



## Department of Energy

Washington, DC 20585

December 8, 2014

Mr. Glenn M. Tracy,  
Director, Office of New Reactors  
U.S. Nuclear Regulatory Commission  
Washington, D.C. 20555-0001

**SUBJECT: JOINT INITIATIVE REGARDING U.S. NUCLEAR REGULATORY  
COMMISSION LICENSING STRATEGY FOR ADVANCED (NON-LIGHT  
WATER) REACTOR TECHNOLOGIES**

Dear Mr. Tracy:

In July 2013 U.S. Department of Energy (DOE), Office of Nuclear Energy (NE) and the U.S. Nuclear Regulatory Commission (NRC), Office of New Reactors (NRO) agreed to establish a joint initiative to develop a key element of a licensing framework for advanced (non-light water reactor) technologies. In particular DOE and NRC agreed to pursue an initiative to address the "General Design Criteria (GDC) for Nuclear Power Plants," Appendix A to 10 CFR Part 50, relative to licensing advanced reactor designs. The initiative would be conducted in two phases, with DOE leading first phase efforts to conduct reviews, analyses and evaluations that would lead to development of draft advanced reactor design criteria from which the principal design criteria could be derived for advanced reactor concepts. DOE would provide recommendations and deliverables in the form of technical reports to NRC as input for NRC staff development of regulatory guidance. The second phase would consist of NRC's efforts to review the recommendations and deliverables regarding draft advanced reactor design criteria and to develop regulatory guidance pertaining to the development of principal design criteria for advanced reactor designs.

DOE, with support from selected national laboratories and consultants, has completed the first phase of this effort which has culminated in the development of a series of proposed adaptations to the GDC that could be used by advanced reactor developers as guidance in the establishment of their principal design criteria. Specifically, the DOE national laboratory team developed draft Advanced Reactor Design Criteria applicable to most advanced concepts and technology specific criteria for Sodium Fast Reactor and modular High Temperature Gas Reactors for consideration by NRC in its development of regulatory guidance. The results of that effort are reflected in the Idaho National Laboratory (INL) technical report, *Guidance for Developing Principal Design Criteria for Advanced (Non-Light Water) Reactors*, INL/EXT-14-31179).

The purpose of this letter is to transmit to the NRC the INL report INL/EXT-14-31179, so that the NRC can begin the second phase of the initiative, which involves review of the content of the report (which includes the draft design criteria), initiation of the regulatory review process, and the intended issuance of regulatory guidance. DOE stands ready to assist the NRC in review of the attached report and to support the NRC in its development of NRC-



Printed with soy ink on recycled paper

Add: Glenn Tracy  
to EREAS

4601  
NRO

issued regulator guidance that can be referenced by advanced reactor design license applicants when developing principal design criteria.

Please contact Craig Welling at (301) 903-0110, if you have questions or require additional information regarding this request to commence the NRC review in support of the remaining activities within this joint initiative.

Sincerely,

A handwritten signature in black ink that reads "John E. Kelly". The signature is written in a cursive style with a long horizontal flourish extending to the right.

Dr. John E. Kelly  
Deputy Assistant Secretary for  
Nuclear Reactor Technologies

Enclosure

CC: Mr. Michael Mayfield  
Mr. Thomas O'Connor  
Mr. Craig Welling