

## NSUF Topic Areas Office Hours Q&A

**Q: If I propose something like irradiation creep, would that be of interest to this program?**

A: We don't want to make any sort of pronouncements on any particular projects or research areas. That certainly sounds like that falls within irradiation effects on fuels and materials.

**Q: Last time we tried an exotic type of material, but that was not reviewed well because that material was not characterized even though we were not focusing on those properties. If we were to propose some neutron radiation experiment what would be the kind of material classes or alloys that would be of interest the program?**

A: NE has the mission to support the current fleet as well as the variety of advanced reactor technologies that are coming through. There's links in the CINR to program documents. There is a little bit more of a risk with some sort of novel material, but that would be for the PI write the proposal in such a way to show that the relevance and importance of that novel material was important to the Department of Energy.

**Q: For Ion irradiation versus neutron irradiation, what we have seen before is that neutron radiation proposals run into millions of dollars and generally are not funded, but proposals with ion radiation, seem like more viable. Is there anything specific in this program that you follow when looking at different irradiation types?**

A: Obviously we will definitely need neutron irradiations for material qualification at some point in the process. The challenge is that they are very expensive, so there will be a smaller number of awards out of a given cycle. One of the things that we've used as a paradigm in the past is that there's probably not much point in doing ion irradiation on a material that already has an extensive neutron irradiation history. If, for example, you wanted to do ion irradiation of 316L at 300 degrees C, there wouldn't be interest in doing ion irradiation or neutron irradiation because it's a well characterized material.

If instead you proposed some nanocomposite multi-layered material that has zero radiation history and you want to put it in HFIR for three years and give it 20 DPA, that probably won't get reviewed very well either because no one knows anything about that material.

We want to do the best science, so there's a number of ways that an applicant can look at something like this, an applicant should focus on doing the type of testing that is most appropriate for that material at the TRL or understanding level of it.

**Q: Are there some resources or documents that we could review to help us get a better sense of, for example for flux, what's currently used, what's currently state of the art?**

A: The advanced sensors instrumentation webpage at the DOE will have a link to a bunch of documents. This is a database of the sensors being used. <https://nes.energy.gov/>

**Q: Looking at NSUF 1.2, a question on the letter of intent, the description says to only cover the NSUF relevant scope of the projects. We're looking at small form factor sensor material and we do have some in-house irradiation capabilities we will probably do in an earlier step, but then we really need to go to the high flux high dose test later. Should we really only cover the last part even though a big part of what we would propose would be R&D steps up towards that as well?**

A: You're welcome to put all that in and like you mentioned, it's probably useful to put it in, but you should make a note saying this is going to be done at our university's research reactor and we're not asking for NSUF support for that. The LOI is used by NSUF staff to match the applicants up with our partner facility points of contact. The LOI is not a review document, it's just that first point of contact. To extend that answer a little bit further, the insinuation there is that the pre-application is your review document. The LOI is more project management, but the pre-application should have those full descriptions, don't wait till the full application.

**Q: Is there any restriction on the number of NSUF facilities that one can request access to?**

A: The short answer is no. The longer answer is that it can get expensive, but if it makes sense as a project there's no restriction on that. You can reach out to the NSUF office for resources that can help provide the information on the different capabilities out there.

**Q. The title "CORE AND STRUCTURAL MATERIALS BEHAVIOR AND DEVELOPMENT" suggests that structural materials are of interest, however the description seems to focus on fuel-related materials. Would structural materials be within the scope of NSUF-1.1?**

A. Yes, NSUF1-1 includes nuclear materials and fuel of interest to NE. Therefore, structural materials are within the scope of NSUF-1.1 topic.

**Q. Is it acceptable to submit both a NSUF 1.1+R&D, such as to NSUF 1.1 and R&D TOPIC AREA 11 on a similar topic?**

A. The same proposal cannot be submitted to multiple Topic Areas, including the NSUF Access areas.