

**SECTION A. Project Title: Solid Rocket Propellant Fire Characterization****SECTION B. Project Description**

The Johns Hopkins University, Applied Physics Laboratory (JHU/APL) will perform research to understand the performance of fuel used as heat sources in radioisotope power systems under accident scenarios that would subject the heat sources to solid rocket propellant fire. JHU/APL will subject fuel simulants (no radioactive material is used for these tests) to solid rocket propellant fires to better understand the potential for material release under these conditions. They will also perform tests to characterize the fires, which will improve predictions of fuel performance for untested conditions. The information from these tests may be used to support the safety analysis of space missions that use radioisotope power systems.

**SECTION C. Environmental Aspects / Potential Sources of Impact**

**Air Emission** - Air emissions including perchlorates, hydrochloric acid, and carbon monoxide will be released and in compliance with ATK's air operating permit.

**Discharge of Wastewater** - Wastewater discharges will be in accordance with ATK's NPDES and RCRA permits.

**Soil Disturbance** - The tests will occur on previously disturbed areas where similar tests have been conducted.

**Well Water Use** - Any water used on this project is obtained from ATK Elkton's water supply system which is fed by an on-site well.

**Work Within' a floodplain** - The burnfield where the work would occur is located within a floodplain but is protected from flood damage by a soil berm.

**Contaminated Soil** - Any potentially contaminated soil that is disturbed will be containerized, sampled, and analyzed accordingly. All containerized soils will be disposed in accordance with their analytical results and Federal, state, and local regulations.

**Industrial Waste Generation** - Any industrial wastes generated during this operation will be managed and disposed in accordance with all Federal, state and local regulations.

**Hazardous Waste Generation** - Any hazardous wastes generated during this operation will be managed in compliance with ATK's RCRA permit and disposed in accordance with all Federal, state and local regulations.

**Chemical Waste Disposal** - Any chemical wastes generated during this operation will be managed and disposed in accordance with all Federal, state and local regulations.

**Chemical Use/Storage** - All chemicals used and stored as a result of this operation will be in accordance with ATK's internal procedures and in accordance with all Federal, state and local regulations.

The Elkton facility has all of the required environmental permits and authorizations required to conduct the subject activity. These include Resource Conservation and Recovery Act (RCRA, National Pollutant Discharge Elimination System (NPDES), and Maryland air emission operation permits. These permits regulate the disposal of waste material, waste water discharges, and air emissions resulting from propellant test activities. In the process of obtaining each of these permits, the Elkton facility was required to supply all pertinent environmental information necessary for regulatory agencies to evaluate the activities and determine that they would not have a significant adverse impact to the environment.

**SECTION D. Determine the Level of Environmental Review (or Documentation) and Reference(s):** Identify the applicable categorical exclusion from 10 CFR 1021, Appendix B, give the appropriate justification, and the approval date.

Note: For Categorical Exclusions (CXs) the proposed action must not: 1) threaten a violation of applicable statutory, regulatory, or permit requirements for environmental, safety, and health, including requirements of DOE orders; 2) require siting and construction or major expansion of waste storage, disposal, recovery, or treatment facilities; 3) disturb hazardous substances, pollutants, contaminants, or CERCLA-excluded petroleum and natural gas products that pre-exist in the environment such that there would be uncontrolled or unpermitted releases; 4) adversely affect environmentally sensitive resources. In addition, no extraordinary circumstances related to the proposal exist which would affect the significance of the action, and the action is not "connected" nor "related" (40 CFR 1508.25(a)(1) and (2), respectively) to other actions with potentially or cumulatively significant impacts.

## DOE-ID NEPA CX DETERMINATION

References: B3.11 Outdoor tests and experiments for the development, quality assurance, or reliability of materials and equipment (including, but not limited to, weapon system components), under controlled conditions that would not involve source, special nuclear, or byproduct materials. Covered activities may include, but are not limited to, burn tests (such as tests of electric cable fire resistance or the combustion characteristics of fuels), impact tests (such as pneumatic ejector tests using earthen embankments or concrete slabs designated and routinely used for that purpose), or drop, puncture, water-immersion, or thermal tests.

Justification: The activity consists of outdoor test burns on solid rocket propellant for characterization purposes.

Is the project funded by the American Recovery and Reinvestment Act of 2009 (Recovery Act)  Yes  No

Approved by Jack Depperschmidt, DOE-ID NEPA Compliance Officer on September 12, 2011.