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XE00-R-R1ZZ-RDZZ-L-000215\_Rev 1  
10 CFR 2.390

October 7, 2019

Docket No: 99902071

U.S. Nuclear Regulatory Commission  
ATTN: Document Control Desk  
Washington, D.C. 20555-0001

**Subject: Transmittal of Proprietary White Paper on Mechanistic Source term Verification & Validation (XE00-T-S3-SW-N\_000144\_XSTERM Code Suite Verification and Validation Plan\_Rev 1)**

The purpose of this letter is to provide the NRC with X-energy's Mechanistic Source Term Verification & Validation White Paper in preparation for our next pre-application meeting, which we request to be held on October 16, 2019. Based on previous discussion during and after the closed meeting held with the NRC on July 18, 2019, this white paper is being submitted to allow for limited review and feedback from the NRC. This will facilitate a phased approach to familiarizing the NRC with our approach to calculating radiological source terms for the Xe-100 Nuclear Power Plant.

Similar to the information submitted in support of the July 18, 2019 meeting held between X-energy and the NRC, this white paper contains commercially sensitive, proprietary information. The information from these two submittals will be used during our discussions during the October 16, 2019 meeting. We are requesting that this information be withheld from public disclosure in accordance with 10 CFR 2.390, "Public inspections, exemptions, request for withholding," paragraph (a)(4). Accordingly, we also request the October 16, 2019 be closed to the public. Since Commercially Proprietary Information constitutes a significant portion of the enclosure herein, a public version is not being submitted. Accordingly, Enclosure 1 is the Non-Public version of X-energy's Mechanistic Source Term V&V Plan White Paper. This proprietary information is appropriately marked and an affidavit providing the basis for this request is provided in Enclosure 2.

As part of the October 16, 2019 meeting, we would like to have the opportunity to provide the NRC staff with a demonstration of X-energy's XSTERM code suite. This is a X-energy developed proprietary software that performs Mechanistic Source Term analyses. This demonstration will also aid in familiarizing NRC staff with our approach as reflected in the White Paper.

Sincerely

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Harlan Bowers  
President  
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Enclosures:    1) XE00-T-S3-SW-N\_000144\_XSTERM Code Suite Verification and Validation Plan\_Rev 1  
                  2) Affidavit