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ENSDF Modernization

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The National Nuclear Data Center (NNDC) at Brookhaven National Laboratory (BNL) has recently undertaken a significant modernization of the Evaluated Nuclear Structure Data File (ENSDF) format, transitioning from a legacy 80-column ASCII format to JSON. This new hierarchical JSON format leverages a modern format consisting of key-value pairs, enabling efficient data organization, flexibility, and optimal compatibility for web-based data dissemination. However, the shift to JSON requires substantial adaptation of the existing codebases, as much of the current nuclear data software ecosystem is deeply reliant on the fixed-width ASCII format. The transition involves updating numerous codes, tools, and workflows to align with the modernized JSON schema, presenting both challenges and opportunities for improved data handling.

To facilitate this modernization, the NNDC is developing the ENSDF Editor, software tailored for ENSDF evaluator evaluation efforts. This editor is designed to provide an integrated environment where evaluators can efficiently review, evaluate, and edit nuclear structure data in the new JSON format. Built using advanced technologies such as Electron, a framework that combines Chromium and Node.js, the ENSDF Editor aims to deliver a cross-platform desktop experience that ensures consistency, performance, and accessibility across various operating systems. This tool will be instrumental in supporting evaluators as they transition to the updated format, ultimately enhancing the accessibility and usability of nuclear data for research, development, and applications in the nuclear science community.

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