MANAGING ECONOMIC RISKS DUE TO ELECTRICAL EQUIPMENT CONTAINING PCBS: ANALYTICAL TOOLS TO SUPPORT UTILITY DECISIONS

Deborah A. L. Amaral, Dean W. Boyd, David Cohan,
Michael S. Hohnson and Donald S. Wilson

Decision Focus Incorporated

ABSTRACT

For industries that make use of hazardous materials, the direct economic consequences of alternative courses of action are often the most important factors in decisions about how to manage risks, but may be difficult to predict. The analysis of alternatives can be very complex, and uncertainty about actual and perceived risks may impede company efforts to manage risks. A mathematical model designed to assist electric utility personnel in the financial analysis of management options for PCB-containing equipment has been developed and implemented as an interactive software tool. Based on the methods of decision analysis and utility finance, this specific application allows the user to represent uncertainty about possible PCB incidents (fires or spills), including frequency of occurrence, incident severity, and the costs of cleanup, plant shutdown, and legal liabilities. Predictions of total life-cycle equipment and incident costs can be compared for utility ratepayers and shareholders in order to facilitate risk management decisions. While the approach is general enough to be useful for many types of hazardous materials, this paper presents a PCB transformer risk management case study using this tool.

KEY WORDS: Risk management, Risk analysis, PCB, Software, Utility, Decision, Model, Transformer

The PCB Economic Risk Management Model (ASK) and the Contaminated Oil Economic Risk Management Model (COIL) are decision support tools designed to help utility personnel manage equipment containing or contaminated with PCBs. Based on the methodology of decision analysis, the models provide techniques for comparing alternative strategies in terms of equipment costs and the costs of potential incidents such as fires and spills.

INTRODUCTION

Electric utilities typically have a variety of equipment containing or contaminated with PCBs. Accidents or failures involving such equipment may lead to very large economic costs for the utility. These costs can include cleanup of the facility and the surrounding area, repair or replacement of utility and third-party equipment, and possible legal liabilities. The possibility of incurring such losses may exist even when