



## ANS-SR TECHNICAL MEETING MAY 14, 2018

**Location:** North Augusta Community Center  
495 Brookside Ave.  
North Augusta, SC 29841  
(803) 441-4290

**Attendance:** 45                      **Presenter:** John Williams, Southern Company

Tonight's speaker was Mr. John Williams of Southern Company speaking on the topic of "Accident Tolerant Fuel".

Tonight was also a landmark technology night as this was the first time ANS-SR Live Streamed the presentation to the ANS National Facebook page.

Mr. Williams has been with Southern Company since 2005 and has over 20 years of experience in nuclear fuel including core design, storage, research with NEI, and as the Nuclear Fuel Director for Southern Company. He is a graduate of Georgia Tech.

Much of the industry began working on accident tolerant fuel more than 10 years ago, but that work was accelerated by the 2011 Fukushima events. The fuel was brought to the industry at a rapid pace so it would be available to support the current reactor fleet. Phase 1 of 3 of this was a national evaluation taken on by national labs, the regulators, and universities and fuel vendors. Phase, which is where the industry is now, selected the three most promising accident tolerant fuel technologies for testing. Phase 3 will be full scale commercial roll out.

**The DOE wanted test assemblies in reactors by 2022, Southern Company's Plant Hatch beat that by 4 years**, becoming the first reactor in the U.S. to load test assemblies of accident tolerant fuel. Mr. Williams explained there are three aspects to accident tolerant fuel: improved coping time, reduced oxidation and hydrogen generation, and improved mechanical performance. The options available are improved clad coatings, improved cladding materials, and new fuel forms.

Hatch has loaded six advanced coating steel clad ARMOR (General Electric) fuel assemblies in February of this year. The silicon carbide cladding and uranium-zirconium alloy fuels are still a few years away from testing. Vogtle will load advanced fuel in 2019 and the Clinton and Byron plants will load advanced fuel in 2020. Full scale deployments are targeted for 2023.



# ANS



As a closing note, Mr. Williams indicated that improved performance savings are expected to offset costs of the advanced fuels. He also noted the PWR fleet in the U.S. is enrichment limited and 6-7 weight percent would be helpful.

Tonight's dinner was subsidized in part by ESH Solutions, LLC and Mr. Chuan Wu.





# ANS

