

# Safety Instrumented Burner Management Systems Ready or Not Here They Come!

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The concept of a Safety Instrumented Burner Management System (SI-BMS) is to stay. If you are unsure of this statement one should consider that six (6) different codes / standards currently exist and / or are being revised to invoke the Safety Lifecycle with respect to Burner Management Systems. This includes the following:

- *The Black Liquor Recovery Boiler Advisory Committee (BLRBAC)* has developed several guideline documents regarding design and operation of Recovery Boilers in the Pulp and Paper Industry. These documents invoke SIS requirements on the Recovery Boiler BMS.
- *FM 7605* – Factory Mutual requires that any PLC listed for use in combustion safeguard service meet the SIS requirements contained in IEC 61508. At this writing we are aware of only one vendor who has a product submitted to FM for approval with respect to Safety Instrumented Burner Management Systems.
- *TR84* – The ISA S84 committee has formed a BMS sub-committee to develop a document that clarifies how SIS concepts apply to a BMS. Examples being included in the document for each code or standard are:
  - *NFPA 85* – Single burner boiler
  - *NFPA 86* – Thermal oxidizer
  - *API 556* – Process heater with multiple burners
  - *API 14C* – Reboiler
  - *API 14C* – Heater Treater

The goal of the SP84 committee is for industrial users to properly follow the safety lifecycle to define the risk associated with every BMS to determine if it is a SIS.

- *NFPA 86* Committee is planning to update this standard to reflect their agreement that an industrial BMS is a SIS and that a safety PLC should be used. A linking paragraph will be added that refers to ANSI/ISA 84.00.01-2004 as acceptable methodology.
- *EN 50156-1* is a German standard covering electrical equipment for furnaces that is scheduled for revision in 2004. This document invokes SIS requirements for a BMS.
- *API 556* document governs design of BMS's in the petroleum industry. Is being revised to invoke SIS requirements on BMS's.

To promote the concept of a Safety Instrumented Burner Management System ISA has developed a webinar and is in the process of introducing a 1day course on this topic. The schedule for the next BMS related training is as follows:

- EWS16PW1 – Is a Burner Management System a Safety Instrumented System?; July 14<sup>th</sup> 2005 & November 16<sup>th</sup> 2005
- ES17PC - Safety Instrumented - Burner Management Systems: A How To Primer (Dates to be announced in the near future)

If the above subject is of interest to you or if you have other intriguing questions regarding BMS designs, the Safety Division provides an excellent forum to search for answers. This can be accomplished in three ways:

1. Join the Safety Bulletin Board and post your BMS questions for the Division members to answer.
2. Plan on attending the ISA show in Chicago. A BMS paper session and / or panel session is planned to address this subject. Contact Mike Scott if you wish to present papers and / or participate in a panel session on BMS designs.
3. The Chicago panel session will provide a forum for the audience to ask questions of industry experts on the design and application of BMS's. The goal of this panel session is to review NFPA requirements for BMS's and compare / contrast these issues with the requirements of SIS standards (i.e. ANSI/ISA S84).

- Proposed Panel Session Members
- FM Representative
- NFPA 85 / 86 Representative
- ANSI/ISA S84 BMS Sub-Committee Member
- Process Industry End Users