OECD/NEA 31st WPEC Meeting

Summary of Activities for
SG45 Validation of Nuclear Data Libraries (VaNDaL)

Morgan C. White

SG45 Chair

June 27-28, 2019

LOS Alamos
NATIONAL LABORATORY
— EST. 1943 —

Review of SG45 Goals and Status

- Year 1 (May 2018 – June 2019)
  - *Collect suitable input decks from participants and other stakeholders*
  - *Define the layout and implement an initial repository*
  - Generate a prototype QA requirements specification and tools to help implement this process
- Year 2 (June 2019 – May 2020)
  - Perform QA on a subset of inputs using prototype requirements to determine suitability, revise as necessary
  - *Generate a prototype requirements document for standard outputs*
  - *Develop tools to run benchmarks and parse these outputs*
- Year 3 (May 2020 – May 2021)
  - Finalize QA and outputs requirements
  - Release initial benchmark suite and tools

NEA GitLab Server   https://git.oecd-nea.org/

- The VaNDaL project requires a version control system to record changes to the suites of benchmarks used for validation over time
  - At the May 2018 SG45 meetings, multiple stakeholders raised concerns regarding where such a system would reside
  - Requested NEA assistance (similar needs within many working groups)
- December 2018 - *NEA GitLab: a tool for international collaboration*
  - Hosted using OECD/NEA IT resources and administration
  - Implements an industry standard collaboration tool (GitLab)
  - Provides controls to allow fine tuned access to individuals, groups or public
  - Locates the benchmark repositories in the same website as projects
- SG45 (private and public) work spaces provided
  - One initial repository (A. Trkov, IAEA) committed to server
  - *Action item remains for other participants to provide initial repositories*

ot infrastructure

NL, ORNL) effort

hared repositories

such efforts

- #1 is naming convention requires benchmark, revision, case and alternate model
- *Need engagement, and agreement, between ICSBEP, NEA/DICE and VaNDaL*
- – Several more laboratories are interested and likely to engage through VaNDaL
- A prototype output file has been developed (W. Haeck, LANL)
  - – Tools developed to mine MCNP outputs and produce JSON interchange file
    - Initial focus has been to support intercomparison, DICE and similar efforts
  - – Collaboration has generated request for additional data (E. Rozhikhin, IPPE)
    - Inherently useful for output analysis but *also provides novel ways to QA inputs*
  - – JSON schema will be managed through NEA GitLab
  - – Plans to extend tools to mine outputs from other transport codes

Navigating Intellection Property Rights is "Interesting"

- *These benchmark input decks (and expertise in their use) are part of the "crown jewels" of many institutes*

- We need to resolve questions of Intellection Property (IP) rights
  - The main driver to provide open access is to make transparent and reproducible to all end users all information that affects the evaluation process
  - The main driver in requesting an NEA hosted GitLab server was a desire by many stakeholders to provide secure access controls for sensitive information

- The inherent question is the who and how we all access this information
  - It is clear that inputs for benchmarks publicly published should be public
    - But many such publications contain insufficient detail
  - It is clear that inputs for proprietary benchmarks require appropriate controls
    - But many proprietary benchmarks affect the evaluated data libraries
  - *This will require attention, persistence and patience*

QA Procedures for Verification of Benchmark Inputs

- Start of work has been delayed as attention has been elsewhere
- IRSN (CRYSTAL), LANL (WHISPER) and ORNL (VALID) have existing internal QA procedure documents that will be studied
  - Documents will be made available to collaboration through SG website
- N. Leclaire (IRSN) has volunteered to lead draft of SG45 document
  - Development will be done using NEA GitLab tools

Moving forward

- There will be a broader discussion of the IP questions with the ICSBEP/IRPHE communities and the NEA steering committee
  - Though it appears clear that the input decks in question can be put on the NEA GitLab server within the password protected space
    - e.g. ICSBEP input decks would have the same requirements as ICSBEP access
  - The question to be answered is what license to use for their release
- The interlaboratory comparison has continued funding and is key to continue to help drive development of the tools and documentation
  - We are also planning to hold side meetings during the CSEWG and JEFF meetings to help coordinate and move forward this meeting
    - Intent would be to have an outline of the QA document by November and the full draft by the WPEC meeting next May
  - We would appreciate NEA support to have methods to import and export the interchange data file into the DICE (or other) databases
- Better engage with other SGs to make use of these products