**Section 2120.1420 Historical Boiler Inspections**

a) Frequency of Inspection. Historical boilers shall be inspected every two years.

b) Preparation for Inspection

1) It is the responsibility of the owner to assure the historical boiler is properly prepared for inspection.

2) As much preparation as possible shall be completed prior to the arrival of the inspector.

3) Standards of inspection shall be the requirements of the National Board Inspection Code (NBIC) and this Subpart.

4) Preparation for internal inspection shall be as required by the NBIC, including:

A) The boiler must be at ambient temperature and dry.

B) Fireside open and grates must be removed.

C) Fireside tubesheets and tubes must be thoroughly cleaned of soot and ash.

D) Waterside drained and hand holes, plugs and inspection openings must be removed.

E) Sediment, scale and mud must be flushed.

F) Insulation or jackets must be removed, as appropriate.

5) When there is limited or no access for visual inspection, remote camera or fiber optic devices may be used.

c) Inspection Sequence

1) Initial Inspection. In addition to initial internal and external visual inspection, a baseline full grid ultrasonic testing (UT) inspection, as required by NBIC, shall be performed. The boiler shall be equipped with a fusible plug.

2) Subsequent Inspections

A) A certificate inspection two years following the initial inspection shall be performed. The certificate inspection will consist of a hydro test of between 100% and 125% of the calculated maximum allowable working pressure, along with an external visual inspection both at rest and under pressure.

i) The owner shall provide the pump, water, water temperature and expertise to safely complete the test, including proper protection from the elements as needed.

ii) A powered mechanical pump must have a safety relief device between the pump discharge and the boiler inlet.

iii) The State of Illinois will not be responsible for damage occurring as a result of the hydro test.

B) A certificate inspection shall be performed two years following the hydro test and shall consist of a detailed internal and external visual inspection with a spot check of approximately 10% UT coverage on all stayed and un-stayed surfaces.

C) Subsequent certificate inspections shall be performed every 2 years and shall follow a cycle of first performing a hydro test and then performing a detailed internal and external visual inspection with a spot check of approximately 10% UT coverage on all stayed and unstayed surfaces.

D) At no time shall the interval for internal inspection exceed 4 years.

E) If 4 consecutive years of inspections (2 certificate inspections) are not conducted, the next inspection shall be an initial inspection (see subsection (c)(1)), with full grid UT inspection performed by a certified American Society for Nondestructive Testing (ASNT) Level II UT Inspector.  The owner will be responsible for this second full grid UT inspection.

d) In-service Inspection Option at the Discretion of the Inspector. In lieu of the hydro test, an Inspector may choose to witness the object in operation. The following examinations and tests shall be performed while the boiler is in operation:

1) Two independent means of boiler feed water delivery systems shall be demonstrated to the Inspector. Observance is to be performed at an operating pressure no less than 90% of the safety valve set point of the boiler. If the boiler is equipped with more than one feed water tank, each feed water device must be able to take water out of either feed water tank. Pumped feed water shall be preheated prior to entering the boiler.

2) Demonstration of operable try-cocks that show a level of water that correlates with that shown in the gauge glass.

3) Demonstration of operating gauge glass upper and lower shutoff valves.

4) Demonstration of an operating gauge glass blow down valve.

5) Verification that the gauge glass is visually clear and fully operational.

6) Visual inspection for leaks.

7) Safety Valve Test. Safety valves shall be tested by having the operator raise boiler pressure to the safety valve popping point. Popping point pressure and blow down will be observed to ensure they are within tolerances (see NBIC Part 2, S2.8). A certification acceptable under Section 2120.1210 may also be used for verification of set pressures.

e) Additional Inspection as May Be Required. The boiler may be subjected to other methods of inspection, at the owner's expense, as deemed necessary by the boiler inspector to determine soundness and to assure the safety of the operators and citizens of the State of Illinois.

f) Display of Inspection Certificate. The current Inspection Certificate shall be posted in a visible area near the point of operation.

(Source: Amended at 41 Ill. Reg. 846, effective January 17, 2017)