Arnika Chidambaram

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**Neutron Transport and Nonproliferation**

From my understanding, the mission of the National Nuclear Security Administration (NNSA) Nonproliferation Program (NA-22) is to reduce and eventually eliminate the potential threat of proliferation. By implementing policies and developing R&D technology solutions, the dangers can be reduced, worldwide. The strategy for reducing the threat of proliferation includes material management and minimization of weapons-usable nuclear material, which is done through conversion, nuclear material removal and material disposition.

Neutral particle transport is the study of how neutral particles move and interact with material. Neutrons are emitted by certain nuclear materials through spontaneous fission or interaction with alpha particles. The rate of neutron fluence indicates how much nuclear material is present which is why being able to accurately measure, detect and characterize is important. Having a means of quantifying neutral particle transport enables us to both accurately measure neutron-emitting fissile material and identify present neutron sources.

New developments, including emerging policies and R&D technology, in the field of neutron transport support the mission of NA-22. Understanding neutron emission probabilities and behavior brings us closer to knowing how much fissile material we will have to deal with. And having this information will help us select the proper approach for disposal. Overall, I believe new developments in the field will further repair the reputation of the nuclear industry in light of recent nuclear accidents and bring nuclear energy to the forefront of viable alternative energy sources.