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INTERPRETATION
Emergency Discharge of Refrigerants
CSA B52 ANNEX B

This Information Bulletin replaces IB15-004, which has been withdrawn.

CSA B52-18 Clause 6.10 requires the designer to consider the provision of an emergency discharge system when designing a refrigeration system.

For a system to be installed in Alberta, CSA B52 Annex B Guideline for Emergency Discharge of Refrigerants must be followed to comply with the Clause 6.10 requirement except as provided below. Where the relief piping is in compliance with the requirements of CSA B52 Annex H, the use of Annex B, Clause B.2.2 is optional since the emergency line size determination is the responsibility of the design engineer.

As an alternative to using Annex B, a design engineer must conduct a Hazard and Operability (HAZOP) study which includes, but is not limited to, consideration of elements such as fueling a fire in the immediate vicinity of the refrigerant system, release of stored energy leading to explosion, release of toxic fluids inside a building, safety of operators and others, and damage to property. The results of the HAZOP study shall include all necessary actions required to make the system safe. The report of the HAZOP study shall be signed by a professional engineer and shall be submitted to ABSA for evaluation.

Background

This Information is to clarify the requirement of Clause 6.10 and to provide a practical alternative to using Annex B. Compliance with Clause 6.10 is often subject to different interpretations leading to inconsistent conclusions for similar situations. It is also apparent that consideration of only environmental concerns may sometimes result in increased risk to the operators and building occupants in the event of an emergency. Failure to fully consider all hazards, in lieu of providing the emergency discharge system, can lead to increased hazard associated with the operation of the pressure equipment in a refrigeration plant. In the interest of consistent safe application of Clause 6.10 for the design of refrigeration systems for use in Alberta, the options are to design the discharge system in accordance with Annex B or to conduct a HAZOP study and implement the design/study results. It should be noted that Annex B applies to Emergency Discharge lines only. Pressure relief valve discharge lines are covered in Clause 7.3.6.

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Djordje Srnic, M.Sc., P.Eng.
Administrator, Province of Alberta Pressure Equipment Safety
Chief Inspector, ABSA the pressure equipment safety authority