

416e Contemporary Issues in Homeland Security in a Chemical Process Safety Course

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Chemical plants, like other potential terrorist targets, are subjects of intense scrutiny as the federal government and other agencies seek to protect the public from harm. Engineering students must be kept aware of the role they will be expected to play in maintaining security in a plant environment and to protect the public from the worst of unexpected occurrences. With the rapid changes in chemical plant security that began well before 2001 and continue today, chemical engineering educators must be provided with current information pertinent to existing classes that will empower tomorrow's engineers to function effectively.

A module developed to integrate topics in homeland security into a course in Ethics, Safety, and Professionalism is currently being used at the University of Kentucky, Paducah Extended Campus. This module introduces students to the role of government, industry groups, and individual plants in maintaining as safe an environment as reasonably possible in an age of terrorism. The focus of the module is to tie elements of the course and curriculum previously discussed to a rapidly changing contemporary issue. Topics tied to the module include the role of government (executive and legislative roles and current activities in both with regard to plant safety, previously introduced in the context of safety and environmental law), green engineering (just-in-time production, waste minimization), fail-safes, and risk analysis (HAZOP and other methods). New topics include site vulnerability analysis, ventilation security, and cybersecurity. Extensive documentation is provided, as well as references to the most current information available regarding plant security.