NATIONAL AERONAUTICS AND SPACE ADMINISTRATION
[Notice 91-17]

Outer Solar System Exploration Program, Including the CRAFT and Cassini Missions

AGENCY: National Aeronautics and Space Administration.

ACTION: Notice of intent to prepare an environmental impact statement for the Outer Solar System Exploration Program, including the CRAFT and Cassini Missions.

SUMMARY: The National Aeronautics and Space Administration, in accordance with the National Environmental Policy Act of 1969 (NEPA), as amended (42 U.S.C. 4321 et seq.), the Council on Environmental Quality Regulations for Implementing the Procedural Provisions of NEPA (40 CFR parts 1500-1506), and NASA's Procedures for Implementing NEPA (14 CFR 1216.300 et seq.), intends to prepare an Environmental Impact Statement (EIS) for NASA's Outer Solar System Exploration Program (hereafter referred to as "Program"). This EIS will (1) serve as a programmatic EIS for NASA's future Program activities, (2) and specifically address the planned Comet Rendezvous Asteroid Flyby (CRAFT) and Cassini missions. The proposed launch site for the CRAFT/Cassini missions is Cape Canaveral Air Force Station, Florida.

DATE: Interested parties are invited to submit written comments to NASA by April 15, 1991, to assure full consideration during the scoping process.

ADDRESSES: Comments should be submitted to Mr. Howard Wright, CRAFT/Cassini Program Manager, Office of Space Science and Applications, Code SL, National Aeronautics and Space Administration, Washington, DC 20546.

FOR FURTHER INFORMATION CONTACT: Mr. Howard Wright (202) 455-3586.

SUPPLEMENTARY INFORMATION: In pursuit of the goal of understanding the birth and evolution of the planetary system, NASA has developed a strategy which calls for an orderly progression from planetary reconnaissance, through exploration, to intensive study of each of the three regions of the solar system: the inner solar system (terrestrial planets), the primitive bodies (comets and asteroids), and the outer solar system (the gas giants).

Until recently, NASA's Outer Solar System Exploration Program concentrated on flyby or reconnaissance type missions to the outer solar system. With the launch of the Galileo mission, the Program began its transition to exploration level missions. Subsequent missions aimed at exploration include the Comet Rendezvous Asteroid Flyby (CRAFT) mission and the Cassini mission to Saturn, to be followed by the Comet Nucleus Sample Return, Neptune Orbiter- Triton Probe and the Pluto Flyby missions. This series of exploration oriented missions is the current focus of the Outer Solar Systems Exploration Program.

These missions share common requirements for launch energy, on-board propulsion, power, communications and data handling, and navigation, guidance and control. Radiosotope thermoelectric generators (RTG's) are baselined as the power source for these missions based on such considerations as the spacecraft environment, power requirements, and payload constraints. NASA is developing a modular, cost-effective spacecraft—the Mariner Mark II—to satisfy these common mission requirements. In addition to relying on this common spacecraft, these missions to the outer solar system are planned to use Titan IV launch vehicles and will fly trajectories that are likely to require planetary gravity assist flybys (most likely Earth).

Thus, the exploration-oriented series of missions possess all of the major characteristics of a major Federal action for which a programmatic EIS is appropriate. The programmatic EIS will serve as baseline document for the environmental evaluation of subsequent outer planet and planetary body missions. This EIS will address all of these common elements in a single document and will provide detailed information on each mission to the extent that such data are available at the time of the preparation of the programmatic EIS.

The EIS will also address the design, fabrication, launch, and operation of CRAFT and Cassini as specific examples of the class of missions which utilize the Mariner Mark II spacecraft. The proposed baseline action calls for the launch of the CRAFT and Cassini missions at Cape Canaveral Air Force Station, Cape Canaveral, Florida, on Titan IV/Centaur expendable launch vehicles in the 1988-1992 time frame. Missions of this type generally require a trajectory that includes Earth flyby gravity-assists.

Programmatic and mission-specific alternatives to this proposed action include, but are not necessarily limited to, the (1) use of alternative sources of on-board power (including solar); (2) use of a trajectory that relies on a planet other than Earth to provide gravity assist; and (3) elimination of one or more missions ("no action").

The EIS will consider the potential environmental impacts associated with the launch and operation of these missions. Particular emphasis will be placed on potential safety and environmental impacts associated with the possible release of plutonium-238 from the RTG's in the event of a launch accident or an inadvertent spacecraft re-entry into the Earth's atmosphere.

Environmental effects associated with the Titan IV are assessed in the Department of the Air Force Environmental Assessment for the Complementary Expendable Launch Vehicle (Now named Titan IV), Cape Canaveral Air Force Station, Florida (1986).

Written public input and comments on environmental issues of the proposed missions, including but not limited to, mission alternatives, spacecraft, launch vehicles, and on-board power source options, as well as related environmental concerns, are hereby solicited.


C. Howard Robins, Jr.,
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[FR Doc. 91-5/82 Filed 2-28-91; 8:45 am]

BILLING CODE 7510-01-M