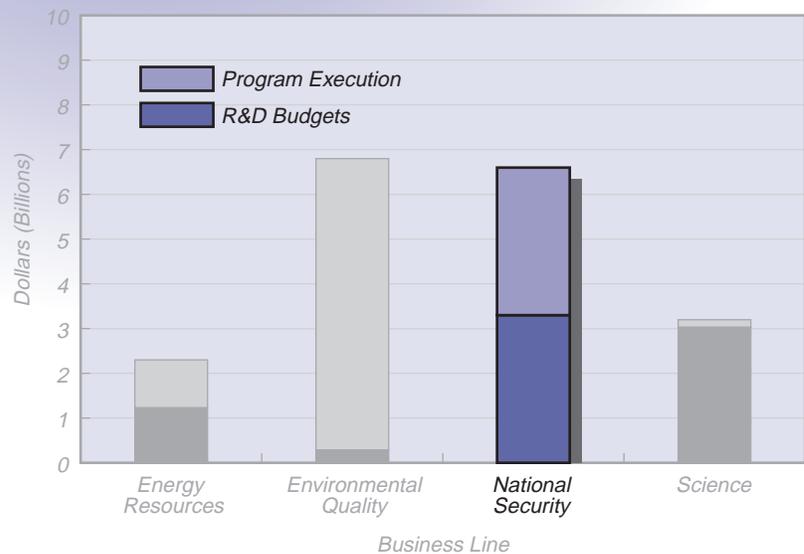
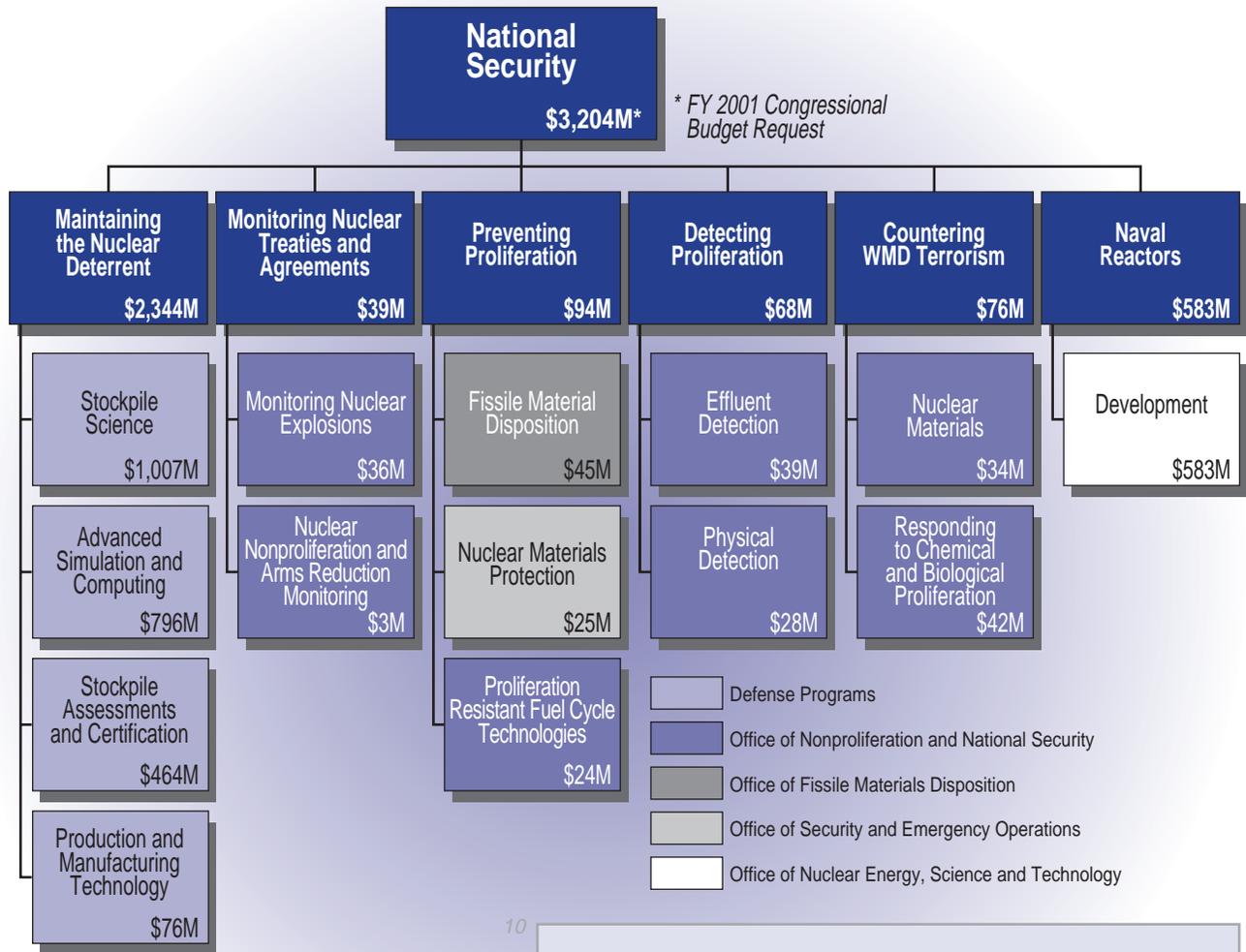


# DOE Research and Development Portfolio

## National Security



# National Security R&D Portfolio

## FY 2001 Congressional Budget Request, R&D Highlights

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### Areas of Major R&D Focus:

- ***Maintaining the Nuclear Deterrent*** [Budget: FY99-\$2,234, FY00-\$2,306M, FY01-\$2,344M]
  - Provide a scientific basis for assessing and certifying the safety, security, and reliability performance of the stockpile without underground nuclear testing. Major objectives to accomplish this will include the development of capabilities to conduct experiments in physical regimes important for understanding and simulating nuclear weapons performance, understanding of the effects of aging on nuclear weapons materials and components, and developing experimentally validated computational simulation methods and required computing hardware for simulating nuclear weapons performance.
  - Develop new technologies for the design and production of special nuclear materials, weapon subsystems, and components in order to reduce cost, minimize environmental impact, and improve component reliability and surety.
- ***Monitoring Nuclear Treaties and Agreements*** [Budget: FY99-\$45.3M, FY00-\$39.1M, FY01-\$39.4M]
  - Develop technologies to enable nuclear explosion monitoring and to ensure compliance with nuclear nonproliferation and arms control treaties and agreements.
- ***Preventing Proliferation*** [Budget: FY99-\$68.9M, FY00-\$75.1M, FY01-\$94.4M]
  - Develop and adapt technologies that convert U.S. weapons-usable plutonium to a form that will prohibit the plutonium from ever being used for nuclear weapons.
  - Assist Russia in the demonstration of plutonium disposition technologies.
  - Develop core security technologies to prevent diversion of nuclear materials, reduce employee radiation exposure, enhance physical security of the DOE complex, and enhance information protection technology.
  - Develop proliferation-resistant nuclear fuel cycle technology.
- ***Detecting Proliferation*** [Budget: FY99-\$67.4M, FY00-\$66.1M, FY01-\$67.5M]
  - Develop proliferation detection technologies to reveal proliferation or spread of weapons of mass destruction.
- ***Countering Weapons of Mass Destruction Terrorism*** [Budget: FY99-\$57.4M, FY00-\$71.6M, FY01-\$76.2M]
  - Develop technologies and methods to detect, deter or counter terrorism involving weapons of mass destruction.
- ***Naval Reactors*** [Budget: FY99-\$586.2M, FY00-\$572M, FY01-\$583M]
  - Develop technologies to support and ensure the continued availability of safe, long-lived, militarily effective nuclear propulsion plants in keeping with the nation's defense requirements, and to ensure their continued safe and reliable operation.

### New or Expanded Areas of R&D Emphasis:

- ***Science-based Stockpile Stewardship***

Increase significantly investments in science activities to support assessment and certification of weapon primaries, associated radiographic facilities and experiments, and surveillance of the stockpile (increase of \$38 million).
- ***Proliferation Resistant Reactors and Fuels Research Program***

The Department of Energy will accelerate development of proliferation-resistant nuclear fuel cycles by implementing a new \$20 million Proliferation Resistant Reactors and Fuels Research Program initiative during FY 2001. This initiative will support a joint R&D program with the Russian Federation.
- ***Chemical/Biological Nonproliferation***

R&D in the Chemical/Biological Nonproliferation area will receive a modest increase in fiscal year 2001, growing from \$40 million to \$42 million, with more growth anticipated in the out years.