

0/0045

MEMORANDUM OF UNDERSTANDING  
 BETWEEN  
 NATIONAL AERONAUTICS AND SPACE ADMINISTRATION  
 AND  
 U. S. DEPARTMENT OF ENERGY  
 REGARDING  
 ENERGY-RELATED CIVIL SPACE ACTIVITIES

**I. PURPOSE**

This Memorandum of Understanding (MOU) establishes the role of the Department of Energy (DOE) in supporting the National Aeronautics and Space Administration (NASA) civil space mission and the process for defining and implementing activities between the two agencies.

**II. BACKGROUND**

NASA, the U.S. civil space agency, is responsible for defining, designing, developing, launching and operating the Nation's civil spacecraft and space-related facilities. DOE's civil space activities support the NASA civil space mission in the DOE mission areas of energy and energy-related research and development (R&D), fundamental science and environmental technology, and the advanced technology development capability which underlies these, as well as science, engineering, and mathematics education,

DOE, its National Laboratories, and NASA have worked together for over 30 years in space science and applications, exploration, and technology development. Presidential National Space Policy Directives encourage DOE to expand its role in several areas, such as space exploration, space-based global change observation, remote sensing, space launch technology, commercialization, and associated international cooperation. Close collaboration between NASA and DOE will enhance the effectiveness of programs in both agencies.

**III. POLICY**

In areas consistent with NASA's civil space responsibilities and DOE'S missions and capabilities, collaborative efforts between the two agencies will be pursued. This includes the following areas:

## Energy and Energy -related Research and Development

Renewable Energy. NASA and DOE both conduct strong non-nuclear **energy** R&D programs in support of their respective civil space and energy missions. DOE and NASA shall Coordinate renewable energy research and technology efforts and shall identify appropriate activities that address NASA's civil **space** power needs, consistent with the goals and objectives of the National Energy Strategy (NES) .

Nuclear Energy. in response to NASA's mission requirements, DOE shall be responsible for the design, development, fabrication, evaluation, testing, and delivery of nuclear subsystems, components, technologies; and technical data for space nuclear power and propulsion systems; for the environmental, **safety** and health aspects of space nuclear **systems**; and for providing guidance with respect to security and safeguard requirements for special nuclear materials. NASA shall be responsible for the overall design and program management of space nuclear propulsion systems, for integrating the nuclear components and/or subsystems into the space vehicles, and for their launch and operations in space. The agencies shall ensure their **space** nuclear-related activities are conducted in a safe and environmentally acceptable manner.

Global Climate Change. NASA and DOE are major participants in the U.S. Global Change Research Program. National space policy assigns lead responsibility for defining the **space-based** portion of this program---the U.S. Space-based Global Climate Change Observation System (S-GCOS)--to NASA. DOE shall conduct activities in support of the SGCOS and/or that support its global climate change role as defined by the NES.

## Fundamental Science

Radiation effects. One of the most significant issues in qualifying humans and space hardware for long duration space flight is understanding radiation risks. DOE research and ground facilities are critically important for this effort. Therefore, in support of NASA programs in life sciences, space physics and spacecraft development, DOE shall conduct research and maintain and operate irradiation facilities, including particle accelerators, necessary to simulate space radiation fields. DOE, in coordination with NASA, shall ensure the availability of new irradiation facilities, as appropriate, in order to ensure that state-of-the-art **space** radiation research can be performed in the United States-

Space science research. DOE and NASA shall continue to work to provide research investigations in space physics and astrophysics to support a viable U.S. space science program.

## ■ Advanced Technology Development

NASA and DOE shall cooperate on developing advanced technology efforts which meet critical technology needs of the civil space sector. These needs shall be defined and incorporated in the NASA Integrated Technology Plan for the Civil Space Program.

## ■ Science, Engineering and Mathematics Education

In order to meet the America 2000 educational goals and objectives, NASA and DOE are committed to conducting programs to improve the Nation's science education system and to attract and retain more young people in science, engineering, and mathematics.

Both agencies shall consult and cooperate to further strengthen and **enhance** their respective and mutual technology transfer and international efforts in the areas identified above.

## IV. IMPLEMENTATION

NASA/DOE collaboration on specific space-related projects and **programs shall be the subject of MOUs or other implementing agreements** detailing specific roles and responsibilities, performance and schedule requirements, management provisions and **funding arrangements**. Such interagency agreements shall address specific patent and intellectual property protection, as needed. **NASA/DOE collaboration may include joint projects and programs as well as coordinated activities.** Working groups **may be established to define plans and address issues in specific areas.**

For NASA, the **Administrator**, and for WE, the **Secretary**, shall **be ultimately responsible** for the oversight of this MOU within their respective agencies. For NASA, the **Deputy Administrator**, and for DOE, the **Deputy Secretary of Energy**, shall coordinate the implementation of this MOU and ensure that issues **cutting across organizational lines in either agency are resolved expeditiously.**

Activities between NASA and WE **may involve NASA's Program Offices, Field Centers, other facilities, grantees, and contractors and DOE'S Program Offices, National Laboratories, Energy Technology Centers, and contractors.** All activities **proposed to be undertaken pursuant to this MOU shall be subject to the availability of funds.**

## V. SENIOR MANAGEMENT REVIEW GROUP

A NASA/DOE **Senior Management Review Group shall meet at least semiannually to coordinate and facilitate NASA/DOE space-related activities.** These meetings will serve the following purposes:

**review and comment on the status of collaborative activity between the two agencies;**

- o review NASA energy- and technology-related requirements;
- o review DOE space-related capabilities and programs;
- o assess respective long-term plans of potential mutual Interest; and,
- o consider policy and programatic issues **of** mutual concern.

The Senior Management Review Group shall be co-chaired by the NASA Deputy Administrator and the Deputy Secretary of Energy. The Group shall consist of the NASA Associate Administrators for Aeronautics and Space Technology, Space Science and Applications, and Exploration and the DOE Assistant Secretaries for Conservation and Renewable Energy, Defense Programs, and Nuclear Energy, and the Director of Energy Research. Other NASA and DOE representatives shall be included depending on the subject under discussion, such as education, technology transfer, international cooperation, and other energy areas. The DOE Director, Office of Space, shall serve as the Executive Secretary for the Group.

As appropriate, the Senior Management Review Group shall meet in Executive Session with the NASA Administrator and the Secretary of Energy presiding.

#### VI. AUTHORITY

This MOU is carried out within the statutory guidelines in the Atomic Energy Act of 1954, as amended, the Department of Energy Organization Act (42 U.S.C. 7101, et seq.), and the National Aeronautics and Space Administration Act of 1958, as amended (42 U.S.C. 2451 et seq.), and related statutes.

#### VII. DISCLOSURE OF INFORMATION

Subject to the Freedom of Information Act (5 U.S.C. 552), decisions on the disclosures of information to the public regarding projects and programs within this MOU shall be made following consultation between NASA and DOE regarding the other's activities.

#### VIII. EFFECTIVE DATE

This MOU is effective upon signature by the NASA Administrator and the Secretary of Energy.


#### IX. AMENDMENTS

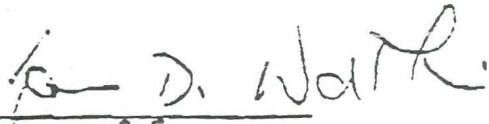
This MOU may be modified or amended by written agreement between the NASA Administrator and the Secretary of Energy.

X.

TERMINATION

This MOU may be terminated by mutual agreement of the NASA Administrator and the Secretary of Energy or by either party upon three months written notice to the other.

By   
Administrator  
National Aeronautics and  
Space Administration

By   
Secretary of Energy

Date: July 9, 1992

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