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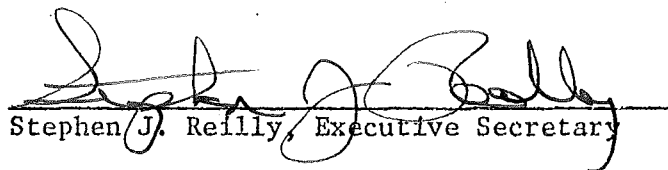
STATE OF WISCONSIN)
) SS
DEPARTMENT OF INDUSTRY,)
LABOR AND HUMAN RELATIONS)

TO ALL TO WHOM THESE PRESENTS SHALL COME, GREETINGS:

I, Stephen J. Reilly, Executive Secretary of the Department of Industry, Labor and Human Relations, and custodian of the official records of said Department, do hereby certify that the attached rules to Wisconsin Administrative Code, Chapter 41, Boiler & Unfired Pressure Vessel, were adopted by the Department of Industry, Labor & Human Relations on April 5, 1971.

I further certify that said copy has been compared by me with the original on file in this Department and that the same is a true copy thereof and of the whole of such original.

IN TESTIMONY WHEREOF, I have hereunto set my hand and affixed the official seal of the Department at the Capitol, in the City of Madison, this 5 day of April, A.D., 1971.


Stephen J. Reilly, Executive Secretary

ORDER OF

DEPARTMENT OF INDUSTRY, LABOR AND HUMAN RELATIONS

Pursuant to authority vested in the Department of Industry, Labor and Human Relations by section 101.01 to 101.29 Wis. Stats., the Department of Industry, Labor and Human Relations hereby amends, repeals, recreates and adopts Chapter 41, Boiler & Unfired Pressure Vessel, Wis. Adm. Code.

The rules attached hereto shall become effective on the first day of the month following publication in the Wisconsin Administrative Code as provided in Section 227.

Repeal subsection Ind 41.12 (1) second "Note" following Table 2 which reads:

"Note: Most pressure reducing valves are arranged with a valved bypass which also acts as a potential steam source hazard in case the bypass is left open. Where such valved bypass is used, the following formula shall be used to determine the steam flow rate through the bypass."

including referenced formulas that follow this note.

Subsections Ind 41.12 (1)(a) and (b) are created to read:

(a) The following formula shall be used to determine the steam flow rate through the bypass when pressure reducing valves are arranged with a valved bypass which also acts as a potential steam source hazard in case the bypass is left open.

$$RVC = 1/2 \times OC \times BPA$$

Where RVC = relief valve capacity, lbs. of steam per hour.

OC = orifice capacity, lbs. of steam per hour per square inch. (See Table 1.)

BPA = bypass pipe area, sq. inch. (See Table 2.)

(b) The larger of the relief valve capacities calculated by the formulas in subsections Ind 41.12 (1) and (1)(a) shall be used for selecting the relief valve for the vessel.

Note: Example. Suppose a high pressure boiler operating at 125 psi distributes steam to a series of 40 psi ASME constructed retorts through

a 1-1/2 inch size pressure reducing valve provided with a glove-valved 1 inch bypass. Determine the proper ASME relief valve protection for the retorts. Utilizing data in tables and the first of the 2 formulas above:

$$W = 1/3 \times 7200 \times 2.04 = 4896 \text{ lbs. steam per hour.}$$

Checking the bypass steam flow according to the second formula gives:

$$W = 1/2 \times 7200 \times 0.86 = 3100 \text{ lbs. steam per hour.}$$

The potential steam flow through the pressure reducing valve is 4896 lbs. per hour rated capacity or

$$4896 \times 1000 \text{ or } 4,896,000 \text{ BTU per hour.}$$

DEPARTMENT OF INDUSTRY, LABOR & HUMAN RELATIONS



Stephen J. Reilly, Executive Secretary

DATE April 5, 1921