



# DIRECTOR'S CORNER



Recent incidents have focused renewed attention to facility siting. Although verbal interpretations have no official standing and federal employees rarely speak for attribution, there have been a number of forums following the adoption of the PSM Standard where OSHA representatives have made themselves available to speak about PSM and answer questions. These interpretations on PHA contain some interesting information on OSHA's view of this important subject. Also, OSHA has published non-mandatory guidance on PSM issues in OSHA Publication 3133 (the "purple booklet"). This guidance is also unofficial.

Facility siting is considered to be an analysis, conducted in conjunction with the PHA, of the spatial relationship between where the hazards are located and where the people congregate. Merely stating in the PHA that industry spacing standards have been met is not sufficient. You would not simply state in a PHA that the pressure relief system is adequate without an available analysis document. Similarly, facility siting analysis requires the review of the particular chemical hazards, such as flammability, explosivity, or toxicity, coupled with the local plant layout. Industry spacing standards (API, NFPA, etc.) are equipment-to-equipment standards, not equipment-to-people standards.

When I broached this subject with Trevor Kletz, he remarked, "During the late 1970s, following several serious accidents, particularly the explosion at Flixborough in 1974, there was much interest in plant layout and there were many conference presentations and papers on the subject. For example, an article of mine was published in *Fire Protection Manual for Hydrocarbon Processing Plants*, Volume 2, by C.H. Vervalin (Gulf Publishing, 1981, page 1990. The article was originally published in *Hydrocarbon Processing* (Vol 58, No 10, October 1979, p 205) and is a summary of a longer paper presented at the AIChE 1979 Loss Prevention Symposium and published in full in *Loss*

*Prevention*, Volume 13, 1980, p 147. The number of times this paper was published indicates the interest in the subject at the time. Similar advice, differing in detail but broadly similar was given in many other conference presentations and publications (many listed by Lees) including one from the UK Health and Safety Executive. No doubt new revised and more up-to-date recommendations will now be made and soon forgotten. It is not enough to learn from experience. Companies need a formal procedure for making sure that lessons are remembered and passed on to new employees. It is impossible to pass on everything learned from past incidents but plant layout is a subject of obvious major importance."

Following are some of the industry standards and guidelines available for evaluation and analysis of facility siting:

- API Recommended Practice 752 Management of Hazards Associated with Location of Process Plant Buildings
- DOW's Fire & Explosion Index Hazard Classification Guide
- NFPA 496: Standard for Purged and Pressurized Enclosures for Electrical Equipment
- Factory Mutual Global Property Loss Prevention Data Sheet 17-44
- Factory Mutual Global Property Loss Prevention Data Sheet 7-42

In addition, there are various modeling and calculation methodologies that have been suggested by many others that can be applied to facility siting. However, facilities must determine on their own the extent and nature of the analysis they must conduct with regard to facility siting. Based on the analysis, facilities must develop appropriate engineering, procedural, and administrative measures to protect their employees.

Finally, as recent incidents have indicated, attention must also be paid to trailer siting (permanent as well as temporary) issues, such as the availability of explosion resistant trailers.

On September 29, 2005, the Mary Kay O'Connor Process Safety Center sponsored a workshop on facility siting in Houston, Texas. The objective of the workshop was to provide a forum for free exchange of ideas regarding facility siting issues between all stakeholders. The workshop led to a number of observations and recommendations regarding future work and needs with regard to facility siting. In addition to establishing a dialogue, the workshop led to three important outcomes: 1) establishment of a portal to continue the exchange of ideas; it is hoped that the exchange of ideas may some day lead to best practices in facility siting, 2) recommendation to the American Petroleum Institute to consider revision of the API-752 guidelines based on the facility siting workshop findings, 3) recommendation to the Center for Chemical Process Safety, American Institute of Chemical Engineers to consider revision of the CCPS Guidelines book based on the facility siting workshop findings. Following the workshop, a facility siting portal (<http://www.facilitysiting.com>) has been established. The facility siting workshop proceedings is available from the portal or from the Center.

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Fall 2005