

Preface

The technology related to plant safety and environmental impact has advanced to the point that some difficult, yet vital issues are being addressed. This special issue of the *Journal of Hazardous Materials* treats some of these issues. Vapor/liquid disengagement is important to describe both for an accidental puncture and for the opening of a pressure relief valve. An enhancement of the vapor fraction occurs as the two-phase vapor/liquid mixture flows through the available orifice in the tank. The first two papers show that it is now possible to treat this enhancement quite readily for all types of vessel geometry.

Three papers address modeling the dispersion of an aerosol jet, including a rigorous treatment of drop evaporation. One of these discusses experimental work making use of a new additive to decrease the volatility of hydrogen fluoride. Peroxides are another hazardous class of chemicals addressed in this issue. Modeling is described which enhances the application of calorimetry data to design pressure relief systems. Pressure relief should be viewed in the more general context of plant risk analysis, as a pioneering paper in this issue illustrates.

Finally, modeling on a very large scale is required to assess such issues as mercury emissions from coal-fired power plants. Such modeling must include descriptions of the effectiveness of various pollution control systems on power plants. Altogether, some significant advances are discussed here. I wish to thank the authors for their contributions.

JOHN L. WOODWARD