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**Statement of the Energy Committee of ASME's Technical Communities  
on the Department of Energy Fiscal Year 2010 Budget Request**

June 19, 2009

Mr. Chairman, Ranking Member, and Members of the Subcommittee:

The ASME Energy Committee is pleased to provide this testimony on the Fiscal Year 2010 (FY 2009) budget request for research and development programs in the Department of Energy (DOE).

Introduction to ASME and the ASME Energy Committee

The 127,000-member ASME is a nonprofit, worldwide educational and technical Society. It conducts one of the world's largest technical publishing operations, holds more than 30 technical conferences and 200 professional development courses each year, and sets some 600 industrial and manufacturing standards. The Energy Committee of ASME's Technical Communities comprises 30 members from 17 Divisions of ASME, representing approximately 40,000 of ASME's members.

ASME has long advocated a balanced energy supply mix to meet the nation's energy needs, including advanced coal, petroleum, nuclear, natural gas, biomass, solar, wind and hydroelectric power, and energy efficient building and transportation technologies. Only such a portfolio will allow the U.S. to maintain its quality of life while addressing future environmental and security challenges. Sustained growth will also require stability in licensing and permitting processes not only for power stations but also for transmission and transportation systems.

A forward-looking energy policy will require enhanced, sustained levels of funding for R&D as well as government policies that encourage deployment and commercialization. While the Energy Committee supports much of the FY 2010 budget request, especially the increases in funds for fundamental scientific research, we wish to reemphasize that a balanced approach to our energy needs is critical and we are concerned about the decrease in funding for nuclear energy, which is essential to meeting our national energy needs.

Critical Issues

The Energy Committee would like to point out some critical energy issues:

- Additional investment guarantees for construction of new clean and especially nuclear facilities must be enacted in future energy legislation. These guarantees will enable lower financing costs for a variety of energy technologies leading to lower energy costs for the American public. Extending these programs further into the future will allow a reasoned rate of increase in construction and application of these technologies for electric generation.
- There is a critical shortage of trained persons in the work force at all levels. This includes persons in the various building trades that will be involved in the construction of our

energy systems, persons in the manufacturing industry that will manufacture the components that make up our energy systems, persons who will be available to operate and maintain the energy systems when they are built, and persons trained as engineers and scientists at all levels who will perform the R&D and design functions for all energy systems. A recent initiative, “Regaining our ENERGY Science and Engineering Edge” or “RE-ENERGYSE,” a program being conducted jointly by the DOE EERE and the National Science Foundation (NSF) and geared to young scientists and engineers, is a positive step toward addressing this chronic issue.

### Fossil Energy

The FY 2010 budget request of \$884 million for fossil energy represents a \$513 million decrease over the FY 2009 appropriation. Fossil Energy Research and Development would be reduced \$112 million to \$403 million. The R&D budget for oil and natural gas related research has been eliminated. It should be noted that the DOE Office of Fossil Energy received \$3.4 billion for Research and Development as part of ARRA, for research, development and deployment of carbon capture and sequestration, therefore the ASME Energy Committee supports this funding request. The Energy Committee supports the current proposed funding for coal research programs at \$617 million for FY10. The effective use of coal in today’s environment demands an increase in efficiency and a decrease in release of environmentally harmful waste streams. A large portion of this effort right now is the Clean Coal Program Initiative (CCPI), which received \$1.5 billion as part of ARRA and therefore, did not request any additional funding for FY10. This approach builds on technological R&D advancements in IGCC and CCS technology achieved over the past five years and provides commercial-scale demonstration opportunities for fossil energy power plants.

The use of more efficient processes for coal use, such as advanced integrated gasification combined cycle technology, combined with carbon sequestration will allow the U.S. to utilize its coal resources in a more environmentally sound and cost effective manner. We encourage strong and consistent funding for these programs now and in future years.

### Advanced Fuels Research

The Energy Committee agrees that the advanced fuels research should be aimed at fuels used in the transportation system. We believe that the development of transportation fuel systems that are not petroleum based is a critical part of our future national energy policy. The FY 2010 budget for biomass and bio-refinery systems R&D is increased by \$18 million to \$235 million. The Energy Committee encourages Congress to ensure that these research programs continue to receive adequate funding. We are also pleased to see the increase to \$330 million in the effort related to vehicle technologies with a program emphasis on plug-in hybrid electric vehicles.

### Nuclear Energy

The Energy Committee is discouraged to see a steep decrease in the DOE Nuclear Energy budget to \$844 million in FY 2010. Even with the reduction of the MOX fuel fabrication facility from the Nuclear Energy budget, placing it back with the Nuclear National Security Administration (NNSA), the nuclear R&D portion of the budget request is reduced by \$112 million to \$403 million for FY 2010. Because of the sharp reduction in funding, and the decision to exclude the Office of Nuclear Energy from ARRA, the Committee strongly recommends restoring funding for DOE Office of Nuclear Energy to at least the levels appropriated in FY 2009. Nuclear power, as a non-greenhouse gas-emitting resource, is a critical component of a diverse U.S. power generation mix and should play a larger role in the nation's base power supply. Sustained

increases in nuclear power research are justified by the imperative of low cost, low emissions electricity.

Proposed increases in the Nuclear Energy budget are most evident in the Generation IV Nuclear Energy Systems, \$191 million, Fuel Cycle R&D, \$192 million, and Nuclear Power 2010 program at \$20 million. The primary decrease is in the Generation IV Nuclear Systems Initiative which is \$45 million. The Energy Committee believes that nuclear generated electricity is important to the nation, especially in a more carbon conscious environment. Therefore continued R&D looking at advanced nuclear systems is critical.

The Global Nuclear Energy Partnership (GNEP) program, before its cessation in the FY 2009 Omnibus Appropriations bill, was a vital means to enhancing the future of safe, reliable, nuclear energy through the establishment of international centers for nuclear fuel cycle services for nations both large and small. Although no funding is provided for GNEP, the Advanced Fuel Cycle Initiative, now called Fuel Cycle R&D, would receive \$192 million in funding in FY10. The Energy Committee concurs with the DOE goal to establish a full scale demonstration of the required facilities, including a burner reactor and fuel recycle plant that will not produce a pure plutonium product stream. The ASME Energy Committee is disappointed with the cancellation of the GNEP program and urges Congress and the Administration to reconsider the discontinuation of GNEP. GNEP was established as an international effort and many international partners had agreed to participate. This is consistent with efforts to establish an international nuclear fuel bank.

#### Energy Efficiency and Renewable Energy

The Office of Energy Efficiency and Renewable Energy (EERE) manages America's investment in research, development and deployment of the Department of Energy's (DOE) diverse energy efficiency and renewable energy applied science portfolio. It should be noted that the DOE EERE received \$16.5 billion as part of ARRA, including \$2.5 billion for Research and Development. The FY 2010 request of \$2.02 billion, \$570 million above the FY09 appropriated amount, provides a broad and balanced portfolio of solutions to address the urgent energy and environmental challenges currently facing our nation. Most of the key EERE programs, including Biomass, Solar, Wind, Geothermal, Building Technologies, Vehicle Technologies, and Industrial technologies, have received sizable increases in funding to support the growth of renewable energy that the U.S. needs. The potential to reduce the production of greenhouse gases and to meet the growing need for domestically produced energy justifies sustained and increased support for these programs.

The Fuel Cell Technologies program, formerly known as the Hydrogen technology program has been reduced \$100 million from the FY 2009 appropriation. While the Administration has publicly indicated that they view the probability of fuel cell vehicles as "low", this program is a key driver in the development of fuel cell technology. The Energy Committee encourages restoring funding to the Hydrogen Program consistent with the FY 2009 appropriation. The other technology program to receive a cut was the Water Power Program, which is now requested to receive \$30 million in FY 2010 - a 25% or \$10 million cut from FY 2009. While relatively small, this program supports R&D for wave and ocean energy technologies as well as conventional and pumped storage hydropower. Water power will contribute significantly to the eventual transition to clean and renewable power generation in the US. The Energy Committee encourages restoring funding to the Water Power Program consistent with the FY 2009 appropriation.

The integration of renewable electric generating systems into the operation of the electricity distribution system is critical to economic operation of these systems. DOE's support of R&D into distributed systems integration began in FY 2007. The Energy Committee believes that R&D related to the integration of the electric grid and its control as a national system is imperative to the growth of renewable energy generating technologies and we encourage full funding for such research.

#### Science and Advanced Energy Research Programs

The Energy Committee is pleased by the increased request for the Office of Science (OS) which restores the funding trajectory mandated in the America Competes Act of 2007. It should be noted that the DOE Office of Science received \$1.6 billion as part of ARRA. The FY 2010 budget proposal of \$4.94 billion is an increase of \$184 million over the FY09 appropriation. OS programs in high energy physics, fusion energy sciences, biological and environmental research, basic energy sciences, and advanced scientific computing, serves, in some small way, every student in the country. These funds support not only research at the DOE Laboratories but also work at a large number of universities and colleges. We believe that basic energy research will also improve U.S. energy security over the long term, through its support for R&D on cellulosic ethanol, advanced battery systems, and fusion.

#### Other DOE Programs

DOE is also very active in areas outside of R&D. The environmental remediation program that funds the decommissioning and decontamination of old DOE facilities is one such program. The Energy Committee questions the advisability of all of the budget decreases in this program. The coming resurgence in the commercial nuclear arena is likely to deplete the trained professionals available for this program as engineers choose to move to the more stable commercial environment. Congress should appropriate the budget to ensure that this work is accomplished in an expeditious manner.

#### Conclusion

Members of the ASME Energy Committee consider the issues related to energy to be one of the most important issues facing our nation. The need for a strong and coherent energy policy is apparent. We applaud the Administration and Congress for their understanding of the important role that scientific and engineering breakthroughs will play in meeting our energy challenges. In order to promote such innovation, strong support for energy research will be necessary across a broad portfolio of technology options. DOE research can play a critical role in allowing the U.S. to use our current resources more effectively and to create more advanced energy technologies.

Thank you for the opportunity to offer testimony regarding both the R&D and other parts of the proposed budget for the DOE. The ASME Energy Committee is pleased to respond to additional requests for additional information or perspectives on other aspects of our nation's energy programs.

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*This statement represents the views of the Energy Committee of ASME's Technical Communities and is not necessarily a position of ASME as a whole.*