

The Rationale for Alarm Rationalization

Abstract

Quantifying the economic value of an Alarm System, or even the value of rationalising it, has rarely been attempted. Alarm Systems are in that category of things imposed upon a plant either by legislation or by the fear of litigation and backed by bodies such as OSHA and HSE or, in the case of operator alarms, that come over-enthusiastically configured as part of the DCS along with the built-in need for a later rationalisation project to make them usable. Few, if any, plants actually know the value, as opposed to the cost, of their alarm systems hence they can not justify and do not see a need to initiate projects involving additional expenditure on, for instance, alarm rationalisation or on-going continuous improvement of the alarm systems. Requirements for such projects come from outside the plant either compelled by legislation or coerced by the need to be seen to have adhered to Best Practice in case litigation should follow a plant incident. In the absence of a value-understanding, project justification degrades to the need for just-enough compliance with the legal or Best Practice requirement and may be seen as an imposition deserving of less than their full enthusiasm by those most closely involved with the plant and who are already fully and gainfully occupied in meeting production and up-time targets. Unfortunately these are the very people most essential to any rationalisation or improvement of an Alarm System.

In this paper we show that Alarm Limits and Operating Limits should be the same and that this will allow Alarm Limits' and their rationalisation to benefit from the well-developed economic understanding already in existence for Operating Limits.

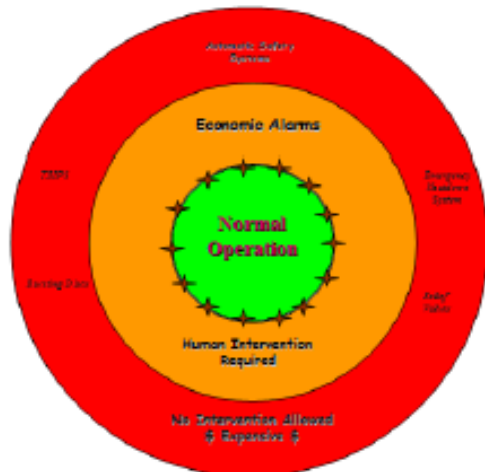


Figure 1 The Vision - Alarm Limits defining the Operating Envelope

There are two major alarm systems to be considered. The first is the Safety Alarm System responsible for taking control and shutting down the process in extreme process excursions which both the process control system and the operator have been unable to prevent. The value it provides is in preventing an extreme excursion from turning into a disaster with liabilities and costs that can run into hundreds and even

thousands of millions of dollars. Its costs are viewed as an insurance premium against a disaster that most plants will, thankfully, never experience.

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