NATIONAL AERONAUTICS AND SPACE ADMINISTRATION (NASA)

Notice (14-)

National Environmental Policy Act: Mars 2020 Mission

AGENCY: National Aeronautics and Space Administration

ACTION: Notice of Availability (NOA) of the Final Environmental Impact Statement (FEIS) for implementation of the Mars 2020 Mission.

SUMMARY: Pursuant to the National Environmental Policy Act of 1969, as Amended, (NEPA) (42 U.S.C. 4321 et seq.), the Council on Environmental Quality Regulations for Implementing the Procedural Provisions of NEPA (40 CFR Parts 1500-1508), and NASA NEPA regulations (14 CFR Part 1216 subpart 1216.3), NASA has prepared and issued an FEIS for the proposed Mars 2020 mission.

The purpose of this proposed mission is to continue NASA's in-depth exploration of Mars by conducting comprehensive science on the surface of Mars. The mission would consist of a highly mobile science laboratory (rover) designed to explore and investigate in detail a site on Mars in support of the overall scientific goal to address questions of habitability and the potential origin and evolution of life on Mars. The rover would include new in situ scientific instrumentation designed to seek signs of past life. This instrumentation would be used to select a suite of samples that would be stored in a retrievable cache for a potential future mission to return to Earth. The Mars 2020 mission would also demonstrate technology for future exploration of Mars (e.g., small secondary payloads or other technologies applicable to both robotic and human missions).

This Environmental Impact Statement (EIS) is a tiered document (Tier 2 EIS) under NASA's Programmatic EIS for the Mars Exploration Program (MEP). The FEIS presents descriptions of

the proposed Mars 2020 mission, spacecraft, and candidate launch vehicles; an overview of the affected environment at and near the launch site; and the potential environmental consequences associated with the Proposed Action and alternatives, including the No Action Alternative.

The FEIS evaluates three alternatives in addition to the No Action Alternative. Under the Proposed Action, Alternative 1, NASA's Preferred Alternative, the proposed Mars 2020 rover would utilize a radioisotope power system, a Multi-Mission Radioisotope Thermoelectric Generator (MMRTG), as its primary source of heat and electrical power to operate and conduct science on the surface of Mars. Under Alternative 2, the proposed Mars 2020 rover would utilize solar energy as its primary source of electrical power to operate and conduct science on the surface of Mars. Under Alternative 3, the proposed Mars 2020 rover would utilize solar energy as its primary source of electrical power augmented by the thermal output from Light Weight Radioisotope Heater Units (LWRHUs) to help keep the rover's on board systems at proper operating temperatures to conduct science on the surface of Mars.

Under the Proposed Action (Alternative 1), Alternative 2 or Alternative 3, the Mars 2020 spacecraft would be launched on board an expendable launch vehicle from Kennedy Space Center (KSC) or Cape Canaveral Air Force Station (CCAFS), Florida during the July through August 2020 time period. The arrival date at Mars would range from January 2021 to March 2021. Should the mission be delayed, the proposed Mars 2020 mission would be launched during the next available launch opportunity in August through September 2022. Under the No Action Alternative, NASA would discontinue preparations for the Mars 2020 mission, and the spacecraft would not be launched.

DATES: NASA will issue a Record of Decision (ROD) for the proposed Mars 2020 mission either by December 19, 2014, or after 30 days from the date of publication of the NOA of the

Mars 2020 FEIS in the Federal Register of the U.S. Environmental Protection Agency (EPA) NOA of the Mars 2020 FEIS, whichever is later.

ADDRESSES: The FEIS may be reviewed at the NASA Headquarters Library (Washington, DC), the Jet Propulsion Laboratory Visitors Lobby (Pasadena, CA), as well as public libraries in Florida including Central Brevard, Cocoa Beach, Merritt Island, Port St. John, Cape Canaveral and Titusville. Limited hard copies of the FEIS are available and may be requested by contacting Mr. George Tahu at the address, telephone number, or electronic mail address indicated below. The FEIS is available electronically to download and read at http://www.nasa.gov/agency/nepa/mars2020eis. NASA's ROD will also be placed on this website when it is issued. Anyone who desires a hard copy of NASA's ROD when it is issued should contact Mr. Tahu.

FOR FURTHER INFORMATION CONTACT: Mr. George Tahu, Planetary Science Division, Science Mission Directorate, NASA Headquarters, Washington, DC 20546-0001, telephone 202-358-0016, or electronic mail to mars2020-nepa@lists.nasa.gov.

SUPPLEMENTARY INFORMATION:

With either the Proposed Action (Alternative 1), Alternative 2, or Alternative 3, the potentially affected environment for a launch accident includes the area at and in the vicinity of the launch site, KSC/CCAFS in Florida. Potential launch accidents could result in the release of some of the radioactive fuel from within the MMRTG. The MMRTG planned for use on the rover for the Proposed Action (Alternative 1) would use approximately 4.8 kilograms (10.6 pounds) of plutonium dioxide to provide heat and electrical power. The LWRHUs planned for use on the rover for Alternative 3 would use approximately 192 grams (0.42 pounds) of plutonium dioxide to provide heat.

The U.S. Department of Energy (DOE) served as a cooperating agency for this NEPA action, and in cooperation with NASA, performed a risk assessment of potential accidents for the Mars 2020 mission. This assessment used a methodology refined through applications to the Galileo, Ulysses, Cassini, Mars Exploration Rover, New Horizons, and Mars Science Laboratory missions. DOE's risk assessment for the proposed Mars 2020 mission utilizing an MMRTG, Alternative 1, indicates that in the unlikely event of a launch accident, a release of radioactive material is not expected. The risk assessment also indicates that in the unlikely event of a launch accident under Alternative 3, a release of radioactive material is not expected.

NASA published a NOA of the Draft EIS (DEIS) for the Mars 2020 mission in the Federal Register on June 5, 2014, (79 FR 32577) and made the DEIS available in electronic format on its website, http://www.nasa.gov/agency/nepa/mars2020eis. The EPA published its NOA in the Federal Register on June 6, 2014, (79 FR 32729). In addition, NASA published its NOA of the DEIS in local newspapers in the Cape Canaveral, Florida regional area, and held an online public meeting (also advertised in local newspapers and NASA social media sites) on June 26, 2014, during which attendees were invited to present both oral and written comments on the DEIS. No comments concerning the DEIS were submitted during the online public meeting. NASA received 10 comment submissions (by letter, email, and telephone) during the comment period ending July 21, 2014. The comments are addressed in the FEIS.

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