LCEE's Project XL Initiative Is Moving Forward

The Laboratory Consortium for Environmental Excellence (LCEE), a group formed of several academic lab institutions, developed a proposal for an EPA Project XL which addresses the handling of hazardous waste in laboratories (see LS&EM *6(1), p. 1 and 5(6), p. 4). LS&EM editorial adviser Ralph Stuart of the University of Vermont is keeping track of the proposal's progress and has submitted the following report. He will continue to coordinate our coverage of this potentially very important initiative. Cynthia L. Salisbury is also a member of our editorial advisory board. In her caveat below, she suggests another reason for paying close attention to developments in the progress of the Project XL initiative.*

The proposal was delivered to EPA in February 1998. Its intent is to provide a performance-oriented basis for EPA and state regulatory assessments of the environmental performance of labs with regard to hazardous waste issues. Some fines recently handed to academic institutions in California and New England for laboratory "mishandling" of hazardous waste highlight the need for this project. As a matter of fact, efforts parallel to ours are being undertaken across the country.

The problem addressed by the LCEE proposal is the mismatch between the expectations of the hazardous waste regulations regarding how hazardous materials are to be handled in the workplace and the physical reality of laboratories. The regulations are crafted to apply to generally predictable industrial processes which involve large amounts of a limited number of chemicals. In contrast, labs by definition use small amounts of a large variety of chemicals that workers generally handle personally from the time each substance is delivered to the lab until the time it leaves. This difference in process style results in many ambiguities and gray areas when attempts are made to apply the current Resource Conservation and Recovery Act (RCRA) regulations to labs.

The Project XL proposal developed by LCEE has two components. One seeks to address the differences between industrial and laboratory conditions and to develop a regulatory basis that more closely matches the reality of lab work. The second concerns the small-scale treatment of laboratory hazardous waste, which is currently impractical because of EPA and/or state permitting requirements.

Fixing the Mismatch: The EMP

Matching the regulations to the type of work carried out in labs is accomplished through the development of an environmental management plan (EMP) at the institutional level. Because most laboratories are part of a larger organization that provides hazardous waste disposal services for the lab, it is inappropriate to require the labs themselves to meet all the requirements imposed on industrial waste generators. The EMP model recognizes this and describes how labs fit into an organization's environmental management system to assure that human health and the environment are protected.

The environmental management plan describes how hazardous waste generation within labs can be monitored and managed without requiring lab workers to be fully aware of the nuances of all RCRA regulations. This is done by organizing labs into "laboratory process units" (LPUs), which are groups of lab rooms that are supervised by a single individual and that have operations and potential environmental impacts in common. The LPU arrangement would allow multiple laboratories within an organization to be independently managed to the extent that their operations are separate, without creating an unwieldy number of situations for government regulators to inspect.

The EMP/LPU component of the Project XL proposal is expected to be tested by three New England universities in the pilot project stage: Boston College, The University of Massachusetts at Boston and the University of Vermont. Details about the requirements of the EMP and more discussion of the LPU concept and how it has been practically applied in other settings are available on-line at http://esf.uvm.edu/labxl.

No More Part B Permit

The second component of the LCEE proposal concerns treatment of the small amounts of hazardous waste that come from laboratories. Currently, treatment of hazardous wastes outside the container in which they are accumulated requires a Part B permit from EPA or the state agency. This permit can be very detailed and cost-prohibitive to acquire, particularly in cases involving small amounts of waste. The LCEE proposal suggests establishing an internal system that would allow an organization with a significant number of labs to set up a process that would review treatment protocols to ensure that they are done safely and effectively. This component of the XL proposal will be piloted by the University of Massachusetts at Amherst.

A variety of EPA criteria must be met for a Project XL proposal to proceed. For one, the plan must promise to improve environmental performance by the people using the reformed regulations. This is a special challenge for the LCEE proposal because the environmental impact of most lab operations is so small as to be unmeasurable, and because those that are measurable are highly variable given the nature of laboratory work. The LCEE proposal envisions a variety of performance indicators that might be used to determine whether environmental performance has improved, ranging from statistical analysis of the hazardous waste generated to the perceived impact of the project on lab workers' awareness of the potential environmental impacts resulting from their work.

Another XL criterion is transferability. The project must develop regulatory alternatives that are transferable to organizations beside the pilot sites. This has been a prominent consideration throughout the life of the LCEE proposal. It is believed that the concepts developed there could be applied to laboratories in a wide variety of organizational settings.

Representatives of the LCEE pilot schools named above met with national and Region 1 EPA officials in late February to discuss the proposal. The tone of the meetings was encouraging, although two key questions remain. These concern how the proposed environmental management plan rule would be interpreted and enforced, and how environmental performance would be measured. A second national stakeholders meeting was held in late March. In preparation for that meeting, the LCEE schools focused on developing environmental performance indicators (EPIs) and establishing baseline numbers for them.

Comments or suggestions regarding EPIs or baseline numbers can be sent to the proposal's developers at the Web site (http://esf.uvm.edu/labxl). The complete LCEE proposal is available for viewing at that on-line address. Input from the laboratory community is important. Anyone interested is encouraged to review the proposal and send comments to the individuals named on the Web site.

A Caveat

Several academic institutions in the Northeast have formed the Laboratory Consortium for Environmental Excellence in order to identify, develop and share best environmental management practices in laboratories. Certain LCEE members are proposing to develop an alternative hazardous waste management system for labs under EPA's Project XL Program. The participants contend that "attempting to apply an industrial-type hazardous waste program to such activities and operations is inefficient and cumbersome." They say that a disproportionate share of their environmental, health and safety resources is dedicated to compliance with RCRA regulations. So, they say, they ought to get relief from certain requirements of RCRA if they agree to comply with their own proposed alternate environmental management system.

Sounds good, right? Well, what if the LCEE-proposed alternative, construed as a model for hazardous waste management in labs nationwide, ultimately is more stringent than existing regulations and gets adopted? Then don't the rest of us have a problem? LCEE's Project XL is one that we should all watch carefully. It may be the way of our future. Let's be sure it's what we all want.