

# ANS NCSD Newsletter Fall 2022

## Member Highlight- Amy Van Der Vyver

Amy joined Sellafield Ltd. in 2017 after being recruited on to their Degree Apprenticeship Scheme. This saw her studying part time for a BEng in Nuclear Plant Eng. (graduating in 2021) whilst working within the safety case profession. Throughout her time at Sellafield, she has worked in various areas of the safety case profession including plant facing teams and specialist safety assessment areas. Her first year was spent in the Thermal Oxide Reprocessing Plant (THORP) Safety Case Team, before she moved on to carry out radiological and criticality safety assessments for other facilities on the Sellafield site.



Amy moved into her permanent role as a criticality safety assessor in 2020. Since then, she has been involved in a range of projects covering a broad spectrum of criticality safety aspects including transport, solvent extraction, waste management and criticality emergency planning. In 2020, Amy and Emma Williams from the UK National Nuclear Laboratory started coordinating the UK Working Party on Criticality's (WPC) webinar series to encourage and promote continued professional development amongst the community. Amy has also been involved in the authoring of the WPC's good practice guide on organizational health with respect to criticality safety and serves as vice chair of the NCSD Program Committee.

## Site Highlight GEH/GNF-A Campus Developments

Nuclear criticality safety (NCS) practitioners at GEH/GNF-A campus are playing a key role in developing the next generation of nuclear fuel deconversion and fuel fabrication technologies in support of fission power. The above quotes ring true for the front end of the nuclear fuel cycle. Accident Tolerant Fuel (ATF) for existing light water reactors includes UF<sub>6</sub> feedstock enriched up to 8.0 wt. % U<sub>235</sub> (a.k.a. LEU+). The SNM-1097 license amendment request has been submitted to the USNRC for review (June 2022), accepted for technical review by the USNRC (November 2022) and is anticipated to take approximately one year to complete the licensing technical review and approval.

Additional developments include standing up a new Natrium™ Fuel Fabrication Facility (NFFF) that will produce uranium metal alloy fuel enriched to ~20.0 wt. % U<sub>235</sub> (a.k.a. HALEU). The necessary design, analysis, and licensing of this new facility is now well underway pursuant to our arrangements with TerraPower under the DOE's Advanced Reactor Demonstration Program and will require HALEU feedstock in the form of uranium metal to produce the required metal UZr alloy fuel pins.

Both LEU+ (8%) and HALEU (20%) licensing efforts represent systematic program changes and challenges to GEH/GNF-A NCS staff. Analytic methods must be validated to critical benchmarks, area of applicability established, validation reports are submitted for USNRC advanced review and a 'letter authorization' documents our ability to derive subcritical limits using validated methods with acceptable margin of subcriticality. Process hazards analysis, quantitative risk assessment, and integrated safety analysis summary safety bases documents are required. These NCS program challenges and developments are happening now.

Help us spread the **WORD!**

**2022 NCSD Membership Challenge**

at the 2022 ANS Winter Meeting in Phoenix, AZ

Info: [ncsdchallenge@gmail.com](mailto:ncsdchallenge@gmail.com)

Open to students, YMG, and those new to NCSD

Win Prizes!

Network with Members!

Discover NCSD!

## UPCOMING EVENTS

### Trainings/Classes:

<https://mcnp.lanl.gov/classes.html>

- Variance Reduction with MCNP6 Online (Dec 5-7)
- Intermediate MCNP6 Online (Apr 10-14, 2023)
- Introduction to MCNP6 Online (June 5-9, 2023)  
<https://www.ornl.gov/scale/training>  
[www.rampac.energy.gov](http://www.rampac.energy.gov)
- NP 702- Methods for Reviewing Safety Analysis Reports for Packaging and Performing Confirmatory Analysis at LLNL (Dec 6-15)
- NP 701- QA for Radioactive Material Packaging at ANL (March 27-31, 2023)  
<https://ncsp.llnl.gov/training-education>
- Two-week DOE NCSP Hands-on Course at NCERC/SNL (Jan 23-Feb 3, 2023)
- One-week Managers/CSOs Course at SNL (April 17-21, 2023)
- One-week Managers/CSOs Course at NCERC (June 5-9, 2023)

### Meeting Reminders:

- EFCOG Regulatory & Enforcement Technical Subgroup Meeting (Nov 8-9)
- 2022 ANS Winter Meeting (Nov 13-17, Phoenix, AZ)
- ICSBEP/SINBAD/IRPhEP TRG (April 3-7, 2023, Paris, FR)
- 2023 ANS Student Conference (April 13-15, 2023, Knoxville, TN)
- 2023 ANS Annual Meeting (June 11-14, 2023, Indianapolis, IN)
- EFCOG Annual Meeting at SRS (June 21-22, 2023)
- 2023 ICNC Meeting (October 1-6, 2023, Sendai, JP)
  - Abstracts due Dec 30