ADDENDUM NO. 7 TO THE MEMORANDUM OF UNDERSTANDING

BETWEEN UNITED STATES DEPARTMENT OF ENERGY AND NUCLEAR REGULATORY COMMISSION ON NUCLEAR ENERGY INNOVATION

Establishing Roles and Responsibilities for National Environmental Policy Act (NEPA) Implementation Requirements for Reactor Demonstration Projects Supported by DOE

I. Purpose and Scope

On October 7, 2019, the United States (U.S.) Department of Energy (DOE) and Nuclear Regulatory Commission (NRC) (hereinafter the "parties" or "party") entered into a Memorandum of Understanding on Nuclear Energy Innovation (Nuclear Innovation MOU) related to advanced reactor research, development, and reviews. Six previous addenda have been added to the initial Nuclear Innovation MOU. The purpose of this Seventh Addendum (Addendum) is to establish a framework for early coordination and participation among the signatories to this agreement to support common goals in furthering each agency's responsibilities.

DOE and the NRC developed this Addendum to ensure the proper coordination of effort between DOE and the NRC. This Addendum to the Nuclear Innovation MOU seeks to establish functional coordination between DOE and the NRC regarding NEPA and National Historic Preservation Act section 106 ("NHPA" or "Section 106") requirements associated with the demonstration and deployment of advanced reactor (to include both light-water and non-light-water) demonstrations in the U.S. receiving DOE support for design, license, construction, and operation of advanced reactors at U.S. sites.

DOE has previously served as a cooperating agency with NRC for development of the environmental impact statements (EISs) for other facilities for which DOE has provided a cost share award. This includes the EIS for construction and the Supplemental EIS (SEIS) for operation of the SHINE Medical Radioisotope Production Facility.

These various activities are coordinated by the NRC's Office of Nuclear Material Safety and Safeguards (NMSS) and Office of Nuclear Reactor Regulation (NRR) and the DOE offices involved in the development, demonstration, and deployment of advanced nuclear reactor designs, specifically the Office of Nuclear Energy (DOE-NE) and the Office of Clean Energy Demonstrations (DOE-OCED).

The cooperation between DOE and the NRC will balance the need to assure the NRC's independence to avoid compromising its regulatory role and the respective responsibilities of each agency to cost-effectively implement advanced reactor demonstration NEPA requirements within the bounds of their own statutory authority.

II. Authority

DOE and the NRC enter into this Addendum pursuant to Pub. L. No. 117-58, Section V. Organizational Implementation, and Section VII. Commencement, Modification, and Termination of the Nuclear Innovation MOU. This Addendum does not alter the authority or independence of the NRC or DOE or their abilities to fulfill their responsibilities. In addition to the above, this Addendum coordinates each agency's responsibilities for environmental review pursuant to: Atomic Energy Act (AEA), NEPA, Energy Reorganization Act (ERA 1974), NHPA, and other applicable statutory provisions.

III. Background

DOE is responsible for promoting the safe and environmentally sound development of nuclear power in the U.S. As a part of its mission to promote the development of advanced nuclear power capability, DOE has established several cooperative agreements with domestic reactor vendors that seek to deploy advanced nuclear reactor technologies, including three projects receiving government cost share awards for commercial demonstration as of June 2023:

- Carbon Free Power Project (CFPP) – CFPP LLC, an entity wholly owned by Utah Associated Municipal Power Systems (UAMPS), plans to deploy a six (6) module NuScale light water-cooled small modular reactor on the Idaho National Laboratory by 2029/2030. Licensing is expected to be conducted under 10 CFR Part 52 with a Combined License Application (COLA) to be submitted to the NRC in early 2024. DOE's Idaho Operations Office has granted a Site Use Permit to CFPP for the demonstration project on the Idaho National Laboratory (INL) site near Idaho Falls, Idaho.

- TerraPower Natrium Reactor – TerraPower, working with PacifiCorp, plans to deploy a single Natrium sodium fast reactor unit at a site in Kemmerer, Wyoming by 2030. Reactor licensing will be conducted under 10 CFR Part 50 with a Construction Permit Application (CP) to be submitted to the NRC in early 2024 for the Kemmerer, Wyoming plant.

- X-energy Xe-100– X-energy, working with Dow Chemical Company, plans to deploy a 4-unit Xe-100 high temperature gas reactor plant on the Gulf Coast by 2030. Reactor licensing will be conducted under 10 CFR Part 50 with a CP planned to be submitted to the NRC in December 2023 for the Xe-100.

The NRC, consistent with its role as an independent safety and security regulator, is responsible for providing accurate, current information on the NRC's regulations and licensing processes. The three projects listed above are currently in the pre-application stage of the licensing process. DOE expects to have a role in the applicants' NEPA environmental, cultural, and historic preservation activities and associated outreach that takes place prior to their submittal of the NRC licensing applications. It is expected that once the license applications are submitted to the NRC for these three projects, the NRC will take on the lead agency role for development of the EISs with DOE as a cooperating agency. However, circumstances may arise where both agencies will be better serviced by a different form of coordination, such as if each agency needs to prepare its own environmental review document. This Addendum does not preclude such arrangements. Further, the terms of this Addendum are not limited to the three projects listed above and may be applied to

other demonstrations and deployments of advanced reactors in the U.S. receiving DOE support for design, license, construction, and operation of advanced reactors at U.S. sites. Inclusion of additional projects is contingent upon express, written approval by both DOE and the NRC.

IV. Roles and Responsibilities of Each Party

NEPA requires public disclosure and consideration by federal agencies of potential environmental impacts, unavoidable adverse environmental effects, and alternatives to the proposed action before irretrievable commitments of resources are made. This agreement supports these principles and the NRC and DOE acknowledge their respective responsibilities for complying with the requirements of NEPA. For the projects covered by this Addendum, the primary roles and responsibilities for the NRC and DOE are:

NRC as the NEPA Lead Federal Agency. The NRC is the independent safety and security regulator for civilian use of radioactive materials. The NRC is responsible for the evaluation of licensing applications and decision-making regarding whether to license reactor facilities, such as the three demonstration projects discussed herein. To prevent the duplication of efforts by Federal agencies and to further support integration of agency processes, NEPA allows for the designation of a lead Federal agency for the preparation of environmental documents. Other agencies that have an action on the same project may serve as cooperating agencies on the environmental documents. As the agency with the approval/disapproval authority for the licensing of production and utilization facilities under Sections 103 and 104 of the Atomic Energy Act, the NRC shall:

- Serve as the lead agency for the preparation of the NEPA documents associated with the new nuclear project license applications listed above, and any additional projects agreed as specified above, for activities with a nexus to radiological health and safety (such as construction and operation of a nuclear facility).

- Address the impacts of preconstruction activities (defined by 10 CFR 50.10(a)(2)) in the NRC NEPA documents with input from DOE, as appropriate.

- Lead FAST-41[1] actions, as applicable.

- Conduct NHPA Section 106 reviews and consultations in accordance with NHPA regulations for activities within the regulatory authority of the NRC. The NRC will coordinate with DOE on ways to reduce burden to State Historic Preservation Officers and Federally Recognized Tribes that may result from multiple consultation efforts being conducted by each federal agency for the same project (e.g., combing agency NHPA Section 106 efforts).

[1] As modified by the 2021 Bipartisan Infrastructure Law, the Fixing America's Surface Transportation (FAST) Act was signed into law in 2015. Title XLI of this Act (42 U.S.C. § 4370m et seq.), referred to as "FAST-41," created a new governance structure, set of procedures, and funding authorities to improve the Federal environmental review and authorization process for covered infrastructure projects by promoting early consultation, interagency coordination and project-specific planning.

The NRC and DOE may determine that NEPA document development would be best served by another arrangement (e.g., Joint Lead Agencies) that is beneficial to the project. If so, a project-specific cooperative agreement that fully describes the roles and responsibilities of each party will be developed and approved by each party.

DOE as a NEPA Cooperating Agency. While DOE will oversee and manage Federal funds supporting the design and development efforts, the NRC has responsibility for issuing authorizations, permits, and licenses for new reactors and, as such, will act as the lead Federal agency for NEPA and the NHPA for activities that are within the regulatory authority of the NRC. DOE will act as a cooperating agency in the NEPA and NHPA reviews for activities that are within the regulatory authority of the NRC. As a cooperating agency, DOE may:

- Fulfill NEPA responsibilities, independently of the NRC, for activities that are considered in the NRC NEPA reviews but with no nexus to radiological health and safety (such as site preparation or preconstruction). DOE will document any such evaluations in DOE NEPA reviews, which may be cited in the NRC NEPA documents, as appropriate.

- Conduct NHPA Section 106 reviews and consultations in accordance with NHPA regulations, independently of the NRC, for preparation and activities with no nexus to radiological health and safety. DOE would document any such Section 106 reviews, which may be cited in the NRC NEPA documents, as appropriate. DOE will coordinate with the NRC on ways to reduce burden to State Historic Preservation Officers and Federally Recognized Tribes that may result from multiple consultation efforts being conducted by each federal agency for the same project (e.g., combing agency NHPA Section 106 efforts).

The NRC and DOE may determine that NEPA document development would be best served by another arrangement (e.g., Joint Lead Agencies) that is beneficial to the project. If so, a project-specific cooperative agreement that fully describes the roles and responsibilities of each party will be developed and approved by each party.

Project Coordination. This Addendum encourages early involvement among the NRC, DOE, the public, and other government agencies during the NEPA evaluation process. The NRC and DOE will share project-specific information on the potential environmental impacts of the advanced reactor projects. Documentation shall be developed in accordance with the Parties' disclosure and decision-making procedures.

As the lead agency under NEPA, the NRC is responsible for determining the purpose and need of the project for purposes of the NEPA documents and the NRC's licensing process. DOE may also draft a statement of the secondary purpose and need of the project for purposes of DOE's involvement in the project for inclusion in the NEPA documents. The NRC and DOE should coordinate early on the scope of the NEPA analysis for all activities under each agencies' Federal purview and ensure that the purpose and need, the suite of alternatives, and the evaluation presented in the NEPA documents meet the needs of each agency, where possible. The NRC and

DOE will complete independent decisions in carrying out their respective responsibilities, as necessary.

NEPA Document Preparation. The NRC and DOE may develop additional guidance to ensure that the preparation of the project-specific NEPA documents are coordinated to achieve an efficient review schedule to the maximum extent practicable. This includes the following actions for analysis and document preparation:

- As indicated above, each agency is responsible for drafting specific NEPA documents or sections of NEPA documents (and requesting additional information as necessary). Ultimately, each agency is the final authority for the content of their NEPA documents. As the licensing authority and as the lead agency for the EIS that supports such licensing, the NRC will make final determinations for conclusions needed for the NRC licensing.

- The agencies shall provide preliminary draft NEPA documents for review and comment on the relevant portions of those documents, as appropriate. The NRC preliminary draft NEPA documents may include advance copies of the purpose and need section, as well as advance copies of the draft and final project-specific NEPA documents. If applicable, the NRC will assemble the draft and final NEPA documents with DOE-specific sections prepared by DOE. The NRC will then provide DOE with an adequate period of time in which to review and concur on the draft and final NEPA documents. DOE's review of the NRC preliminary draft NEPA documents will be completed and coordinated with the NRC as stated in the NRC NEPA schedule for each project.

- Each agency has responsibility for its own decision document, if necessary. Upon completion of the final project-specific NEPA document, DOE will commence its process for considering adoption of the NEPA document or completing any required additional NEPA reviews in accordance with agency regulations and policy.

DOE and the NRC hereby agree to work with each other to ensure that timely decisions with respect to the preparation of the project-specific NEPA documents are made and that the responsibilities of each agency are met. Specifically, each agency agrees to the following list of responsibilities:

A. Communication

1. The agencies agree to communicate with each other during preapplication interactions with a potential applicant and throughout the environmental review process to ensure that issues are raised as soon as possible and shared between both agencies. The NRC will coordinate and share information with all relevant participating agencies.

2. Each agency agrees to meet with the applicant and other agencies, when requested by the applicant, the NRC, or DOE, to identify areas of potential concern and to assess the need for and availability of agency resources to address issues related to the environmental review of the advanced reactor applications. If either agency is not involved in a meeting, the other will provide any significant results from the meeting.

3. DOE shall consult with the NRC, as the lead agency, regarding the schedule for the review. Regarding this schedule, the NRC and DOE will strive to ensure that their review activities occur on a concurrent, rather than sequential, basis, with the objective of avoiding unnecessary delays in the process and the schedule established by the NRC. If at any point during the consultation process DOE or the NRC anticipates an inability to comply with the schedule, it will communicate the reason for this inability to the other agency as soon as possible. The agencies will then work together to help mitigate the impacts of the anticipated delay when appropriate.

B. Proactive Participation. After this Addendum is signed, DOE and the NRC will do the following:

1. Identify the issues and concerns related to the proposed projects that need to be addressed in the NEPA documents for DOE and the NRC to meet their respective obligations.

2. Identify issues and concerns and attempt to resolve them while draft documentation is being developed.

C. Sharing of Data. The agencies will share the information gathered, considered, and relied upon by each of them with all other relevant agencies. Specifically, the NRC and DOE agree to do the following:

1. Cooperate in the preparation of requests for additional information, studies, or data to avoid duplicative requests and to compile a consistent set of information on which all the agencies will rely.

2. Cooperate in identifying and developing the information at the level of detail required to complete the environmental review.

D. Hearings. On request, each agency will participate in any public meetings or hearings held by the other agency related to the environmental review. Particularly in the case of the NRC adjudicatory hearings, DOE may provide expert testimony, as required, in those areas or sections covered in the NEPA documents in whose preparation DOE participated and in those areas of special DOE expertise. DOE's participation in the NRC adjudicatory hearing process will be consistent with all relevant laws and regulations and coordinated with appropriate representatives.

V. Funding Authorization

This Addendum is neither a fiscal nor a funds obligation document and does not authorize expenditure or reimbursement of appropriated funds. To the extent activities discussed in this Addendum would require resources beyond the NRC's existing appropriated authorities, the parties may agree to enter into Implementing Interagency Agreements, supplemental to the MOU and this Addendum, that address such activities.

VI. Organizational Conflicts of Interest

DOE and the NRC are aware of the organizational conflict of interest requirements and obligations of the respective agencies under those requirements, including Section 170A of the Atomic Energy Act of 1954, as amended. DOE and the NRC will work together to resolve any organizational conflicts that may arise.

DOE's support of these projects, or any project subsequently approved by the parties to be addressed by this Addendum, comports with congressional instruction to make cost shared awards to advanced reactor projects for the actual construction of real demonstration reactors while reducing the cost and risks to the developers. DOE will not be the licensee for these reactors, will not directly buy the power produced, and will not benefit from the sale of power. DOE experiences no financial impacts if the project succeeds or fails. DOE's support of these reactors is not through a procurement process and as such they cannot be utilized for the benefit of DOE.

VII. Administration of the Addendum

A. While retaining ultimate responsibility for making determinations and exercising their individual responsibilities in accordance with existing statutory responsibilities, the NRC and DOE will consult with one another to resolve disputes using existing dispute resolution methods and in accordance with this Addendum. If no agreement can be reached, either agency may refer the matter to the CEQ in accordance with 40 CFR Part 1504, "Predecision Referrals to the Council of Proposed Federal Actions Determined to Be Environmentally Unsatisfactory." Notwithstanding any such referral, the NRC reserves the right to make a final decision on any matter within the NRC's regulatory authority. If a project is covered under the FAST-41 process, then the matter may be resolved through the mutual deliberation of the agencies and the Federal Permitting Improvement Steering Council (FPISC), which implements the FAST-41 process.

B. This Addendum may be modified, amended, or terminated upon written request of any party hereto and the subsequent written concurrence of the other party. Termination hereunder may become effective no earlier than 30 days after providing written notice of such termination to the non-terminating party.

C. The NRC and DOE acknowledge that the Addendum does not alter the authority and responsibilities of the parties under their respective jurisdictions.

1. This Addendum is intended only to establish a strong working relationship between the parties in connection with efficient actions on applications for authorizations, permits, or licenses filed in connection with the above mentioned projects and is not intended to, nor does it create, any right, benefit, or trust responsibility, substantive or procedural, enforceable at law or equity by any person or party against the U.S., its agencies, its officers, or any other person.

2. This Addendum is to be construed in a manner consistent with all applicable laws and regulations.

3. Neither this Addendum nor any individual provision of this Addendum shall be deemed to restrict, modify, or otherwise limit the application or enforcement of any laws of the U.S. with respect to matters specified herein, nor shall anything in the Addendum be construed as modifying the existing authority of either agency.

4. The parties intend to carry out fully the terms of this Addendum. All provisions in this Addendum, however, are subject to the availability of resources and appropriated funds. In addition, this Addendum does not limit the ability of any of the participating agencies to review and respond to final applications.

5. If the applicant or other person makes a request under the Data Quality Act for a correction of information, the agency that disseminated the information will be responsible for processing the request.

6. This Addendum cannot be used to obligate or commit funds or as the basis for the transfer of funds.

7. Nothing in this Addendum, in and of itself, requires any signatory agency to enter into any contract, grant, or interagency agreement.

ACCORDINGLY, the parties have signed this MOU on the dates set forth below, to be effective for all purposes as of the date last signed. The signatures may be executed using counterpart original documents.

FOR THE US NUCLEAR REGULATORY COMMISSION:

Robert M. Taylor

Digitally signed by Robert M. Taylor
Date: 2023.07.05 14:40:29 -04'00'

Robert Taylor, Deputy Director Date
Office of Nuclear Reactor Regulation

John W. Lubinski

Digitally signed by John W. Lubinski
Date: 2023.07.05 12:18:33 -04'00'

John Lubinski, Director Date
Office of Nuclear Material Safety and Safeguards

ACCORDINGLY, the parties have signed this MOU on the dates set forth below, to be effective for all purposes as of the date last signed. The signatures may be executed using counterpart original documents.

FOR THE US DEPARTMENT OF ENERGY:

Alice K. Caponiti Digitally signed by Alice K. Caponiti
Date: 2023.07.19 14:47:56 -04'00'

Alice Caponiti, Deputy Assistant Secretary Date
Office of Nuclear Energy

Todd A. Shrader Digitally signed by Todd A. Shrader
Date: 2023.07.29 14:26:41 -04'00'

Todd Shrader, Director, Project Management Date
Office of Clean Energy Demonstrations