American Nuclear Society

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May 17, 2024

The Honorable Jennifer Granholm
Secretary
U.S. Department of Energy
1000 Independence Ave. SW
Washington, DC 20585

Dear Secretary Granholm:

On behalf of the men and women of the American Nuclear Society (ANS)[1], I write to express our gratitude for the Department's recent decision to pause the planned demolition of the Engine Maintenance, Assembly, and Disassembly (EMAD) Facility located in Area 25 of the Nevada National Security Sites.

EMAD is a unique and irreplaceable facility for safely testing and qualifying spaced-based nuclear technologies. Constructed in 1968 at a cost of more than $50 million, EMAD is a four-story building with 100,000 square feet of floor space that includes what was once the largest hot cell in the world. The facility was part of the Nuclear Rocket Development Station that supported development and testing of nuclear rocket engines from 1957 until 1973. In following years, the facility was maintained and supported various projects requiring a large hot cell facility. While the facility has subsequently been decontaminated and decommissioned, its central structure remains intact pending demolition.

As you're most likely aware, the U.S. is currently investing heavily in nuclear reactor technologies for space applications, which include nuclear thermal propulsion, fission surface power reactors, and terrestrial microreactors. The predominant research posture is to focus on modeling and simulation to establish viable reactor designs, with follow-on separate and combined effects testing in existing research reactors to close data/knowledge gaps for reactor components such as fuel and instrumentation. This is a reasonable strategy to increase technical readiness levels from proof-of-concept to prototyping. However, full scale system testing is required to bring such technologies into flight qualified levels, and facilities like EMAD are critical for completing this type of work.

Whether or not EMAD is ultimately used for further testing, ANS supports the strategic pause on demolition until alternative plans for testing space-based nuclear systems can be finalized. Building a new facility with EMAD's capabilities is estimated to cost on the order of $15 billion and require upwards of two decades to site and construct.

[1] The American Nuclear Society is the premier organization for those who embrace nuclear science and technology for their vital contributions to improving people's lives and preserving the planet. ANS membership is open to all, and current membership consists of individuals from all walks of life; including engineers, doctors, students, educators, scientists, soldiers, advocates, government employees, and others. ANS is committed to advancing, fostering, and promoting the development and application of nuclear sciences and technologies to benefit society.

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Furthermore, should a scenario arise in the meantime where we need to accelerate the development of space-based power and propulsion systems – say a detection of a Near Earth Object in the solar system that poses an impact threat to Earth – preserving EMAD is an inexpensive “hedge” against the emergence of unforeseen events.

ANS is uniquely positioned to support a conversation between the space community and the nuclear community regarding the future of the EMAD facility. Due to our professional members and long history of involvement in space nuclear technologies we’d be more than willing to participate in any public discussions on this matter.

Your attention to this matter is appreciated. Please contact me (cpiercy@ans.org) if you have any questions or require additional information.

Sincerely,

Craig H. Piercy

Executive Director / CEO
American Nuclear Society

cc: William White, Senior Advisor, Office of Environmental Management
Jeffrey Avery, Principal Deputy Assistant Secretary, Office of Environmental Management
Cathy Tullis, Chief of Staff, Office of Environmental Management
Kristen Ellis, Associate Principal Deputy Assistant Secretary, Office of Regulatory and Policy Affairs, Office of Environmental Management