

Michael F. Kenel

Senior Associate



Education

- > Ph.D. in Toxicology (University of Michigan)
- > Master of Science in Industrial Health (University of Michigan)
- > Bachelor of Arts in Mathematics (Wayne State University)

Key Areas of Expertise

- > Risk Management: Risk Analysis, Prioritization, Mitigation
- > State and Local Critical Infrastructure Protection Planning
- > State and Local Continuity of Government Planning
- > State and Local Energy Assurance Planning
- > Web-Based Multimedia Training and Exercises
- > FEMA Preliminary Damage Assessments
- > Regional Catastrophic Planning: Gap Closure on Targeted Capabilities through Strategic Improvement Planning

Over 25 years of experience as a risk management consultant, homeland security specialist, training course developer and exercise designer. Dr. Kenel has established a track record for providing innovative solutions to complex technical issues related to each of these areas:

Risk Management:

Formally trained in quantitative risk analysis acquiring skills in model development, Monte-Carlo probability analysis, decision tree analysis, and uncertainty and sensitivity analyses.

As a Risk Manager, developed strategies supporting institutionalization of best practices across all levels of an organization through a “Plan-Do-Check-Act” management approach focused on continuous improvement.

Key Experiences:

- Semi-quantitative **risk analysis** and prioritization of Michigan’s critical infrastructure sites across the private and public sectors (State of Michigan Homeland Protection Board).
- Risk-based selection of alternative water treatment technologies to replace high-risk chlorine gas storage (Michigan Department of Environmental Quality).
- Risk analysis and remediation **options analysis** following contamination of municipal drinking water system with anthrax (U.S.E.P.A. Office of Water).
- Modeling worker exposure to industrial chemicals and mitigating associated risks at manufacturing facilities (General Motors World Wide Facilities Group).
- Cost-effective **screening model** of fountain service risks in order minimize product contamination and protect brand reputation (Coca-Cola Company).
- Prioritization and mitigation of legal, safety, business and operational risks as part of a major municipal construction project (Greater Cincinnati Water Works).
- Modeling carcinogenic risks associated with drinking water contaminants (NSF International).
- Implemented **“Plan-Do-Check- Act” management systems** at over 25 manufacturing facilities as part of corporate program to reduce environmental risks. (Ford Motor and GMC).

Michael F. Kenel
Senior Associate

Homeland Security Subject Matter Expert:

On behalf of the State of Michigan, over a 3-year period conducted 120 vulnerability assessments and security improvement plans in support of the State's **Critical Infrastructure Protection** Program. The sites evaluated included water and wastewater plants, chemical plants, power plants, electrical transmission lines, natural gas and oil pipelines, bulk chemical storage facilities, bridge and tunnel structures, airports, railroads, shipping and transportation hubs, stadiums and arenas, and corporate world headquarters (State of Michigan Homeland Protection Board).

Developed the State of Michigan's **Continuity of Government** and **Continuity of Operations** plans and guides for use by State and local governments. The plans provided guidance on selecting alternate facilities, cross-training key personnel, developing a vital records management system, delegating authorities, and designing exercises based on the reconstitution of essential functions (Michigan State Police). Developed a software application which provided guidance to 21 State Agencies in their implementation of Continuity of Operation Plans (Michigan Department of Management and Budget).

Developed **Energy Assurance Response Plans** identifying the roles and responsibilities of staff and executive management during escalating State and Federal energy emergencies. Also, participated in the development of a **Regional Energy Assurance Toolkit** including the identification of energy sources (natural gas, petroleum, and electricity) and critical energy infrastructure essential for local governments to sustain private and public sector services within the region (Michigan Public Service Commission).

Updated the State of Michigan's Damage Assessment Plan based on **FEMA's Preliminary Damage Assessment** plan. The Plan focuses on evaluating damaged homes and businesses as part of reimbursement under the federal Stafford Disaster Relief and Emergency Assistance Act. Training on the plan was also provided to Michigan's Rapid Impact Assessment Team.

Worked with state and county officials in the area of **Strategic Planning** regarding Critical Infrastructure Protection and Emergency Management. Drafted Michigan's first Critical Infrastructure Strategic Plan working with State Agency representatives (Michigan Critical Infrastructure Protection Committee). Led a 9-month strategic planning effort in developing a 5-year Emergency Management Strategic Plan. The plan addressed issues related to county governance, deployment of pre-trained Rapid Response Teams, improvements in interoperable communications, establishment of a formal training and exercise program development, and implementation of mutual aid agreements (Oakland County Public Works Committee).

Other Key Experiences:

- Conducted a state-wide food vulnerability assessment (Michigan Department of Agriculture).
- Assessed targeted capabilities data as part of Chicago Regional Catastrophic Planning effort.
- Developed response, evacuation and in-place shelter plans for 11 Capitol Buildings and Mall.
- Developed Joint Hazard Mitigation Plan (Ottawa and Kent Counties\City of Grand Rapids).
- Assessed vulnerabilities and upgraded response plans at over 20 municipal water systems.
- Active participant on State Steering Committee for Water Agency Response Network.
- Conducted a detailed Consequence Assessment regarding the potential impact to Michigan in the event of a New Madrid earthquake (Michigan State Police).

Michael F. Kenel
Senior Associate

Training Course Development

Developed a 5 module web-based training course for members of the Michigan Rapid Impact Assessment Team conducting FEMA Preliminary Damage Assessments, including (Michigan State Police):

- Federal and State Disaster Declaration Processes
- Disaster Types and Historical Frequency
- FEMA **Damage Assessment Scoring**
- On-site Worker Safety Precautions
- Damage Assessment Forms and Tools

Developed the 5 on-line training courses regarding water system security (MIWARN):

- Water Security: State and Federal Programs
- **Mutual Aid:** MIWARN Notification System
- Critical Infrastructure Protection Program
- Continuity of Operations Program
- **Consequence Management in Water Contamination Events**

Developed on-line training courses in support of new implemented security system (Michigan Department of Management and Budget):

- Capitol Complex **Visitor Management System**
- **Best Security Practices** for State Employees
- Capitol Complex Evacuation and Sheltering Plan
- All-Hazard **Emergency Response Guide**
- Capitol Complex Electronic Access System

Conducted over 2000 hours of training at General Motors and Ford Motor Company North American facilities on the institutionalization of best practices directed at reducing the risks associated with environmental emissions as part of a "Plan-Do-Check-Act" Environmental Management System.

Table-Top and Functional Exercises

Designed and conducted "Arc-Light" multimedia **table-top exercise**. The exercise was based on a regional power outage caused by a severe winter storm. The National Association of Regulatory Utility Commissioners recognized the exercise as a model for other state utility commissions.

Designed and conducted the "New Madrid Aftermath" **functional exercise** according to Homeland Security Exercise and Evaluation Guidelines. The exercise was based largely on addressing energy supply disruptions to the State of Michigan and the need to treat and shelter earthquake victims.

Other Key Experiences

- Represented the State of Michigan at the Department of Energy's "White Prairie" exercise based on 3 scenarios: cyber-attack, destruction of power grid, and national trucking work stoppage.
- Exercise coordinator for Greater Cincinnati Water Works Table Top exercise addressing damaged water intakes during drought conditions.
- Exercise evaluator for Mid-Michigan's 9 county function exercise based on the spread of H1N1 virus.