

**From:** [Steve Smith](#)  
**To:** [AdvancedRxDCComments Resource](#)  
**Cc:** [Leslie Dewan](#); [Wendolyn Holland](#)  
**Subject:** [External\_Sender] Transatomic Power Comments on Draft ARDC  
**Date:** Wednesday, June 08, 2016 3:51:11 PM  
**Attachments:** [TAP Draft ARDC Comments 8JUN16.docx](#)

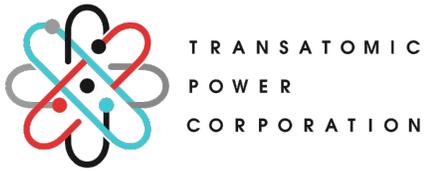
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To Whom it May Concern,

Please find attached Transatomic Power Corporation's comments on the NRC's draft Advanced Non-Light Water Reactor Design Criteria. Transatomic is truly excited at this critical step in ensuring a technology-inclusive and performance-based regulatory framework for reviewing advanced reactor designs, and we would be more than happy to answer any questions the staff might have. Thank you for your consideration.

Sincerely,

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June 8, 2016

Mr. Michael E. Mayfield  
Director  
Division of Engineering, Infrastructure, and Advanced Reactors  
U.S. Nuclear Regulatory Commission  
Washington, DC 20555-0001

Subject: Transatomic Power Comments on Draft Advanced Non-Light Water Reactor Design Criteria

Dear Mr. Mayfield,

On behalf of Transatomic Power Corporation (TAP), I am writing in regard to the NRC's draft Advanced Non-Light Water Reactor Design Criteria (ARDC), released for public comment this past April. The joint DOE-NRC initiative that led to the criteria's drafting is a critical step toward a technology-inclusive and performance-based regulatory review process for advanced reactor plants, and TAP is truly excited at the progress that has been made on this front.

The advanced reactor industry, by way of the Nuclear Energy Institute (NEI), has submitted comments on both the ARDC and the technology-specific DC. As TAP is developing a molten salt reactor design, the following comments are meant to supplement industry's submission, as well as provide additional commentary that reflects the concerns of molten salt reactor developers. Our comments include:

- In addition to endorsing industry's comments generally, TAP strongly endorses the industry comments on ARDC 16, 17 (and those that it directly affects), 18, 26, 27, 34, 35, 37, and 44. These comments all recommend that NRC adopt proposed language in either the DOE report, "Guidance for Developing Principal Design Criteria for Advanced (Non-Light Water) Reactors" (ML14353A246) or in subsequent DOE responses to staff questions. The proposed DOE language allows for broad, performance-based concepts such as "functional containment" to be applied to advanced reactors generally, thus requiring developers to demonstrate compliance with performance metrics rather than meeting prescriptive criteria.
- Also related to developing performance-based criteria, the staff's endorsement of specified acceptable radionuclide release design limits (SARRDLs) for the mHTGR in place of specified acceptable fuel design limits (SAFDLs) referred to in ARDC 10 is a welcome step toward ensuring performance-based criteria for accident scenarios. We also recognize that this distinction currently only covers mHTGRs due to the special features of TRISO fuel. However, because it is currently unclear how solid fuel SAFDLs will apply to liquid fuel reactors such as TAP's, we recommend that the staff include the SARRDL concept in the general ARDC, and allow SAFDLs to be a special subset of the SARRDLs specifically relating to metal clad fuel.
- While we recognize that it is not within the scope of the joint DOE-NRC ARDC initiative, we would strongly encourage the staff to allow for consideration of risk insights in Principal Design

Criteria (PDC) development for advanced reactor designs. Though we also recognize that it may require a rule making, this allowance could ultimately be included in the introduction to 10 CFR 50, Appendix A, and cross-referenced with 10 CFR 50.69.

With at least half a dozen companies in the US, UK and Canada developing molten salt reactor designs, it is essential that the ARDC are sufficiently technology-inclusive and performance-based that these developers, including TAP, can experience the same confidence in applying the ARDC during PDC development as SFR and mHTGR developers. We greatly appreciate the ARDC work that has been done thus far, and we would be happy to clarify any of our comments or answer any questions the staff might have as they develop this guidance. We also welcome further engagement with the staff as they moved toward the issuance of a final Regulatory Guide.

Thank you again for your efforts in this important step toward creating a ready environment for safe and innovative designs to move through the regulatory process, and thank you for your consideration.

Sincerely,



Dr. Leslie Dewan  
Chief Executive Officer  
Transatomic Power Corporation

cc: Ms. Diane T. Jackson, NRO/DEIA/ARPB, NRC  
Ms. Jan M. Mazza, NRO/DEIA/ARPB, NRC  
NRC Document Control Desk