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# *Conclusions*

**M**any significant vulnerabilities and underlying management weaknesses were identified by the Chemical Safety Vulnerability Working Group. Collectively, these vulnerabilities and weaknesses indicate that chemical safety has not received the priority and attention it deserves from DOE and contractor managers.

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Chemicals are pervasive throughout the DOE complex; the types and quantities of chemicals found vary widely, as do the processes and operations in which they are used. In many cases, chemicals are not well characterized or controlled. Historically, chemicals have been perceived to be less hazardous to workers than were radiation hazards. As a result, chemical hazards are frequently less well recognized and analyzed.

There is no uniform understanding within DOE about what constitutes an effective chemical safety program. Expectations have not been clearly articulated, and budget processes have hindered the development of effective programs. As a result, chemical safety programs at DOE sites are typically fragmented or not fully implemented.

Improving DOE's performance with respect to chemical safety will require an immediate and sustained effort by DOE and contractor management. DOE should look within itself as well as toward the private sector for innovative and effective solutions. The best performers in the private sector have long recognized the need to eliminate or mitigate risks associated with hazardous chemicals. DOE must learn from these examples and must also apply its own commendable practices more widely to reduce or remove chemical safety vulnerabilities.