INTRODUCTION

The Chemical Mixture Methodology (CMM) is widely used by the Department of Energy (DOE) and around the world to support emergency preparedness and response planning. Because fires and explosions at chemical processing, transportation, storage, and usage locations can release multiple chemicals into the atmosphere, it is important to accurately gauge the impact on human health of simultaneous exposure to multiple chemicals. There are many software tools available to assess the impacts resulting from the release of a single chemical but the CMM is one of the few that addresses chemical mixtures.

The focus of this project is to develop a software tool, the CMM Wizard, that provides greater flexibility and is easier to use than the current, Microsoft Excel\(^2\) workbook that is used to perform CMM analyses.

NEW APPROACH: THE CMM WIZARD

The CMM wizard was created to transform the CMM workbook into a user-friendly virtual database that is easily accessible for many on the World Wide Web.

Issues with Previous System:
- Restrictive for Users
- Lack of Flexibility → Only 30 chemicals allowed

CMM Wizard New System:
- Web-based software → easily accessible for many
- Programmed with visual basic, basic HTML programming in an active server page
- Queries updated information for over 3300 chemicals using Microsoft Access\(^6\)
- Uses all the same information as the CMM workbook
- Allows as many chemicals as necessary for analysis
- Allows for multiple receptor distances to be analyzed
- Practical format to enhance emergency preparedness
- An improved tool for emergency management

THE CMM WIZARD PROGRAM

The CMM wizard is easily accessed from the internet. Users go through a series of five steps where they input information to be analyzed by the program. After successfully inputting all the information, the CMM wizard provides an analysis of the potential effects from exposure to a given chemical mixture.

THE FUTURE OF THE CMM PROJECT

The CMM Wizard Project is part of a larger CMM development effort to enhance the user’s ability to prepare for an emergency. In 2011, the plan is to integrate the CMM Wizard with an atmospheric dispersion model. This combined analysis tool will allow users to gain more accurate, relevant, and timely results which will improve emergency preparedness plans and response capabilities for the users.

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References:

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