

Overall Assessment, Findings, and Conclusions

The updated site-specific risk assessment (uSSRA) for the proposed National Bio- and Agro-Defense Facility (NBAF) released in 2012 is a substantial improvement over the original 2010 site-specific risk assessment (SSRA), and the Department of Homeland Security (DHS) and its contractors should be commended for this effort. Many of the shortcomings identified by the previous National Research Council committee (NRC, 2010) have been addressed in the uSSRA, and this has resulted in a more quantitative and transparent analysis. The uSSRA uses more conventional risk assessment methods and better complies with standard practice than did the 2010 SSRA. In general, the descriptions of the approaches are clear, and the uSSRA uses appropriate conceptual models and methods. However, the committee finds that some questionable and inappropriate assumptions were made to develop estimates of the probabilities, frequencies, and amounts of release of foot-and-mouth disease virus (FMDv) and other pathogens. In general, one needs to distinguish between the use of appropriate methods and use of appropriate assumptions to produce estimates. In the uSSRA, the former are generally acceptable, but the latter in some cases are not.

OVERALL ASSESSMENT

The quantitative conclusions of the uSSRA differ dramatically from those of the 2010 SSRA. Data and methods of the previous risk assessment led to a conclusion that for the two scenarios with the greatest risk of FMDv release (fomite and worker without respiratory protection), there would be a 70% probability that FMDv release would cause an infection resulting in an outbreak during the 50-year life span of the NBAF in Manhattan, Kansas. In contrast, the uSSRA concludes that the cumulative probability for 142 risk events (including catastrophic events such as tornadoes and earthquakes) leading to an accidental release of FMDv over 50 years is about 0.11% (or 1 in 46,000 per year), which is orders of magnitude lower than the first estimate. Improvements in the 65% design phase documents for the facility compared with the earlier and less complete design documents on which the 2010 SSRA was based may explain some of the risk reduction. However, the committee believes that questionable and