INTER PLANT STANDARD - STEEL INDUSTRY		
IPSS	DEFINITIONS OF TERMS RELATED TO SAFETY	IPSS:1-11-001-98
	Based on IS/ISO/IEC GUIDE 51:1990	

0. FOREWORD

0.1 This Inter Plant Standard prepared by Standards Committee on Safety Appliances and Procedures, IPSS 1:11, with the active participation of the representatives of all the steel plants and manufacturers of safety items was adopted in February 1988.

0.2 Objective of this Standard is to provide definition of terms related to safety which have been taken from ISO/IEC documents without change, for ease of reference to authentic definitions and thus remove any chance of duplicity of meaning or interpretation. Thus, the reference of each definition from the following documents has been indicated appropriately :

1. IS/ISO/IEC GUIDE 51:1990 - Guidelines for the inclusion of safety aspects in standards.

2. ISO/IEC TAG SAFETY N 41 DRAFT, JANUARY 1997 Revision of ISO/IEC Guide 51 - Safety aspects - Guidelines for their inclusion in standards.

1. SCOPE

1.1 This Inter Plant Standard covers the definitions of terms related to safety.

2. DEFINITIONS

2.1 **Safety** - Freedom from unacceptable risk of harm.

NOTES:

1. In standardization, the safety of products is generally considered with a view to achieving the most favourable balance between a number of factors, including non-technical factors such as human behaviour, that will reduce risks to persons and property to an acceptable level (level of safety).

2. Sometimes, the word **Safety** is also used instead of, or together with, a word describing the function - usually protection or warning/alarm. Although not incorrect, the word **Safety** as a descriptive adjective need not be used in this case since it conveys no useful extra information but is likely to be interpreted as an assurance of guaranteed freedom from risks of harm. A recommended approach therefore is to replace, wherever possible, the word **Safety** by an indication of the objective.

Examples are :

- "protective helmet" (instead of "safety helmet");
- "protective impedance device" (instead of "safety impedance")

(IS/ISO/IEC GUIDE 51:1990 Definition 3.1)

2.2 **Risk** - A combination of the probability of occurrence of harm and the severity of that harm.

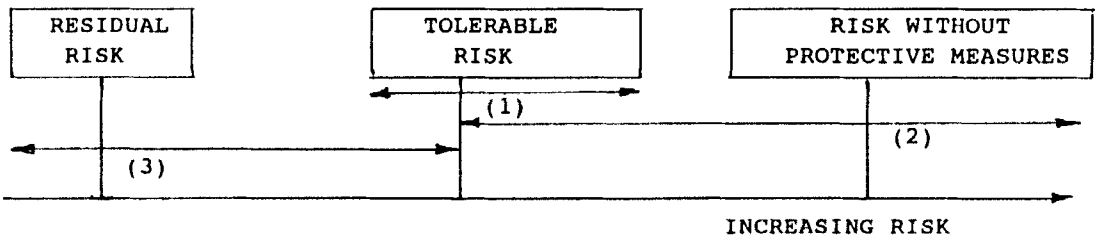
(ISO/IEC TAG SAFETY N 31 DRAFT JANUARY 1997 Definition 3.5)

2.2.1 Residual Risk - Risk remaining after protective measures have been taken.

(ISO/IEC TAG SAFETY N 31 DRAFT JANUARY 1997 Definition 3.6)

2.2.2 Tolerable Risk - Risk which is accepted in a given context based on the current values of society.

(See Figure 1 and para after it)



NOTES :

1. Tolerable risk may vary depending upon the current values of society applied to the hazardous situation.
2. Although risk without protective measures is normally greater than the tolerable risk, it may be equal to tolerable risk.
3. Residual risk is the risk which is left after the risk reduction process. It is less than or equal to the tolerable risk.

FIGURE 1 ILLUSTRATION TO THE RISK REDUCTION PROCESS

The tolerable risk is the result of a balance between the ideal of absolute safety and demands to be met by a product, process or service and factors such as benefit to the user, suitability for purpose, cost effectiveness, and conventions of the society concerned. Tolerable risk is achieved by the iterative process of risk assessment (see Figure 2) which combines risk analysis and risk evaluation.

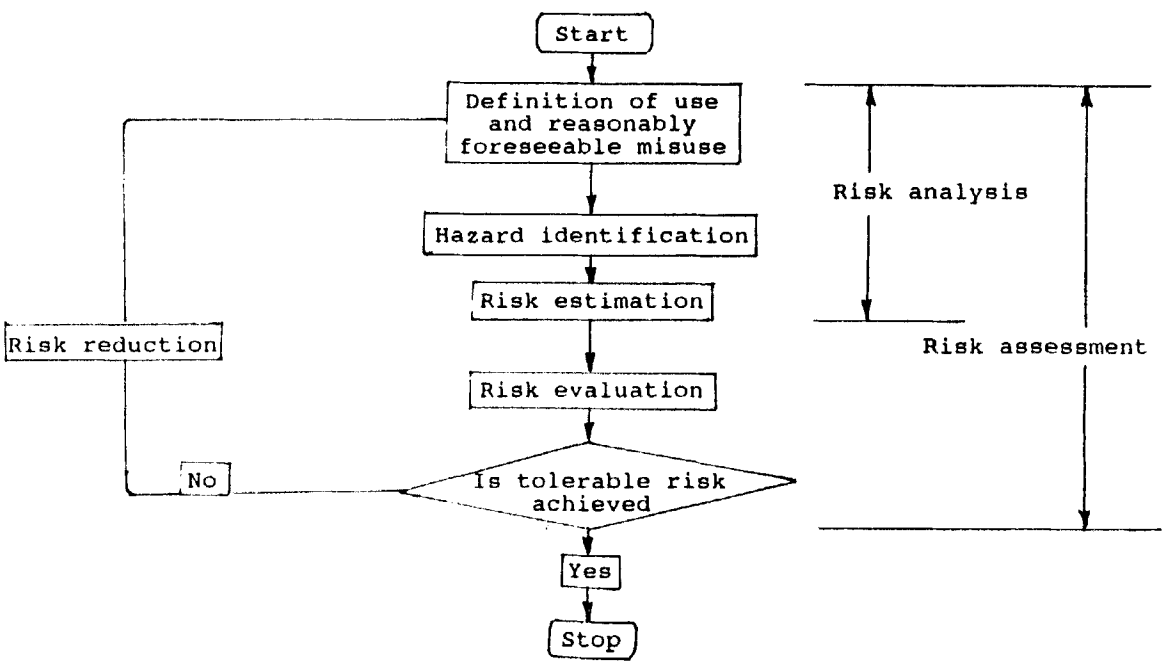


FIGURE 2 THE ITERATIVE PROCESS OF RISK ASSESSMENT AND RISK REDUCTION
[ISO/IEC TAG SAFETY N 31 DRAFT JANUARY 1997, Definition 3.8]

2.2.3 **Risk Analysis** - The use of available information to identify hazardous events and to estimate the risk.

[ISO/IEC TAG SAFETY N 31 DRAFT JANUARY 1997 Clause 3.12]

2.2.4 **Risk Evaluation** - The process in which on the basis of risk analysis and taking into account factors such as social, economic and environmental aspects, judgments are made on the acceptability of the risk.

[ISO/IEC TAG SAFETY N 31 DRAFT JANUARY 1997, Clause 3.13]

2.2.5 **Risk Assessment** - The process of risk analysis and risk evaluation.

[ISO/IEC TAG SAFETY N 31, DRAFT, JANUARY 1997, Clause 3.14]

2.3 **Hazard** - A potential source of harm.

[IS/ISO/IEC GUIDE 51:1990 Definition 3.2]

2.3.1 **Mechanical Hazards** - Projections, sharp points or edges which may cause cuts/lacerations; excessive noise/vibration; impact; entrapment of limbs in moving and stationery equipment; stability factor; etc.

[IS/ISO/IEC GUIDE 51:1990 clause 6.2 (c)]

2.3.2 **Electrical Hazards** - Electric arc which may cause eye damage or burns; electric shock or burns resulting from contact with parts at hazardous voltages; breakdown of insulation; leakage current; etc.

[IS/ISO/IEC GUIDE 51:1990 clause 6.2 (c)]

2.3.3 **Thermal Hazards** - High or low temperature.

[IS/ISO/IEC GUIDE 51:1990 clause 6.2 (c)]

2.3.4 **Fire or Explosion Hazards** - Linked with fire or explosion, or incurred as their secondary consequences including damage to property.

[IS/ISO/IEC GUIDE 51:1990 clause 6.2 (c)]

2.3.5 **Chemical Hazards** - Inhalation, ingestion, or contact with harmful chemical agents.

[IS/ISO/IEC GUIDE 51:1990 clause 6.2 (c)]

2.3.6 **Biological Hazards** - Inhalation, ingestion, or contact with harmful Biological agents.

[IS/ISO/IEC GUIDE 51:1990 clause 6.2 (c)]

2.3.7 **Radiation Hazards** - Radio-frequency, infra-red, ultra-violet, high intensity light, coherent light, ionizing radiation, etc.

[IS/ISO/IEC GUIDE 51:1990 clause 6.2 (c)]

2.3.8 Warning Notices - Signal words :

DANGER	- to call attention to high risk
WARNING	- to call attention to medium risk
CAUTION	- to call attention to a low risk

[IS/ISO/IEC GUIDE 51:1990 clause 6.4.8]

2.4 Harm - Physical injury and/or damage to health or property.

[IS/ISO/IEC GUIDE 51:1990 Definition 3.4]

2.5 Level of Safety - A level of how far safety is to be pursued in a given context, assessed by reference to an acceptable risk based on the current values of society.

[IS/ISO/IEC GUIDE 51:1990 Definition 3.5]

2.6 Safety Standard - A document that deals exclusively with the safety aspects of a product, process or service.

NOTE: In some cases, standards covering more than safety aspects are also called "safety standards". Then, separate treatment of the safety aspects - as distinct from other aspects not related to safety - is essential.

[IS/ISO/IEC GUIDE 51:1990 Definition 3.6]

2.7 Intended use - The use of a product, process or service under conditions or for purposes in accordance with specifications and instructions provided by the suppliers - including information for publicity purposes.

[IS/ISO/IEC GUIDE 51:1990 Definition 3.7]

2.8 Reasonably Foreseeable Misuse - The use of a product, process or service under conditions or for purposes not intended by the supplier, but which can happen, induced by the product, process or service in combination with or as a result of, common human behaviour.

[IS/ISO/IEC GUIDE 51:1990 Definition 3.8]

2.9 Protective Measures - The combination of risk reduction strategies taken to achieve at least the tolerable risk.

NOTE: Protective measures include risk reduction by inherent safety, protective devices, personal protective equipment, information for use and installation and training.

[ISO/IEC TAG SAFETY N 31, Definition 3.7]