

DEPARTMENT OF INDUSTRIAL RELATIONS
Division of Occupational Safety & Health
Pressure Vessel Unit
1515 Clay Street, Suite 1302
Oakland CA 94612-1402
Tel: (510) 622-3052 Fax: (510) 622-3063



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Circular Letter PV-2006-01

Effective Date: June 1, 2006

Subject: Boiler Internal Inspection Interval Extensions

To: All Inspection Agencies and Boiler Owners

The State of California Labor Code allows for an extension of the required annual internal inspection of boilers and fired pressure vessels. Chemical plants, petroleum companies, public utilities, and other industries having superior preventive maintenance and examination programs may apply to the Division for this extension. A maximum extension of 36 months for fired boilers and 72 months for unfired vessels may be granted. The following will detail the minimum information that shall be supplied with each application. See the Labor Code Section 7682 and the California Code of Regulations Title 8 Section 770 (<http://www.dir.ca.gov/Title8/770.html>) for further information.

1. What is the reason for the extension and what is the length? What is the heat input if extension is for a waste heat boiler?
2. What is the history of the boiler? Supply the Manufacturer's Data Report and all Repair or Alteration Reports. List all boiler shut downs. Verify that there is no sign of scaling, corrosion, erosion, or overheating. Demonstrate the superior preventive maintenance and examination programs that are in place. Supply company inspection records.
3. Describe the water treatment program. List the name of the company supplying the water treatment and how long they have been performing the treatment for this boiler. Obtain a statement from the water treatment specialist stating that treatment program is being followed and resulting in superior water chemistry. An example of the summary of weekly tests for this boiler shall be submitted.
4. Describe the wall-thickness testing program. List the minimum required thickness for each part measured. If the extension is for longer than 24 months, detail how the on-stream examination of corrosion points will take place and how the operations and safety controls (including the safety valves) will be inspected. This shall also be acceptable to the Qualified Inspection Agency performing the boiler inspections. A letter from the agency shall be submitted stating their acceptance.
5. Submit the application to this office for acceptance. A site visit by one of our inspectors may be necessary.

Boiler Extensions when Subject to Metallurgical Damage

California Code of Regulations Title 8 Section 770(b)(4) states "For boilers and process steam generators where metallurgical damage may occur, the Division may categorize the boiler or process steam generator as unfired upon acceptance of a risk engineering analysis submitted by the owner of the boiler to the Division. The risk engineering analysis shall include the design basis for categorizing the boiler as unfired, the potential consequences to the boiler and to the safety of the person(s) responsible for attending the boiler, and a discussion of protective devices and specific procedures to prevent the consequences."



Title 8 allows fired boilers to be inspected internally every 36 months and unfired boilers to be inspected internally every 72 months. Boilers subject to metallurgical damage are considered fired boilers unless the Division accepts the risk engineering analysis described in 770(b)(4). It has been the Division's policy to consider any boiler exposed to a heat input in the creep range temperatures (approximately 800°F for carbon steel) to be subject to metallurgical damage. In addition to the information needed for a fired or unfired boiler extension, what follows is information that the Division will need in the risk engineering analysis in order to categorize a boiler subject to metallurgical damage as unfired.

1. Supply Management of Change (MOC) documentation.
2. Supply a Process Hazard Analysis type assessment that addresses overheating, thinning, over-pressurization, and any other potential hazards associated with the boiler.
3. Calculate the time to failure when the boiler is "dry fired".
4. Operational response time when "dry firing" takes place.
5. Address creep, spheroidization and graphitization.
6. Employee exposure to a tube failure or steam release (a Risked-base Inspection type analysis might be appropriate).
7. A description of the safeguards or controls that prevent overheating or over-pressurization. Provide procedures that describe control operations.
8. Are the controls and safeguards serviceable and replaceable on-stream? Are the controls capable of operating for the 72-month time frame?
9. Provide documentation that indicates that the safety valves may safely operate for the requested interval without on-stream servicing.
10. Describe the numbers of feed water pumps and their operational independence.
11. Describe the operational procedures when there is a loss of water pressure, steam coil rupture, or pump failure. Provide evidence of operator training to these procedures.

An employer that is able to demonstrate superior preventive maintenance and examination programs for the operation of their boilers will be issued a letter from the Division granting an extension of the required boiler internal inspection interval.

Sincerely,

Original signed by Donald C. Cook

Donald C. Cook
Principal Safety Engineer