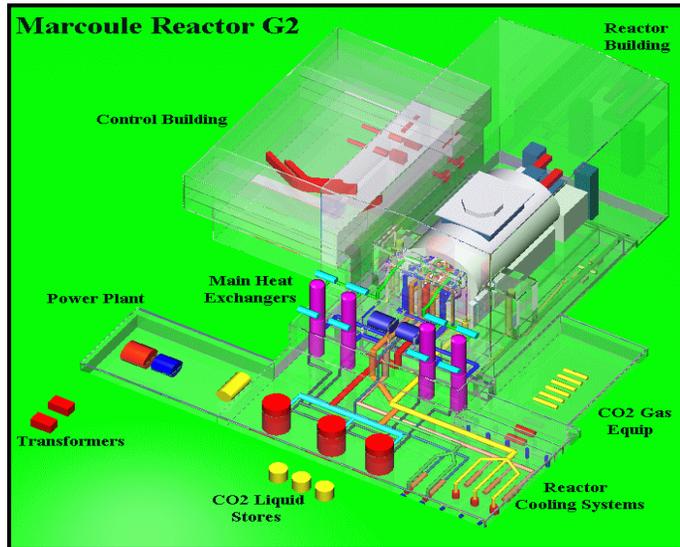


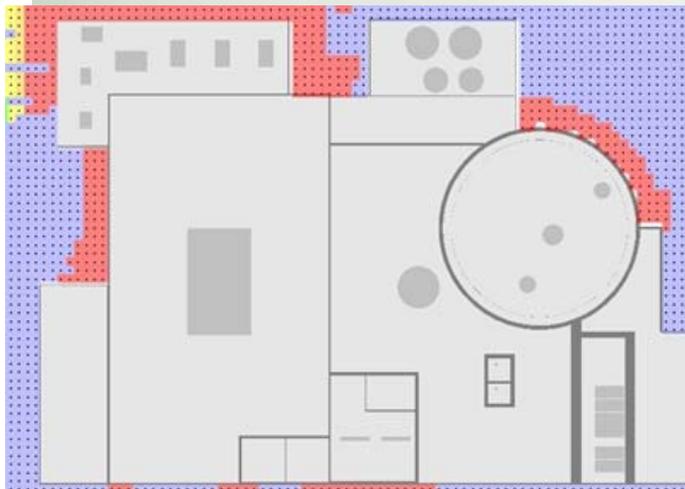
Facility Vulnerability Using the Visual Interactive Site Analysis Code (VISAC)

Modeling and Simulation Group

Computational Sciences & Engineering Division



VISAC Facility Model



Threat Vulnerability Map

Problem Statement:

- Nuclear, chemical, and other industrial facilities are a large and vital part of the US infrastructure. These facilities not only represent a large financial investment but also can pose a serious risk should they become targets for a terrorist attack. Releases following such an incident can adversely affect the public health and contaminate large areas. It has become clear that these high-value, fixed assets rank near the top among possible targets that must be safeguarded from terrorists.

Technical Approach:

- VISAC is a Java-based graphical expert system developed by ORNL in response to the pressing needs of several government agencies. VISAC provides security specialists and mission planners with a fully integrated capability to analyze and predict the outcomes of accidents/incidents at nuclear, chemical and other industrial facilities. Damage to the facility structures and critical components is calculated by using blast correlation models to estimate equipment failure probabilities, direct structural damage, and the probability of undesirable collateral effects such as fire, chemical, or radiological releases. VISAC directly interfaces with HPAC for environmental tracking of any toxic releases.

Benefit:

- VISAC is a very fast tool that can be used to generate vulnerability maps showing the areas of a facility that have the greatest need for additional security measures. This feature allows the user to assess the impact of various scenarios and make the most cost-effective distribution of their security resources.

Point of Contact:

Robert H. Morris
(865) 576-5878
morrishr@ornl.gov

