

## APPENDIX A: Interagency Crosscutting Activities

As shown on the following table, DOE has many projects in each of its business lines that involve the participation of other Federal agencies.

<b>DOE Business Line/Project</b>	<b>Federal Agency Participants</b>
<b>Energy Resources</b>	
<b>Objective ER1: Fuel Supplies</b>	
Transfer of Naval Oil Shale Reserves	DOI (Bureau of Land Management)
Use of Federal Royalty Oil To Re-fill Strategic Petroleum Reserve	DOI OMB, CEQ, DOI, Treasury, White House
Interagency Work Group on Oil and Gas	National Economic Council, EPA, USDA
Energy Production from Federal lands	DOI, EPA
Federal Energy Regulation	DOI, EPA, Corps of Engineers
Power Marketing Administrations/Hydroelectric	FERC, DOI (Bureau of Land Management, Bureau of Reclamation), Army Corps of Engineers, International Boundary and Water Commission
National Water Resource Needs	Army Corps of Engineers
Emergency Response	DoD, State, DOT, GSA, TVA, HHS, VA, NOAA, DOJ, USDA, EPA, NRC, FEMA, IAEA, National Communication System
Domestic Natural Gas Production	DOI (Bureau of Land Management)
President's Commission on Critical Infrastructure Protection	Treasury, DOJ, DoD, DOC, DOT, CIA, FEMA, FBI, NSA
<b>Objective ER2: Transformation into Electricity</b>	
Advanced Turbine Systems	NASA, DOC (NIST), DoD, EPA
Electric Industry Restructuring	FERC, EPA, DOC, NRC
Electric Utility Regulation	FERC, EPA, NRC, DOC, DOJ
President's Commission on Critical Infrastructure Protection	Treasury, DOJ, DoD, DOC, DOT, CIA, FEMA, FBI, NSA
<b>Objective ER3: Efficient Use</b>	
Partnership for a New Generation of Vehicles	EPA, DOT, NASA, DOD, NSF, DOC
Advanced Vehicle Program	DOT, DARPA, EPA
Corporate Average Fuel Economy	DOT, EPA
Federal Energy Management Program	All Federal Agencies
Partnership for Advancing Technology in Housing	HUD, DOC
Buildings for the 21 <sup>st</sup> Century	All Federal agencies
Energy-related Inventions Program	DOC (NIST)
Million Solar Roofs Initiative	All Federal Agencies
Combined Heat and Power (Cogeneration)	EPA
<b>Objective ER4: Energy Information</b>	
Nuclear Energy Research	NRC

<b>DOE Business Line/Project</b>	<b>Federal Agency Participants</b>
<b>Objective ER5: Global Issues</b>	
President's Climate Change Technology Initiative	DOC, NOAA, NIST, EPA, AID, DOT, State
U.N. Framework Convention on Climate Change	NOAA, State, EPA, USDA, DoD, AID, Treasury, DOJ, Labor
21 <sup>st</sup> Century Research Fund	NIH, NSF, NASA, DOC
Science and Technology (Federal Level)	NSF, DoD, NASA, DOC, EPA, DOT, OSTP, NAS
<b>National Nuclear Security</b>	
<b>Objective NS1: Maintain Stockpile Confidence</b>	
Nuclear Weapons Stockpile	DoD
Nuclear Arms Reduction	State, DoD, IAEA
<b>Objective NS2: Achieve Science-Based Stockpile Stewardship</b>	
Nuclear Weapons Stockpile	DoD
High Performance Computing and Communications Program	NSF, DARPA, NASA, NIH, NSA, DOC (NIST), NOAA, EPA, ED, Agency for Health Care Policy and Research
<b>Objective NS3: Ensure Enterprise Vitality and Readiness</b>	
National Nuclear Security Programs	DoD
<b>Objective NS4: Provide Nonproliferation Leadership</b>	
International Arms Control and Nonproliferation	State, DOC, DoD, NRC, IAEA, NASA
International Nuclear Safety Program	State, NRC, DoD, AID, NSC, Office of Vice President
Disposition of Surplus HEU	U.S. Enrichment Corporation, TVA, NRC
<b>Objective NS5: Provide Naval Nuclear Propulsion</b>	
Naval Reactors Program	DoD
<b>Objective NS6: Ensure Nuclear Security</b>	
Nuclear Classification and Declassification Program	DoD, Defense Special Weapons Agency, State, CIA,
Emergency Response	DoD, State, DOT, GSA, TVA, HHS, VA, NOAA, DOJ, USDA, EPA, NRC, FEMA, IAEA, National Communication System
Law Enforcement Initiative	FBI, Treasury (ATF)
First Responder Program	DoD, EPA, FBI, FEMA, Public Health Service
<b>Environmental Quality</b>	
<b>EQ1: Clean Up &amp; Close Sites by 2006</b>	
Uranium Mill Tailings Radiation Control Act	NRC
Science and Technology (Federal Level)	NSF, DoD, NASA, DOC, EPA, DOT, OSTP, NAS
<b>EQ2: Characterize Yucca Mountain</b>	
Civilian Radioactive Waste Management	NRC, EPA, NWTRB, DOT
<b>EQ3: Manage Depleted Uranium</b>	
Depleted UF <sub>6</sub>	DNFSB, Ohio's EPA, NRC

<b>DOE Business Line/Project</b>	<b>Federal Agency Participants</b>
<b>Science</b>	
<b>SC1: Physical Sciences in Quest for Clean, Affordable and Abundant Energy</b>	
Center for Environmentally Responsible Carbon Dioxide Processes	NSF
Interagency Coordination and Communication Group for Metals	DOE, NSF, AFOSR, ONR, EPA, NASA
National Plant Genome Initiative	NSF, USDA, NIH
<b>SC2: Science Foundations to Protect Our Living Planet</b>	
U.S. Global Change Research Program	USDA, NOAA, NSF, NASA, DoD, HHS, DOI (USGS), State, EPA, OMB, OSTP, Smithsonian Institution
Bioengineering Coordinating Committee	NSF, NIH
<b>SC3: Matter and Energy as Fundamental Building Blocks</b>	
Alpha Magnetic Spectrometer for Space-Based High Energy Physics	NASA, International Participants
U.S. Human Genome Project	NIH
National Nanotechnology Initiative	NFS, DoD, NASA, DOC, NIH
Basic Plasma Science and Engineering	NSF
<b>SC4: Extraordinary Scientific Tools, Workforce Infrastructure</b>	
High Performance Computing and Communications Program	NSF, DARPA, NASA, NIH, NSA, DOC, (NIST), NOAA, EPA, ED, Agency for Health Care Policy and Research, VA
Large Hadron Collider	NSF, CERN
Working Group on Structural Biology at Synchrotron Radiation Facilities	NIH, NFS, DOC (i.e., NIST)
<b>Corporate Management:</b>	
<b>Objective CM1: Environmental, Safety, and Health</b>	
Conduct Health Studies	HHS, NIH, CDC, NCI

**Legend:**

ACIS = Arms Control Intelligence Staff  
 AFOSR = Air Force Office of Scientific Research  
 AFRL = Air Force Research Laboratory  
 AFSMC = Air Force Space and Missile Systems Center  
 AFSPACECOM = Air Force Space Command  
 AID = Agency for International Development  
 ATF = Bureau of Alcohol, Tobacco, and Firearms  
 CDC = Center for Disease Control  
 CFQ = Council for Environmental Quality  
 CIA = Central Intelligence Agency  
 CUSTOMS = U.S. Customs Service  
 DARPA = Defense Advanced Research Projects Agency  
 DOC = Department of Commerce  
 DoD = Department of Defense  
 DOI = Department of Interior  
 DOJ = Department of Justice  
 DOT = Department of Transportation  
 ED = Department of Education  
 EPA = Environmental Protection Agency  
 FAA = Federal Aviation Administration  
 FBI = Federal Bureau of Investigation  
 FEMA = Federal Emergency Management Agency  
 FERC = Federal Energy Regulatory Commission  
 FTA = Federal Transit Administration  
 GSA = General Services Administration  
 HHS = Department of Health and Human Services

HUD = Dept of Housing and Urban Development  
 IAEA = International Atomic Energy Agency  
 Labor = Department of Labor  
 NAS = National Academy of Sciences  
 NASA = National Aeronautics and Space Administration  
 NCI = National Cancer Institute  
 NIH = National Institutes of Health  
 NIJ = National Institute of Justice  
 NIST = National Institute of Standards and Technology  
 NLM = U.S. National Library of Medicine  
 NOAA = National Oceanic and Atmospheric Administration  
 NRC = Nuclear Regulatory Commission  
 NSA = National Security Agency  
 NSC = National Security Council  
 NSF = National Science Foundation  
 NWTRB = Nuclear Waste Technical Review Board  
 ONR = Office of Naval Research  
 OSD = Office of the Secretary of Defense  
 OSTP = White House Office of Science and Technology Policy  
 PHS = Public Health Service  
 State = State Department  
 Treasury = Treasury Department  
 TVA = Tennessee Valley Authority  
 USDA = U.S. Department of Agriculture  
 USGS = U.S. Geological Survey  
 VA = Department of Veteran Affairs



## APPENDIX B: DOE Office Designations

CI	Congressional Affairs
CFO	Chief Financial Officer
CN	Counterintelligence
DP	Defense Programs
ED	Economic Impact & Diversity
EE	Energy Efficiency & Renewable Energy
EH	Environment, Safety & Health
EIA	Energy Information Administration
EM	Environmental Management
FE	Fossil Energy
HG	Hearings and Appeals
IA	International Affairs
IG	Inspector General
IN	Intelligence
MA	Management and Administration (formerly Human Resources)
MD	Fissile Materials Disposition (now part of NN)
NE	Nuclear Energy, Science & Technology
NN	Defense Nuclear Nonproliferation (formerly Nonproliferation National Security)
NNSA	National Nuclear Security Administration
NR	Naval Reactors
OA	Independent Oversight and Performance Assurance
PC	Privatization and Contract Reform
PO	Policy
PMA	Power Marketing Administrations
RW	Civilian Radioactive Waste Management
S1	Secretary of Energy
SC	Science
SO	Security and Emergency Operations
WT	Worker & Community Transition



## APPENDIX C: Statutes and Other Authorities for DOE Objectives

This list is representative of the authorities available to the Department to carry out its activities.

### Energy Resources

#### Generally Applicable Statutes:

- ! **Department of Energy Organization Act** (DOE Act) (42 U.S.C. 7101, et seq.);
- ! **Energy Conservation and Production Act** (42 U.S.C. 6801, et seq.);
- ! **Energy Policy Act of 1992** (Pub. L. No. 102-486, 42 U.S.C. scattered sections);
- ! **Energy Policy and Conservation Act** (42 U.S.C. 6201, et seq.);
- ! **National Energy Conservation Policy Act** (42 U.S.C. 8201, et seq.);

### Objective ER1

#### Promote reliable, affordable, clean, and diverse domestic fuel supplies.

#### Statutes:

- ! **Atomic Energy Act of 1954**, §31 (42 U.S.C. 2051) (research and development relating nuclear processes, atomic energy, and nuclear material);
- ! **DOE Act**, §102 (9) and (12) (42 U.S.C. 7112(9), (12)) (purposes of DOE — provision of adequate supply of energy at lowest reasonable cost and foster competition among parties engaged in the supply of energy);
- ! **Energy Policy Act of 1992**
  - §303-305 (42 U.S.C. 13212-13214) (alternative fuels for Federal Government use);
  - §405-414 (42 U.S.C. 13231-13239) (alternative fuels for non-Federal use);
  - §501-514 (42 U.S.C. 13251-13264) (replacement fuels, alternative fuels, and alternative fueled private vehicles);
  - §601-626 (42 U.S.C. 13271-13296) (electric motor vehicles);
  - §1203-1205, 1211-1212 (42 U.S.C. 13312-13314, 13316-13317) (renewable energy);
  - §1301-1341 (42 U.S.C. 13331-13370) (coal);
  - §2015, 2022-2025 (42 U.S.C. 13415, 13432-13435) (oil and gas supply enhancement and demand reduction);
  - §103, 2107, 2116, 2119, 2121-2122, 2124 (42 U.S.C. 13456, 13458, 13476, 13479, 13491-13492, 13494) (energy efficiency, renewable energy, and nuclear energy);
  - §2203, 2206 (42 U.S.C. 13503, 13506) (basic energy research);
- ! **Energy Policy and Conservation Act**, §101-181 (42 U.S.C. 6211-6251) (domestic supply availability, including Strategic Petroleum Reserve authorities);
- ! **Federal Nonnuclear Energy Research and Development Act of 1974** (42 U.S.C. 5901-5920) (comprehensive nonnuclear research and development, including coal, oil, and natural gas programs);
- ! **Chapter 641 of title 10, United States Code** (Naval Petroleum Reserves authority);
- ! **National Defense Authorization Act for Fiscal Year 1996**, title 34 (Pub. L. No. 104-106) (sale of Naval Petroleum Reserve Numbered 1 and study of future of other Naval Petroleum Reserves);

- ! **Strom Thurmond National Defense Authorization Act for Fiscal Year 1999**, title 34 (10 U.S.C. 7420 note) (disposal of Naval Petroleum Reserve Numbered 2, Naval Petroleum Reserve Numbered 3, and Oil Shale Reserve Numbered 2);
- ! **National Energy Conservation Policy Act**;
  - §521-569 (42 U.S.C. 8241-8259, 8271-8278) (Federal energy initiative);
  - §801-804 (42 U.S.C. 8287-8287c) (energy savings performance contracts);
- ! **Natural Gas Policy Act of 1978**;
  - §301-304 (15 U.S.C. 3361-3364) (emergency natural gas authority);
  - §401-403 (15 U.S.C. 3391-3393) (natural gas curtailment policies);
- ! **Solar Energy Research, Development, and Demonstration Act of 1974** (42 U.S.C. 5551-5566) (research and development in solar technology);
- ! **Energy Supply and Environmental Coordination Act of 1974** (15 U.S.C. 791-798) (alternative fuels use by electric power plants);

**Executive Orders:**

- ! **Executive Order 12235** (delegates authority under §§302 and 303 of the Natural Gas Policy Act of 1978 to the Secretary of Energy);

**Objective ER2**

**Promote reliable, affordable, and clean transformation of fuel supplies into electricity and related products.**

**Statutes:**

- ! **DOE Act**, §203 (a) (1) (42 U.S.C. 7133(a)(1)) (assignment of duties related to management of electric power supply);
- ! **Federal Nonnuclear Energy Research and Development Act of 1974** (42 U.S.C. 5901-5920) (comprehensive nonnuclear research and development, including coal, oil, and natural gas programs);
- ! **Solar Energy Research, Development, and Demonstration Act of 1974** (42 U.S.C. 5551-5566) (research and development in solar technology);
- ! **Renewable Energy and Energy Efficiency Technology Competitiveness Act of 1989** (42 U.S.C. 12001-12007) (demonstration and deployment of renewable energy and energy efficiency technologies for buildings and transportation);
- ! **Energy Supply and Environmental Coordination Act of 1974** (15 U.S.C. 791-798) (alternative fuels use by electric power plants);
- ! **Bonneville Project Act of 1937** (16 U.S.C. 832-832I) (sale and disposition of electric energy generated at the Bonneville project);
- ! **Flood Control Act of 1944**, §5 (16 U.S.C. 825s) (authority to transmit and dispose of electric power and energy);
- ! **Reclamation Project Act of 1938**, §9 (c) (43 U.S.C. 485h (c) (Western Area Power Administration));
- ! **Department of the Interior and Related Agencies Appropriations Acts for Fiscal Years 1986-1995 and 1997** (Pub. L. Nos. 99-190, 99-591, 100-202, 100-446, 101-45, 101-121, 101-302, 101-512, 102-154, 102-381, 103-138, 103-332, 104-208) (clean coal technology);
- ! **Global Change Research Act of 1990** (15 U.S.C. 2921, et seq.) (interagency program to study and improve the understanding of and response to global change);



- ! **National Climate Program Act** (15 U.S.C. 2901-2908) (multi-agency program on the effects of climate on energy supply and demand, the natural environment, and other areas);

### Objective ER3

#### Increase the efficiency and productivity of energy use, while limiting environmental impacts.

##### Statutes:

- ! **Atomic Energy Act of 1954**, §31 (42 U.S.C. 2051) (research and development relating nuclear processes, atomic energy, and nuclear material);
- ! **National Energy Conservation Policy Act**;
  - §521-569 (42 U.S.C. 8241-8259, 8271-8278) (Federal energy initiative);
  - §801-804 (42 U.S.C. 8287-8287c) (energy savings performance contracts);
- ! **Energy Policy Act of 1992**;
  - §303-305 (42 U.S.C. 13212-13214) (alternative fuels for Federal Government use);
  - §405-414 (42 U.S.C. 13231-13239) (alternative fuels for non-Federal use);
  - §501-514 (42 U.S.C. 13251-13264) (replacement fuels, alternative fuels, and alternative fueled private vehicles);
  - §601-626 (42 U.S.C. 13271-13296) (electric motor vehicles);
  - §1203-1205, 1211-1212 (42 U.S.C. 13312-13314, 13316-13317) (renewable energy);
  - §1301-1341 (42 U.S.C. 13331-13370) (coal);
  - §2015, 2022-2025 (42 U.S.C. 13415, 13432-13435) (oil and gas supply enhancement and demand reduction);
  - §103, 2107, 2116, 2119, 2121-2122, 2124 (42 U.S.C. 13456, 13458, 13476, 13479, 13491-13492, 13494) (energy efficiency, renewable energy, and nuclear energy);
  - §2203, 2206 (42 U.S.C. 13503, 13506) (basic energy research);
- ! **Department of Energy Metal Casting Competitiveness Research Act of 1990** (15 U.S.C. 5301, et seq.) (technology development for metals industry);
- ! **Department of the Interior and Related Agencies Appropriations Acts for Fiscal Years 1986-1995 and 1997** (Pub. L. Nos. 99-190, 99-591, 100-202, 100-446, 101-45, 101-121, 101-302, 101-512, 102-154, 102-381, 103-138, 103-332, 104-208) (clean coal technology);
- ! **Global Change Research Act of 1990** (15 U.S.C. 2921, et seq.) (interagency program to study and improve the understanding of and response to global change);
- ! **National Climate Program Act** (15 U.S.C. 2901-2908) (multi-agency program on the effects of climate on energy supply and demand, the natural environment, and other areas);
- ! **Renewable Energy and Energy Efficiency Technology Competitiveness Act of 1989** (42 U.S.C. 12001-12007) (demonstration and deployment of renewable energy and energy efficiency technologies for buildings and transportation);
- ! **Steel and Aluminum Energy Conservation and Technology Competitiveness Act of 1988** (15 U.S.C. 5101, et seq.) (R&D program to develop competitive manufacturing technologies and increase energy efficiency in the steel and aluminum industries);

## Objective ER4

**Inform public policy makers, energy industries, and the general public by providing reliable energy information and analysis.**

**Statutes:**

- ! **DOE Act,**
  - §102 (42 U.S.C. 7112) (purposes of the Department);
  - §205 (42 U.S.C. 7135) (Energy Information Administration);
  - §209 (42 U.S.C. 7139) (energy research office);
  - §301-309 (42 U.S.C. 7151-7157) (transfer of functions);

## Objective ER5:

**Cooperate globally on international energy issues.**

**Statutes:**

- ! **DOE Act**
  - §102 (42 U.S.C. 7112) (purposes of the Department);
  - §203(a)(1-4, 6-7, 9-10) (42 U.S.C. 7133(a) (1-4, 6-7, 9-10)) (functions assigned to assistant secretaries);
- ! **Energy Policy Act of 1992**
  - §1203-1204, 1211 (42 U.S.C. 13312-13313, 13316) (renewable energy exports programs);
  - §1331-1333, 1338 (42 U.S.C. 13361-13363, 13337) (coal export program);
  - §1601-1609 (42 U.S.C. 13381-13388) (global climate change);
- ! **Energy Policy and Conservation Act, §201-281** (42 U.S.C. 6261-6285) (standby energy authorities and international energy program);
- ! **Energy Reorganization Act of 1974, §103(8) and 107(a)** (42 U.S.C. 5813(8) and 5817(a)) DOE may encourage and participate in international cooperation in energy and related environmental research and development, and DOE may make arrangements for the conduct of research and development activities with private or public institutions, including participation in joint or cooperative projects of a research, developmental, or experimental nature;
- ! **Federal Power Act, §202** (16 U.S.C. 824a) (electricity export authority);
- ! **Natural Gas Act, §3** (15 U.S.C. 717b) (exportation or importation of natural gas);
- ! **Support for East European Democracy Act of 1985, §502(f)** (22 U.S.C. 5452(f)) (export of clean coal technology);
- ! **Global Change Research Act of 1990** (15 U.S.C. 2921, et seq.) (interagency program to study and improve the understanding of and response to global change);
- ! **National Climate Program Act** (15 U.S.C. 2901-2908) (multi-agency program on the effects of climate on energy supply and demand, the natural environment, and other areas);

## National Nuclear Security

### Generally Applicable Statutes:

- ! **Department of Energy Organization Act (DOE Act)**, §(42 U.S.C. 7101 et seq.);
- ! **Atomic Energy Act of 1954 (42 U.S.C. 2011 et seq.)**;
- ! **Soviet Nuclear Threat Reduction Act of 1991 (22 U.S.C. 2551 note)**;
- ! **Annual Department of Energy national security authorization Acts, 1977 to present (since 1986, enacted as title XXXI of National Defense Authorization Acts), particularly**;
- ! **National Defense Authorization Act for Fiscal Year 2000**;
  - §§3141-3156, Department of Energy Facilities Safeguards, Security, and Counterintelligence Enhancement Act of 1999 (42 U.S.C. 7383 note) (new security procedures at DOE facilities);
  - §§3201-3299, National Nuclear Security Administration Act (50 U.S.C. 2401 note, 50 U.S.C. 2401-2484, 42 U.S.C. 7144-7144c) (established the National Nuclear Security Administration);

### Objective NS1

**Maintain and refurbish nuclear weapons in accordance with directed schedules to sustain confidence in their safety, security, and reliability indefinitely, under the nuclear testing moratorium and arms reduction treaties.**

#### Statutes:

- ! **Atomic Energy Act of 1954**;
  - §25 (42 U.S.C. 2035) (establishes the Division of Military Application);
  - Chapter 4 (42 U.S.C. 2061-2064) (R&D in the theory and production of atomic energy, including application for military purposes);
  - Chapter 5 (42 U.S.C. 2071-2078) (production of special nuclear materials);
  - Chapter 9 (42 U.S.C. 2121-2123) (military application of atomic energy);
- ! **National Defense Authorization Act for Fiscal Year 1994**, §3138 (42 U.S.C. 2121 note) (establishes the Stockpile Stewardship Program);
- ! **National Defense Authorization Act for Fiscal Year 1996**, §3133 (42 U.S.C. 2121 note) (establishes a tritium production program capable of meeting the tritium requirements of the United States for nuclear weapons);
- ! **Strom Thurmond National Defense Authorization Act for Fiscal Year 1999**, §3159 (42 U.S.C. 2121 note) (establishment of panel to assess annually the certification process for the reliability, safety, and security of the stockpile).

### Objective NS2

**Achieve the robust and vital scientific, engineering, and manufacturing capability that is needed for the current and future certification of the nuclear weapons stockpile and the manufacture of nuclear weapon components under the nuclear testing moratorium.**

#### Statutes:

- ! **National Defense Authorization Act for Fiscal Year 1994**, §3138, (42 U.S.C. 2121 note); (establishes the Stockpile Stewardship Program);

- ! **National Defense Authorization Act for Fiscal Year 1995**, §3131 (Pub.L. No. 103-337) ( provides a “Stockpile Stewardship Recruitment and Training Program”);
- ! **National Defense Authorization Act for Fiscal Year 1998**;
  - §3151 (42 U.S.C. 2121 note) (plan for management of warheads in nuclear weapons stockpile);
  - §3155 (42 U.S.C. 7381 note) (program to promote collaboration among the labs, universities, and industry in support of scientific and engineering advancement in DOE defense program areas)
- ! **Strom Thurmond National Defense Authorization Act for Fiscal Year 1999**;
  - §3135 (Pub. L. No. 105-261) (requirement to maintain F-canyon and H-canyon at a high state of readiness);
  - §3159 (42 U.S.C. 2121 note) (establishment of panel to assess annually the certification process for the reliability, safety, and security of the stockpile);
- ! **National Defense Authorization Act for Fiscal Year 2000**, §3133 (42 U.S.C. 2121 note) (nuclear weapons stockpile life extension program);

### **Objective NS3**

#### **Ensure the vitality and readiness of DOE’s national nuclear security enterprise.**

##### **Statutes:**

- ! **Atomic Energy Act of 1954**
  - §25 (42 U.S.C. 2035) (establishes the Division of Military Application);
  - Chapter 4 (42 U.S.C. 2061-2064) (R&D in the theory and production of atomic energy, including application for military purposes);
  - Chapter 5 (42 U.S.C. 2071-2078) (production of special nuclear materials);
  - Chapter 9 (42 U.S.C. 2121-2123) (military application of atomic energy);
- ! **National Defense Authorization Act for Fiscal Year 1994**, §3138 (42 U.S.C. 2121 note) (establishes the Stockpile Stewardship Program);
- ! **National Defense Authorization Act for Fiscal Year 1996**, §3133 (42 U.S.C. 2121 note) (establishes a tritium production program capable of meeting the tritium requirements of the United States for nuclear weapons);
- ! **Strom Thurmond National Defense Authorization Act for Fiscal Year 1999**,
  - §3135 (Pub. L. No. 105-261) (requirement to maintain F-canyon and H-canyon at a high state of readiness)
  - §3159 (42 U.S.C. 2121 note) (establishment of panel to assess annually the certification process for the reliability, safety, and security of the stockpile.
- ! **National Defense Authorization Act for Fiscal Year 2000** (Pub. L. No. 106-65)
  - §3132 (continuation of processing, treatment, and disposition of legacy nuclear materials);
  - §3162 (fellowship program for development of skills critical to the DOE nuclear weapons complex);
  - §3163 (maintenance of nuclear weapons expertise in DOD and DOE);

## Objective NS4

### Reduce the global danger from the proliferation of weapons of mass destruction (WMD).

#### Statutes:

- ! **Atomic Energy Act of 1954**
  - §31 (42 U.S.C. 2051) (conduct atomic energy research and development activities through contracts, agreements and loans with private or public institutions or persons, including foreign governments);
  - §§123-131 (42 U.S.C. 2153-2160) (international activities related to atomic energy);
- ! **Export Administration Act** (Pub.L.No. 96-72 of 9-29-79 and Pub.L.No. 99-64 of 7-12-85 Part 778)
- ! **FY 1994 Foreign Operations Appropriations Act**, §560 (Pub.L.No. 103-87) (authorizes the Department to institute a program of cooperation between scientific and engineering institutes in the New Independent States of the Former Soviet Union and national laboratories and other qualified academic institutions in the United States);
- ! **Department of Energy Organization Act**, §102(10) (42 U.S.C. 7112(10)) authorizes DOE to undertake international energy activities, in coordination with the Secretary of State;
  - §212 (42 U.S.C. 7143) establishes the Office of Fissile Materials Disposition;
- ! **Energy Reorganization Act of 1974**, §103(8) and 107(a) (42 U.S.C. 5813(8) and 5817(a)) DOE may encourage and participate in international cooperation in energy and related environmental research and development, and DOE may make arrangements for the conduct of research and development activities with private or public institutions, including participation in joint or cooperative projects of a research, developmental, or experimental nature;
- ! **Soviet Nuclear Threat Reduction Act of 1991** and subsequent amendments provide authority for the transfer of certain funds to DOE for use in assisting in certain nuclear safety activities in the independent states of the former Soviet Union;
- ! **Soviet Nuclear Threat Reduction Act of 1991 (“Nunn-Lugar”)** (22 U.S.C. 2551 note) authorizes the President to establish and conduct programs to assist the demilitarization of the independent states of the former Soviet Union. Programs include transporting, storing, safeguarding and destruction of nuclear and other weapons; and establishing verifiable safeguards against the proliferation of such weapons and their components. Amendments to the Soviet Nuclear Threat Reduction Act since 1991 have continued and expanded the authority of the President to assist states of the former Soviet Union with demilitarization, nonproliferation and arms control initiatives. These include the Freedom Support Act of 1992 (PL. 102-511); The Former Soviet Union Demilitarization Act of 1992 (Title XIV of the National Defense Authorization Act for Fiscal Year 1993, PL. 102-484, and Titles XIII-XV of the National Defense Authorization Act for Fiscal Year 1997, (PL. 104-201);
- ! **National Defense Authorization Act for Fiscal Year 1996**, §3131 (Pub.L.No. 104-106), authorizes conduct of programs to improve fissile materials protection, control, and accountability in Russia;
- ! **National Defense Authorization Act for Fiscal Year 1997**, §1441 (Pub.L.No. 104-201) establishes National Coordinator on Nonproliferation (for weapons of mass destruction) and provides funding for cooperative plutonium disposition activities with Russia;
- ! **National Defense Authorization Act for Fiscal Year 2000**, §3136 (Pub. L. No. 106-65) (nonproliferation initiatives and activities);
- ! **United States Enrichment Corporation Privatization Act**, §3112 (Pub.L.No. 104-134) establishes terms and conditions governing the disposition of surplus highly enriched uranium;

**Treaties:**

- ! **Treaty on the Nonproliferation of Nuclear Weapons (NPT);**
- ! **The Threshold Test Ban Treaty (TTBT)** (verification of compliance with treaty provisions by the parties);
- ! **Agreement for Cooperation between the United States of America and the International Atomic Energy Agency;**
- ! **Agreement with the International Atomic Energy Agency for the Application of Safeguards in the United States of America with Protocol (U.S. - IAEA) Treaty for Safeguards in the U.S.** (Voluntary Offer);

**Objective NS5**

**Provide the U.S. Navy with safe, militarily effective nuclear propulsion plants, and ensure their continued safe and reliable operation.**

**Statutes:**

- ! **Atomic Energy Act of 1954**
  - §25 (42 U.S.C. 2035) (establishes the Division of Military Application);
  - Chapter 4 (42 U.S.C. 2061-2064) (R&D in the theory and production of atomic energy, including application for military purposes);
  - Chapter 9 (42 U.S.C. 2121-2123) (military application of atomic energy);
- ! **Energy Reorganization Act of 1974**, §104 (42 U.S.C. 5814) (Naval Reactors);
- ! **Department of Energy Organization Act**, §309 (42 U.S.C. 7158) (Naval Reactors);
- ! **Department of Defense Authorization Act, 1985**, §1634 (freezes E.O. 12344 on Naval Reactors in place unless changed by law) (42 U.S.C. 7158 note);
- ! **Energy Policy Act of 1992**, §§2121-2124 (42 U.S.C. 13491-13494) (advanced nuclear reactors R&D);
- ! **National Defense Authorization Act for Fiscal Year 2000**
  - §§3201-3299, National Nuclear Security Administration Act (50 U.S.C. 2401 note, 50 U.S.C. 2401-2484, 42 U.S.C. 7144-7144c) (relocates the Office of Naval Reactors from the Office of Nuclear Energy, Science, and Technology to the NNSA and reaffirms the assignments and responsibilities assigned by E.O. 12344);

**Executive Order:**

- ! **Executive Order 12344** (jurisdiction of DOE and DOD over the Naval Nuclear Propulsion Program);

**Objective NS6**

**Ensure the effective security policy, implementation, and oversight for the Department's nuclear materials, facilities, and information assets.**

**Statutes:**

- ! **Atomic Energy Act of 1954**
  - Chapter 12 (42 U.S.C. 2161-2169) (control of Restricted Data and establishment of personnel security program);
  - Chapter 18 (42 U.S.C. 2271-2284) (criminal provisions relating to security functions);
  - §161 (42 U.S.C. 2201) (protection of nuclear materials and Restricted Data);

- ! **Atomic Weapons and Special Nuclear Materials Rewards Act**, §§2-7 (50 U.S.C. 47a-47f) (rewards for information on illegal possession of atomic weapons or special nuclear material);
- ! **Defense Production Act of 1950** (50 U.S.C. App. 2061 et seq.) (conversion of civilian materials to military use);
- ! **Economic Espionage Act of 1996** (Pub.L. No. 104-294) (prevention of economic espionage);
- ! **National Defense Authorization Act for Fiscal Year 1993**, §§3161 and 3163 (42 U.S.C. 7274h, 7274j) (DOE defense nuclear facilities workforce restructuring plan);
- ! **National Defense Authorization Act for Fiscal Year 1998**, §3161 (42 U.S.C. 7251 note) (creation of a DOE Security Management Board);
- ! **Strom Thurmond National Defense Authorization Act for Fiscal Year 1999**, §3161 (50 U.S.C. 435 note) (plan prepared by DOE and U.S. Archives to prevent inadvertent release of Restricted and Formerly Restricted Data);
- ! **National Defense Authorization Act for Fiscal Year 2000**;
  - §§3141-3156, Department of Energy Facilities Safeguards, Security, and Counterintelligence Enhancement Act of 1999 (42 U.S.C. 7383 note) (new security procedures at DOE facilities);
  - §§3201-3299, National Nuclear Security Administration Act (50 U.S.C. 2401 note, 50 U.S.C. 2401-2484, 42 U.S.C. 7144-7144c) (established the National Nuclear Security Administration);

**Executive Orders:**

- ! **Executive Order 10450** (security requirements for Government employment);
- ! **Executive Order 10865** (safeguarding classified information within industry);
- ! **Executive Order 11057** (communication of Restricted Data);
- ! **Executive Order 12958** (procedures for classification of national security information);
- ! **Executive Order 12968** (procedures for access to classified information);
- ! **Executive Order 12938** (national emergency in regards to weapons of mass destruction);

**Emergency Planning and Operations:**

- ! **Executive Order 10480** (Defense Production Act priority contracting and allocation authority);
- ! **Executive Order 11912** (DPA priority contracting and allocation authority to maximize domestic energy supplies);
- ! **Executive Order 11953 and 12656** (emergency preparedness);
- ! **Executive Order 12742** (national security industrial responsiveness);

**Intelligence:**

- ! **Executive Order 12333** (functions and responsibilities of U.S. intelligence community);
- ! **Executive Order 12334** (President's Intelligence Oversight Board);
- ! **Executive Order 12356** (special access programs for intelligence information);

**Treaty:**

- ! **Open Skies Treaty**;

## Environmental Quality

### Generally Applicable Statutes:

- ! **Department of Energy Organization Act**, §102(11), (13), and (15) (42 U.S.C. 7112(11), (13), and (15)) and §203(a)(3) and (8) (42 U.S.C. 7133(a)(3) and (8));
- ! **Atomic Energy Act of 1954**, §161 b. and l. (42 U.S.C. 2201(b) and (l));
- ! **Comprehensive Environmental Response, Compensation, and Liability Act of 1980**, (42 U.S.C. 9601 et seq.);
- ! **Solid Waste Disposal Act (RCRA)** (42 U.S.C. 6901 et seq.);
- ! **National Environmental Policy Act of 1969** (42 U.S.C. 4321 et seq.);
- ! **Clean Air Act** (42 U.S.C. 7401 et seq.);
- ! **Federal Water Pollution Control Act (Clean Water Act)** (33 U.S.C. 1251 et seq.);
- ! **Safe Drinking Water Act** (42 U.S.C. 300f et seq.);
- ! **Toxic Substances Control Act** (15 U.S.C. 2601 et seq.);
- ! **Hazardous Materials Transportation Act** (49 U.S.C. 5101 et seq.);

### Objective EQ1

**Safely and expeditiously clean up sites across the country that supported nuclear weapons research, production, and testing, and conducted DOE-funded nuclear energy and basic science research in the United States. After completion of cleanup, continue stewardship activities to ensure that human health and the environment are protected.**

### Statutes:

- ! **Comprehensive Environmental Response, Compensation, and Liability Act of 1980** (42 U.S.C. 9601 et seq.) (cleanup of contaminated sites);
- ! **Solid Waste Disposal Act** (42 U.S.C. 6901 et seq.) (minimization of generation of hazardous waste, hazardous waste management, and cleanup of past contamination at currently active sites);
- ! **National Defense Authorization Act for Fiscal Years 1990 and 1991**, §3141 (42 U.S.C. 7274a) (defense waste cleanup technology program);
- ! **National Defense Authorization Act for Fiscal Years 1992 and 1993**, §3135 (42 U.S.C. 7274g) (environmental restoration and waste management five-year plan and budget reports);
- ! **National Defense Authorization Act for Fiscal Year 1994**, §3153 (42 U.S.C. 7274k) (baseline environmental management reports);
- ! **National Defense Authorization Act for Fiscal Year 1995**, §3140 (Pub. L. No. 103-337) hazardous materials management and emergency response training program);
- ! **National Defense Authorization Act for Fiscal Year 1996**, §3156 (42 U.S.C. 7274k note) (accelerated schedule for environmental restoration and waste management activities);
- ! **National Defense Authorization Act for Fiscal Year 1997**;
  - §3143 (42 U.S.C. 7274n) (program of closure-acceleration projects);
  - §3153 (42 U.S.C. 7274k note) (future use plans for defense nuclear facilities at which environmental restoration and waste management activities are occurring); and



- §§3171-3180 (42 U.S.C. 7274k note) (cost effective management mechanisms, innovative technologies, and performance-based contracting);
- ! **National Defense Authorization Act for Fiscal Year 1998;**
  - §3132 (Pub. L. No. 105-85) (authority to enter into privatization contracts);
  - §3159 (Pub. L. No. 105-85) (delegation of certain authorities to site manager of Hanford Reservation);
- ! **Strom Thurmond National Defense Authorization Act for Fiscal Year 1999,**
  - §3139 (Pub. L. No. 105-261) (establishment of Office of River Protection at Hanford);
  - §3141 (Pub. L. No. 105-261) (authority to enter into partnership with Federal and non-Federal entities to share the costs of operating the hazardous materials management and hazardous materials emergency response training program);
- ! **Uranium Mill Tailings Radiation Control Act of 1978** (42 U.S.C. 7901 et seq.) (program to clean up inactive uranium milling sites and other contaminated properties in their vicinity);
- ! **Department of Energy National Security and Military Applications of Nuclear Energy Authorization Act of 1980**, §213, Pub.L.No. 96-164 (establishes WIPP);
- ! **Waste Isolation Pilot Plant Land Withdrawal Act** (Pub.L.No. 102-579) (withdraws land for WIPP and establishes procedures for starting its operation);
- ! **Energy Policy Act of 1992**, §2113 (42 U.S.C. 13473) (plan for developing new technologies for minimizing the volume and toxic lifetime of nuclear waste);

## Objective EQ2

**Complete the characterization of the Yucca Mountain site and, assuming it is determined suitable as a repository and the President and Congress approve, obtain requisite licenses, construct and, in FY 2010, begin acceptance of spent nuclear fuel and high-level radioactive wastes at the repository.**

### Statutes:

- ! **Nuclear Waste Policy Act of 1982** (42 U.S.C. 10101 et seq.) as amended (disposal, interim storage, monitored retrievable storage, and transportation of high-level radioactive waste and spent nuclear fuel);

## Objective EQ3

**Manage the material and facility legacies associated with the Department's uranium enrichment and civilian nuclear power development activities.**

### Statutes:

- ! **Atomic Energy Act of 1954**, §§1801-1805 (42 U.S.C. 2297g—2297g-4) (uranium enrichment plants decontamination and decommissioning);
- ! **Public Law 105-204** (treating and recycling depleted uranium hexafluoride);

## Science

### Generally Applicable Statutes:

- ! **Department of Energy Organization Act (DOE Act)** (42 U.S.C. 7101 et seq.);
- ! **Atomic Energy Act of 1954** (42 U.S.C. 2011 et seq.);
- ! **Energy Reorganization Act of 1974** (42 U.S.C. 5801 et seq.);
- ! **Federal Nonnuclear Energy Research and Development Act of 1974** (42 U.S.C. 5901 et seq.);

## Objective SC1

**Provide the leadership, foundations, and breakthroughs in the physical sciences that will sustain advancements in our Nation's quest for clean, affordable, and abundant energy.**

**Statutes:**

! **Atomic Energy Act of 1954;**

- §31 (42 U.S.C. 2051) (research and development (R&D) related to: (1) nuclear processes, theory, and production, and (2) use of nuclear and radioactive materials for medical, biological, agricultural, health, and industrial purposes);
- §32 (42 U.S.C. 2052) (conducting energy-related R&D activities in DOE facilities, e.g., National Laboratories);
- §33 (42 U.S.C. 2053) (Energy R&D for non-DOE entities if private facilities inadequate);
- §91 (42 U.S.C. 2121) (R&D in the military applications of atomic weapons and the production of atomic weapons and atomic weapons parts);

! **DOE Act;**

- §102(5) and (6) (42 U.S.C. 7112(5), (6)) (carry out a comprehensive energy R&D program);
- §203(a)(2) and (3) (42 U.S.C. 7133(a)(2), (3)) (R&D in solar, geothermal, recycling, fossil, and nuclear energy and environmental effects of energy technologies);
- §209 (42 U.S.C. 7139) (creates Office of Energy Research to: (1) advise the Secretary on R&D programs, R&D financial assistance, and lab management other than nuclear weapons labs, and (2) supervise DOE R&D activities);
- §301 (42 U.S.C. 7151) (transferred Energy Research and Development Administration functions and Energy Reorganization Act of 1974 functions to DOE);

! **Energy Reorganization Act of 1974, §103 (42 U.S.C. 5813) (management of R&D programs respecting all energy sources; energy-related environmental, biomedical, and physical science R&D; international R&D cooperation);**

! **Federal Nonnuclear Energy Research and Development Act of 1974, §§4 and 8 (42 U.S.C. 5903, 5907) (energy R&D&D, including coal, oil, natural gas, and other nonnuclear programs);**

! **High-Performance Computing Act of 1991, §203 (15 U.S.C. 5523) (high-performance computing and communications systems R&D);**

! **Spark M. Matsunaga Hydrogen Research, Development, and Demonstration Act of 1990 (42 U.S.C. 12401-12408) (RD&D concerning hydrogen as an economic fuel or storage medium);**

! **National Defense Authorization Act for Fiscal Year 1991, §1801 (sections 2901-2904, title 10, United States Code) (environmental R&D to meet DOD and DOE environmental obligations);**

! **National Defense Authorization Act for Fiscal Years 1990 and 1991, §3141 (42 U.S.C. 7274a) (defense waste cleanup technology program);**

! **National Superconductivity and Competitiveness Act of 1988, §4 (15 U.S.C. 5203) (DOE superconductivity research and development activities);**

## Objective SC2

**Develop the scientific foundations to understand and protect our living planet from the adverse impacts of energy supply and use, support long-term environmental cleanup and management at DOE sites, and contribute core competencies to interagency research and national challenges in the biological and environmental sciences.**

### Statutes:

- ! **Energy Policy Act of 1992**, §§1601-1609 (42 U.S.C. 13381-13388) (sets forth a global climate change program in DOE);
- ! **Global Change Research Act of 1990** (15 U.S.C. 2921, et seq.) (interagency program to study and improve the understanding of and response to global change);
- ! **National Climate Program Act** (15 U.S.C. 2901-2908) (multi-agency program on the effects of climate on energy supply and demand, the natural environment, and other areas);

## Objective SC3

**Explore matter and energy as elementary building blocks from atoms to life, expanding our knowledge of the most fundamental laws of nature spanning scales from the infinitesimally small to the infinitely large.**

### Statutes:

- ! **Atomic Energy Act of 1954;**
  - §31 (42 U.S.C. 2051) (conducting R&D and training activities in nuclear energy and related fields);
  - §32 (42 U.S.C. 2052) (conducting energy-related R&D activities in DOE facilities, including the National Laboratories);
  - §33 (42 U.S.C. 2053) (conducting energy research and development activities for non-DOE entities);
  - §161 g. and j. (42 U.S.C. 2201(g) and (j)) (acquiring and disposing of real and personal property);
- ! **DOE Act;**
  - §209(b)(3) (42 U.S.C. 7139(b)(3)) (management of non-defense multi-purpose laboratories);
  - §§647-649 (42 U.S.C. 7257-7259) (acquisition, maintenance, construction, and use of laboratories and other facilities);
- ! **Energy Policy Act of 1992;**
  - §2203 (42 U.S.C. 13503) (construction of user facilities; policy and plans for multi-program energy laboratories);
  - §§2203, 2206 (42 U.S.C. 13503, 13506) (basic energy research);
- ! **Energy Reorganization Act of 1974**, §107 (42 U.S.C. 5817) (facilities and property);
- ! **National Defense Authorization Act for Fiscal Year 1991**, §3132 (42 U.S.C. 7257a) (GOCO labs R&D);
- ! **High-Performance Computing Act of 1991;**
  - §102 (15 U.S.C. 5512) (National Research and Education Network, communication among scientists);
  - §203 (15 U.S.C. 5523) (DOE high-performance computing and communications systems R&D);

- ! **Federal Nonnuclear Energy Research and Development Act of 1974**, §§4 and 7 (42 U.S.C. 5903, 5906) (energy R&D through contracts and financial assistance, national laboratories, and working with the private sector);
- ! **National Superconductivity and Competitiveness Act**, §4 (15 U.S.C. 5203) (superconductivity R&D, including the management of property developed or made at the National Laboratories);

**Executive Orders:**

- ! **E.O. 12591 and E.O. 12618** (labs assistance to universities and private sector);

**Objective SC4**

**Provide the extraordinary tools, scientific workforce, and multidisciplinary research infrastructure that ensures success of DOE's science mission and supports our Nation's leadership in the physical, biological, environmental, and computational sciences.**

**Statutes:**

- ! **Atomic Energy Act of 1954;**
  - §31 b. (42 U.S.C. 2051(b)) (grants for education activities in relation to certain fields of nuclear theory and processes);
  - §§151-160 (42 U.S.C. 2181-2190) (patents and inventions relating to nonmilitary utilization; prior art; licenses, royalties, Federally financed research, etc.);
  - §§141-149 (42 U.S.C. 2161-2169) (control of information);
- ! **Energy Reorganization Act of 1974, §§103, 104, and 107** (42 U.S.C. 5813, 5814, 5817) (energy-related education and training and public dissemination of research results);
- ! **Department of Energy Organization Act;**
  - §102(5)(D) (42 U.S.C. 7112(5)(D)) (disseminate information resulting from R&D programs);
  - §209(b)(4) (42 U.S.C. 7139(b)(4)) (the Director of Energy Research is responsible for advising the Secretary on education and training to support basic science);
- ! **Department of Energy Science Education Enhancement Act** (42 U.S.C. 7381 et seq.) (DOE involvement in mathematics, science and engineering education; establishes DOE partnerships with educational institutions);
- ! **Federal Nonnuclear Research and Development Act of 1974**, §§7 and 8 (42 U.S.C. 5906, 5907) (demonstrations of new energy technology and patent policy);
- ! **Stevenson-Wydler Technology Innovation Act of 1980** (15 U.S.C. 3701 et seq.) (amended numerous times) (authorizes government-owned, contractor operated (GOCO) labs to enter into cooperative research and development agreements (CRADAs) with non-Federal parties; establishes other aspects of the technology development relationship between GOCO laboratory contractors and DOE, such as title to inventions; requires Offices of Research and Technology Application at major labs to coordinate activities; and requires making Federally-funded R&D more accessible to State and local governments and private industry);
- ! **National Competitiveness Technology Transfer Act of 1989** (section 3131(d) of the National Defense Authorization Act for Fiscal Years 1990 and 1991) (15 U.S.C. 3710a, note) (technology transfer and CRADAs for GOCO labs);
- ! **Bayh-Dole Act of 1980** (35 U.S.C. 200 et seq.) (small businesses and nonprofit organizations retain title to inventions made under funding agreements with DOE; Federal agencies grant exclusive licenses);

! **Energy Policy Act of 1992;**

- §1211 (42 U.S.C. 13316) (renewable energy international technology transfer program with AID);
- §1332 (42 U.S.C. 13362) (clean coal international technology program with AID);
- §1608 (42 U.S.C. 13387) (innovative environmental international technology transfer program with AID);
- §2025 (42 U.S.C. 13435) (R&D on electric motor vehicles and associated equipment);
- §2203 (42 U.S.C. 13503) (supporting research and technical analysis);
- §2204 (42 U.S.C. 13504) (math and science education);
- §§3001-3002 (42 U.S.C. 13541-13542) (procedures and forms of agreement for carrying out RD&D and commercialization activities under EPACT);
- §§611-616 (42 U.S.C. 13281-86) (electric and hybrid motor vehicle commercial demonstration program);

! **High-Performance Computing Act of 1991;**

- §102 (15 U.S.C. 5512) (National Research and Education Network);
- §203 (15 U.S.C. 5523) (DOE R&D and technology transfer on high-performance computing and communications systems);

! **National Cooperative Research and Production Act of 1993** (15 U.S.C. 4301 et seq.) (details exception to anti-trust prohibition against joint ventures in research and related activities by competitors);

! **Steel and Aluminum Energy Conservation and Technology Competitiveness Act of 1988** (15 U.S.C. 5101 et seq.); (R&D program to develop competitive manufacturing technologies and increase energy efficiency in the steel and aluminum industries);

! **Department of Energy Metal Casting Competitiveness Research Act of 1990** (15 U.S.C. 5301 et seq.) (technology development for metals industry);

! **National Defense Authorization Act for Fiscal Years 1988 and 1989**, §§3141-3151 (15 U.S.C. 4621-4631)) (DOE semi-conductor technology research excellence initiative);

! **Strom Thurmond National Defense Authorization Act for Fiscal Year 1999**, §3137 (42 U.S.C. 7259a) (research and activities on behalf of non-DOE persons and entities);

! **Global Change Research Act of 1990** (15 U.S.C. 2921 et seq.), (interagency program to study and improve the understanding of and response to global change);

! **National Climate Program Act** (15 U.S.C. 2901-2908) (multi-agency program on the effects of climate on energy supply and demand, the natural environment, and other areas);

! **Solar Energy Research, Development, and Demonstration Act of 1974** (42 U.S.C. 5551-5566) (research and development in solar technology);

! **Renewable Energy and Energy Efficiency Technology Competitiveness Act of 1989** (42 U.S.C. 12001-12007) (demonstration and deployment of renewable energy and energy efficiency technologies for buildings and transportation);

! **Albert Einstein Distinguished Educator Fellowship Act of 1994** (42 U.S.C. 7382-7382f) (establishes within DOE a national fellowship program for elementary and secondary school mathematics and science teachers);

**Executive Orders:**

- ! **E.O. 12591 and E.O. 12618** (April 10 and December 22, 1987) Federal Technology Transfer Act implementation; labs assistance to universities and private sector; consultation on CRADAs and licensing agreements with foreign persons or organizations);

## **Corporate Management**

**Generally Applicable Statutes:**

- ! **Department of Energy Organization Act (DOE Act)** (42 U.S.C. 7101 et seq.);
- ! **Atomic Energy Act of 1954** (42 U.S.C. 2011 et seq.);
- ! **Numerous statutes of Government-wide application, such as Federal Property and Administrative Services Act of 1949; chapters 11-91 of title 5, United States Code; Freedom of Information Act; Government Performance and Results Act of 1993; Chief Financial Officer Act of 1990; National Environmental Policy Act of 1969; Administrative Dispute Resolutions Act; and Information Technology Management Reform Act of 1996;**

### **Objective CM1**

**Ensure the safety and health of the DOE workforce and members of the public, and the protection of the environment in all Departmental activities.**

**Statutes:**

- ! **Atomic Energy Act of 1954**, §161 b. and I. (42 U.S.C. 2201(b) and (I)) (protect health and safety);
- ! **DOE Act**, §102(13) (42 U.S.C. 7112(15)) (assure incorporation of national environmental protection goals in formulation and implementation of energy programs);
- ! **National Defense Authorization Act for Fiscal Year 1993**, §§3162-3163 (42 U.S.C. 7274i-7274j) (medical evaluation of current and former DOE employees);

### **Objective CM2**

**Manage human resources and diversity initiatives and implement practices to improve the delivery of products and services.**

**Statutes:**

- ! **DOE Act**
  - §211 (42 U.S.C. 7141) (establishes Office of Minority Economic Impact);
  - §621 (42 U.S.C. 7231) (authority of Secretary to appoint and fix the compensation of officers and employees);
  - §§641–662 (42 U.S.C. 7251—7270b) (general administrative authority);
- ! **Energy Policy Act of 1992**, §3021 (42 U.S.C. 13556) (disadvantaged business enterprises);
- ! **National Defense Authorization Act for Fiscal Year 1998**, §3138 (42 U.S.C. 7256 note) (pilot program relating to use of proceeds of disposal of certain Department of Energy assets);

### **Objective CM3**

**Manage financial resources and physical assets to ensure public.**

**Statutes:**

- ! **DOE Act**, §102(11) and (15) (42 U.S.C. 7112(11), (15)) (provision for DOE cooperation with State and local governments and for public participation in the development of national energy programs);

- ! **National Defense Authorization Act for Fiscal Year 1997**, §3153 and §3173(b)(3) (42 U.S.C. 7274k note) (citizen advisory board for each facility at which environmental restoration and waste management activities are occurring and consultation with the advisory board and the State before making certain decisions);
- ! **Atomic Energy Act of 1954**, §§141-148 (42 U.S.C. 2161-2168) (control, classification, and declassification of information);
- ! **Electronic Freedom of Information Act Amendments of 1996** (Pub. L. No. 104-231) (5 U.S.C. 552) (facilitates electronic transfer of information to and from Federal agencies and the public);

**Executive Order:**

- ! **Executive Order 12862** (September 11, 1993) (setting customer service standards for Federal agencies);

**Objective CM4**

**Manage information technology systems and infrastructure to improve the Department's efficiency and effectiveness.**

**Statutes:**

- ! **DOE Act**, §647 (42 U.S.C. 7257) (authority to acquire and maintain property);
- ! **High-Performance Computing Act of 1991**;
  - §102 (15 U.S.C. 5512) (National Research and Education Network);
  - §203 (15 U.S.C. 5523) (DOE R&D and technology transfer on high-performance computing and communications systems);

**Objective CM5**

**Use appropriate oversight systems to promote the efficient, effective, and economical operation of the Department of Energy.**

**Statutes:**

- ! **DOE Act**
  - §102(2) and (3) (42 U.S.C. 7112(2), (3)) (provision for effective management of energy functions of the Federal Government and for a mechanism for coordinating national energy policy);
  - §643 (42 U.S.C. 7253) (authority to organize and reorganize offices within DOE);
  - §646 (42 U.S.C. 7256) (contracting authority);
  - §650 (42 U.S.C. 7260) (authority to establish and alter field offices);
  - §653 (42 U.S.C. 7263) (working capital fund);
- ! **Energy Policy Act of 1992**, §2304 (42 U.S.C. 13523) (management plan for the conduct of research, development, demonstration, and commercial application of energy technologies);
- ! **Atomic Energy Act of 1954** (42 U.S.C. 2011 et seq.) (contracting authority);
- ! **Government Performance and Results Act of 1993** (§306 of title 5, United States Code, and §§1105(a)(29), 1115-1119, and 9703 of title 31, United States Code);
- ! **National Defense Authorization Act of 1993**, §3161 (42 U.S.C. 7274h) (assisting communities near DOE sites and released DOE workers);
- ! **Clinger-Cohen Act of 1996** (40 U.S.C. 1401 et seq.) (Information Technology Management).





## APPENDIX D: Glossary Term / Description

**ABM**

Anti-Ballistic Missile Treaty Agreement

**Acoustic Resonant Ultrasound Spectroscopy Technology**

Application of this technology has generated a new NDE (non-destructive evaluation) method known as Resonant Ultrasound Spectroscopy (RUS) that has been found useful for characterizing components and structures of many diverse shapes and sizes.

**Annual Accountability Report**

Required by the GPRA of 1993 to review the success of achieving the performance goals/targets of the past fiscal year. An explanation is required in those cases where the goals have not been met. OMB circular A-11 refers to this report as an Annual Program Performance Report. DOE calls this report the Annual Accountability Report. It is due no later than March 31<sup>st</sup>, six months after the close of the fiscal year.

**Annual Performance Plan**

Required by the GPRA of 1993 to set out measurable goals that define what will be accomplished during the budget year. The goals should reflect a level of accomplishment commensurate with the resources requested and subsequently funded. The final plan reflects budget, policy, and programmatic decisions, and is consistent with and transmitted with the President's Budget Request.

**ATF**

Bureau of Alcohol, Tobacco, and Firearms

**Bio-energy**

Fuels derived from plant materials, for example, the production of ethanol fuels.

**BMIS**

Business Management Information System

**Buckyballs**

C<sub>60</sub>, Buckminsterfullerene—a chemical structure of 60 carbon atoms.

**CFO**

Chief Financial Officer

**CFR**

U.S. Code of Federal Regulations

**Chips**

Electronic microchips

**CHRIS**

Corporate Human Resources Information System

**CIA**

Central Intelligence Agency

**CIO**

Chief Information Officer

**Class 7 trucks**

4 or more axles, single trailer

**CNES**

Comprehensive National Energy Strategy

**COSEPUP**

The Committee on Science, Engineering, and Public Policy of the National Academy of Science, National Academy of Engineering, and Institute of Medicine.

**Cosmic background radiation**

The universe is filled with the remnant heat from the Big Bang called the "cosmic microwave background radiation." Today, this radiation is very cold: only 2.728 degrees above absolute zero. It fills the universe.

**COTS**

Commercial off-the-shelf

**CTBT**

Comprehensive Test Ban Treaty

**CVNX**

New class of Navy nuclear-powered aircraft carrier

**Cyber Security**

Computer security

**DARHT**

Dual-Axis Radiographic Hydrodynamic Test Facility

**Decision Unit**

Decision Units represent the major program elements of the approved budget structure, which is used for formulation and decision-making purposes. A Decision Unit is usually a subset of an organization.

**Depleted uranium**

Uranium from which most of the uranium-235 has been removed.

**DNA**

Dioxyribonucleic Acid

**DNFSB**

Defense Nuclear Facilities Safety Board

**DoD**

Department of Defense

**DOE**

Department of Energy

**DOELAP**

DOE Laboratory Accreditation Program

**DSW**

Directed Stockpile Work

**EIA**

Energy Information Administration

**EIS**

Environmental Impact Statement

**Electrochemical Sciences**

Studies the use of electrical energy to bring about a chemical reaction or the generation of electrical energy by means of chemical action.

**Electrolyte**

A chemical compound (salt, acid, or base) that dissociates into electrically charged ions when dissolved in a solvent. The resulting electrolyte (or electrolytic) solution is an ionic conductor of electricity. Very often, the so formed solution itself is simply called an “electrolyte.”

**EMAB**

Environmental Management Advisory Board

**Environmental Restoration**

The assessment, cleanup, and restoration of sites contaminated with radioactive or hazardous substances during past production or disposal activities.

**EPA**

Environmental Protection Agency

**EPAct**

Energy Policy Act of 1992

**ER**

Energy Resources

**Ethanol**

Ethyl Alcohol

**Facilities Decommissioning**

The process of removing a facility from operation, followed by decontamination, entombment, dismantlement, or conversion to another use.

**FBI**

Federal Bureau of Investigation

**FEMA**

Federal Emergency Management Agency

**FEMP**

Federal Energy Management Program

**FEOSH**

Federal Employees Occupational Safety and Health program

**FFMIA**

Federal Financial Management Improvement Act of 1996

**FFRDCs**

Federally-Funded Research and Development Centers

**FMCT**

Fissile Materials Cutoff Treaty

**FMFIA**

Federal Manager’s Financial Integrity Act

**FSU**

Former Soviet Union

**Fusion**

The fusion of lightweight atomic nuclei

**G-7 countries**

Italy, France, Canada, Germany, United States, Japan, United Kingdom

**GAO**

U.S. General Accounting Office

**GDP**

Gross Domestic Product

**General Goal**

Included in a Strategic Plan, this goal defines how an agency will carry out its Mission over a period of time. The Goal is expressed in a manner, which allows a future assessment to be made of whether the Goal was or is being achieved. The goal may be of a programmatic, policy, or managerial nature. General Goals are predominately outcome-type goals.

**Genome**

One complete haploid set of chromosomes of an organism

**Gigawatt**

One billion watts

**Global Climate Change**

Climate change refers to the trends that persist for decades or even centuries, over and above natural seasonal and annual changes. Climate changes are influenced, among other things, by a natural "greenhouse" effect that maintains a warm and inhabitable Earth.

**GMRA**

Government Management and Reform Act of 1994

**GPRA**

Government Performance and Results Act of 1993

**GW**

Gigawatt, 1 billion watts

**HEU**

Highly enriched uranium. Uranium that contains the isotope uranium-235 in concentration of 20 percent or more. Naturally occurring uranium has a uranium-235 content of about 0.7 percent.

**Higgs Boson or Bosons**

Any subatomic particle, including photons and mesons, that does not obey the Pauli exclusion principle (the principle that no two electrons, protons, etc. in a given system can have the same set of quantum numbers and thus, cannot occupy the same space at the same time).

**IAEA**

International Atomic Energy Agency

**Ion**

An electrically charged chemical particle (atom, molecule, or molecule fragment). Anions are negatively charged, and cations are positively charged.

**IPP**

The Initiatives for Proliferation Prevention program is designed to prevent "brain drain" from Russia and other former Soviet states by creating civilian employment for former weapons scientists and workers.

**ISM**

Integrated Safety Management

**IT**

Information Technology

**°K**

Kelvin, one degree Kelvin equals one degree Celsius

**Km**

Kilometer

**LEU**

Low enriched uranium. Uranium that contains the isotope uranium-235 in a concentration of less than 20 percent and greater than 0.7 percent. Most commercial reactor fuel is enriched to 5 percent or less uranium-235.

**LLW**

Low-level radioactive waste. Waste that contains radioactivity but is not classified as high-level waste, transuranic waste, spent nuclear fuel, or by-product material as defined by U.S. Department of Energy Order 5820.2A. Low-level waste is typically disposed of using shallow land burial.

**Mixed oxide (MOX) fuel**

MOX fuel is a blend of uranium dioxide [UO<sub>2</sub>] and plutonium dioxide [PuO<sub>2</sub>], which is fabricated into assemblies suitable for use in nuclear reactors. Commercial nuclear reactors in the United States use a low enriched uranium fuel.

**MLLW or LLMW**

Mixed low-level radioactive waste contains both hazardous waste under the Resource Conservation and Recovery Act and radioactive material, including sources, special nuclear, or by-product material subject to the Atomic Energy Act of 1954. Such waste has to be handled, processed, and disposed of in a manner that considers its chemical as well as its radioactive components.

**MPC&A**

Material protection, control, and accounting

**mpg**

Miles per gallon

**MT**

Metric tons

**Muon Collider**

A positively or negatively charged lepton with a mass 207 times that of an electron.

**NEPA**

National Environmental Policy Act

**NERC**

North American Electric Reliability Council

**neutrino**

Either of two leptons having a mass approaching zero and no charge.

**NIF**

National Ignition Facility

**NIS**

Newly Independent States

**NNSA**

National Nuclear Security Administration

**NNSBL**

National Nuclear Security Business Line

**Nonproliferation Activities**

DOE activities to reduce the threat of proliferation of weapons of mass destruction to the United States.

**NRC**

Nuclear Regulatory Commission

**Nuclear Cities Initiative**

The Nuclear Cities Initiative is designed to prevent “brain drain” from Russia and other former Soviet states by creating civilian employment for former weapons scientists and workers.

**Nuclear Materials Safeguards**

The DOE Nuclear Safeguards and Security programs provide for the protection of DOE’s nuclear weapons, nuclear materials, classified information, and facilities.

**Nuclear Materials Stabilization**

DOE’s activities that stabilize excess nuclear materials to achieve safe states for interim and long-term storage, pending disposition.

**NWPA**

Nuclear Waste Policy Act

**NWSP**

Nuclear Weapons Stockpile Plan

**NWTRB**

Nuclear Waste Technical Review Board

**Objective**

Included in a Strategic Plan. The objective(s) support a General Goal, and can be used to help assess whether a General Goal was or is being achieved. An Objective usually describes a more specific level of achievement than a General Goal.

**OIG**

Office of Inspector General

**OMB**

Office of Management and Budget

**OSHA**

Occupational Safety and Health Administration

**P&F**

Program and Financing schedules in the President’s Budget Appendix.

**PBSs**

Project Baseline Summaries

**PCAST**

President’s Committee of Advisors on Science and Technology

**PEIS**

Programmatic Environmental Impact Statement. A type of EIS that deals with broad strategies and decisions, such as those that are regional or national in scope.

**Pentaflop**

1,000 teraop or 1,000 trillion floating point operations per second.

**Performance Indicator**

A particular value or characteristic used to measure output or outcome. Performance Indicators are associated with Performance Goals in the Annual Performance Plan.

**Performance Measure**

A performance goal or performance indicator

**Performance-Based Budgeting**

The concept of Performance Budgeting is to link various budget levels with the desired results, so that for a given increase or decrease in budget, the impact on the outcome of the program can be determined.

**Person-rem**

The summation of individual radiation doses received by all those exposed to the source or event being considered is referred to as a collective dose. The collective radiation dose received by a population group is usually measured in units of person-rem. (A rem would be equivalent to one roentgen of X-ray or gamma-ray radiation.)

**Plasmas**

A high temperature, ionized gas composed of electrons and positively charged particles in such relative numbers that the gaseous medium is essentially electrically neutral.

**PNGV**

Partnership for a New Generation of Vehicles

**Program Evaluation**

An assessment, through objective measurement and systematic analysis, of the manner and extent to which Federal programs achieve intended objectives.

**Pu**

Plutonium. A heavy, radioactive, metallic element with the atomic number 94. Plutonium is produced artificially in a reactor by bombardment of uranium with neutrons and is used primarily in the production of nuclear weapons.

**Quads**

Quadrillion (1 with 15 zeros) British Thermal Units (BTU's)

**Quasars**

Any of the star like celestial objects that emit immense quantities of light and radio waves.

**R&D**

Research and Development

**Radionuclides**

A radioactive nuclide

**RERF**

Radiation Effects Research Foundation

**SBA**

Small Business Administration

**Secretary of Energy Advisory Board (SEAB)**

The Secretary of Energy Advisory Board (SEAB) was chartered in January 1990, to provide the Secretary with timely, balanced, external advice on issues of importance to the Secretary. SEAB replaced the Energy Research Advisory Board (ERAB) which had been in operation since 1978 as the principal scientific advisory committee to the Department of Energy. The mission of the Secretary of Energy Advisory Board is to provide advice, information, and recommendations to the Secretary of Energy on the Department's basic and applied research activities, economic and national security policy, educational issues, laboratory management, and on any other activities and operations of the Department of Energy as the Secretary may direct.

**SIM**

Strategic Information Management

**SLEP**

Stockpile Life Extension Program

**SOLOMON**

A DOE management information system that tracks actual performance against planned performance.

**SPR**

Strategic Petroleum Reserve

**Stakeholders**

Any person or organization interested in or potentially affected by activities and decisions of the U.S. Department of Energy.

**START I**

Strategic Arms Reduction Talks I

**START II**

Strategic Arms Reduction Talks II

**START III**

Strategic Arms Reduction Talks III

**Strategic Plan**

The Strategic Plan is required to be transmitted to

Congress every three years by the GPRA of 1993. The Strategic Plan covers a period of not less than five years forward from the fiscal year in which it is submitted.

**SUV's**

Sport utility vehicles

**TEDE**

Total effective dose equivalent

**TEF**

Tritium Extraction Facility

**Teraop**

1 trillion operations per second

**Tesla**

The international unit of measure of magnetic flux density, equal to one weber per square meter. One weber equals 108 maxwells. One maxwell is equal to the flux through one square centimeter normal to a magnetic field with intensity of one gauss. One gauss is equal to one line of magnetic flux per square centimeter.

**Top Quark**

A sub-atomic particle, the last undiscovered quark of the six predicted by current scientific theory, discovered at DOE's Fermi National Accelerator Laboratory.

**Tritium**

A radioactive isotope of hydrogen

**UF<sub>6</sub>**

Uranium hexafluoride

**USAID**

U.S. Agency for International Development

**USEC, Inc.**

United States Enrichment Corporation

**UV**

Ultra-violet

**VPP**

Voluntary Protection Program

**Waste Minimization**

An action that economically avoids or reduces the generation of waste by source reduction, reducing the toxicity of hazardous waste, improving energy usage, or recycling.

**WMD**

Weapons of mass destruction

**Workforce 21**

In November 1998, shortly following his appointment as DOE Secretary, Bill Richardson launched a new initiative designed to build a talented and diverse workforce to carry out the Department's critical missions in the new millennium. His "Workforce for the 21st Century Initiative" focuses on strengthening the Department's technical and management capability through targeted hiring, career development, and workforce planning.

## APPENDIX E: Contributors

### ***Strategic Planning Representatives***

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The Department of Energy would like to thank the many members of the DOE complex, other Federal agencies, Congressional staffers, stakeholders, and members of the public that have contributed to the development of this Strategic Plan.



# Our Core Values

## 1. We are public servants and customer-oriented.

- ! DOE is an agency of public servants.
- ! Public service focuses our efforts on constituents.
- ! Public service creates an esprit de corps within DOE.
- ! Public service is an antidote to bureaucracy.
- ! Our decisions and actions are responsive to our customer's needs.
- ! We foster a participatory government in which the opinions and input of diverse stakeholders are sought and considered prior to making decisions.
- ! We develop policies to address major challenges in a proactive, collaborative way with our customers and stakeholders.
- ! We are open and honest and want to be trusted by our customers and stakeholders.

## 2. We value public safety and respect the environment.

- ! We place a high priority on the protection of public health and safety in all of our operations.
- ! We are committed to the restoration of the environment through cleanup of contamination caused by past operations.
- ! We recognize the seriousness of the environmental impacts of our operations, and we develop and employ processes and technologies to reduce or eliminate waste production and pollution in these operations.
- ! We will be a leader in improving the quality of the environment for future generations.

## 3. We believe people are our most important resource and that they should be treated with fairness, respect, and dignity.

- ! We are committed to providing a safe and healthy workplace for all our employees and contractors.
- ! We value the needs of individuals.
- ! We reward employees based on performance.
- ! We are committed to improving the knowledge, skills, and abilities of our employees.
- ! We are committed to diversity.
- ! We share credit with all contributors.
- ! We value listening as an essential tool in learning from others.
- ! Our employees are forthright in sharing their experiences so we can learn from each other.

## 4. We value creativity and innovation.

- ! We are committed to a flexible operating environment that facilitates the pursuit of new technologies, processes, programmatic approaches, and ideas that challenge the status quo.

- ! We seek out, nurture, and reward innovation in daily activities, ranging from the routine to the complex.
- ! Our employees are empowered to pursue creative solutions.
- ! We recognize and highly regard resourcefulness, efficiency, and effectiveness.
- ! We consider adaptable, entrepreneurial approaches that can respond quickly to the rapidly changing world business and political environment to be essential.

## 5. We are committed to excellence.

- ! We consider quality and continuous improvement essential to our success.
- ! We are committed to excellence in everything we do.

## 6. We work as a team and advocate teamwork.

- ! We reinforce the notion of a common or greater Departmental good and encourage interdepartmental teamwork to achieve this goal.
- ! We value teamwork, participation, and the pursuit of win/win solutions as essential elements of our operating style.
- ! We work as a team with other Federal agencies, government organizations, and external stakeholders in pursuing broader national objectives.
- ! We recognize the needs of others for information, and we communicate knowledge and information in an open and candid manner.

## 7. We recognize that leadership, empowerment, and accountability are essential.

- ! We are visionary in our everyday activities.
- ! Our leaders trust and support individuals to make informed decisions about the processes they own.
- ! We are effective stewards of the taxpayer's interests.
- ! Our actions are result-oriented.

## 8. We pursue the highest standards of ethical behavior.

- ! We maintain a personal commitment to professionalism and integrity.
- ! We assure conformance with applicable laws, regulations, and responsible business practices.
- ! We keep our commitments.
- ! We are objective and fair.



