mobile Boiler Rooms

- Typical storage when removed from boiler / trailer frame



Top 5 Reasons as to “How a Rental Job Can Go Bad?”

1. Inadequate Planning and Budget Allotment

2. Non-engineered Installation

3. Lack of Qualified Operators

4. Poor or Lack of Water Treatment

5. Lack of Maintenance



Partial Customer List

- Tesoro
- Chevron
- Phillips 66
- Southern California Edison
- Sempra
- San Onofre
- Weyerhaeuser
- Georgia-Pacific
- Newark Paperboard
- International Paper
- Smurfit Newsprint



Partial Customer List

- City of Los Angeles
- East Mesa Detention Center
- County of San Diego
- Southwest Marine
- NASCO
- NAS Coronado
- EJ Gallo
- JG Boswell
- Chicken of the Sea Tuna
- Circle Foods
- Del Monte Foods





WHAT YOU WANT TO AVOID

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Guidelines for Preparing a Temporary Steam Plant

Questions & Answers

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www.nationwideboiler.com

www.catastak.com

Emergency Preparedness Guide:

http://www.nationwideboiler.com/literature_media/publications.html

