1 RCNY §20-02

CHAPTER 20 PIPING SYSTEMS

§20-02 High Pressure Steam Piping Systems.

These regulations shall apply to high pressure steam piping system which is defined as a system operating at a steam pressure of more than fifteen (15) psi. In the application of these rules and regulations, loops, bends or offsets of the piping shall not be considered expansion joints.

(a) *Existing Systems.*

The following requirements are applicable:

(1) All expansion joints, anchorage and guides which are presently not accessible to permit a complete visual inspection, shall be made accessible. Where the integrity of any shaft enclosure is impaired hereby, proper means shall be provided to maintain its integrity. All joints, including the joints so exposed, shall be inspected for any signs, visual or audible, of [*sic*] any escaping steam or condensation. Where there is evidence of such escaping steam in a bellows joint, immediate appropriate action shall be taken including expeditious replacement of the joint. If the escaping steam is immediately adjacent to a tenanted area, the occupants of this area shall be evacuated and shall not be permitted to return until the joint has been replaced or removed. In all cases, the joint shall be kept under intensive surveillance by the owner until such replacement or removal. In the event that the leak is progressive and has progressed to an extent as to present a hazard, the steam system or any part thereof serviced by the affected joint shall be shut down and the Department of Buildings shall be notified immediately. The Commissioner may waive the requirement for the exposure of the structural attachments to the building of the anchorage or guides upon the certification of a professional engineer to the effect that the exposure would impair a structural element of the building and specifying the basis on which he predicates his conclusion as to the adequacy of the structural attachments to the buildings of the anchorage or guides without such exposure. Upon exposure and initial inspection of the joints, the Commissioner shall be notified in writing by registered or certified mail. Such notification shall specify the type and location of the joints and the date inspected. The notification shall also contain the name of the person responsible for seeing that the inspections are made and properly recorded. Such inspections and exposure shall be made within two weeks from the effective date of this requirement. The initial inspection of the anchorage and guides shall be made within two months from the effective date of this requirement.

The Commissioner shall be notified in the same manner described above of any subsequent change of the person responsible for seeing that the inspections are made and records kept.

The notifications required in this paragraph shall be addressed to the Borough Superintendent of the Borough in which the system is located.

(2) *Maintenance inspections.*

(i) Expansion joints shall be inspected weekly.

(ii) The anchorage and guides shall be inspected annually. Exposure of the structural attachments to the buildings of the anchorages or guides shall not be required where the inspection reveals no improper movement or defects in the system.

(iii) A record of such inspections shall be kept by the person in charge of the mechanical equipment of the building or other qualified person designated by the owner and acceptable to the Commissioner. The records shall be available at the premises and subject to inspection by the Commissioner.

(3) No joint, anchorage or guides shall be repaired, replaced or relocated, unless and until an application has been filed and the approval of the Department is obtained. The application shall contain all pertinent information and shall be filed by a licensed professional engineer, knowledgeable as to high pressure steam piping systems. He shall be responsible for the controlled inspection of the proposed work in accordance with the approval of the Department. This provision shall not apply to the repacking of a slip or ball joint, however, records of such repacking shall be kept in the inspection records as hereinabove provided. When, in the opinion of the professional engineer, the requirement for prior approval by the Department of Buildings would create an imminent health or safety hazard, the professional engineer may permit the work to proceed without prior approval. In such cases, he shall, prior to the repair, replacement or relocation, notify by telephone the Borough Superintendent of the borough in which the building is located; and, if the emergency occurs at other than normal working hours, he shall notify the Emergency Section by telephone at 312-8298.[*sic*] This shall be followed up by the filing of the application and obtaining the approval specified above.

(4) The Commissioner, where he deems it necessary, shall require the replacement or relocation of any joints, guides or anchors. The Commissioner shall cause the joints in potentially hazardous locations such as those which are located adjacent to tenant occupied spaces to be relocated, unless means exist or are provided for eliminating the hazard.

(5) Applicability upon completion of new high pressure steam piping systems. Upon the completion of a new high pressure steam piping system and the approval of same by the Department, the rules relating to existing high pressure steam piping systems affecting maintenance requirements and the keeping of records shall apply.

(b) *New Systems.*

For the purpose of the application of these rules and regulations, the replacement of existing steam piping systems, the installation of a new system in existing buildings, as well as installations in buildings hereafter constructed, shall be considered to be new high pressure steam piping systems. The following requirements are applicable:

(1) Design.

(i) The system shall be designed by a registered architect or licensed professional engineer. An application and plans shall be filed and the approval of the Department obtained. The plans and application shall contain, but not be limited to the following information:

(A) Size and location of all steam piping.

(B) The operating pressures and temperatures.
(C) The location, type, specifications and details of all expansion joints.
(D) The design, size, material and location of all anchors, guides and auxiliary steel, and the stresses thereon.
(ii) Systems using utility street steam shall be designed for a pressure of 200 psig and 413^{o} [*sic*] F up to and including the steam pressure reducing valve or valves which reduce the pressure of 90 psig or below. For steam pressures between 90 psig and 16 psig the system shall be designed for 125 psig.
(2) *Installation.*

(i) Installations (including any welding for same), shall be under controlled inspection by the engineer responsible for the design, or by a Professional Engineer acceptable to him.

(ii) Systems using utility street steam shall be designed for a pressure of 200 psig and 413^{o} F up to and including the steam pressure reducing valve or valves which reduce the pressure of 90 psig or below. For steam pressures between 90 psig and 16 psig the system shall be designed for 125 psig

(iii) Welders shall be qualified for all required pipe sizes, wall thickness and positions in accordance with the American Society of Mechanical Engineers, Welding and Brazing Qualification, Section IX, Boiler and Pressure Vessel Code 1980, (ANSI/ASME BPV- IX- 1980). Requalification is required every three years; or, if there is a specific reason to doubt the welders ability to make sound welds.

(iv) Welder qualification testing shall be performed by an agency listed with the Department of Buildings, and if the testing is by radiography, the inspection shall have a minimum radiography qualification of Level II in accordance with the American Society for Non-destructive Testing, 3200 Riverside Drive, Columbus, Ohio 43221, Recommended Practice, Document No. SNT-TC-1A- 1980.

(v) Copies of the certified welder qualification reports shall be maintained by the responsible welding agency and the company performing the welding, and shall be made available upon request to the Department of Buildings.

(vi) No reports from any welding inspection agency shall be accepted unless such agency has first requested and obtained from this Office [*sic*] in accordance with §25-01(q)(1) of the Board of Standards and Appeals Welding Rules.

(vii) (A) All piping over 3 inches shall be butt welded. Piping 3 inches and under may be socket welded or threaded.
(B) Threaded piping may continue to be used for existing construction in sizes of 6 inches and under.
(C) The Borough Superintendent may determine where welding is not feasible and that an acceptable alternative has been provided.

(viii) Radiographic examination, when required, shall be performed on butt welds in accordance with the following standard:

(ix) The percentage of butt welds subject to radiographic examination shall be based on the piping pressure and shall be as follows:

AMSI/ASME B 31.1 - 1980

Piping Pressure	**Percentage**
90 psig or below	Not required
91 psig to 150 psig	10% at Random
Over 150 psig	100%

However, if in the opinion of the engineer responsible for Controlled Inspection radiographic examination is not required for piping at pressure between 90 psig and 150 psig, he shall so specify in writing, and his final report on the installation may omit the foregoing, and be predicated on all of the other requirements noted above, as well as a hydrostatic test.

(x) Testing - Hydrostatic test the completed installation at 150 percent of the design pressure for all piping pressure. Where the changes in an existing steam system involve less than 30 percent of the piping in the system, the testing may be in accordance with the ASME Power Piping Code, (ANSI/ASME B 31.1 - 1980).