Canadian Standards Association
Mississauga, Ontario
To the Part I Committee

Subject No. 3233 Chair: V. Rowe Date: March 8, 2005

Title: Adequate Ventilation, Appendix J

Submitted by: Vince Rowe of Marex Canada Limited on , 2005.

Proposal: Change Rule J18-006 and associated Annex JB notes as outlined in the attached , and remove the definition for adequate ventilation in Rule J18-002.

Reasons for Request: Subject 3177 made changes to the area classification definitions for the three Zone system and removed the Rule re Adequate Ventilation that was causing confusion. Similar changes should have been made to Appendix J18 for the two Division system at that time. This subject will make the companion revisions to Appendix J18.

Supporting Information: The proposed changes correct the misleading part of the Class 1, Division 2 definitions involving "Adequate Ventilation" and add explanatory notes to Annex JB. The changes are companion changes to the earlier changes to section 18 (Subject 3177).

Subcommittee Deliberation: There were nine Subcommittee members voting, all voted approval without comment.

Subcommittee Recommendation: Accept the proposal without change.

Delete the definition for Adequate Ventilation in Rule J18-002

Revise Rule J18-006 of Annex J18 and Annex JB to read as follows. Note that subject 3182 (already approved) made significant changes to Annex J18 and Annex JB. Comparisons should therefore be made to Annex J18 and Annex JB as approved in subject 3182, not as shown in the 2002 edition of Part I.

18-006 Division of Class I Locations (see Annex JB)
Class I locations shall be further divided into two Divisions based upon frequency of occurrence and duration of an explosive gas atmosphere as follows:

(a) Division 1, comprising Class I locations in which explosive gas atmospheres are likely to be present continuously, intermittently or periodically during normal operation.

(b) Division 2, comprising Class I locations in which:

(i) Explosive gas atmospheres are not likely to occur in normal operation and, if they do occur, they will exist for a short time only; or
(ii) The location is adjacent to a Class I, Division 1 location from which explosive gas atmospheres could be communicated, unless such communication is prevented by adequate positive-pressure ventilation from a source of clean air, and effective safeguards against ventilation failure are provided.

Annex JB notes to J18-006

Δ J18-002 J18-006 *Reference material for area classification can be found in the following documents:*
(a) IEC Standard 60079-10, Area Classification *;*
(b) Institute of Petroleum (British), Model Code of Safe Practice — Part 15: Area Classification Code for Petroleum Installations *;*
(c) American Petroleum Institute RP505, Recommended Practice for Classification of Locations for Electrical Installations at Petroleum Facilities Classified as Class I, Zone 0, Zone 1, and Zone 2 *;*
(d) American Petroleum Institute RP500, Recommended Practice for Classification of Locations for Electrical Installations at Petroleum Facilities Classified as Class I, Division 1 and Division 2 *;*
(e) See also references in this Appendix, note to Rule 18-064;
(f) NFPA 497A, Recommended Practice for Classification of Hazardous (Classified) Locations for Electrical Installations in Chemical Process Areas.

Δ J18-006 .

Typical situations leading to a Division 1 area classification are:

- *the interiors of storage tanks which are vented to atmosphere and which contain flammable liquids stored above their flash point.*
- *Enclosed sumps containing flammable liquids stored above their flash point during normal operation*
- *The area immediately around atmospheric vents*
- *Inadequately ventilated buildings or enclosures*
- *Adequately ventilated buildings or enclosures, such as remote unattended and unmonitored facilities, which have insufficient means of limiting the duration of explosive gas atmospheres when they do occur.*

Typical situations leading to a Division 2 area classification are:

- *Areas where flammable volatile liquids, flammable gases, or vapours are handled, processed, or used, but in which liquids, gases, or vapours are normally confined within closed containers or closed systems from which they can escape only as a result of accidental rupture or breakdown of the containers or systems or the abnormal operation of the equipment by which the liquids or gases are handled, processed, or used*
- *Adequately ventilated buildings which have means of ensuring the length of time abnormal operation resulting in the occurrence of explosive gas atmospheres exist will be limited to a "short time*
- *Most outdoor areas except those around open vents, or open vessels or sumps containing flammable liquids*

API RP500 defines "adequate ventilation" as "Ventilation (natural or artificial) that is sufficient to prevent the accumulation of significant quantities of vapor-air or gas-air mixtures in concentrations above 25 percent of their lower flammable (explosive) limit, LFL, (LEL)." *Appendix B of API RP500 outlines a method for calculating the ventilation requirements for enclosed areas based on fugitive emissions.*

Note industry documents such as API RP505 give guidance as to how Industry interprets a "short time".