



**UNITED STATES
NUCLEAR REGULATORY COMMISSION**
WASHINGTON, D.C. 20555-0001

May 26, 2015

Dr. Homayoon Dezfuli
NASA Technical Fellow for System Safety
Office of Safety and Mission Assurance
NASA Headquarters
300 E Street, SW
Washington DC, 20546

Dear Dr. Dezfuli

The U.S. Nuclear Regulatory Commission (NRC) is extending an invitation to National Aeronautics and Space Administration to participate in an inter-agency workshop on “defense-in-depth.” This concept is fundamental to our ability to accomplish our missions but also one that presents various challenges. This workshop will help us explore this concept and share our views.

Defense-in-depth (DID) is a safety philosophy ingrained in the NRC regulatory structure. It is an approach to designing and operating nuclear facilities that provides reasonable assurance to prevent and mitigate accidents that release radiation or hazardous materials. The key is creating multiple independent and redundant layers of defense to compensate for potential human and equipment failures so that no single layer—no matter how robust—is exclusively relied upon. DID includes the use of access controls, physical barriers, redundant and diverse key safety functions, and emergency response measures. Although DID has a long history within the commercial nuclear community that NRC regulates, no consistency exists in how it is defined and implemented and, more importantly, in how we determine what constitutes adequate DID. Currently, the NRC staff is writing a technical report (called a NUREG) to summarize and provide insights from this history.

The purpose of this workshop is to explore how various agencies—whose mission involves ensuring the health and safety of the public and the environment—address this concept. This exploration will involve identifying the different challenges and sharing insights into possible solutions. We feel that your agency’s participation would be of great benefit to all the workshop attendees.

The workshop will take place over two days. On the first day, each agency will give a presentation of how the concept of DID has been used at their agency. The second day will consist of a series of topical discussions of challenges in using DID and how these challenges might be resolved. A draft agenda and a list of discussion topics will be sent out before the workshop. We welcome your input to ensure the workshop is as useful as possible.

The NRC will capture the workshop proceedings in a technical report. Participants will have a chance to review this report before it is finalized.

The workshop will be held at NRC headquarters in Rockville, MD (the White Flint complex) on August 26 □ 27, 2015. Mary Drouin will be the NRC lead for this workshop and will be coordinating with you. Please contact her at 301 251-7574 or e-mail mary.drouin@nrc.gov if you plan to participate and if you have any questions.

We look forward to your participation at this very important workshop.

Sincerely,

/RA/

Brian W. Sheron, Director
Office of Nuclear Regulatory Research

cc: Dr. Jesse Leitner, NASA
Dr. Frank Groen, NASA
Mr. Stephen Cash, NASA
Mr. Alfredo E. Colón, NASA

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| NAME | M. Drouin (J. Nakoski for) | J. Nakoski | R. Correia (P. Madden for) | B. Sheron |
| DATE | 05/20/15 | 05/20/15 | 05/21/15 | 05/26/15 |

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