



60 Years

Atoms for Peace and Development

Nuclear Security

TOOLS

Design Basis Threat Helps to Strengthen Physical Protection Systems

Why is this important?

A fundamental principle of physical protection is that it should be based on the State's current evaluation of a threat. This evaluation is formalized through a threat assessment process. A design basis threat (DBT) is then derived from this threat assessment to facilitate the development of physical protection on the basis of a State's evaluation of the threat.

A DBT is a comprehensive description of the motivation, intentions and capabilities of potential adversaries against which protection systems are designed and evaluated. A DBT is derived from credible intelligence information and other data concerning threats, but is not intended to be a statement about actual, prevailing threats. Historically, States have used DBTs in their regulatory system to achieve appropriate allocations of resources to the protection of nuclear material and nuclear facilities against malicious acts by potential adversaries that could result in high consequences, particularly radiological consequences or consequences of proliferation; however, a DBT can also be used to protect any asset with associated high potential consequences (e.g. other radioactive material of high activity).

What do I need to know?

A DBT provides:

- A basis for confidence that the physical protection system developed in a State is appropriate and effective;
- A basis for system design and a consistent criterion for assessing the adequacy of a physical protection system;
- A baseline standard against which the need for changes in physical protection can be evaluated;
- A basis for allocating responsibility between involved organizations.

The DBT can permit adaptation of the physical protection systems to address unique features of the materials or facilities. It can help avoid excessive protection being applied to facilities and materials while ensuring that those facilities and materials for which a malicious act could result in high consequences get the protection they require. In this manner, the use of the DBT approach to physical protection can help to reduce the arbitrariness that might otherwise exist in establishing requirements for the physical protection of material and facilities under State jurisdiction.

Specifying a DBT is one way for a State to establish the required performance level for new or existing physical protection systems. The use of a DBT helps ensure that physical protection systems are effective against potential threats without being overdesigned. A national DBT can also provide a consistent basis for requirements across all facilities within a State.

What actions are recommended?



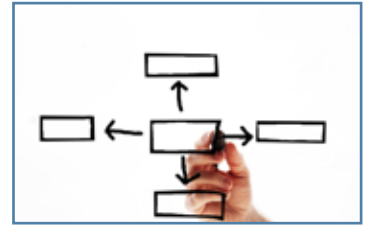
Member States interested in developing a DBT should send a request to **NuclearSecurity@iaea.org**.



Member States should consult with the IAEA to develop an Integrated Nuclear Security Support Plan (INSSP) for building a sustainable nuclear security framework.



Member States interested in DBT workshops can contact **NuclearSecurity@iaea.org**.



For a list of IAEA security training courses and workshops, check the current online IAEA Meeting Schedule.

DBT workshop

The IAEA provides a workshop on the design, use and maintenance of a DBT to assist Member States interested in developing a DBT. Because developing a DBT typically requires the cooperation and involvement of many authorities and organizations within a State, workshop participants generally include legal experts, regulators, facility operators, members of the intelligence community and law enforcement personnel. This workshop is a good way to introduce the DBT methodology to a State wanting to establish threat based physical protection systems and measures.

The DBT workshop:

- Presents a step-by-step methodology for developing a DBT from a national threat assessment;
- Describes how a DBT may be used to establish and evaluate physical protection requirements;
- Presents various factors which should be considered in the development of a DBT along with their potential effects;
- Discusses the three methods commonly used to implement a DBT in the regulatory framework;
- Discusses the need to continuously monitor the threat and the decisions or triggers that would require updating the DBT.

Resources

IAEA Meeting Schedule <http://www-pub.iaea.org/mtcd/meetings/PDFplus/current.pdf>

IAEA Learning Management System portal. elearning.iaea.org/m2/

Email: NuclearSecurity@iaea.org

Visit: the IAEA Nuclear Security Information Portal (NUSEC) at <https://nusec.iaea.org>

