On September 7, 2011, the Senate Appropriations Committee approved the fiscal year 2012 Energy and Water Appropriations bill, by a vote of 29-1 (H.R. 2354/S.Rpt. 112-75). The legislation totals $32 billion and is $3.8 billion below the President's request and about $1 billion above the 2011 appropriation level. The legislation provides the annual funding for the Department of Energy, as well as the Army Corps of Engineers, the Interior Department's Bureau of Reclamation, the Nuclear Regulatory Commission, and various regional water and power authorities.


CORPS OF ENGINEERS

DEPARTMENT OF THE INTERIOR

DEPARTMENT OF ENERGY

CORPS OF ENGINEERS

The FY 2012 budget request is composed of $4,609,000,000 in new budget authority including a proposed $22 million rescission. This reflects a $308 million decrease from the FY2011 request and is $284 million less than the FY2011 enacted amount. The Committee Report notes that the budget request assumes the $22 million rescission that was included as a part of the FY2011 enacted bill, but the administration has not proposed a budget amendment to close this $22 million gap. Therefore, the Committee refers to the Corps' budget request as $4,631,000,000 throughout its report, as will be done here.

The Army Corps of Engineers is responsible for activities in support of coastal and inland navigation, flood and coastal storm damage reduction, environmental protection and restoration, hydropower, recreation, water supply and disaster preparedness and response. The Corps also performs regulatory oversight of navigable waters. Approximately 23,000 civilians and almost 300 military personnel located in eight Division offices and 38 District offices work to carry out the Civil Works program.

The report states: "The tradition of this bill has been that virtually all funding for the Corps of Engineers is designated to specific studies/projects. The administration's budget request for fiscal year 2012 continues this tradition. The four major study/project accounts (General Investigations, Construction, General, Mississippi River and Tributaries, and Operation and Maintenance) comprise $4,108,000,000 of the administration's overall budget request of $4,631,000,000 for the Corps of Engineers. Only $309,198,000 of the budget request in these four accounts is considered as
programmatic funding. That is about 7.5 percent of the funding proposed in these accounts. The remainder of the $3,798,802,000 proposed in the four major accounts is divided among 876 individual line item studies or projects proposed by the administration. As the Corps of Engineers has no inherent programmatic authorities under which the organization was created, all of these individual studies and projects are intended to be specifically authorized by Congress and specifically funded through appropriations acts.

General Investigations
The General Investigations Program is proposed at $104,000,000 for FY2012, a decrease of $22,746,000 from the FY2011 enacted amount. This account funds the preauthorization studies necessary to determine the Federal interests in a water resource problem or need.

Construction, General
The Construction, General account is proposed at $1,480,000,000 for FY2012. The line items proposed for the Construction, General account can be broken down as follows:
- Dam safety activities - $436,700,000 (29.5 percent);
- Environmental compliance activities - $202,800,000 (13.7 percent);
- Flood control and storm damage reduction activities - $243,500,000 (16.5 percent);
- Coastal or deep draft navigation activities - $110,900,000 (7.5 percent);
- Inland and shallow draft navigation activities - $157,400,000 (10.6 percent);
- Ecosystem or environmental restoration activities - $272,600,000 (18.4 percent); and
- An additional $56,100,000 is proposed for national programs (3.8 percent).

This is a decrease of $133,822,000 from the FY 2011 enacted. This account funds post authorization studies and physical construction of authorized projects.

Operation and Maintenance
The Operation and Maintenance account is proposed at $2,314,000,000. This is a decrease of $51,759,000 from FY2011. This account funds post authorization studies of operating projects, maintenance of Federal facilities and Federal operation of facilities where authorized by law.

Regulatory Program
The Regulatory Program is proposed at $196,000,000 for FY2012. This is an increase of $6,380,000 over FY2011 enacted amount to this program that provides the funding for the Corps’ nationwide regulatory roles, primarily under section 404 of the Clean Water Act and section 10 of the Rivers and Harbors Act of 1899.

Flood Control and Coastal Emergencies
The Flood Control and Coastal Emergencies account is proposed at $27,000,000 for FY2012. These funds are proposed for readiness and preparedness activities for the Corps of Engineers.

Office of the Assistant Secretary of the Army (Civil Works)
The Office of the Assistant Secretary of the Army (Civil Works) is proposed as a separate account for $6,000,000. This is $1,010,000 more than in FY2011. The Committee "continues to believe that the Assistant Secretary's office should be funded in the Defense appropriations bill. However, until such time as this account can be reintegrated into that bill, the Committee agrees that the office should be funded as a separate account. The Assistant Secretary's duties encompass much more than the Civil Works functions of the Corps of Engineers and the budget needs of the office should be addressed separately."
General Expenses
The General Expenses account is proposed at $185,000,000 for FY 2012. This is approximately the same as the FY2011 amount. The Committee Report states: "with inflation, this is a cut to the management and oversight functions of the headquarters of the Corps. The Committee notes that the Corps operates one of the most efficient headquarters staffs in the National Capital region."

Levees
The report also states the following on the issue of levees: "The Committee fully supports the Corps' efforts on levee safety. However, the Committee is concerned that the costs to repair levees may be overwhelming to local interests. The Committee is not suggesting that the Corps should back away from its safety culture, only that there should be checks and balances to ensure that recommendations are not blindly made in the name of safety without determining if the recommendations actually provide cost effective safety improvements. The Committee encourages the Corps when working with communities on levee issues to be cognizant of the costs for proposed fixes and the community's ability to fund the repairs.

"The Committee is concerned about what it believes is an overly broad reading of the definition of levees provided in section 9002 of the Water Resources Development Act of 2007. While the definition includes 'structures along canals that constrain water flows and are subject to more frequent water loadings but that do not constitute a barrier across a watercourse’ the Committee does not believe that the intent was that the Corps should be setting the standards for irrigation canals or canals that convey water for power projects. Water in these canals can be shut off in [a] relatively short period of time as opposed to a canal failure in a flood situation. Also, the Federal agencies responsible for these canals have active safety programs in-place and Corps efforts would be duplicative. The Committee encourages the Committee on Levee Safety to provide categorical exclusions for these canal systems."

Flood Control and Coastal Emergencies Account
The Committee has recommended $27,000,000 for the FY2012 Flood Control and Coastal Emergencies account, the same amount as the President's request. This account provides funds for preparedness activities for natural and other disasters, response, and emergency flood fighting and rescue operations, hurricane response, and emergency shore protection work. It also provides for emergency supplies of clean water where the source has been contaminated or where adequate supplies of water are needed for consumption.

Lake Tahoe
The Committee directs the Corps to prepare a cross cut budget that displays the amounts of funding and types of work being done by the 21 agencies doing clean up work in Lake Tahoe. This budget report for FY2012 should be prepared and submitted to the House and Senate Appropriations Committees within 120 days of enactment of this act. Subsequent cross-cut budgets should be prepared and submitted concurrently with the annual budget submission by the Corps.

Congressionally Directed Spending (Earmarks)
The Report states: "the Committee has voluntarily refused all congressionally directed spending requests for fiscal year 2012. That means that the administration has total discretion as to how the funding that this Committee appropriates will be spent as it relates to individual studies and projects. The Committee has retained the traditional tables for each of the four major accounts delineating the 876 line items requested by the President in the budget request. Due to inadequacies in the administration's budget request, the Committee has also inserted some additional line item funding
under the nationwide heading for specific categories of studies or projects that the Committee feels are underrepresented in the administration's budget request. The Corps has discretion within the guidelines provided in each account as to which line items this additional funding will be applied to. The Committee has not included any congressionally directed spending as defined in section 5(a) of rule XLIV of the Standing Rules of the Senate."

**California Line Items - Committee Recommendations**

**General Investigations**

- California Coastal Sediment Master Plan, CA - $900,000 (Feasibility)
- Coyote & Berryessa Creeks, CA- $500,000 (Preconstruction Engineering and Design)
- Los Angeles County, CA - $80,000 (Feasibility)
- Malibu Creek Watershed, CA - $210,000 (Feasibility)
- Sacramento and San Joaquin Comprehensive Basin Study, CA - $300,000 (Feasibility)
- Sac-San Joaquin Delta Islands and Levees, CA - $1,015,000 (Feasibility)
- San Pablo Bay Watershed, CA - $500,000 (Feasibility)
- Solana Beach, CA - $133,000 (Feasibility)
- Sutter County, CA - $339,000 (Feasibility)
- Upper Penitencia Creek, CA - $177,000 (Feasibility)
- Yuba River Fish Passage, CA, - $0 (President requested $100,000 for Reconnaissance)

**Construction, General**

- American River Watershed (Common Features), CA - $25,548,000
- American River Watershed (Folsom Dam Modifications), CA - $21,000,000
- American River Watershed (Folsom Dam Raise), CA - $1,000,000
- Hamilton Airfield Wetlands Restoration, CA - $8,250,000
- Hamilton City, CA - $0 (President requested $8,000,000)
- Napa River, Salt Marsh Restoration, CA - $9,500,000
- Oakland Harbor (50 Foot Project), CA - $350,000
- Sacramento Deepwater Ship Channel, CA - $3,500,000
- Sacramento River Bank Protection Project, CA - $10,000,000
- Santa Ana River Mainstem, CA - $20,500,000
- Santa Paula Creek, CA - $2,078,000
- South Sacramento County Streams, CA - $5,000,000
- Success Dam, Tule River, Ca (Dam Safety) CA - $18,000,000
- Yuba River Basin, CA - $2,000,000

**Operation and Maintenance**

- Black Butte Lake, CA - $2,337,000
- Buchanan Dam, HV Eastman Lake, CA - $2,032,000
- Channel Islands Harbor, CA - $525,000
- Coyote Valley Dam, Lake Mendocino, CA - $3,647,000
- Dry Creek (Warm Springs) Lake and Channel, CA - $5,624,000
- Farmington Dam, CA - $470,000
- Hidden Dam, Hensley Lake, CA - $2,272,000
- Humboldt Harbor and Bay, CA - $2,800,000
- Inspection of Completed Works, CA - $3,854,000
- Isabella Lake, CA - $1,721,000
- Los Angeles County Drainage Area, CA - $5,083,000
California Institute Special Report, October 2011

Marina Del Rey, CA - $3,170,000
Merced County Streams, CA - $399,000
Mojave River Dam, CA - $332,000
Morro Bay Harbor, CA - $1,590,000
New Hogan Lake, CA - $2,456,000
New Melones Lake, Downstream Channel, CA - $1,897,000
Oakland Harbor, CA - $8,755,000
Oceanside Harbor, CA - $1,520,000
Pine Flat Lake, CA - $3,291,000
Project Condition Surveys, CA - $1,710,000
Richmond Harbor, CA - $8,146,000
Sacramento River and Tributaries (Debris Control), CA - $1,299,000
Sacramento River Shallow Draft Channel, CA - $125,000
San Diego Harbor, CA - $3,800,000
San Francisco Bay Delta Model Structure, CA - $986,000
San Francisco Harbor and Bay (Drift Removal), CA - $1,979,000
San Francisco Harbor, CA - $2,548,000
San Joaquin River, Port Of Stockton, CA - $3,746,000
San Pablo Bay and Mare Island Strait, CA - $3,470,000
Santa Ana River Basin, CA - $3,530,000
Santa Barbara Harbor, CA - $2,040,000
Scheduling Reservoir Operations, CA - $1,648,000
Success Lake, CA - $2,564,000
Suisun Bay Channel, CA - $2,770,000
Terminus Dam, Lake Kaweah, CA - $2,346,000
Ventura Harbor, CA - $2,805,000
Yuba River, CA - $97,000

DEPARTMENT OF THE INTERIOR

Bureau of Reclamation

The FY 2012 budget request is $1,018,389,000 – $44,196,000 less than the FY 2011 enacted amount. The report states: "Unfortunately this budget proposal is woefully inadequate in funding the infrastructure needs. The Committee is particularly disappointed to see that rural water projects are greatly underfunded in this budget. In many cases the budget proposals for these projects are less than the inflation rate for the project. In other words, at this level of investment, these projects will never be completed because project costs are increasing faster than the amount recommended by the administration."

The report goes on to state: "The largest account in Reclamation's budget is the Water and Related Resources account. The administration budget proposal includes $805,187,000 for this account. This is a decrease of $106,486,000, from the fiscal year 2011 enacted amount. The Central Valley Project Restoration Fund is proposed at $53,068,000 for fiscal year 2012. This is an increase of $3,154,000 over the fiscal year 2011 enacted amount. This account is primarily funded from revenues collected from water and power customers. Levels of funding in this account are based on a 3-year rolling average of revenues collected. The California Bay-Delta Restoration account is proposed at $39,651,000 for fiscal year 2012. This is approximately the same as the fiscal year 2011 enacted amount. The Policy and Administration account is requested at $60,000,000, $1,078,000 less than the fiscal year 2011 enacted amount."

The mission of the Bureau of Reclamation (Reclamation) is to manage, develop, and protect water
and related resources in an environmentally and economically sound manner in the interest of the American public. Since its establishment by the Reclamation Act of 1902, the Bureau of Reclamation has developed water supply facilities that have contributed to sustained economic growth and an enhanced quality of life in the western states. The Bureau has projects in the 17 Western States, but their programs impact the entire Nation. Reclamation is the largest wholesaler of water in the country operating 348 reservoirs with a total storage capacity of 245 million acre-feet. Reclamation projects deliver 10 trillion gallons of water to more than 31 million people each year, and provide 1 out of 5 Western farmers (140,000) with irrigation water for 10 million acres of farmland that produce 60 percent of the Nation's vegetables and 25 percent of its fruits and nuts.

Water and Related Resources

The committee recommends an appropriation of $885,670,000 for the Water and Related Resources account, which is about $80 million more than the President's request. The President's request of $805 million for FY2012 reflects a decrease of over $100 million from the enacted level in FY2011.

The Water and Related Resources account supports the development, construction, management, and restoration of water and related natural resources in the 17 western states. The account includes funds for operating and maintaining existing facilities to obtain the greatest overall levels of benefits, to protect public safety, and to conduct studies on ways to improve the use of water and related natural resources.

Congressionally Directed Spending (Earmarks)

The Committee again recognized that it is voluntarily forgoing earmarks in this bill and instead carrying the President's line items through, allowing the Administration "total discretion as to how the funding that this Committee appropriates will be spent as it relates to individual studies and projects."

California Line Items - Committee Recommendations

Cachuma Project

The Committee recommends $622,000 for resources management and $625,000 for facilities.

Calleguas Municipal Water District Recycling Project

The Committee Report notes that no funding has been provided for this project as Reclamation apportioned sufficient funding to complete the authorized Federal share of the project.

Indian Water Rights Settlements Account

The Committee chose not to include a separate account for this work because although it "recognizes that these are legal settlements with the affected tribes... it believes it is prudent to keep these items within the Water and Related Resources Account." This is partly because "beyond the actual water rights settlement funding, many of these settlements included construction components very similar to rural water projects funded elsewhere in this account."

San Joaquin Restoration Account

The Committee recommends an appropriation of $0 for the San Joaquin Restoration Fund Account. The Report states: "This account was proposed to implement the provisions described in the Stipulation of Settlement for the National Resources Defense Council et al. v. Rodgers lawsuit. Rather than provide discretionary funding in this account as the budget request suggested, the Committee has chosen to provide this funding request under the Central Valley Project, Friant Division of the Water and Related Resources Account as similar work and funding has been previously provided in that account."
WaterSmart Program, Title XVI Water Reclamation/Reuse Projects

The Committee Report states: “The Committee is concerned that constrained budgets will severely impact the research and development vital to improvements in water recycling and desalination technologies’ development and applications. The Committee believes that only through enhanced Federal and non-Federal research partnerships can this situation be bridged. Therefore, the Bureau of Reclamation should consider how competitively procured cost-shared research on water reuse and desalination can be incorporated into this program. This would potentially allow qualified organizations with extensive experience in conducting research on water reuse and desalination to leverage the Bureau’s funding with other cost sharing partners.”

Central Valley Project Restoration Fund

The Committee recommends $53,068,000 for this fund, matching the President's FY2012 request and exceeding the FY2011 enacted amount by $3 million.

This fund was established to provide funding from project beneficiaries for habitat restoration, improvement and acquisition, and other fish and wildlife restoration activities in the Central Valley project area of California. The Committee states: "Unfortunately a number of sources envisioned to contribute to this fund never materialized or funding is no longer available from those sources. Power users, in particular, are paying a much greater share than anyone anticipated. This has resulted in high CVP power costs, and unpredictable fee assessments on power agencies. The power users fees are unpredictable, since in low water years the water users pay very little and the power users make up the difference." Therefore, the Committee calls on "the Commissioner to work with power users to determine a more predictable payment stream for power users and to develop measures to provide more accountability and transparency to the restoration process. Reclamation should provide a report to the Senate Appropriations Committee within 180 days of enactment of this act on actions they are taking in this regard."

Included in the CVP funding are the following:
- American River Division, Folsom Dam Unit/Mormon IS - $9,220,000
- Auburn-Folsom South Unit - $2,701,000
- Delta Division - $12,681,000
- East Side Division - $4,112,000
- Friant Division - $4,984,000
  - San Joaquin Restoration - $9,000,000
- Miscellaneous Project Programs - $12,213,000
- Replacements, Additions, and Extraordinary Maintenance - $17,911,000
- Sacramento River Division - $36,922,000
- San Felipe Division - $667,000
- San Joaquin Division - $356,000
- Shasta Division - $8,144,000
- Trinity River Division - $14,987,000
- Water and Power Operations - $8,919,000
- West San Joaquin Division, San Luis Unit - $20,814,000

California Bay-Delta Restoration Program

The Committee recommends appropriations of $39,651,000 for the CALFED Bay-Delta Program, matching the President's FY2012 request and falling $269,000 short of the FY2011 enacted level. The California Bay-Delta Restoration account funds the federal share of water supply and reliability improvements, ecosystem improvements and other activities being developed for the Sacramento-San Joaquin Delta and associated watersheds by a state and federal partnership comprised of 18 agencies
(CALSIE). Federal participation in this program was initially authorized in the California Bay-Delta Environmental and Water Security Act enacted in 1996.

**Additional California Projects:**
- Long Beach Area Water Reclamation District - $500,000
- Long Beach Desalinization Project - $500,000
- Orland Project - $709,000
- Salton Sea Research Project - $294,000
- San Diego Area Water Reclamation Program - $2,485,000
- San Jose Area Water Reclamation and Reuse Program - $247,000
- Solano Project - $3,706,000
- Southern California Investigations Program - $268,000
- Ventura River Project - $385,000

**General Provisions**
- Section 202. The bill includes language regarding the San Luis Unit and the Kesterson Reservoir in California.
- Section 203. The bill includes language concerning a project cost ceiling increase.
- Section 204. The bill includes language concerning the desalination act.
- Section 206. The bill includes language concerning the Bay Delta Conservation Plan.
- Section 207. The bill includes language concerning groundwater banking.
- Section 208. The bill includes language concerning transfers among water contractors within the CVP.
- Section 209. The bill includes language concerning the Friant prepayment for the San Joaquin River Settlement currently authorized for disbursement starting in 2019.

**DEPARTMENT OF ENERGY**

The Committee recommends a total FY2012 appropriation of $25,548,976,000 for the Department of Energy. Within these funds, $11,050,000,000 is recommended for the National Nuclear Security Administration [NNSA]. According to the report, "the Committee's highest priority is accelerating breakthroughs in clean energy technologies to reduce the Nation's dependence on foreign oil and developing carbon-free sources of energy that will change the way the United States produces and consumes energy." The Committee also stated that they support "the Department's initiative to develop exascale computing-1,000 times more powerful than today's most powerful computer," and recommends $126,000,000 for this purpose.

**Energy Efficiency and Renewable Energy**

The Committee recommends a total of $1,795,641,000 for Energy Efficiency and Renewable Energy, below FY2011 appropriations of $1,825,641,000 and below the FY2012 budget request of $3,200,053,000.

Energy Efficiency and Renewable Energy programs include research, development, demonstration and deployment activities advancing energy efficiency and renewable energy technologies, as well as federal energy assistance programs. Renewable energy research, development, demonstration and deployment activities include biomass and biorefinery systems, geothermal technology, hydrogen and fuel cell technology, water power, solar energy, and wind energy technologies. Energy efficiency activities include reducing the energy consumption of vehicle, building and industrial technologies, and the Federal Energy Management Program. Federal energy assistance programs include weatherization
assistance, state energy programs, the international renewable energy program, and tribal energy activities.

Electricity Delivery and Energy Reliability

The Committee recommends $141,010,000 for Electricity Delivery and Energy Reliability, almost $100 million below the President's FY2012 request and more than $3 million below the FY2011 enacted level. No funding is provided for the proposed new hub. The recommendation includes funds for Clean Energy Transmission and Reliability, Smart Grid Research and Development, electric vehicle technologies, and a recommendation for the Office of Electricity Delivery and Energy Reliability to "accrete its efforts to provide grants for regional transmission planning and technical assistance to entities that support or implement additional deployment of new renewable electricity generation in the Western and Eastern interconnections."

Nuclear Energy

The Committee recommends $583,834,000 for Nuclear Energy, below the President's FY2012 request of $754,028,000 and below the FY2011 appropriation level of $732,124,000. This includes funding for nuclear energy research and development and radiological facilities management.

The Committee states: "The events at the Fukushima-Daiichi facilities in Japan have resulted in a reexamination of our Nation's policies regarding the safety of commercial reactors and the storage of spent nuclear fuel. These efforts have been supported by appropriations in this bill, and the Committee provides funding for continuation and expansion of these activities. While the Nuclear Regulatory Commission has found that spent nuclear fuel can be stored safely for at least 60 years in wet or dry cask storage beyond the licensed life of the reactor, the Committee has significant questions on this matter and is extremely concerned that the United States continues to accumulate spent fuel from nuclear reactors without a comprehensive plan to collect the fuel or dispose of it safely, and as a result faces a $15,400,000,000 liability by 2020…The Committee directs the Department to develop and prepare to implement a strategy for the management of spent nuclear fuel and other nuclear waste within 3 months of publication of the final report of the Blue Ribbon Commission on America's Nuclear Future…Although successfully disposing of spent nuclear fuel permanently is a long-term effort and will require statutory changes, the Committee supports taking near- and mid-term steps that can begin without new legislation and which provide value regardless of the ultimate policy the United States adopts. The Committee therefore includes funding for several of these steps in the Nuclear Energy Research and Development account, including the assessment of dry casks to establish a scientific basis for licensing; continued work on advanced fuel cycle options; research to assess disposal in different geological media; and the development of enhanced fuels and materials that are more resistant to damage in reactors or spent fuel pools. The Committee has provided more than $500,000,000 in prior years toward the Next Generation Nuclear Plant [NGNP] program. Although the program has experienced some successes, particularly in the advanced research and development of TRISO fuel, the Committee is frustrated with the lack of progress and failure to resolve the upfront cost-share issue to allocate the risk between industry and the Federal Government. Although the Committee has provided sufficient time for these issues to be resolved, the program has stalled. Recognizing funding constraints, the Committee cannot support continuing the program in its current form."

Wind Energy

The recommendation is $80,000,000 for wind energy. The Committee supports the Department's efforts to develop advanced offshore wind energy technologies, including freshwater, deepwater, shallow water, and transitional depth installations.
Science
The Committee recommendation is $4,842,665,000 – below the fiscal year 2011 appropriation of $4,857,665,000 and below the President's FY2012 request of $5,416,114,000.

Office of Science Priorities
The Committee commends the Office of Science for identifying three clear priorities for basic scientific research:
— the discovery and design of new materials for the generation, storage, and use of energy,
— better understanding of microorganisms and plants for improved biofuels production, and
— the development and deployment of more powerful computing capabilities to take advantage of modeling and simulation to advance energy technologies and maintain U.S. economic competitiveness.

High Energy Physics
The Committee recommends $780,200,000 for High Energy Physics. The report states: "The Committee understands that powerful new accelerator technologies created for basic science and developed by industry will produce particle accelerators with the potential to address key economic and societal issues confronting our Nation. However, the Committee is concerned with the divide that exists in translating breakthroughs in accelerator science and technology into applications that benefit the marketplace and American competitiveness. The Committee directs the Department to submit a 10-year strategic plan by June 1, 2012 for accelerator technology research and development to advance accelerator applications in energy and the environment, medicine, industry, national security, and discovery science."

Basic Energy Sciences
The Committee recommends $1,693,860,000 for Basic Energy Sciences, including $151,400,000 for construction activities as requested in the budget. The remaining $1,542,460,000 is intended for research. Within the research funds provided, up to $100,000,000 shall be used to support the 46 Energy Frontier Research Centers. Overall, Basic Energy Sciences supports research in materials science, chemistry, geoscience and bioscience to provide the foundations for future innovations in energy technologies and national security.

Within the funding provided, the Committee also recommends $37,000,000 for major items of equipment, including $8,000,000 for design and engineering work to enhance the capabilities of the Linac Coherent Light Source at SLAC.

Fusion Energy Sciences
Fusion Energy Sciences conducts basic science research and experimentation seeking to harness nuclear fusion for energy production purposes. The Committee recommends $335,463,000 for Fusion Energy Sciences.

Of the $24,741,000 requested for the High Energy Density Laboratory Plasma program, $12,000,000 shall be spent on heavy-ion fusion, laser-driven fusion, and magneto-inertial fusion to be evenly distributed among these three areas of science.

The Report states: “The Committee is concerned about the impact ITER will have on the domestic fusion energy budget. Based on DOE budget estimates, DOE will be requesting between $300,000,000 to $400,000,000 a year from fiscal years 2014 through 2016 to help build ITER. If current trends of declining or flat budgets continue, almost all of the fusion energy sciences budget will be consumed by ITER. The Committee encourages DOE to find a solution to this problem without compromising the scientific and technical expertise residing at U.S. universities, labs, and industrial partners.”

Furthermore, “The Committee also encourages the fusion energy program take continue taking advantage of high performance computing to address scientific and technical challenges on the path to
fusion energy. The Committee supports the Fusion Simulation Program to provide experimentally validated predictive simulation capabilities that are critical for ITER and other current and planned toroidal fusion devices. Given current and future budget constraints, the Committee views this initiative as critical to maintain U.S. world leadership in fusion energy in a cost-effective manner.”

**Advanced Research Projects Agency - Energy (ARPA-E)**

The Committee recommends $250,000,000 for the Advanced Research Projects Agency-Energy, above the fiscal year 2011 appropriation of $179 million but below the President's FY2012 request of $550 million.

The Advanced Research Projects Agency-Energy (ARPA-E) supports research aimed at rapidly developing energy technologies whose development and commercialization are too risky to attract sufficient private sector investment, but that are capable of significantly changing the energy sector to address our critical economic and energy security challenges. Projects funded by ARPA-E include such wide-ranging areas as production processes for transportation fuel alternatives that can reduce our dependence on imported oil, heating and cooling technologies with exceptionally high energy efficiency, and improvements in petroleum refining processes.

**National Nuclear Security Administration**

The Office of the Administrator of the National Nuclear Security Administration (NNSA) provides corporate planning and oversight for Defense Programs, Defense Nuclear Nonproliferation and Naval Reactors, including the NNSA field offices in New Mexico, Nevada and California. The Committee recommendation is $404,000,000, slightly above fiscal year 2011 level of about $399 million but below the FY2012 budget request of $450 million.

The Report states: "The Committee encourages NNSA to develop a plan by the end of fiscal year 2012 – consistent with NNSA's May 2011 strategic plan – to create an open, unclassified research and development space known as the Livermore Valley Open Campus that would increase interactions and partnerships between Lawrence Livermore and Sandia/California National Laboratories as well as the private sector and academia. This type of campus would help Livermore and Sandia maintain leadership in science, technology, and engineering in a wide variety of areas, including high-performance computing, energy and environmental security, and cybersecurity, and attract the workforce needed to fulfill the laboratories' NNSA mission."

**Campaigns**

The campaigns support scientific research, experimental activities and advanced computation, which make up the core of the science-based stockpile stewardship program. For Campaigns, the Committee recommends $1,716,407,000.

**Science Campaign**

The Committee recommends $347,055,000 for science campaigns with at least $44,000,000 going to plutonium and other physics experiments at Sandia National Laboratory. The report states: "No funding shall be used to design, prepare, or execute a scaled experiment. The Committee is concerned that a scaled experiment, which is a type of subcritical experiment that uses plutonium pit-like designs, may not be needed for annual assessments of the current stockpile and a new program for scaled experiments may interfere with achieving the Nuclear Posture Review's goals and schedule. In addition, the Committee is concerned that NNSA does not have the diagnostic equipment at the Nevada National Security Site to collect the necessary data for scaled experiments... The Committee directs NNSA to wait until the JASON study group completes its review of scaled experiments before making a decision on whether to proceed with scaled experiments. If NNSA decides to conduct scaled experiments, the
Committee expects NNSA to submit a plan explaining the scientific value of scaled experiments for stockpile stewardship and meeting the goals of the Nuclear Posture Review, the costs of developing the capabilities for and conducting scaled experiments, and the impact on other stockpile stewardship activities under constrained budgets if scaled experiments are pursued.

**Engineering Campaign**

For the Engineering Campaign, the Committee recommends $143,078,000, as requested.

**Inertial Confinement Fusion and High Yield Campaign**

The Committee recommends $476,274,000, matching the President's request. Within these funds, at least $62,500,000 and $48,000,000 shall be used for inertial confinement fusion activities at the University of Rochester's Omega facility and Sandia National Laboratory's Z facility, respectively. This also includes at least $5,000,000 as requested for the Naval Research Laboratory to continue operating laser facilities focused on laser plasma interactions, target hydrodynamics, and materials.

**Advanced Simulation and Computing**

The Committee recommends $625,000,000 for Advanced Simulation and Computing. The report says, "High-performance computing underpins NNSA's ability to scientifically resolve outstanding weapons performance issues, address material aging and compatibility challenges, conduct future life extension program activities, and rapidly address results from Significant Findings Investigations. As the stockpile continues to age, NNSA will require a thousand fold improvement over today's modeling and simulation capability, commonly referred to as exascale. Therefore, of the funds provided, the Committee recommends $36,000,000 as requested for the exascale initiative."

**Directed Stockpile Work**

The Committee recommends $1,804,882,000 for directed stockpile work. Of that, the Committee recommends $180,000,000 for the B61 life extension program, a reduction of $43,562,000. The Committee directs also that the Administrator of NNSA and the laboratory directors from Los Alamos, Livermore, and Sandia certify to the House and Senate Appropriations Committees that the benefits of installing intrinsic safety and security features outweigh the costs and there are no less costly and effective alternatives to surety that can be accomplished without introducing intrinsic surety features in the B61 by March 1, 2012.

For further information, go to: [http://www.thomas.loc.gov](http://www.thomas.loc.gov) or [http://appropriations.senate.gov](http://appropriations.senate.gov).