



INSTITUT INTERNATIONAL DU FROID  
INTERNATIONAL INSTITUTE OF REFRIGERATION

## Refrigeration Safety

### IIR Working Group of Commission B2 with Commissions B1, E1 and E2

#### INTRODUCTION

In accordance with Article XIX of the International Agreement concerning the IIR and articles 15 to 18 of the Internal Regulations of the Scientific Council of the IIR, the setting up of a Commission B2 Working Group (WG) on Refrigerant System Safety was proposed. It was approved by the Science and Technology Council during its meeting in Washington D.C., on August 21, 2003.

The following Terms of Reference (ToR) further define the role of this WG.

#### OBJECTIVES

The vision that underlies the work is to **get a better “hold” on what can be considered as refrigerant system “safety”**. **This target of the work planned is to record as many existing experiences as possible that involve refrigerant system safety.** Non-synthetic refrigerants have been in use for **100 years or more and the “safety refrigerants” have been in use for about 70 years.** Looking back in time, one can conclude that very little documented experiences exist from all those years. This lack of documentation has become particularly evident when new or updated standards **involving “safety”** had to be written.

In relation to the safety work, it would also be very helpful if one would be able to correlate existing legal demands on the design and maintenance of equipment with all accidents that have been and are experienced world-wide.

This work of the WG are not meant to give proof of anything, but the target is to document all currently existing experiences. Through the years, many very experienced engineers have developed a feeling for how to collect and interpret these experiences. This implies that the work of the WG is to objectively record the contents of these experiences.

Moreover, if guidelines for the safe handling and working with refrigerants could be developed as a result of all experiences collected, the results of the work of the WG could **be defined as "very successful"**. Higher attention given to **"near-miss" situations and risk awareness** is key to less accidents and higher safety levels in general.

## ACTIVITIES

Knowing that there are data in the field without open access, the WG will start by collecting open access information about new accidents rather than looking at historical data. This has the advantage that technologies implemented to avoid historic accidents will not appear in the new data. With all new emerging refrigerants and technologies, developments are moving so fast that "old" data may not be relevant anymore..

For all types of systems and various refrigerants the number of accidents that occur in practical circumstances should be investigated. It is foreseen to set up a database that will include accidents involving injuries to humans as well as damaged products with a certain monetary value.

A preliminary limitation for the scope could be for accidents where it involves human injuries and/or a value of 0.1 MUSD in damaged products.

The accidents have to be publicly documented and so it can be analysed by someone **capable to do so in order to find the "real" reason for the incident.**

Limited studies along the lines of this proposal were started twenty years ago and a short summary report was presented in the form of a paper for the IIR congress in 2003 titled: **"Refrigeration Accident Analysis" by Jan Erik Nowacki and Björn Palm.**

## INVOLVEMENT OF IIR COMMISSIONS

Main commission: Commission B2

Other Commissions: B1, E1 and E2

## MEMBERSHIP

Anyone interested in these safety issues and in the work of the WG is invited to become a member of the IIR.

IIR members can be either private members or representatives of corporate members of the IIR.

## CHAIRMAN AND BUREAU

Chairman: Alexander Cohr Pachai, Denmark

Vice-Chairman: Lambert Kuijpers, Netherlands

Secretary: TBD

## MEETINGS

The Working Group shall strive to meet once a year and to have further virtual ad-hoc meetings

### **Minutes**

Meetings shall be recorded and copies of the minutes shall be sent to the members of the WG with a copy to the IIR head office.