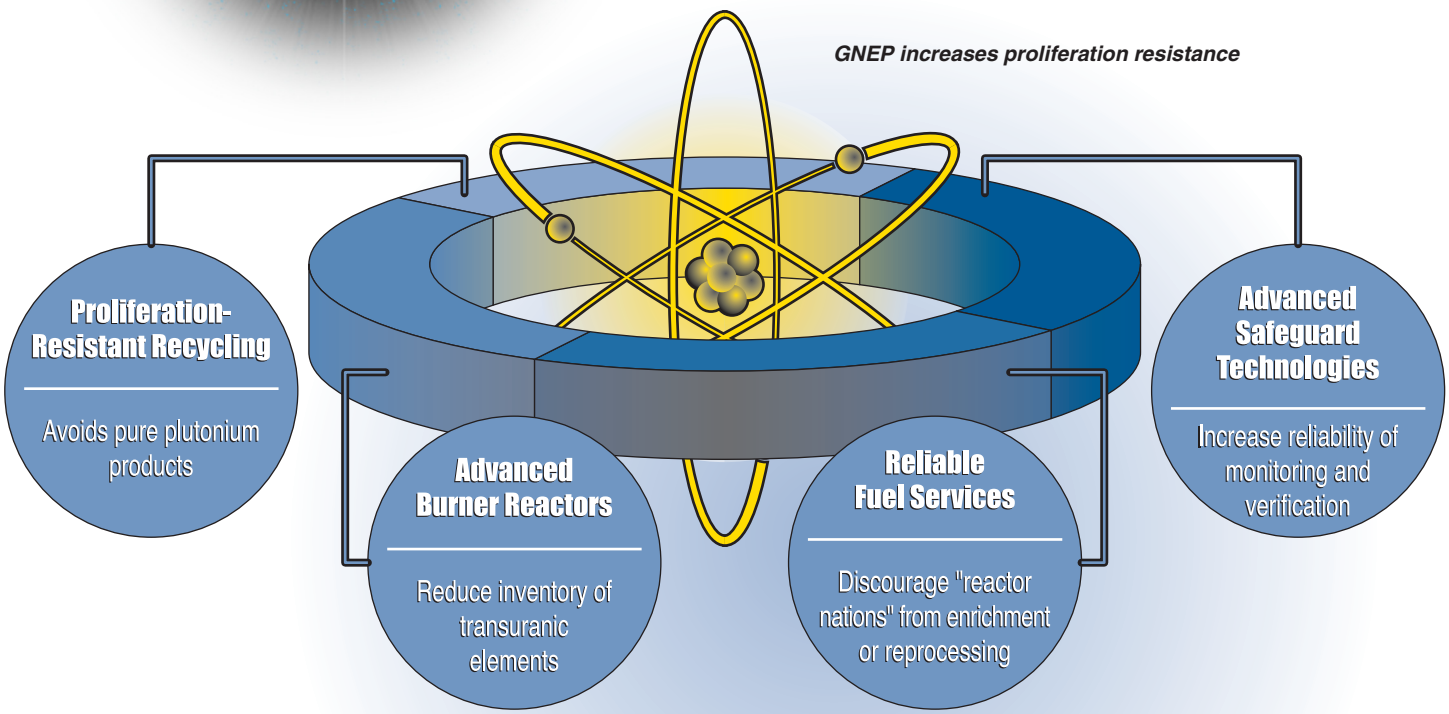
The Global Nuclear Energy Partnership (GNEP)



United States Department of Energy

GNEP Element: Develop Enhanced Nuclear Safeguards

GNEP will help prevent misuse of civilian nuclear facilities for non-peaceful purposes by developing enhanced safeguards programs and technologies. International nuclear safeguards are integral to implementing the GNEP vision of a peaceful expansion of nuclear energy and demonstration of more proliferation-resistant fuel cycle technologies.

What are safeguards?

Safeguards are the basic building blocks of international nonproliferation programs - accounting for nuclear materials, control of technology, transparency in the use of technology and materials to validate peaceful uses, and the ability to inspect and verify compliance with international agreements and obligations. International safeguards have been an effective deterrent against the spread of nuclear technology and materials.

An opportunity to improve

GNEP provides the opportunity to design modern safeguards directly into the

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planning and building of new nuclear energy systems and fuel cycle facilities. Incorporating safeguards into the design phase for new facilities will allow the IAEA to more effectively and efficiently monitor and verify nuclear material. Nuclear technology suppliers will also be able to require the implementation of these enhanced safeguards design elements and work with IAEA to ensure that they are applied in a comprehensive manner. A basic goal of GNEP is to make it impossible to divert nuclear materials or modify systems without immediate detection.

GNEP international collaboration

Possible international collaboration includes:

- Incorporation of nuclear safeguards technology into designs for recycle facilities, *Advanced Burner Reactors*, and associated nuclear materials storage and transportation making them proliferation resistant.
- Development of high reliability, remote and unattended monitoring technologies; advanced containment and surveillance; smart safeguards information collection, management and analysis systems; nuclear facility "use control" systems; and next generation non-destructive analysis and process monitoring sensors.
- Research & development of advanced material tracking methodologies, process control technologies, and plant engineering. Remote sensing, environmental sampling, and forensic verification methods.
- International facilities for conducting testing and demonstration.
- Continue to encourage global "best practices" for security and accounting of nuclear materials.

Working with the International Atomic Energy Agency and GNEP Partners

The U.S. will continue to work closely with the IAEA and GNEP international partners in implementing the advanced safeguards technology and integrated systems approaches. The U.S. is already a primary supplier of safeguards technology and trains all IAEA inspectors in the use of safeguards for tracking nuclear materials.

GNEP will support the IAEA in use of these technologies and encourage similar investments in safeguards technology and integrated systems approaches by GNEP international partners. Under GNEP, international safeguards will be an integral part of the global expansion of nuclear power, including the development of future proliferation-resistant fuel cycle and reactor technologies.

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