

Development and Maintenance of the Design Basis Threat for Civilian Nuclear Facilities in the United States

Establishing a design basis threat (DBT) provides an effective means through which a regulatory body can communicate risk-informed performance-based security standards to its operators and licensees. In the United States, the U.S. Nuclear Regulatory Commission (NRC) is responsible for regulating the physical protection of civilian nuclear material and facilities. The NRC maintains two design basis threats: one to address radiological sabotage that is applicable to power reactors and fuel cycle facilities, and a second DBT for theft or diversion of nuclear material that is applicable to fuel cycle facilities.

The NRC first issued DBTs in the late 1970s. Following the terrorist attacks on September 11, 2001, the NRC undertook a thorough review of its security regulations. This review included an evaluation of the adequacy of the agency's existing DBTs against the agency's analysis of the threat environment. As a result of its review, the agency made revisions to its DBTs first in 2003 and again in 2007.

The NRC maintains its DBTs through a review process called the Adversary Characteristics Screening Process. The agency revised the process as a result of lessons learned through its 2003 and 2007 reviews of the DBT. The Adversary Characteristics Screening Process consists of steps that NRC staff follow in determining whether to recommend a change to the DBT. These steps ensure that input from regulatory, intelligence, law enforcement, and stakeholders is considered when the agency considers a revision to a DBT. Though developed independently, this process has many aspects in common with the process outlined in IAEA Nuclear Security Series No. 10, "Development, Use and Maintenance of the Design Basis Threat."

The NRC established the Principles of Good Regulation to guide the agency in its regulatory activities: independence, openness, efficiency, clarity, and reliability. The DBTs communicate the performance-based requirements for physical protection of power reactors and fuel cycle facilities is an effective means of regulating nuclear security while adhering to those principles.

State

United States

Gender

Male

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