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Risk Assessment Methodologies: Securing our Nation's Infrastructure via System Analysis

Critical infrastructure-type facilities may not require the highest levels of security used at nuclear weapons sites, but the approach is similar. The foundation of a risk assessment methodology (RAM) is the evaluation and design of an integrated performance-based system.

The RAM's were very heavily used for many years after 9/11 and continue to be used today. Thousands of water utilities were assessed using RAM-W(tm), a RAM designed to assess risks to water utility resources, as required by the Bioterrorism Act of 2002. The assessments were conducted over a period of several years and had a significant impact on security awareness and security systems in the water sector. Many other RAM's were created for specific critical infrastructures and used broadly to assess security. The development of new RAM's continues, and the latest is around energy security for microgrids.

Each specific RAM is comprised of the following major steps: 1) Planning, 2) Threat Assessment, 3) Site Characterization, 4) Consequence Assessment, 5) System Effectiveness, 6) Risk Analysis and 7) Risk Management and Reduction. If the value of risk is deemed to be unacceptable, the RAM methodology provides a process for identifying and evaluating security system upgrades in order to reduce risk.

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