

The logo for CEA (Commissariat à l'énergie atomique et aux énergies alternatives) features the lowercase letters 'cea' in a white, sans-serif font. A thin green horizontal line is positioned below the letters.

DE LA RECHERCHE À L'INDUSTRIE

SG43 Reporting May 2019

Code Infrastructure to support a general nuclear database structure (GNDS)

Commissariat à l'énergie atomique et aux énergies alternatives - www.cea.fr

Goals

- To define an interface (API) for reading/writing GNDS
- To define checks to “validate” new evaluations

Stretch Goals

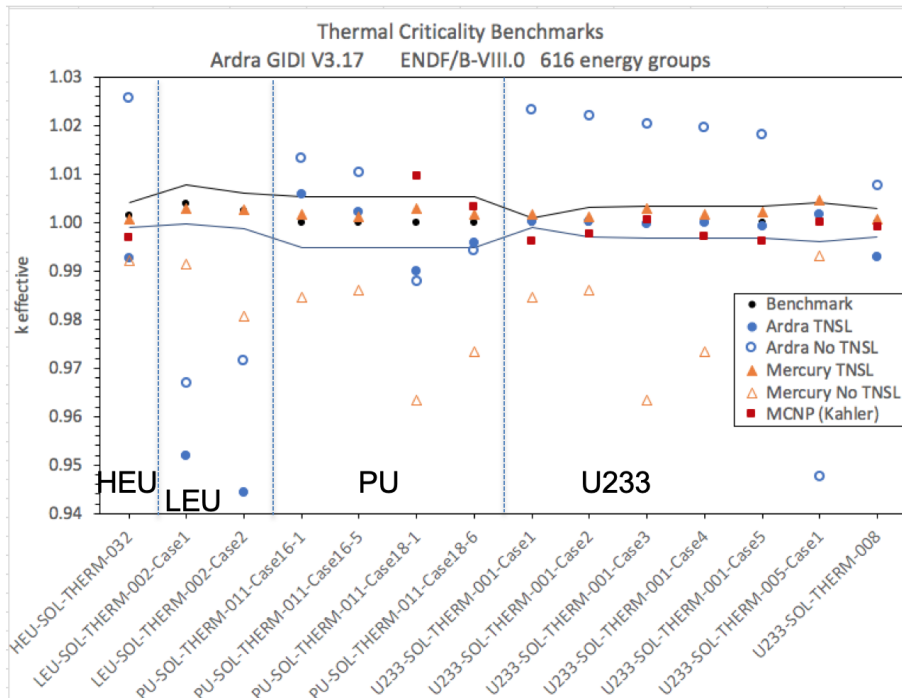
- To develop and share implementations of:
 - Reading/writing tools for evaluation manipulations
 - Visualization tools
 - Tools to assist with uncertainty quantification
- To develop and share implementations of
 - Checking tools

API

- LLNL has two implementations of read/write API, compliant with GNDS 1.9 (ENDF/B-VIII.0)
 - Fudge (Python) <https://github.com/LLNL/FUDGE>
 - GIDiplus (C++) <https://github.com/LLNL/GIDiplus>
- ORNL has a partial implementation in AMPX (C++)
- LANL is writing a specification document for NJOY (C++)
- CEA will be starting its implementation soon in GALILEE (C++)
- JAEA is planning to use LLNL implementations, when available

Demonstration of capability

- LLNL transport codes have been updated to run problems using GNDS data via GIDI API



Checking

- Four documents have been collected from LANL, BNL and CEA with lists of checks locally implemented

- Continue implementations as needed
- Extract actual APIs from working implementations
 - Post-it in NEA-Gitlab
 - Compare them for consistencies/inconsistencies
- Start draft report
- Situation assessment before end 2019

The logo for the Commissariat à l'énergie atomique et aux énergies alternatives (CEA). It features the lowercase letters 'cea' in a white, rounded, sans-serif font. A thin green horizontal line is positioned directly below the letters. The logo is centered within a dark red square, which is itself centered on a larger red background with a pattern of small white dots.