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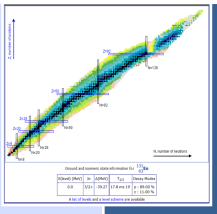
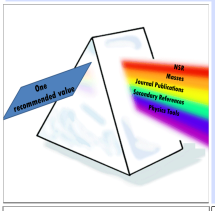
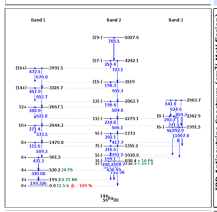


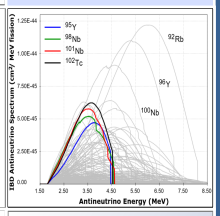
United States Nuclear Data Program

Annual Report for Fiscal Year 2026

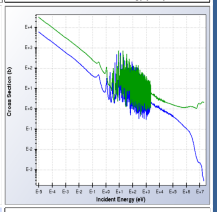
This document describes the activities including related metrics performed by the US Nuclear Data Program members during Fiscal Year 2026.

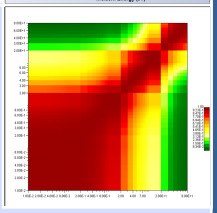












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www.nndc.bnl.gov/usndp

BNL

Contents

Acknowledgements vi

USNDP Mission vii

USNDP Membership viii

I. Introduction 1

II. Network Coordination and Data Dissemination 4

National and International Coordination 4

USNDP Databases 4

Data Dissemination 5

Major Publications 5

III. Nuclear Structure and Decay Data 6

Status of ENSDF 6

Status of XUNDL 6

Status of NSR 6

Horizontal Evaluations and Other Data Related Activities 6

Status of ENSDF Codes 8

IV. Nuclear Reaction Data 10

Status of ENDF 10

Status of EXFOR 10

Reaction Theory 10

Reaction Measurements 11

Nuclear Astrophysics 12

VII. USNDP Staffing 13

Staffing Table FY 2026 13

FTE Plots FY 2026 14

VIII. Detailed Status of the Work Plan – Fiscal Year 2026 Report 16

I. Operations 16

A. Management 16

B. Library 17

C. Customer Services 17

D. Computer Operation 17

E. Nuclear Data Sheets 18

F. Web Site Maintenance 18
II. Main Nuclear Physics Databases 20
A. Nuclear Science References (NSR) 20
B. Experimental Nuclear Structure Data (XUNDL) 20
C. Evaluated Nuclear Structure Data File (ENSDF) 21
D. Numerical Nuclear Data (NuDat) 21
E. Experimental Reaction Data File (EXFOR) 21
F. Evaluated Nuclear Data File (ENDF) 22
III. Nuclear Structure Physics 23
A. National Coordination 23
B. International Coordination 23
C. Compilation of Experimental Nuclear Structure Data 24
D. A-Chains and Nuclides Evaluations for ENSDF 25
E. Ground and Excited State Properties 27
F. Non-ENSDF Decay and Structure Data Evaluations 27
G. Nuclear Structure Data Measurements 28
H. ENSDF Physics and Checking Codes 29
IV. Nuclear Reaction Physics 30
A. National Coordination 31
B. International Coordination 31
C. ENDF Manuals and Documentation 32
D. ENDF Evaluations 32
E. Neutron-induced g-Ray Data Evaluation 34
F. Nuclear Model Development 34
G. Nuclear Reaction Data Measurements 35
H. Astrophysics Nuclear Data Needs 36
I. Covariances Development 37
J. Reactor Antineutrino Spectra and Decay Heat Calculations 37
K. Verification and Validation 37
Appendix A – Additional Funding Sources 39
Appendix B – USNDP Data and Code Products 41
Appendix C – Fiscal Year 2026 Articles authored by USNDP staff 53

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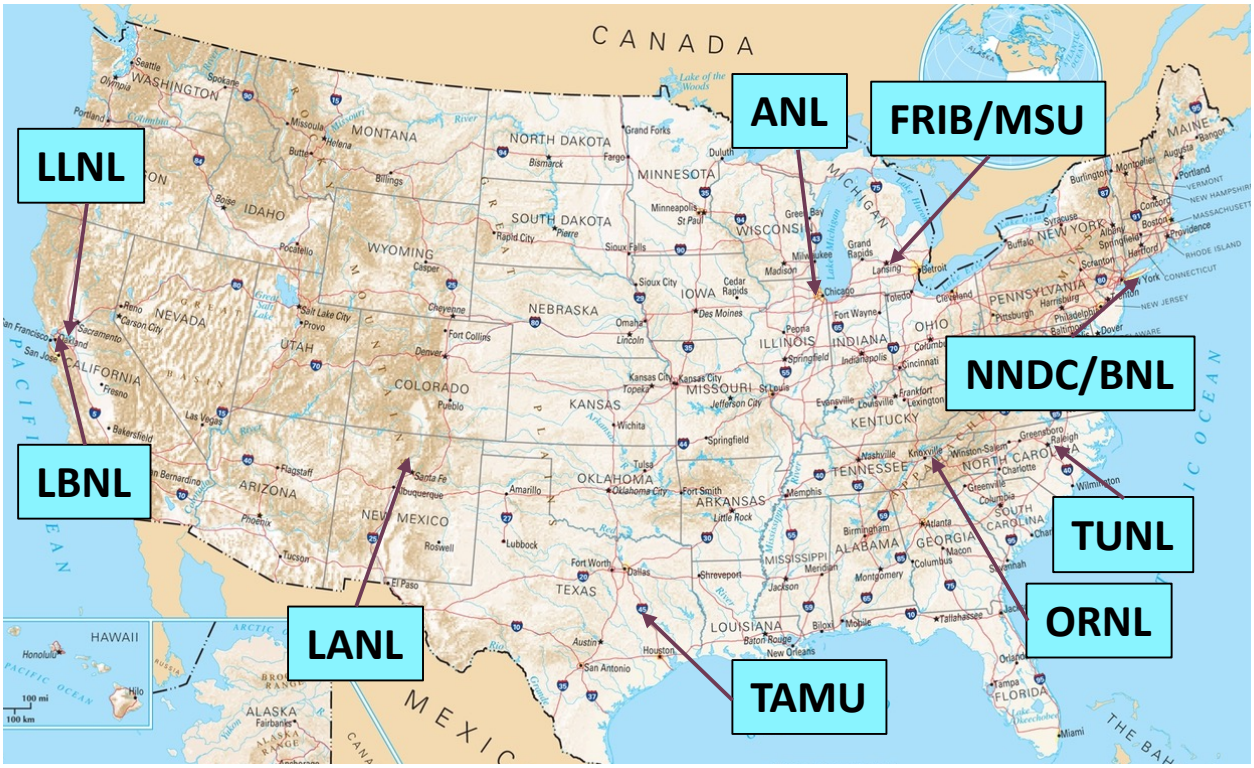
USNDP Mission

The mission of the United States Nuclear Data Program (USNDP) is to provide current, accurate, authoritative data for workers in pure and applied areas of nuclear science and engineering. This is accomplished primarily through the compilation, evaluation, dissemination, and archiving of extensive nuclear datasets. USNDP also addresses gaps in the data, through targeted experimental studies and the use of theoretical models.



Map courtesy of the USGS (https://www.usgs.gov/media/images/general-reference-printable-map).

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I. Introduction

The US Nuclear Data Program (USNDP) Annual Report for Fiscal Year 2026 summarizes the work of USNDP for the period of October 1, 2025 through September 30, 2026, with respect to the Work Plan for FY 2026 that was prepared in 2025. The Work Plan and Final Report for USNDP are prepared for the DOE Office of Science, Office of Nuclear Physics. The support for the nuclear data activity from sources outside the US Nuclear Data Program is summarized in the staffing table and Appendix A. This leverage amounts to about 19.7 FTE scientific, to be compared with 22.3 FTEs at USNDP units funded by the DOE Office of Science, Office of Nuclear Physics**.** Since it is often difficult to separate accomplishments funded by various sources, some of the work reported in the present report was accomplished with nuclear data program support leveraged by other funding.

FY2026 marks the final year of USNDP operations under its current organizational structure, which has remained largely unchanged since its establishment in 1997.

FY 2026 is also the 27th year in which the USNDP has operated under a Work Plan developed by the program participants. The program continued to carry out important work in support of the DOE mission. The work balances the ongoing collecting, analyzing, and archiving of nuclear physics information critical to basic nuclear research and to the development and improvement of nuclear technologies with the electronic distribution of this information to users in a timely and easily accessible manner. The present section of the report consists of activity summaries for the major components of the USNDP. This is followed by an updated staff level assignment table that reflects the final distribution of effort among the tasks carried out during FY 2026. Then, we continue with the detailed status of work performed during FY 2026.

In terms of personnel changes, the USNDP has undergone several changes in FY 2026:

- David Matters left LBNL in May 2026 and joined the faculty of the US Naval Academy
- Mathis Wiedeking is the PI of the LBNL's Nuclear Data Program (1 July 2026)
- Biying Liu joined LBNL as a new postdoc
- Panos Gastis left LANL and moved to the University of Rochester, Laboratory for Laser Energetics
- Pierre Nzabahimana has moved to a different area at LANL
- Andrew LaRochelle was a student from the 2026 SULI program at LANL
- Austin Kunz was a summer post-bachelor's student in 2026 at LANL
- Thuong Nguyen joined as a new postdoc at LANL

Table 1 summarizes the USNDP metrics since 2001. Table 2 shows the breakdown of the metrics by laboratory for the reported fiscal year and comparison with the previous fiscal year. The tables are followed by a definition of each metric and any comments pertaining to the metrics.

Table 1: Summary of the USNDP funding and metrics for the period 2021-present.

Fiscal year	USNDP funding ($K)	Change (%)	Compilations	Evaluations	Disseminations	Articles	Invited talks
2021	9,435[a]	+0.99	5,380	273	7,297	71	59
2022	10,290[b]	+9.06	3,988	292	9,016	71	71
2023	10,933[c]	+0.7	4,245	181	15,136	71	87
2024	10,245[d]	-1.8	3,172	192	13,071	77	70
2025	8,564[e]	N/A	3,266	156	13,627	69	59
2026	7,314[e]	-14.5	2,775	161	11,991	91	62

a: It includes the following (a) FIRE collaboration funding $100k (LLNL); (b) LAB calls funding: $884k (ANL), $717k (BNL), and $173k (ORNL).
b: Includes LAB calls funding: $825k (ANL), $693k (BNL), $702k (LANL), $61k (LLNL), and $424k (ORNL).
c: Includes LAB calls funding: $293k (ANL), $600k (BNL), $836k (LANL), $344k (LBNL), $64k (LLNL), $772k (ORNL) and $113k (PNNL).
d: Includes LAB calls funding: $176k (ANL), $602k (BNL), $821k (LANL), $344k (LBNL), $66k (LLNL), $930k (ORNL) and $149k (PNNL).
e: Does not include LAB call funding as these values were not available.

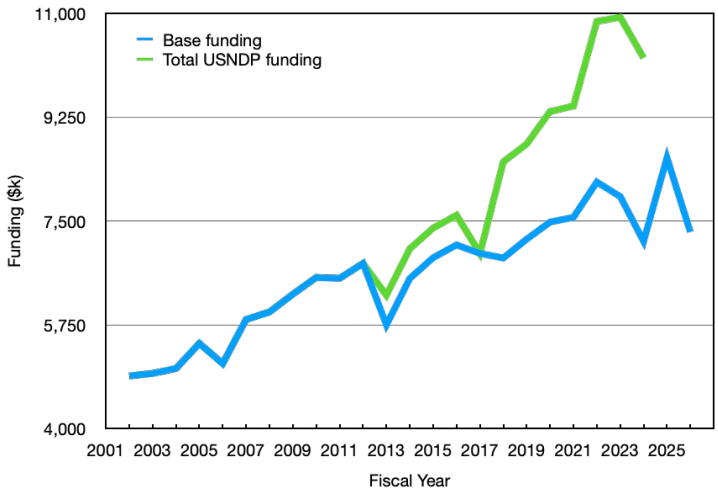


Figure 1: Historical USNDP funding for the years FY 2001-present.

Table 2: USNDP metrics in the last two fiscal years, numbers from the previous fiscal year are shown for comparison.

Laboratory	Compilations		Evaluations		Disseminations (in thousands)		Articles		Invited Talks	
	2025	2026	2025	2026	2025	2026	2025	2026	2025	2026
ANL	0	0	11	13	-	-	15	17	5	6
BNL*	3,155	2,657	53.6	51.4	11,844	11,844	19	22	32	32
LANL	-	-	0.9	1.5	-	-	13	16	7	5
LBNL	0	0	18	10	26	26.6	10	21	15	17
LLNL	-	-	0.2	1.1	-	-	0	3	0	0
MSU	45	48	42	42	-	-	5	6	0	2
ORNL	-	-	10	16	1,561	0	3	2	0	0
TAMU	0	0	17	17	-	-	3	1	0	0
TUNL	70	67	3	9	196	120	1	3	0	0
Total	3,266	2,775	156	161	13,627	11,991	69	91	59	62

*: BNL compilations consist of (a) 2,603 NSR articles, including keywords for 1,954 of them; (b) 86 articles for EXFOR; (c) 349 articles encompassing 733 XUNDL datasets. BNL evaluations consist of (a) 51 nuclides for ENSDF and 0.4 for ENDF/B. For the remaining groups, all compilations are for XUNDL, while all evaluations are either ENSDF (ANL, LBNL, MSU, ORNL and TAMU) or ENDF/B (LANL, LLNL).

Metric definitions and comments:

1. **Compilations**: The sum of the new entries added to the USNDP bibliographic (NSR - articles) and experimental databases (EXFOR - reactions, XUNDL - structure data sets). The compilation activities are lagging due to funding challenges and the lack of contractor support.
2. **Evaluations**: The sum of new evaluations submitted or accepted for inclusion in the USNDP evaluated nuclear databases. For ENSDF, it is the number of evaluated nuclides, while for ENDF, it is the number of evaluated reactions/covariances. There were 158 ENSDF evaluations and 3 ENDF/B evaluations submitted. The number of ENSDF evaluations remains well below the number needed, about 340, to evaluate each of the ENSDF nuclides on average every 10 years.
3. **Dissemination**: The number of electronic data retrievals made from USNDP maintained web sites. Data retrieval is defined as a request for data from any of the databases that receives a result. Total pages accessed is not tallied. It is an interesting coincidence that the total BNL disseminations are nearly identical in FY25 and FY26, but the detailed mix of retrievals has changed (see Figure 2 below).
4. **Articles**: The number of articles published in refereed journals. The number of articles per FTE has remained relatively constant in the last few years, but the number of FTEs in the USNDP has grown. A selected list of articles published is given in the Appendix C.
5. **Invited talks**: The number of presentations given at the explicit invitation of the organizers of conferences, symposia, workshops, and training courses. The number of invited talks has not changed significantly from last year's value.

II. Network Coordination and Data Dissemination

The National Nuclear Data Center (NNDC) continues to serve as the core facility of the U.S. Nuclear Data Program (USNDP). It has the main responsibility for national and international coordination, database maintenance, and data dissemination. However, other program participants are also involved in coordination and dissemination activities.

National and International Coordination

The NNDC serves as the secretariat for the US Nuclear Data Program and has prepared the Work Plan for this fiscal year in cooperation with the members of the Coordinating Committee. The NNDC Head serves as the chair of the USNDP Coordinating Committee, which consists of the Principal Investigators from each of the participating group and chairs the annual meeting. This year, the USNDP Annual Meeting was held virtually from 28-31 October because of the October government shutdown. A representative from LANL chairs the Nuclear Reaction Data Working Group, and a representative from TUNL chairs the Nuclear Structure Working Group.

The Coordinating Committee's major effort this year was to restructure the USNDP as part of the USNDP Renewal Proposal effort. The new organization will come into effect in FY 2027.

The NNDC serves as the focal point for U.S. collaboration in international nuclear data activities. This collaboration continued both in nuclear structure and decay data (Network of Nuclear Structure and Decay Data Evaluators, NSDD) and reaction data (NEA Working Party on International Nuclear Data Evaluation, WPEC, and Network of Nuclear Reaction Data Centers, NRDC). Members of the NNDC also chair two WPEC SubGroups: SG-54, "Continuation of Subgroup 50 on developing an automatically readable, comprehensive, and curated experimental reaction database", and SG-53, "Stable Zirconium Evaluations and Validation (Zr updates)".

The NNDC also chairs the Cross Section Evaluation Working Group (CSEWG), which produces the ENDF/B evaluated nuclear data library for nuclear science and applied nuclear technology use. The 2025 CSEWG Meeting was hosted by BNL and delayed to 6-9 January because of the government shutdown during October 2025. This meeting focused on continued validation of the ENDF/B-VIII.1 data and preparation for ENDF/B-IX. In August of 2026, the ENDF/B-VIII.1 "Big Paper" was published.

The USNDP also continues to play a leading role in the annual Workshop for Applied Nuclear Data Activities (WANDA) conference series. The USNDP's Andre Sieverding co-chaired a session on "Creating an Inventory Sub-Library**",** and USNDP members presented talks at the "AI/ML for Nuclear Data: Opportunities and Challenge" session during the 9-13 February 2026 WANDA meeting.

USNDP Databases

NNDC maintains the collaboration GitLab collaboration platform (git.ndc.bnl.gov) in order to facilitate data and codes development and keep track of changes. The NNDC maintains seven nuclear physics

databases for USNDP, which were updated continuously this fiscal year with new and revised information from efforts of the NNDC, USNDP and international collaborators. Distributions of all or parts of these databases have been made to national and international collaborators as scheduled.

Data Dissemination

There were 11,991 million database retrievals this fiscal year USNDP-wide. The decrease in BNL retrievals represents a change in methodology and a move to Google Analytics. Removing the "Others" category from the BNL totals results in the values in reported Table 1. We note that the spike in NSR retrievals in the period 2022-2024 is likely from crawlers mining NSR for training data for Large Language Models.

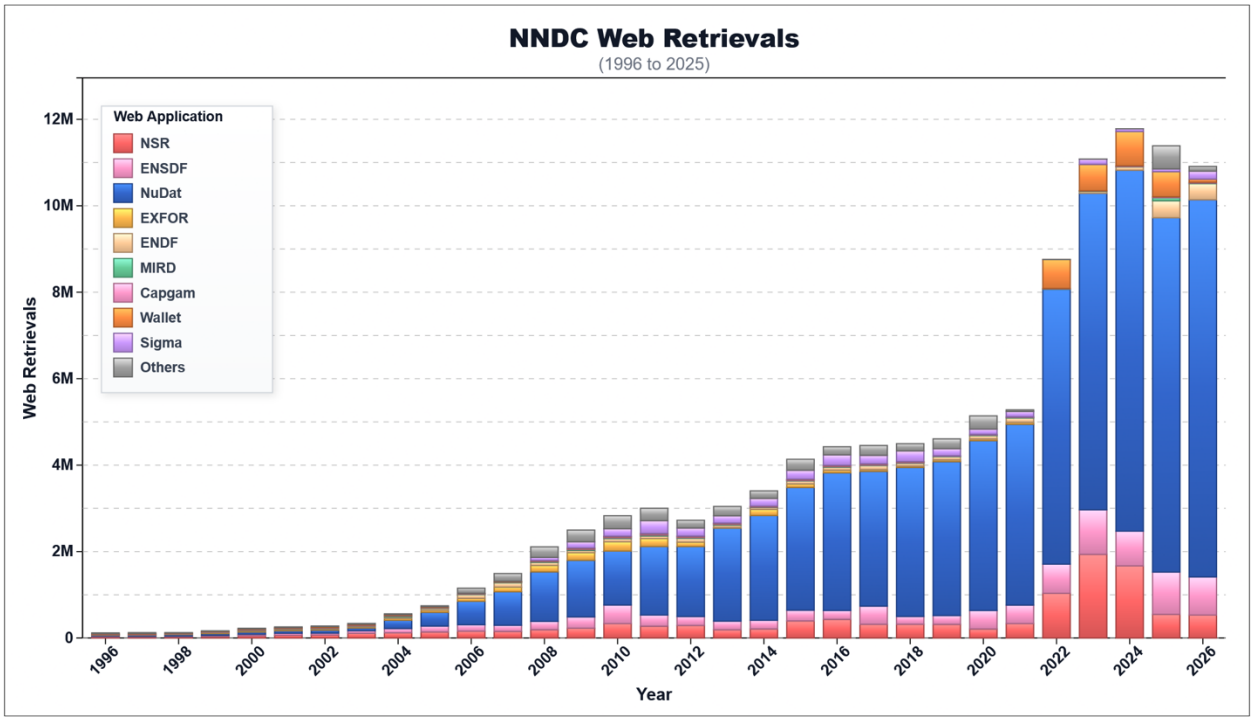


Figure 2: Historical NNDC web retrieval statistics.

Major Publications

The NNDC continues to publish the refereed journal Nuclear Data Sheet with eight issues published in calendar year 2026. In the August issue, the ENDF/B-VIII.1 release paper was published: G. P. A. Nobre et al., "ENDF/B-VIII.1: Updated Nuclear Reaction Data Library for Science and Applications," *Nuclear Data Sheets*, **210** (2026) 1–224, https://doi.org/10.1016/j.nds.2026.04.001.

III. Nuclear Structure and Decay Data

The nuclear structure working group emphasizes the evaluation of measured nuclear structure and decay properties for all isotopes. These data are maintained at the NNDC in the Evaluated Nuclear Structure Data File (ENSDF). Production of ENSDF is an international effort operating under the auspices of the IAEA Nuclear Structure Decay Data (NSDD) network. ENSDF is an important source of information for derivative databases and applications, including NuDat, Nuclear Wallet Cards, RIPL, MIRD and ENDF/B. Evaluations are published as peer-reviewed articles in the Nuclear Data Sheets. The Nuclear Science Reference (NSR) and Experimental Unevaluated Nuclear Structure Data List (XUNDL) databases have been kept current. The combination of ENSDF and XUNDL databases represents a nearly complete literature coverage of experimental nuclear structure data, which is a salient feature of these databases.

Status of ENSDF

ENSDF evaluations of 158 nuclides were submitted for inclusion into the database. These evaluations included recommended properties for 10,478 Levels and 15,330 Gammas. 12 mass chains were reviewed by the network for consideration for publication in the Nuclear Data Sheets journal. Three new ENSDF evaluators were trained in FY25, one from MSU and two from LLNL.

Status of XUNDL

Based on regular scanning of nuclear physics journals, the USNDP contributed 732 datasets to XUNDL. The project to compile and carry out physics checks on the data from nuclear structure and decay data manuscripts, as well as some reaction papers, submitted to Phys. Rev. C and European Physical Journal A continues.

Status of NSR

Historically, the NSR project involved contributions from NNDC staff members and external contractors. In FY 2025, the external contractors were eliminated at Brookhaven, and the NSR manager worked to fill this void. Despite these loses, 1,954 articles were added to the NSR database. Combined efforts of R. Arcilla, B. Shu and B. Pritychenko are exploring various automation strategies including Java-based nsystems for NSR entry preparation for 30 major nuclear physics and engineering journals, webscraping of several other journals, and work on using Large Language Models. USNDP contributions are from B. Pritychenko (manager), C. Dunn, B. Shu, and R. Arcilla (NNDC), with international input from L. Vrapcenjak (IAEA).

Horizontal Evaluations and Other Data Related Activities

A summary list of "Horizontal Evaluations and Other Data Related Activities" involving USNDP structure evaluators includes the following:

IAEA-CRP evaluation of fission yields - A. Sonzogni, A. Mattera, E. Ricard, B. Pritychenko, T. Kawano, F.G. Kondev – continuing.

The Atomic Mass Evaluation (AME) and the evaluation of basic nuclear physics properties for ground states and isomers (NUBASE) - F.G. Kondev – continuing.

Modernization of ALPHAD-radD analysis code - A new Java code AlphaHF was developed and completed to replace the legacy ALPHAD-radD fortran, which uses even-even r0 parameters from 2020Si16 in NDS. Update of r0 parameter to include new papers on even-even alpha decays and to incorporate data in AME2020 is continuing. The updated evaluation of alpha-decay data for even-even nuclei, and anticipated publication of a paper on updated r0 parameters is being done. J. Chen in collaboration with Drs. S. Singh and S. Kumar, Akal University, India – continuing.

IAEA-led decay data library for monitoring applications - J. Chen, F.G. Kondev – continuing.

WalletCraft - Object-oriented database for ground and long-lived isomeric properties: E. Ricard, B. Shu, D. Mason, C. Morse, S. Ota, J. Wu, A. Mattera - continuing.

B(E2) project for first 2+ and 4+ states of all the even-even nuclei - continuing to compile B(E2) values with a plan to provide a set of evaluated, recommended values. B. Pritychenko - continuing.

Gamma-ray transition probabilities for all experimentally known multipolarities for all the nuclei - update of Endt's work of the 70's. This project started recently and will take two-three years to complete. J. Chen – continuing.

Two neutrino double beta decay - "Two-neutrino mode Double-beta Decay Half-Lives

Evaluation: Double-beta decay data for 14 parent nuclei have been reviewed and USNDP FY2023 Report Page 10 recommended T1/2 and nuclear matrix elements were produced." This work is completed and was published in January 2025. B. Pritychenko and V.Tretyak (KINR, Ukraine)

The online Berkeley Evaluated Alpha and proton Radioactivity (BEApR) database - The BEApR database is an online database of all known heavy charged particle emitters (proton, alpha, cluster and fission) from both beta-delayed and direct emitters. The database contains all relevant information on half-lives, spin/parity, branching ratios and individual transitions from 1243 nuclei from Li (Z =3) to Og. This information is taken from physics journals, conference proceedings and dissertations with 3977 individual references. This database is updated monthly as new results are published – continuing.

paceENSDF: Python Archive of Coincident Emissions from ENSDF - The paceENSDF project is a Python package enabling interaction, manipulation, analysis, and visualization of radioactive-decay data and and corresponding coincidence γ-γ and γ-X-ray data. The software package is shipped complete with a JSON-formatted database of coincident γ-γ and γ-X-ray data along with the radioactive-decay data from the Evaluated Nuclear Structure Data File (ENSDF) translated into both JSON and RIPL (Reference Input Parameter Library) formats. The project is completely open source and is available on both PyPI and GitHub – continuing.

pyEGAF - The pyEGAF project is an open-source Python library designed to enable interaction, manipulation, analysis and visualization of the thermal (n, γ) data in the Evaluated Gamma-ray Activation File (EGAF). The software package is shipped complete with JSON and RIPL translations of the original ENSDF-formatted EGAF data sets in addition to the original ENSDF format. This is an open-source project available on both PyPI and GitHub - continuing.

Photon Strength Function (PSF) Database - For the 2025 database update, PSF data for 34 nuclei were assessed, resulting in the creation of 53 new datasets with corresponding README documentation. 528 PSF files from the 2024 release and earlier were reviewed, with formatting corrections applied and file labels standardized; a unified procedure for handling asymmetric and total uncertainties was also implemented – continuing.

Nuclear Level Density (NLD) Database - LBNL has joined a new four-year effort, through a CRP with the International Atomic Energy Agency (IAEA), to establish a modern, comprehensive experimental Nuclear Level Density (NLD) database. As part of this initiative, LBNL leads the collection, compilation, and assessment of experimental NLD data across a broad range of techniques, while also contributing to the benchmarking of theoretical NLD models to be integrated into the database as recommended models – continuing.

Status of ENSDF Codes

The core legacy ENSDF codes used throughout the evaluation workflow have been modernized by Jun Chen of the MSU data center into a suite of Java programs offering enhanced functionality and new features. Under his leadership, the MSU center continues to maintain and improve these existing Java codes while also developing new analysis and utility tools. A recent milestone is the development of the Java-based EvaluationToolkit, which consolidates all ENSDF Java codes into a single, integrated interface to automate and streamline the evaluation workflow. In addition, a significant new initiative at the MSU data center is exploring the incorporation of Artificial Intelligence and Machine Learning (AI/ML) into the workflow. This project is led by Lijie Sun, a new evaluator at the center. An AI-assisted ENSDF formatting tool has been developed under this initiative and is already in active use for his evaluations, with ongoing improvements. Efforts are being made to make a package of this tool available for and easily used by other evaluators in the near future, in conjunction with the use of existing Java ENSDF codes.

The active code suite includes the McMaster-MSU JAVA-NDS code for producing print-ready documents and ENSDF data retrievals; the ConsistencyCheck toolkit for ensuring evaluation consistency; Java-RULER for calculating transition strengths with an improved Monte Carlo error propagation; GLSC (Gamma to Level Scheme Computation), which replaces legacy codes for fitting gammas and calculating emission probabilities; and the AME-NUBASE viewer for customized retrieval and automatic Q-value updates. Additional essential utilities include KeynumberCheck and FormatCheck for data validation, the Excel2ENSDF converter for data compilation, the RadiationReport and LogftCalculator for decay dataset analysis, and the AlphaHF code for alpha decay calculations.

Efforts to develop new utility and analysis codes are ongoing, focusing on further streamlining, automating, and accelerating the evaluation workflow to enhance overall efficiency and productivity. A complete list and detailed descriptions of these codes are provided in Appendix B – USNDP Data and Code Products.

IV. Nuclear Reaction Data

The nuclear reaction data effort focuses on evaluation of nuclear reaction data and the related measurement and compilation activities. USNDP also makes important contributions to nuclear reaction model code development and improvement of reaction cross-section standards.

Status of ENDF

During fiscal year 2026 (FY2026), the Evaluated Nuclear Data File (ENDF/B) program advanced both the dissemination of the current library and preparations for its next release. A major milestone was the open access publication of the ENDF/B-VIII.1 reference paper in Nuclear Data Sheets [G. P. A. Nobre et al., Nuclear Data Sheets **210,** 1–224 (2026)], documenting improvements to neutron reaction evaluations, photonuclear and charged-particle data, thermal neutron scattering, and nuclear data covariance testing, as well as improved agreement with integral benchmark experiments. The paper describes the latest recommended library developed by the Cross Section Evaluation Working Group (CSEWG), following six years of advances since ENDF/B-VIII.0. In parallel, work continued to coordinate and assemble evaluations submitted for the subsequent ENDF/B release, including quality assurance, testing, and preparation of data for distribution through the National Nuclear Data Center (NNDC) and collaborative infrastructure.

Status of EXFOR

EXFOR library is a unique worldwide depository of experimental low- and intermediate-energy nuclear reaction data. Presently, it is run by the International Nuclear Reaction Data Centers (NRDC) network under the auspices of the International Atomic Energy Agency (IAEA), Vienna, Austria. The National Nuclear Data Center (NNDC) is responsible for the compilation of experimental nuclear reaction data in Area #1 (USA & Canada). In FY 2026, the center has produced 105 new and 117 corrected compilations and submitted 19 preliminary and 17 final data transmissions.

The experimental nuclear reaction library is essential for nuclear reaction data evaluation and application development. To address the growing evaluators' data needs, the WPEC NEA/DB launched Subgroup 54 "Curated EXFOR: Developing a Machine-readable, Comprehensive, and Corrected by Evaluators Experimental Nuclear Reaction Database" led by NNDC. In FY2026, we have actively tested the EXFOR database JSON format and produced the first 16 curated data compilations.

Reaction Theory

The statistical Hauser-Feshbach codes developed under USNDP collaboration include CoH3 (LANL), YAHFC (LLNL), and EMPIRE (BNL). Although these codes are already capable of producing reliable nuclear reaction data, we keep them updated to incorporate the most recent nuclear reaction theories. Recent progress in the theoretical nuclear reaction physics includes a consistent description of the direct inelastic scattering and the pre-equilibrium emission, where the QRPA (Quasi-particle Random Phase Approximation) equations are solved by the FAM (Finite Amplitude Method). LANL develop FAM

demonstrated experimental data of both the scattering processes are well reproduced without any adjustable parameters. This development suggests our current modeling of pre-equilibrium process, called the exciton model, needs further development by including more microscopic ingredients.

Towards the USNDP cooperated project on the activation library, it is essential to prepare a new framework of nuclear data production in a more efficient way, since we will produce hundreds of nuclear data files. LANL develops such a framework, called LACE (Los Alamos CoH-base Evaluation), where the ENDF-formatted file manipulation code DeCE processes all the CoH-generated intermediate files. In FY26 we made the prototype of LACE, and we tested it by making more than 400 ENDF files.

LLNL's FY26 progress emphasizes neutron cross-section evaluation, covariance generation, and reaction-model development. Key advances include improving the covariance data for n+^{239}Pu through a large-scale Markov Chain Monte Carlo fit of all reaction-model parameters, including the optical model, to available measurements. This provides a robust representation of cross-channel correlations for incorporation into the evaluation. LLNL is also moving toward evaluating n+^{242}Pu for fast neutrons, including development of a new in-house implementation of the generalized least-squares fitting approach used in GMAP for the fission cross section. This implementation has been recently tested for ^{239}Pu(n,2n).

In reaction-model development, efforts are preparing for LLNL's contribution to the planned activation library by streamlining production of evaluated GNDS files from model calculations. Recent work on has also identified priorities for improving YAHFC, LLNL's Hauser-Feshbach code, including treatment of deuteron breakup and alpha clustering.

Reaction Measurements

The newly developed LANL-TP evaluation, based on updated fast-energy 35Cl nuclear data obtained at LANSCE, significantly improves the reliability of neutron transport calculations for chlorine-containing systems. By combining CLYC detector measurements with MCNP and GEANT4 simulations, the first experimentally validated ^{252}Cf fission-spectrum averaged cross sections for the ^{35}Cl(n,p_0) and summed ^{35}Cl(n,$p_{x>0}$ + n, α) were obtained, in excellent agreement with the new evaluation while revealing systematic discrepancies with ENDF/B-VIII.1. The validated evaluation reduces uncertainties in fast-neutron absorption by chlorine, increasing confidence in reactor physics calculations for molten chloride fast reactors and improving predictions of reactor reactivity by constraining previously poorly known (n,p) reactions. This LANL-TP fast-energy evaluation is suitable for future ENDF release.

The first experimental data for neutron-induced reactions on ^{68}Zn significantly improved ^{68}Zn(n,p)^{68}Cu cross sections between 4 and 12 MeV and resolved longstanding discrepancies in the ^{68}Zn(n,α)^{65}Ni reaction below 12 MeV. The new measurements demonstrate that existing evaluated libraries substantially underestimate the (n,p) cross section by as much as 80% in ENDF/B-VIII, while confirming that ENDF provides the best overall description of the (n,α) channel. By combining the new data with elastic, inelastic scattering, and capture cross sections in a comprehensive Hauser-Feshbach analysis, the improved Optical Model potential and level-density parameters were reported to consistently

reproduce multiple reaction channels and identify deficiencies in current nuclear structure information, particularly for the neutron-rich residual nucleus, ^{68}Cu. These results provide a stronger experimental basis for future full evaluations of ^{68}Zn, improve predictive reaction modeling for charged-particle emissions, and enhance the reliability of applications involving fusion technology, accelerator-driven systems, radiation damage assessments, and isotope production.

A simulation framework for machine learning-assisted pulse shape discrimination (PSD) in silicon semiconductor detectors was developed to improve charged-particle identification for neutron induced reaction measurements without relying on conventional ΔE-E telescope configurations. A physics-based waveform generator models charged transport, signal induction, preamplifier response, and electronic filtering, to reproduce measured proton and α-particle waveforms with good agreement. This study demonstrates that realistic, simulated waveforms can be coupled with MCNP and GEANT4 transport simulations to predict detector performance under different operating conditions, including varying bias voltages and particle energies. Using these simulated waveforms, a Random Forest machine-learning model was trained entirely on systematic data and successfully classified experimentally measured proton and α-particles with better than 90% accuracy, illustrating the potential of simulation-driven "SI" for automated particle identification. The approach provides a pathway toward higher detection efficiency, lower systematic uncertainties, restoration of previously unusable, defected signals, and real-time waveform-based particle identification in future LENZ experiments. This work is under journal review.

Stable copper isotopes of ^{63}Cu and ^{65}Cu have been measured for providing high-fidelity (n,p) and (n,α) reaction cross sections using LENZ instruments at WNR. Analyses are ongoing, so once finalized the angular distributions and the secondary particles' energy spectra will be used for full evaluation. For the radioactive isotope of ^{26}Al, the LENZ instrument was moved to the Lujan Center for measuring neutron induced reactions for the energy range of thermal to 300 keV. Currently the team is characterizing the response function of neutrons at Lujan using MCNP simulation results, to reproduce experimental yields via codes such as GEANT4 and SAMMY, where any resolved resonances are populated. This preliminary analysis shows significant cross sections with resonance-like shape at the neutron energy higher than 100 keV, where there is no experimental data available, expecting an impactful information to deduce the Maxwellian Average Cross Section information for ^{26}Al(n,p).

Nuclear Astrophysics

For generating new reaction data relevant to nuclear astrophysics applications, the new target fabrication method for ^{26}Al was developed at LANL. ^{26}Al is an important radionuclide for research on stellar nucleosynthesis in the Galaxy and the environment of the early solar system. Some of the destruction channels via neutron-induced reactions for ^{26}Al either have no measured data or discrepancies in the available data. With this new fabrication method, the new experimental data was obtained at the Lujan Center in LANSCE, and this data will be converted to reaction rates for further network calculations to better understand this destruction pathways. This impact calculation will continue in FY27.

VII. USNDP Staffing

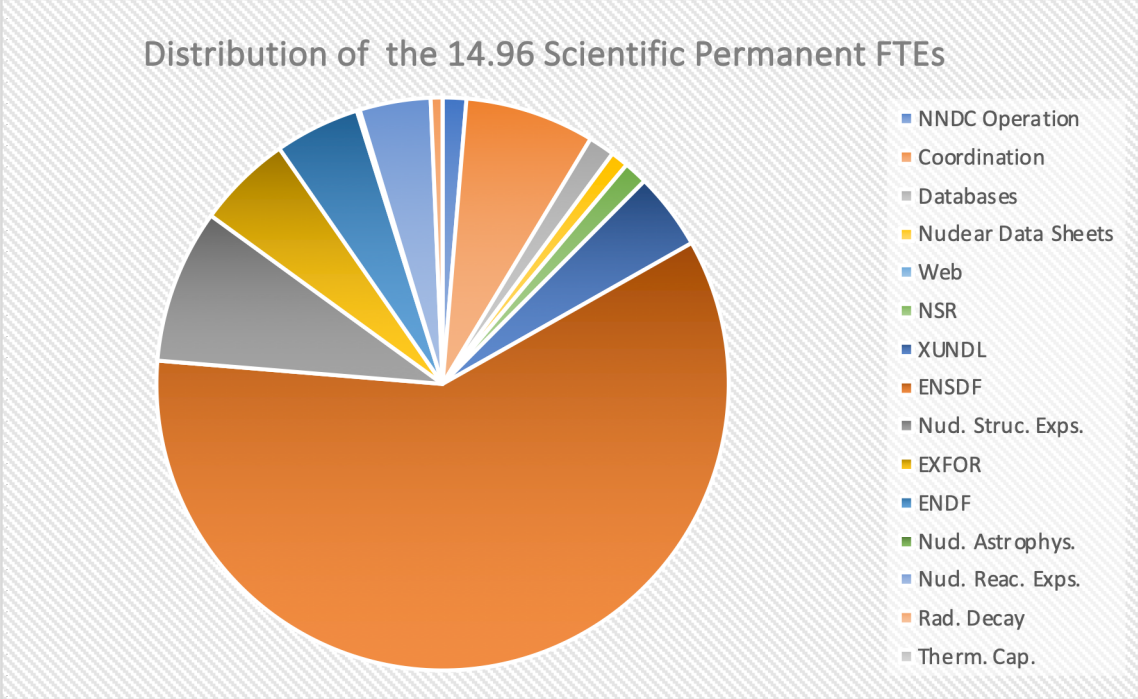
Staffing Table FY 2026

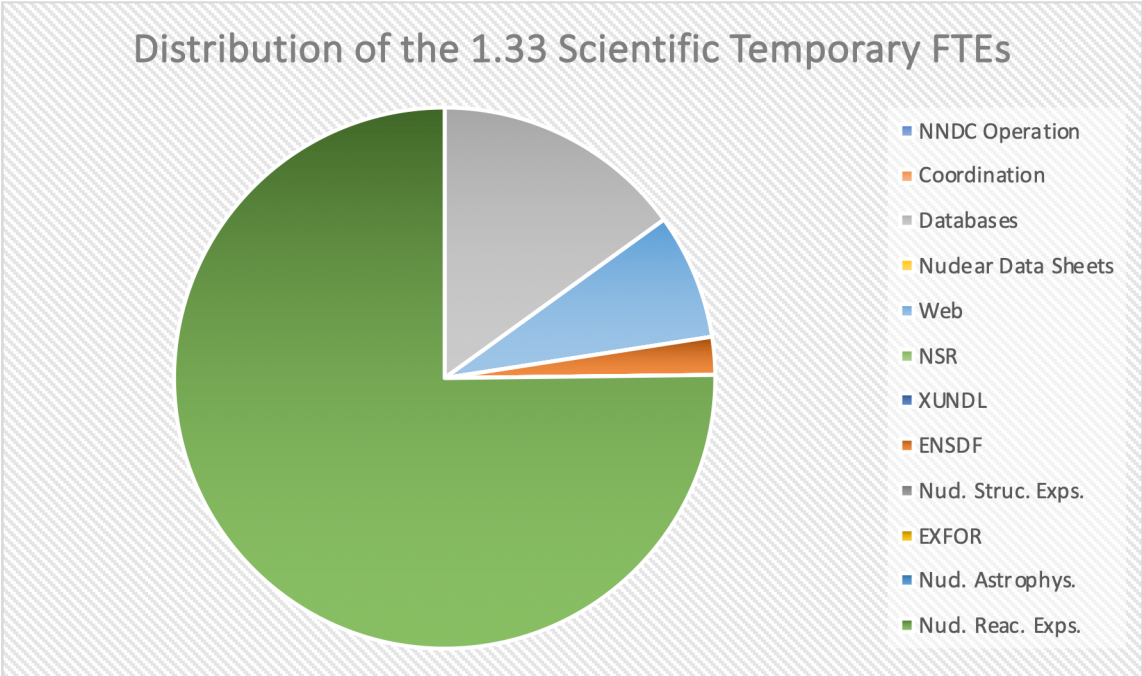
The table below gives the FTE distribution for each USNDP group according to activity. The values in this table and following plots are for the based funding only. In this table, PhD P means PhD Permanent; PhD T means PhD Temporary, which includes post-docs and scientists working under contract; T/A means Technical and Administrative; and GS means Graduate Student.

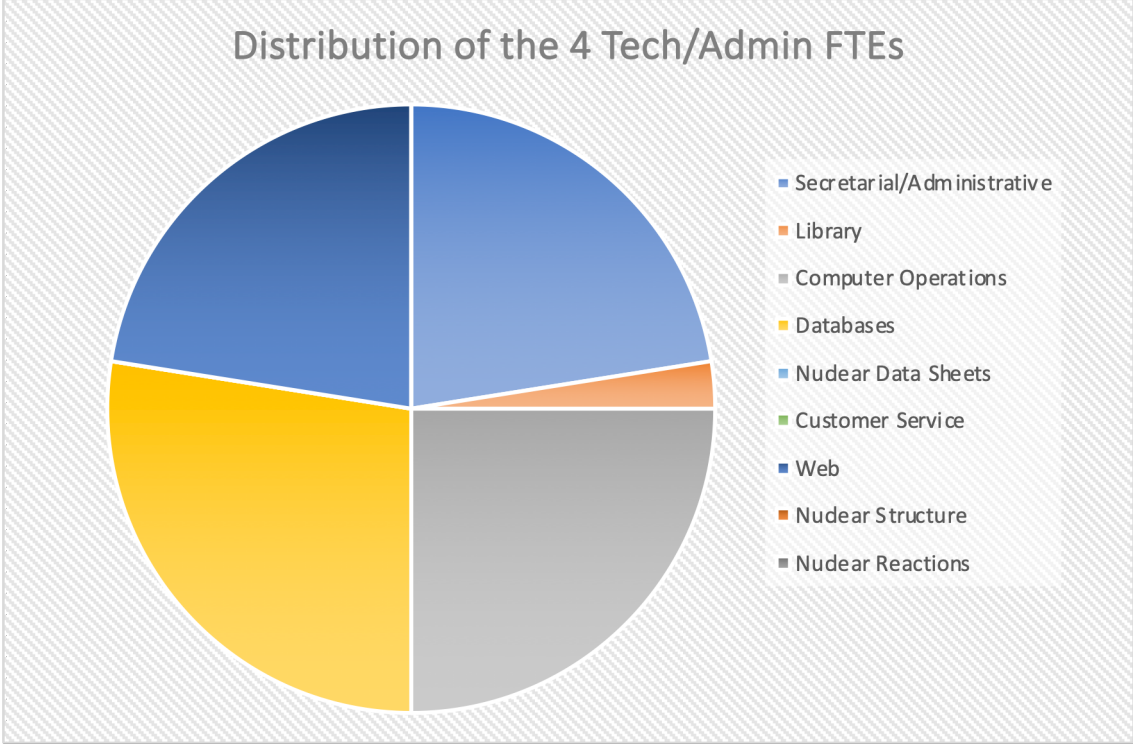
Activity	ANL		BNL			LANL			LBNL		LLNL	MSU	ORNL	TAMU	TUNL		
	PhD P	PhD T	PhD P	PhD T	T/A	PhD P	PhD T	GS	PhD P	PhD T	PhD P	PhD P	PhD P	PhD P	PhD P	PhD T	Totals
I. NNDC Facility Operation	0	0	0.2	0	2	0	0	0	0	0	0	0	0	0	0	0	2.2
Management			0.2														0.2
Secretarial/Administrative Support					0.9												0.9
Library					0.1												0.1
Computer Operations					1												1
II. Coordination	0.03	0	0.42	0	0	0.1	0	0	0.3	0	0.1	0	0.1	0	0.05	0	1.095
National Coordination	0.03		0.4			0.05			0.15		0.1		0.1		0.05		0.875
International Coordination			0.02			0.05			0.15								0.22
III. Nuclear Physics Databases	0	0	0.22	0	1.1	0	0	0	0	0.2	0	0	0	0	0	0	1.52
Nuclear Science References, NSR			0		0.45												0.45
Exper. Nucl. Structure Data, XUNDL			0.08														0.08
Eval. Nucl. Structure Data, ENSDF			0.08														0.08
Numerical Nuclear Data, NuDat					0.25												0.25
Experimental Reaction Data, CSISRS			0														0
Evaluated Nuclear Data File, ENDF			0.05														0.05
Database Software Maintenance																	0
Future Database System Develop.			0.01							0.2							0.21
IV. Information Dissemination	0	0	0.15	0	0.9	0	0	0	0	0.1	0	0	0	0	0	0	1.15
Nuclear Data Sheets			0.15														0.15
Customer Services																	0
Web Maintenance & Development					0.9					0.1							1
V. Nuclear Structure Physics	0.95	0	3.6	0	0	0	0	0	0.9	0.3	0	2	1	1	1.7	0.03	11.48
NSR Abstract Preparation			0.2	0													0.2
Compilation of Exper. Structure Data			0.2									0.25			0.2		0.65
Eval. of Masses & Nuclides for ENSDF	0.4		2						0.8			1.3	1	1	1.4	0.03	7.93
Ground & Metastable State Properties	0.4		0.2														0.6
Radioactive Decay Data Evaluation	0.05									0.2		0.05					0.3
Thermal Capture Gamma Data Eval.										0.1							0.1
Nuclear Structure Data Measurement	0.1		1						0.1						0.1		1.3
ENSDF Evaluation Support Codes												0.4					0.4
VI. Nuclear Reaction Physics	0.03	0	0.9	0	0	0.9	0	0.9	0.5	1.5	0.12	0	0	0	0	0	4.845
Experimental Data Compilation			0.8	0					0.2	0.5							1.5
ENDF Manuals and Documentation			0.05														0.05
ENDF Evaluations			0.05			0.2					0.05						0.3
Nuclear Reaction Standards																	0
Nuclear Model Development						0.3		0.5			0.05						0.85
Nucl. Reaction Data Measurements						0.4		0.4	0.2	1							2
Astrophysics Nuclear Data Needs	0.03								0.1								0.125
Covariances development											0.02						0.02
Reactor anti-neutrino & decay heat calc.																	0
Verification and Validation																	0
DOE-SC Nucl. Data Funded Staff	1	0	5.49	0	4	1	0	0.9	1.7	2.1	0.22	2	1.1	1	1.75	0.03	22.29
Staff Supported by Other Funds	0	1	4.51	0	0	3	0	2.1	2.1	6.1	0.9						19.71
TOTAL STAFF	1	1	10	0	4	4	0	3	3.8	8.2	1.12	2	1.1	1	1.75	0.03	42

FTE Plots FY 2026

The plots below give the FTE distribution for Scientific Permanent, Scientific Temporary and Tech/Admin FTEs, in pie charts according to activity.






Distribution of the 4 Tech/Admin FTEs
Secretarial/Administrative
Library
Computer Operations
Databases
Nuclear Data Sheets
Customer Service
Web
Nuclear Structure
Nuclear Reactions

VIII. Detailed Status of the Work Plan – Fiscal Year 2026 Report

Each task area in this section is summarized with a status table listing individual tasks and their completion status. Below we present a sample task area table with the meaning of each status indicator.

XNL Planned Activities	Status	Issues/Path Forward
This is the name of the first activity.		This task is on schedule/going well/etc. It is not required to mention anything in the Issues/Path Forward box.
This is the name of the second activity.		This task is complete. Again, it is not required to discuss it.
This is the name of the third activity.		This task is behind schedule. The Issues/Path Forward field will explain/elaborate. There may be an issue HQ can help with.
This is the name of the fourth activity.		A milestone was missed. The Issues/Path Forward field will explain/elaborate. There may be an issue HQ can help with.

I.Operations

A. Management

This task includes planning, budgeting, personnel, interaction with management, and interaction with funding authorities.

BNL Planned Activities	Status	Issues/Path Forward
Prepare and organize USNDP budget briefing.		No budget briefing was held in FY26.
Prepare USNDP reports and work plans.		The FY27 Workplan and the FY25 Annual Reports were published in FY26.
Organize and chair USNDP meeting.		The Annual USNDP Meeting was held remotely from 28-31 Oct. 2025.
Lead drafting of the USNDP Renewal proposal		The USNDP Renewal proposal was submitted in April 2026. The FWP's for the renewed project were submitted in September 2026.
Develop Roles and Responsibilities documents for the USNDP and each of its major data product projects		

LANL Planned Activities	Status	Issues/Path Forward
Organize and chair Nuclear Reaction Working Group.		

TUNL Planned Activities	Status	Issues/Path Forward
Organize and chair USNDP Nuclear Structure Committee.		

B. Library

NNDC maintains an archival collection of low- and intermediate-energy nuclear physics publications. This library supports the NNDC compilation activities, the U.S. nuclear reaction and nuclear structure data evaluation, and international nuclear structure evaluation effort.

BNL Planned Activities	Status	Issues/Path Forward
Following the NNDC move to building 490, re-establish NNDC library in new area		The library move is complete.

C. Customer Services

This task accounts for the non-electronic services which the USNDP renders to customers. At the scientific staff level, this means direct assistance to users needing advice from nuclear data experts or advice on solving complex queries via electronic access to the database. The NNDC staff allocation at the support level is for maintaining a "help desk" as well as for administrative/clerical support of its customer services.

BNL Planned Activities	Status	Issues/Path Forward
Provide technical support to nuclear data end-users as necessary.		

D. Computer Operation

The NNDC operates several Linux servers to support compilation, evaluation, database maintenance, and information dissemination functions. In addition, each staff member has a desktop computer that supports an interface to these Linux servers and supports administrative functions, such as word processing and email.

BNL Planned Activities	Status	Issues/Path Forward
Provide technical computer support to NNDC staff, visitors, and external collaborators to enable them to effectively and securely use NNDC computing resources as well as procure computer hardware, software and support services to meet NNDC's computing requirements.		

Manage the high performance NNDC/NX cluster.		
Upgrade GitLab server software to provide more powerful and advanced functionalities in the NNDC collaboration services.		
Manage the NNDC Gitlab instance to enable collaboration on various nuclear data computational projects		
In collaboration with ITD, ensure continuous availability of mission-critical Web services through full compliance of NNDC's computers with DOE cyber security requirements.		
Maintain the NNDC Web Services availability on the 99.9% and higher level.		
Strictly follow all BNL and DOE cybersecurity rules and regulations during the Web application design, development and implementation. Address issues that arise during BNL scans.		

E. Nuclear Data Sheets

The USNDP provides some paper publications as well as electronic access to the nuclear physics databases that it maintains. This includes the Nuclear Data Sheets journal published by Elsevier and various versions of the Nuclear Wallet Cards.

BNL Planned Activities	Status	Issues/Path Forward
Prepare issues of Nuclear Data Sheets for publication.		

MSU Planned Activities	Status	Issues/Path Forward
Continue development of software for Nuclear Data Sheets publication.		

F. Web Site Maintenance

The NNDC provides electronic access to the nuclear physics databases that it maintains on behalf of the USNDP as well as access to other nuclear physics information through its website. Other USNDP members also offer nuclear physics information through their websites. These services require resources to maintain currency and improve performance.

ANL Planned Activities	Status	Issues/Path Forward
Provide access to published and updated versions of the Atomic Mass Evaluation (AME)		

and the NUBASE library of nuclear physics properties		
Provide access to stand-alone (MacOS and Windows) and mobile (iOS, iPadOS and Android) applications of the AME and NUBASE libraries		
Provide access to Argonne Nuclear Data and Measurements Reports (ANL/NDM)		

BNL Planned Activities	**Status**	**Issues/Path Forward**
Solicit user suggestions on enhancements to the ENSDF, NSR, NuDat, and Sigma web interfaces and be responsive to those needs. Expand search and plotting capabilities for ENSDF data.		
Continue developing new web interfaces for ENDF and EXFOR databases.		
Maintain currency of the CSEWG, USNDP and the NNDC websites, proactively respond to users' requests.		
Make progress with modernization of the website, enhancing capabilities and following industry best practices.		
Continue development of mobile applications targeting highly used databases.		

ORNL Planned Activities	**Status**	**Issues/Path Forward**
Update online nuclear astrophysics server as required.		

TUNL Planned Activities	**Status**	**Issues/Path Forward**
Provide access to present and past evaluations of Energy Levels of Light Nuclei for A=3-20 nuclides, including associated figures and energy-level diagrams and tables.		
Provide access to compiled and evaluated data on light nuclei related to p-, alpha- and n-capture reactions, and ground-state decays.		
Provide access for TUNL dissertations collection.		

LBNL Planned Activities	**Status**	**Issues/Path Forward**
Continued maintenance of the LBNL/UCB Nuclear Data Group Website (https://nucleardata.berkeley.edu/), which attracted 4354 unique visitors in FY26. This website hosts all of the data products produced by the LBNL group.		

II.Main Nuclear Physics Databases

A. Nuclear Science References (NSR)

The NNDC is responsible for NSR, the bibliographic database for nuclear physics research. This task includes data compilation, quality control, file update and maintenance, and file distribution to collaborators. Updates are performed on a continuing basis. The preparation of NSR entries is given under Nuclear Structure Physics. The literature search and preparation of KEYWORD abstracts for publications included in NSR require scientific expertise. BNL continues to have the overall responsibility for this database. Similar contributions from other external collaborators are expected. These will be checked and edited by BNL as necessary before being added to the database.

BNL Planned Activities	Status	Issues/Path Forward
Prepare entries for new references and keyword abstracts for 2/3 of them. Provide coverage for 80 major journals, including complete coverage of Physical Review C, Nuclear Physics A, and European Physical Journal A.		Due to the loss of contractors in FY25 and the focus on modernizing the NSR workflow, compilations lagged historical performance.
Distribute database to collaborators.		
Perform database updates and maintenance.		
Continue joint project with the NRDC network to transfer missing nuclear reaction references to NSR.		
Study in depth the possibilities of using AI and ML techniques in NSR.		
Complete modernizing the NSR workflow and data model.		

B. Experimental Nuclear Structure Data (XUNDL)

The NNDC is responsible for maintaining and providing access to the XUNDL database. This database contains compilations (in ENSDF format) of recently published or completed level-structure data for high-spin and low-spin physics. The NNDC coordinates this work and updates the database as new/revised data sets are received from collaborators.

BNL Planned Activities	Status	Issues/Path Forward
Perform weekly updates of the database using input received from compilers.		
Archive and distribute database yearly.		

Review compiled datasets submitted by other data centers prior to inclusion in the XUNDL database. Work with PRC and EPJA to check and compile data prior to publication.		

C. Evaluated Nuclear Structure Data File (ENSDF)

The NNDC is responsible for ENSDF, a database of evaluated experimental nuclear structure and decay data. The NNDC is responsible for the format and content checking, preparation of the manuscript, and quality control (review) of evaluations submitted for inclusion. The NNDC maintains the database, which includes database updates and distribution to collaborators. Corrections are implemented on a continuous basis.

BNL Planned Activities	Status	Issues/Path Forward
Maintain ENSDF database, includes continuous updating.		
Process evaluations received from ENSDF evaluators.		
Archive and distribute ENSDF database on a monthly basis.		
Proceed with the ENSDF modernization project.		

D. Numerical Nuclear Data (NuDat)

The NNDC is responsible for NuDat, which consists of a database and a suite of codes that access it, allowing web users to search for level and γ-ray properties extracted from ENSDF, ground and metastable state properties (Wallet Cards), and atomic and nuclear radiations derived from ENSDF. Additionally, NuDat contains an interactive Chart of Nuclides and interactive level schemes.

BNL Planned Activities	Status	Issues/Path Forward
Update NuDat database as necessary.		

E. Experimental Reaction Data File (EXFOR)

The NNDC is responsible for maintaining the EXFOR database for Area 1 (North America). This database contains experimental nuclear reaction data for incident energies below 1 GeV, including neutron-induced reactions and reactions with incident-charged particles of mass A ≤ 12. Many groups worldwide compile experimental data and send it to the central database at the International Atomic Energy Agency in Vienna in the EXFOR format. Then, each center is responsible to update its own database. The effort described here includes quality control, file update, and data transfer activities. The NNDC database is updated as compilations are exchanged and checked from the compiling centers. The compilation activity is given under Nuclear Reaction Physics.

BNL Planned Activities	Status	Issues/Path Forward
Update EXFOR database with compilations from cooperating centers (500 entries expected for the entire network). The NNDC compilation work can be found under Nuclear Reaction Physics, Section V of the present document.		Due to the loss of contractors in FY25 and the focus on modernizing EXFOR through Subgroup 54, compilations lagged historical performance.
Compile experimental data for neutron, charged-particle, and photon-induced reactions from over one hundred publications.		
Explore possibilities of recovering previously unobtainable reaction data and proactively respond to users' needs.		
Lead to WPEC Subgroup 54, the successor group to subgroup 50, focused on creating a critically reviewed version of EXFOR.		

F. Evaluated Nuclear Data File (ENDF)

The NNDC is responsible for ENDF, a database of evaluated nuclear data required for many nuclear applications. The work is organized under the CSEWG, coordinated by the NNDC. The ENDF file contains complete descriptions of nuclear reactions of neutrons with many nuclides and elements for energies up to 20 MeV and radiations from radioactive decay. A number of evaluations for energies up to 150 MeV and for incident-charged particles and photons are also included. The data are stored in the ENDF format developed at NNDC in the 1960s and adopted as an international standard. In addition to the U.S. library, ENDF/B, the database contains evaluated data libraries from the European Union, Japan, Russia, and China. This activity includes the processing and quality control of the U.S. ENDF/B library, the distribution of this database in the U.S. and the exchange of libraries internationally. New evaluations for the next release of the library, following ENDF/B-VIII.1, are assembled, tested and made available to users through NNDC's Web servers and GitLab collaboration server at git.nndc.bnl.gov.

BNL Planned Activities	Status	Issues/Path Forward
Maintain and improve Sigma database and web interface for users without specialized knowledge of ENDF-6 format.		
Maintain and extend ADVANCE, the ENDF continuous integration system that continually checks for modification to the ENDF database then runs all available tests on the changed data files.		
Maintain the ENDF project area on NNDC's gitlab instance.		
Coordinate the peer review of evaluations submitted to the ENDF project.		

Prepare and release beta releases of the next ENDF library, as determined by CSEWG.		

III.Nuclear Structure Physics

A. National Coordination

The NNDC is the Secretariat for the U.S. Nuclear Data Program (USNDP). Members of the USNDP plan an active role coordinating national structure evaluation and data preservation activities

BNL Planned Activities	Status	Issues/Path Forward
Participate in the Nuclear Data Working Group (NDWG), including helping in the organization of sessions on inventory calculations.		

LBNL Planned Activities	Status	Issues/Path Forward
Participate in the Nuclear Data Working Group (NDWG), including helping in the organization of sessions in the WANDA 2026 (facilities) sessions.		

LLNL Planned Activities	Status	Issues/Path Forward
Chair a WANDA session on nuclear data for inventory calculations.		

MSU Planned Activities	Status	Issues/Path Forward
Co-chair and organize a nuclear data session at the annual Low-Energy Community Meeting.		

TUNL Planned Activities	Status	Issues/Path Forward
Co-chair and organize a nuclear data session at the annual Low-Energy Community Meeting.		

B. International Coordination

Members of the USNDP plan an active role coordinating international structure evaluation and data preservation activities

ANL Planned Activities	Status	Issues/Path Forward
Technical coordinator of the IAEA-led project on "Evaluated Decay Data Library for Monitoring		

Applications". Contribute to the evaluation and review of nuclear decay data for selected radionuclides and overseen the review process.		
Lecture at the ICTP-IAEA school on 'Nuclear Structure and Decay Data Experiment, Theory and Evaluation'		

BNL Planned Activities	Status	Issues/Path Forward
Serve as co-director of ICTP/IAEA Workshop on ENSDF Evaluation		
Co-chair International Nuclear Structure and Decay Data (NSDD) meeting		Meeting was originally planned for spring of 2026, but has been delayed to October of FY27.

MSU Planned Activities	Status	Issues/Path Forward
Co-lead and coordinate hands-on activities for ENSDF evaluation of a mass chain at the IAEA-ICTP nuclear structure and decay data workshop		
Coordinate the post-workshop collaborative evaluation of the mass chain by international working groups of the ICTP workshop		
Serve as rapporteur for the technical meetings of the international Nuclear Structure and Decay Data (NSDD) evaluator network and the IAEA-led project on "Evaluated Decay Data Library for Monitoring Applications"		

TUNL Planned Activities	Status	Issues/Path Forward
Participate as an observer, and give feedback, for the consultant meeting of the International Nuclear Data Evaluation Network for Light Elements (INDEN-LE)		

C. Compilation of Experimental Nuclear Structure Data

This activity involves compilation of recently published or completed experimental nuclear structure data for inclusion in XUNDL. The compilation is managed by the NNDC.

ANL Planned Activities	Status	Issues/Path Forward
Compile and review recently published experimental nuclear structure data relevant to the AME and NUBASE libraries. Interact with the authors for requesting additional experimental data or for further clarification of the published results.		
Compile B(E3) experimental data for inclusion into the new topical evaluation on B(E3)		No work performed due to shift of effort to other higher priority projects, such as ENSDF and AME

transition probabilities. This work is carried out in collaboration with a data scientist from the Australian National University.		

BNL Planned Activities	Status	Issues/Path Forward
Compile and review datasets for recently published experimental nuclear structure data for inclusion in the XUNDL database. Interact with the authors for requesting additional experimental data or for further clarification of the published results.		
Compile new B(E2) experimental data. Continue work on a B(E2) evaluation project.		
Compile new double-beta decay experimental data.		

MSU Planned Activities	Status	Issues/Path Forward
Compile and review datasets for recently published experimental nuclear structure data for inclusion in the XUNDL database. Interact with the authors for requesting additional experimental data or for further clarification of the published results.		
Work with PRC and EPJA to check and compile data prior to publication.		
Train a MSU undergraduate student for XUNDL compilation		
Develop AI-assisted formatting tools for XUNDL compilation		

TUNL Planned Activities	Status	Issues/Path Forward
Compile and review datasets for recently published experimental nuclear structure data for inclusion in the XUNDL database. Interact with the authors for requesting additional experimental data or for further clarification of the published results.		

D. A-Chains and Nuclides Evaluations for ENSDF

USNDP evaluates nuclear structure and decay data for inclusion in the ENSDF database. This effort includes the critical analysis of all available experimental nuclear structure and radioactive decay data for a nuclide or a group of related nuclei to deduce recommended values from the measured data and prepare a file in ENSDF format that is the basis for publications in Nuclear Data Sheets and is used to update the contents of the USNDP nuclear structure and decay database, ENSDF.

ANL Planned Activities	Status	Issues/Path Forward
Evaluate at least one mass chain from the ANL region of responsibility.		
Review mass chain evaluations, as requested by the ENSDF coordinator.		

BNL Planned Activities	Status	Issues/Path Forward
Evaluate at least four mass chains or their equivalent nuclides.		The equivalent of 3 nuclides were evaluated. The 4th is being finalized and will be submitted early FY27.
Review at least four mass chains or their equivalent nuclides.		
Update ENSDF for the identification of new nuclides and for the first publication on the findings of the excited states of nuclides.		
Edit all evaluations submitted for publication, including checking their format and physics content.		
Continue mentoring new ENSDF evaluators.		

LBNL Planned Activities	Status	Issues/Path Forward
Plan to submit at least one mass chain (~15 nuclides), address reviewer/editorial comments of the submitted mass chains for publication.		
Review at least one mass-chain evaluations, as requested.		

MSU Planned Activities	Status	Issues/Path Forward
Evaluate the equivalent of at least three mass chains (two by the PI and one by the new ENSDF evaluator trained by the PI).		
Review at least one mass-chain evaluation.		
Continue training and mentoring the new ENSDF evaluator hired at FRIB in FY25		
Develop AI-assisted formatting fools for ENSDF evaluation		

ORNL Planned Activities	Status	Issues/Path Forward
Evaluate two medium sized mass chains or their equivalent		We completed one mass chain evaluation. However, initiating a second new mass chain was not feasible, as we had to shift our focus toward preparing a future funding proposal following our exclusion from the USNDP renewal
Review mass-chain evaluations, as requested by NNDC.		

Address review comments and complete editorial revisions on mass chains for publication.		

TAMU Planned Activities	Status	Issues/Path Forward
At least one mass chain, or their equivalent nuclides, will be evaluated.		
Review mass-chain evaluations, as requested.		
Address post review and editorial work on mass chains in preparation for publication.		

TUNL Planned Activities	Status	Issues/Path Forward
Evaluate about one A-chain per year for publication in Nuclear Data Sheets and inclusion in the ENSDF database. An objective is to produce two A-chain evaluations per year.		
Evaluate and update ENSDF for A=2-20 near drip-line nuclides, especially for first observations or when ENSDF has no previous dataset.		

E. Ground and Excited State Properties

ANL Planned Activities	Status	Issues/Path Forward
Evaluate atomic masses and complementary nuclear structure data for the AME and NUBASE libraries. Complete and publish the new AME and NUBASE evaluations.		
Respond to user needs for evaluated nuclear masses and other related nuclear physics properties		

TAMU Planned Activities	Status	Issues/Path Forward
Developing a visualization of high-spin level schemes		

F. Non-ENSDF Decay and Structure Data Evaluations

ANL Planned Activities	Status	Issues/Path Forward
Technical coordinator of the IAEA-led project on "Evaluated Decay Data Library for Monitoring Applications". Contribute to the evaluation and review of nuclear decay data for selected		

radionuclides and overseen the review process. The project will be completed this year.		

LBNL Planned Activities	Status	Issues/Path Forward
As part of our work on the Berkeley Evaluated Alpha & proton Radioactivity (BEApR) database compiling all experimental data on beta-delayed and direct heavy charged particle emission. In FY25 the group has completed the compilation and is now maintaining the database as new publications are produced.		
LBNL update IAEA Photon Strength Function Database with new experimental data (unrelated to quasicontinuum data evaluator traineeship).		
LBNL updating and Improving Nuclear Level Densities for Applications through IAEA CRP - FY26 will be the second year of this 4-year effort (unrelated to quasicontinuum data evaluator traineeship).		
Maintain a numerical database with complete Gamma-ray-X ray coincidence data developed in a joint effort with the Defense Threat Reduction Agency called the Python Archive of Coincident Emissions from ENSDF (paceENSDF), which is being disseminated through GitHub and PyPi. It is being benchmarked against ENSDF decay data as well as recently published datasets not yet included in ENSDF.		

MSU Planned Activities	Status	Issues/Path Forward
Contribute to the IAEA-led project on "Evaluated Decay Data Library for Monitoring Applications."		

G. Nuclear Structure Data Measurements

ANL Planned Activities	Status	Issues/Path Forward
Contribute to nuclear physics research activities at ANL (ATLAS and nuCARIBU), MSU (FRIB), and other nuclear physics user facilities with the main emphasis on decay studies of neutron-rich nuclei, spectroscopy of heavy actinide nuclei, and nuclei far from the line of stability.		

BNL Planned Activities	Status	Issues/Path Forward

Precisely determine decay schemes relevant for applications using state-of-the-art gamma-ray spectroscopy.		
Contribute to measurements at user facilities, such as Argonne's ATLAS and MSU's FRIB.		

LBNL Planned Activities	Status	Issues/Path Forward
Analyze historical 238U(n,f) decay and prompt data gamma-ray data sets obtained using the GENESIS array. Results from these experiments are planned for publication as a part of the dissertation of a Berkeley student planned for 2028.		
Perform structure and decay measurements using the LBNL 88-Inch cyclotron and DT-API neutron generator on the UC Berkeley campus. This includes neutron scattering using the GENESIS and NEXUS array in collaboration with the NNSA, stopping power measurements with the Missile Defense Agency, activation/cross section measurements with the DOE Isotope Program and integral fusion materials testing with DOE and corporate partners.		

MSU Planned Activities	Status	Issues/Path Forward
Contribute to gamma-ray spectroscopy and lifetime measurements with GRETINA and beta-delayed proton-decay measurements of astrophysically-important nuclei at FRIB		

TAMU Planned Activities	Status	Issues/Path Forward
Contribute to beta-gamma spectroscopy for precision measurements of halflives and branching ratios for Standard Model at Cyclotron Institute.		

H. ENSDF Physics and Checking Codes

BNL Planned Activities	Status	Issues/Path Forward
Maintain and upgrade ENSDF checking and physics programs for format changes as required.		
Prepare ENSDF file editor for use in data evaluation.		

Modernize ENSDF physics code to accomodate new ENSDF format.		
Work on the development of a new editor for the ENSDF format and develop applications that apply Machine Learning techniques to the new format.		

MSU Planned Activities	Status	Issues/Path Forward
Maintain and improve the ENSDF utility and analysis codes in Java developed at MSU, such as McMaster-MSU-Java-NDS, ConsistencyCheck, GLSC, Java-RULER, Excel2ENSDF, FormatCheck, AlphaHF, KeynumberCheck, AME-Nubase-viewer.		
Continue to develop and improve the ENSDF-evaluation toolkit (EvaluationToolkit) that combines all ENSDF Java codes and provides a simple user-friendly interface to help facilitate, streamline and automate the ENSDF-evaluation process.		
Continue to develop new Java codes to replace the remaining legacy ENSDF codes in Fortran that lack maintenance.		
Continue to develop the new Java-NDS program and other utility and analysis Java codes to work with the new ENSDF JSON format		
Develop other tools to seamlessly work with Microsoft's VS code editor for further facilitating ENSDF evaluation workflow		
Study in depth the possibilities of using AI and ML techniques with existing codes for ENSDF workflow		

LLNL Planned Activities	Status	Issues/Path Forward
Collaborate with BNL in the development of the next generation ENSDF format and develop applications that apply Machine Learning techniques to the new format.		

IV.Nuclear Reaction Physics

A. National Coordination

The NNDC is the Secretariat for the Cross Section Evaluation Working Group (CSEWG). Other members of the USNDP also have leadership roles within CSEWG.

BNL Planned Activities	Status	Issues/Path Forward
Organize and chair CSEWG meeting at BNL.		Due to the government shutdown early in FY26, the 2025 CSEWG Meeting was held 6-9 January 2026.
Edit and publish summary reports and proceedings of the CSEWG meetings.		The meeting minutes were published as a BNL laboratory report: BNL-230125-2026-INRE
Chair the CSEWG Executive Committee.		
Organize mini-CSEWG, Hackathon, and/or other meetings in the summer if needed, as mandated by the CSEWG Executive Committee.		

LANL Planned Activities	Status	Issues/Path Forward
Organize and chair CSEWG Fission Product Yield Subcommittee.		A.E. Lovell of LANL is a new FPY subcommittee chair
Organize and chair CSEWG Covariance Subcommittee.		
Organize and chair Nuclear Reaction Working Group.		

LLNL Planned Activities	Status	Issues/Path Forward
Organize and chair WANDA session on activation libraries		
Organize and chair Nuclear Data Week session on and ENDF activation library		

B. International Coordination

Members of the USNDP plan an active role coordinating international reaction evaluation and data preservation activities

BNL Planned Activities	Status	Issues/Path Forward
Chair OECD/NEA Working Party on Evaluation Cooperation Subgroup 53 "Stable Zirconium Evaluations and Validation"		
Chair OECD/NEA Working Party on Evaluation Cooperation Subgroup 54 "Curated EXFOR - developing a machine-readable, comprehensive, and corrected by evaluators experimental nuclear reaction database"		

C. ENDF Manuals and Documentation

The NNDC is responsible for maintaining the format and procedures manual for the ENDF system as well as producing the documentation supporting the contents of the ENDF/B library.

BNL Planned Activities	Status	Issues/Path Forward
Maintain the GitLab version of the ENDF-6 formats manual current with CSEWG-endorsed format changes. Issue official release of the manual.		
Automate the generation and posting of the latest unofficial version of the ENDF-6 formats manual.		
Collaborate in the development of the format specification for the GNDS (the successor format to ENDF-6) with the legacy ENDF-6 format during the transition to GNDS.		

D. ENDF Evaluations

Evaluated nuclear reaction data, for applications and basic science needs, are stored in the ENDF database, which is maintained by BNL. As Chair of the CSEWG Evaluation Committee, LANL staff works with BNL to ensure quality control, particularly for new evaluations. New evaluations funded primarily from other sources are prepared for archival in the ENDF library. BNL, LANL, LLNL and ORNL provided neutron, proton, and photonuclear reaction data evaluations.

BNL Planned Activities	Status	Issues/Path Forward
Respond to user needs for evaluated nuclear reaction data.		
Collect and address users feedback related to the ENDF library.		
Coordinate the evaluations for Zr isotopes to support new reactor fuel concepts.		
Work with CSEWG on upgraded evaluations for future release of the ENDF/B library.		
Improve methodology for providing covariance data in the resonance and fast neutron region to the next release of ENDF.		
Update the Decay Data Sub-library as new data for neutron-rich nuclides become available.		
Improve methodology for generating unresolved resonance region cross section probability distributions.		
Maintain the Atlas of Neutron Resonances electronic files in preparation for a future update of the Atlas of Neutron Resonances.		

Continue working on the use of ML techniques to better determine resonance properties.		
Contribute to the Fission Yield evaluation CRP at the IAEA.		

LANL Planned Activities	Status	Issues/Path Forward
Upgrade the LANL ENDF evaluations for actinides as well as some other materials in the intermediate mass region, which perform well in criticality benchmarks, including new theoretical development of statistical models for deformed systems. Close collaboration with international nuclear data library activities at IAEA and OECD/NEA.		New evaluations of ^{233}U and ^{240}Pu were produced, and they were tested by the criticality benchmarks. We also performed ^{239}Pu(n,xn) evaluation based on the GEANIE experimental data. New evaluation of Ti, Cu, Y, and Zr isotopes has been initiated.
Provide new evaluations of the prompt and delayed neutron and photon multiplicities as well as their energy spectra for both major and minor actinides, which are consistent with the fission product yield evaluations.		The prompt and delayed neutron and photon multiplicities and their energy spectra were produced for all the U and Pu isotopes. These data are all in the ENDF format, and we identified some issues in the NJOY data processing of them.
Improve fission cross section calculations that maintain consistency across the actinide mass numbers.		A new fission model developed at LANL has been employed to calculate the fission cross sections of all the U and Pu isotopes, where a consistent set of fission barriers was used.
Improve nuclear data of photon-induced reactions for medium to heavy nuclides with particular focuses on the pre-equilibrium process.		A new model of pre-equilibrium emission of neutron for the photo-induced reaction was incorporated into the CoH3 code, which gives better agreement with experimental data.
Improve calculations for neutron-induced charged-particle reactions in collaboration with LENZ/LANSCE, and produce evaluated files based on these experimental data.		As a preparatory study, (n,p) and (n,α) cross sections of ^{75}As were performed, and a long-standing issue of overestimation problem was carefully investigated. An internal report was shared with the LENZ scientists.

LBNL Planned Activities	Status	Issues/Path Forward
Supporting ENDF via contribution to the Gamma-Rays Induced by Neutrons (GRIN) collaboration. Efforts include the capture-gamma database, pyEGAF, described in a corresponding reference article (https://doi.org/10.1016/j.nima.2023.168715).		
Developing the pyGammaRad python package for Gamma-Ray Angular Distributions calculations to generate tabulated data in machine-readable CSV and JSON formats suitable for ML applications.		pyGammaRad is released and available
Working with IAEA "Charged-particle cross section database for medical radioisotope		

production" CRP group for selection of new reaction monitor standards for upcoming database update.		

LLNL Planned Activities	Status	Issues/Path Forward
Perform new evaluations as per LLNL customer requests and submit these as well as other LLNL-generated evaluations into ENDF.		
Perform evaluations for Y and Zr isotopes for a possible activation (sub)library, including data from LLNL surrogate measurements.		
Verify R-matrix fits for 6Li(n,t) and 10B(n,a) standards reactions		
Participate in IAEA standards meetings and review impact of changes in standard cross sections for LLNL applications.		

E. Neutron-induced g-Ray Data Evaluation

LBNL Planned Activities	Status	Issues/Path Forward
Continue updating the Inelastic Scattering of Reactor Fast Neutrons Database (e.g., the “Baghdad Atlas”) with modern ENSDF data, as a validation database for (n,n’gamma) as well as with new sources of energy differential (n,n'gamma) data.		
Start benchmarking reaction modeling codes, including Talys and EMPIRE. This work will be performed in collaboration with researchers from the IAEA and LANL.		
Explore the role of quasi-continuum contributions through collaboration with researchers from LLNL and the University of Oslo.		
Model neutron-induced reactions combine with detector response and radiation transport simulations to extract optical-model and other reaction parameters via the forward-modeling process.		

F. Nuclear Model Development

This task covers activities, such as the development and validation of nuclear reaction models, used for prediction of nuclear reaction cross sections. The two major codes are CoH3 (LANL) and EMPIRE (BNL). Measurements made by ANL, LANL and LBNL, along with other measurements made with DOE low-energy

physics funds, will play a crucial role in the validation of the models in these computer codes. LANL participates in the IAEA Coordinated Research Project RIPL that improves the accuracy and reliability of input parameters used in nuclear reaction calculations.

LANL Planned Activities	Status	Issues/Path Forward
Continue to develop a microscopic description of the fission process based on penetrability calculations through multi-dimensional potential energy surface. Implement the theory into the Hauser-Feshbach code to calculate all fission-related observables in a common framework.		
Continue to develop a coupled-channels Hauser-Feshbach method for better prediction of neutron-induced reactions on deformed nuclei, where fluctuation of the cross sections is properly treated by the Random Matrix Theory.		
Continue to develop the Hauser-Feshbach fission fragment decay code for evaluating major actinides, which has a unique capability to produce all the fission observables simultaneously.		
Develop a new technique to calculate the probability table for the Monte Carlo transport simulations based on the Gaussian Orthogonal Ensemble.		

G. Nuclear Reaction Data Measurements

BNL Planned Activities	Status	Issues/Path Forward
Measure product yields at NASA Space Radiation Laboratory (NSRL) for reactions relevant for space applications.		

LANL Planned Activities	Status	Issues/Path Forward
Publish reports on cross sections of 40K(n,p) and 40K(n,a) reactions for the neutron energy range of 0.1 - 6.0 MeV.		
Finalize double-differential cross sections of 65Zn in respect to incoming neutron energies and outgoing particles angles for the neutron energy range of 0.5 - 20 MeV.		
Perform analyses of angular distributions and energy spectra for stable Cu and Zn using the		

neutron-induced charged particle emitting reaction data obtained using LENZ		
Continue to develop Machine-Learning analysis tools to improve systematic uncertainties and restore imperfect signals in measurement data sets		
Continue to provide angular distributions of the 16O(n,α) reaction using SREFT, Time Projection Chamber, at LANSCE.		
Work on development of experimental capability for measuring nuclear reactions on radionuclides		

LBNL Planned Activities	Status	Issues/Path Forward
Perform reaction using the LBNL 88-Inch cyclotron and DT-API neutron generator on the UC Berkeley campus. This includes neutron scattering using the GENESIS and NEXUS array in collaboration with the NNSA, stopping power measurements with the Missile Defense Agency, activation/cross section measurements with the DOE Isotope Program and integral fusion materials testing with DOE and corporate partners.		

H. Astrophysics Nuclear Data Needs

The objective of this activity is to support the nuclear data needs of the increasingly sophisticated simulations of astrophysical phenomena.

ANL Planned Activities	Status	Issues/Path Forward
Provide recently compiled and evaluated nuclear data of nuclear physics properties for astrophysics modeling at FRIB.		

BNL Planned Activities	Status	Issues/Path Forward
Evaluate nuclear astrophysics potential of EXFOR library.		

LANL Planned Activities	Status	Issues/Path Forward
Work on improvement of neutron capture, beta-delayed neutron and fission modeling for astrophysical hydrodynamics simulations.		
Work on Monte Carlo simulation effort using Geant4, to implement radioactive nuclear reaction studies at Time of Flight facilities, in the		

interest of providing improved neutron reaction rates on radionuclides.		
Develop network calculations for nucleosynthesis of heavy elements by implementing newly updated experimental reaction rates in relevant astrophysical scenarios.		

ORNL Planned Activities	Status	Issues/Path Forward
Continue assessments of nuclear data needs for astrophysics measurements. Participate in discussions with the nuclear astrophysics group at ORNL		

TUNL Planned Activities	Status	Issues/Path Forward
Contribute a small effort for the 2025 Experimental Thermonuclear Reaction Rates library (ETR-2025) by evaluating astrophysical reaction rates for some nuclei. An update underway and a publication is planned.		

I. Covariances Development

LBNL Planned Activities	Status	Issues/Path Forward
Continue to develop an experimentally driven fission covariance database		

J. Reactor Antineutrino Spectra and Decay Heat Calculations

BNL Planned Activities	Status	Issues/Path Forward
Improve our methods and databases to calculate anti-neutrino spectra for major actinides.		
Perform decay-heat calculations in collaboration with experimental groups.		
Contribute to relevant experiments.		

K. Verification and Validation

Quality Assurance (QA) of a nuclear data library requires that all files are checked for integral consistency and conformance with the adopted format. This part of the QA is called verification and is one of the fundamental functions of the NNDC. Furthermore, checking performance of the library against the

integral experiments, known as validation, is also an important step to ensure the usefulness of the library for the end-users. The most extensive validation is performed by LANL and other CSEWG contributors funded with non-DOE-SC sources. The USNDP supports the ultimate validation effort carried out at BNL.

BNL Planned Activities	Status	Issues/Path Forward
Maintain automatic, real-time verification and validation of new/modified ENDF evaluations submitted to the NNDC GitLab server.		

Appendix A – Additional Funding Sources

This appendix lists additional funding for certain USNDP contributors. This funding either aligns with existing USNDP activities or is funded as part of the NDIAWG series of funding opportunities.

BNL
BNL scientists are engaged in a number of non-USNDP funded nuclear data activities, most notably with the continued support of the National Criticality Safety Program (NCSP) and the Defense Nuclear Nonproliferation (NA-22) Program. Currently the NCSP partly funds the operation of the Evaluated Nuclear Data File library project, in conjunction with the USNDP. NA-22 and Fusion Energy programs funds several projects as a direct result of the Nuclear Data Interagency Working Group proposal process.

LANL
Additional supports for the nuclear data project are as follows: 1. Advanced Simulation and Computing funded by NNSA. 2. The US Nuclear Criticality Safety Program (NCSP). 3. Evaluation of energy dependent fission product yields, funded by NA-22. 4. LANL-LDRD to develop new fission model by solving multi-dimensional potential energy surface. 5. Experimental support under Office of Experimental Sciences funded by NNSA 6. New (alpha,n) data measurement and evaluation effort at U of Notre Dame, funded by NA-22 7. Improving nuclear data gaps for global security applications, funded by NNSA 8. LANL-LDRD to improve photo-nuclear data by performing photon-induced reactions at Higgs Facility

LBNL
Additional supports for the LBNL nuclear data project are as follows: 1. NA-22: To measure quasicontinuum properties in 136Xe 2. DARPA: explore modified excitation and deexcitation pathways with laser driven electron beams. 3. NRD, LLC: Nuclear data measurements of 209Po production cross section 4. DoE-FES: NIF Starfire As a collaborative member of the STARFIRE Hub, the goal of this work is to perform real-time irradiation of the final-stage optics and other critical optical components for inertial fusion energy at the National Ignition Facility 5. NNSA-NA241: Microcalorimetry for Nuclear Data 6. NNSA-NA22: Physics-Informed Machine Learning for Nuclear Data 7. DOE-IP: Using neural networks to accelerate TALYS-2.0 nuclear reaction simulations 8. UCB: Neutron Experiments Under Soda (NEXUS). The externally funded NEXUS facility was installed and commissioned during FY26 in Room 1140 of Etcheverry Hall at UC Berkeley. 9. BAKAR: High-flux neutron target and shielding Funded by UC Berkeley Bakar Foundation the design, fabrication and testing of a new high-flux neutron production target took place at the 88-Inch Cyclotron

LLNL
LLNL has maintained a nuclear data program for nearly 60 years. The program is connected to, yet complementary to, activities sponsored by the USNDP. LLNL's reaction-data evaluation efforts are funded primarily by the Advanced Simulation and Computing program within NNSA. LLNL scientists have

played a leading role in developing the GNDS data format, with most of this work funded through the NCSP. Through the NCSP, LLNL also provides independent verification and validation of nuclear data in the ENDF/B library. Nuclear-structure evaluation capabilities have been established at LLNL through support from the evaluator traineeship program, sponsored by DOE-NP and NNSA through NDIAWG (DE-FOA-0003238).

Additional supports for the LLNL nuclear data project are as follows:
1. Advanced Simulation and Computing under NNSA.
2. The US Nuclear Criticality Safety Program (NCSP).
3. Support from the evaluator traineeship program from DOE-NP & NNSA through NDIAWG FOA DE-FOA-0003238

Appendix B – USNDP Data and Code Products

Joint Products		
Evaluated Nuclear Data File (ENDF)	**POC:** David Brown (dbrown@bnl.gov) CSEWG Chair, Gustavo Nobre (gnobre@bnl.gov) ENDF Library Manager	**URL:** https://www.nndc.bnl.gov/endf/; https://doi.org/10.11578/endf/2571019
	Description: Core nuclear reaction database containing evaluated (recommended) data from the ENDF/B-VIII.1 library. It provides data in the ENDF-6 and GNDS formats, covering all nuclides of practical relevance for neutrons up to 20 MeV and partly up to 150 MeV. It serves as principal input for neutronics calculations, including nuclear reactor design, national security, accelerators, criticality safety, shielding, nuclear reaction research, radiation protection and detector simulation. **Derived From:** AME, Atlas of Neutron Resonances, ENSDF, EXFOR, NSR, Literature	
Evaluated Nuclear Structure Data File (ENSDF)	**POC:** Elizabeth Ricard (mccutchan@bnl.gov)	**URL:** https://www.nndc.bnl.gov/ensdf/; https://doi.org/10.18139/nndc.ensdf/1845010
	Description: Core nuclear structure and decay database containing evaluated (recommended) data for 3,171 nuclides, organized in over 17,269 individual datasets. It serves as principal source of data for nuclear structure research, nuclear spectroscopy applications, MIRD, NuDat, and publications such as Nuclear Data Sheets and Table of Isotopes. **Derived From:** AME, NSR, XUNDL	
Experimental Nuclear Reaction Data (EXFOR)	**POC:** Naohiko Otsuka (NDS, International Atomic Energy Agency, n.otsuka@iaea.org) Database Manager, Boris Pritychenko (pritychenko@bnl.gov) Area 1 Lead	**URL:** https://www-nds.iaea.org/exfor
	Description: Experimental nuclear reaction data from the Area no. 1 (USA and Canada). Contains 8,095 compiled experiments based on 9,792,673 data points.	
eXperimental Unevaluated Nuclear Data Library (XUNDL)	**POC:** Elizabeth Ricard (mccutchan@bnl.gov)	**URL:** https://www.nndc.bnl.gov/xundl/; https://doi.org/10.18139/nndc.xundl/1860326
	Description: Experimental nuclear structure and decay data, covering more than 2,500 recent nuclear structure and decay articles. The XUNDL database contains 4,212 datasets for 1,990 nuclides. **Derived From:** Literature	

Argonne National Laboratory		
Atomic Mass	**POC:** Filip Kondev	**URL:** https://www.anl.gov/phy/atomic-mass-data-resources

Evaluation (AME)	(kondev@anl.gov)	
	Description: Provides evaluated (recommended) data for the atomic masses and their derivatives for 3557 nuclides **Derived From:** Literature, NUBASE, and NSR	
NUBASE Evaluation of Basic Nuclear Properties (NUBASE)	**POC:** Filip Kondev (kondev@anl.gov)	**URL:** https://www.anl.gov/phy/atomic-mass-data-resources
	Description: Provides evaluated (recommended) data for the basic properties for 3340 nuclides in their ground state and 1938 isomers (T1/2>100 ns) **Derived From:** Literature, AME, NSR, and ENSDF	
Evaluation of Properties of K-Isomers in Deformed Nuclei	**POC:** Filip Kondev (kondev@anl.gov)	**URL:** https://www.sciencedirect.com/science/article/pii/S0092640X15000029; https://epjst.epj.org/articles/epjst/abs/2024/05/11734_2024_Article_1096/11734_2024_Article_1096.html
	Description: Contains evaluated (recommended) data for the properties of K isomers in deformed nuclei **Derived From:** Literature, NSR, and ENSDF	
Argonne Nuclear Data and Measurements Reports (ANL/NDM)	**POC:** Filip Kondev (kondev@anl.gov)	**URL:** https://www.anl.gov/phy/reference/argonne-nuclear-data-measurement-anlndm-reports
	Description: Contains experimental and evaluated data produced at ANL since 1978, including a) measured microscopic nuclear parameters, b) experimental techniques and facilities employed in measurements, c) the analysis, correlation and interpretation of nuclear data, d) the compilation and evaluation of nuclear data	
Nucleus++	**POC:** Filip Kondev (kondev@anl.gov)	**URL:** https://www.anl.gov/phy/atomic-mass-data-resources
	Description: Desktop (MacOS & Windows) and mobile (iOS, iPadOS & Android) applications visualizing evaluated data available in the AME and NUBASE libraries	

Brookhaven National Laboratory, National Nuclear Data Center		
Atlas of Neutron Resonances	**POC:** David Brown (dbrown@bnl.gov)	**URL:** https://www.nndc.bnl.gov/atlas/
	Description: The sixth edition of the vaunted BNL-325 "Barn book", authored by Dr. Said Mughabghab and published by Elsevier in two volumes on April 17, 2006. The present sixth edition differs from previous editions in that available capture, fission, and total neutron cross sections in the keV-Mev neutron energy region were analyzed by the author with the objective of determining average neutron resonance parameters and compared to those obtained from the resolved energy regions. In addition to the extensive list of detailed individual resonance parameters for each nucleus, this contains thermal cross sections and average resonance parameters as well as a short survey of	

	the physics of thermal and resonance neutrons with emphasis on evaluation methods. **Derived From:** EXFOR, NSR, CINDA, Literature	
B(E2) Evaluation	**POC:** Boris Pritychenko (pritychenko@bnl.gov)	**URL:** https://www.nndc.bnl.gov/be2/
	Description: Recent data on electric quadrupole transition probabilities or B(E2; 0+ → 2+) values **Derived From:** Literature	
CapGam	**POC:** Benjamin Shu (bshu@bnl.gov)	**URL:** https://www.nndc.bnl.gov/capgam/
	Description: The energy and photon intensity with uncertainties of gamma rays as seen in thermal-neutron capture are presented in two tables, one in ascending order of gamma energy and a second organized by Z, A of the target. **Derived From:** ENSDF, CINDA, EXFOR, NSR, Literature	
CapGam (Mobile App)	**POC:** Benjamin Shu (bshu@bnl.gov)	**URL:** https://play.google.com/store/apps/details?id=gov.bnl.nndc.capgam&hl=en_US
	Description: A collection of CapGam datasets packaged into a mobile app which requires no Internet connection. **Derived From:** CapGam	
Computer Index of Nuclear (reaction) Data (CINDA)	**POC:** Boris Pritychenko (pritychenko@bnl.gov)	**URL:** https://www.nndc.bnl.gov/cinda/
	Description: Bibliographical neutron induced reaction information, including experimental, theoretical and evaluation works. It contains references to 275,000 reactions from 55,000 works. **Derived From:** Literature	
Double Beta Decay Data	**POC:** Boris Pritychenko (pritychenko@bnl.gov)	**URL:** https://www.nndc.bnl.gov/bbdecay/
	Description: Data on double beta (ββ) decay, data content is integrated with the Nuclear Science References (NSR) database. **Derived From:** ENSDF	
ENDF API	**POC:** Donnie Mason (dmason@bnl.gov)	**URL:** https://www.nndc.bnl.gov/endf-api/
	Description: A REST API for filtering and retrieving ENDF data. The API is designed to be used by web applications and other software that needs to access ENDF data programmatically.	
ENSDF API	**POC:** Donnie Mason (dmason@bnl.gov)	**URL:** https://www.nndc.bnl.gov/ensdf-api/

	Description: A REST API for filtering and retrieving ENSDF data. The API is designed to be used by web applications and other software that needs to access ENSDF data programmatically.	
ENSDF Schema Viewer	**POC:** Donnie Mason (dmason@bnl.gov)	**URL:** https://www.nndc.bnl.gov/ensdf/schema/
	Description: A web application which allows users to download the ENSDF JSON Schema files and view them in a tree structure along with details of each field in the schema.	
LogFT Calculator (Website)	**POC:** Benjamin Shu (bshu@bnl.gov)	**URL:** https://www.nndc.bnl.gov/logft/
	Description: A web application which uses Jun Chen's RadiationReport to calculate LogFT values. **Derived From:** RadiationReport code	
Maxwellian-averaged Cross Sections (MACS)	**POC:** Boris Pritychenko (pritychenko@bnl.gov)	**URL:** https://www.nndc.bnl.gov/astro/
	Description: Maxwellian-averaged cross sections and astrophysical reaction rates calculated from ENDF/B, JEFF, JENDL, CENDL, BROND, ROSFOND, and EAF libraries. **Derived From:** ENDF	
Medical Internal Radiation Dose (MIRD)	**POC:** Elizabeth Ricard (mccutchan@bnl.gov)	**URL:** https://www.nndc.bnl.gov/mird/
	Description: Evaluated nuclear decay data for over 2,100 radioactive nuclei. Data are extracted from ENSDF, processed by the program RadList, and used for medical internal radiation dose calculations. **Derived From:** ENSDF	
Nuclear Science References (NSR)	**POC:** Boris Pritychenko (pritychenko@bnl.gov)	**URL:** https://wwww.nndc.bnl.gov/nsr; https://doi.org/10.18139/nndc.nsr/1866086
	Description: Bibliography of nuclear physics articles (252,568 as of November 19, 2025), indexed according to content and spanning more than 100 years of research.	
Nuclear Wallet Cards	**POC:** Elizabeth Ricard (mccutchan@bnl.gov)	**URL:** https://www.nndc.bnl.gov/walletcards/search.html; https://doi.org/10.18139/nndc.walletcards/2558149
	Description: Observable nuclear properties for ground- and isomer-states of all known nuclides. **Derived From:** ENSDF and AME	
Nuclear Wallet Cards for Radioactive Nuclei	**POC:** Benjamin Shu (bshu@bnl.gov)	**URL:** https://www.nndc.bnl.gov/walletcards/radioactive.html
	Description: Half-lives and gamma ray energies for long-lived radioactive isotopes.	

Nuclear Wallet Cards (Mobile App)	**POC:** Benjamin Shu (bshu@bnl.gov), Donnie Mason (dmason@bnl.gov)	**URL:** None
	Description: A collection of Wallet Cards data packaged into a mobile app which requires no Internet connection. **Derived From:** Nuclear Wallet Cards	
NuDat3	**POC:** Donnie Mason (dmason@bnl.gov)	**URL:** https://www.nndc.bnl.gov/nudat3/
	Description: Evaluated (recommended) nuclear structure and decay information for 3,175 nuclides, about 161,895 levels, 243,639 gamma-rays, etc. Obtained from ENSDF and Nuclear Wallet Cards. **Derived From:** ENDF, ENSDF, Nuclear Wallet Cards, and AME	
NSR Java Libraries	**POC:** Benjamin Shu (bshu@bnl.gov)	**URL:** None
	Description: Java libraries used for modeling NSR entries, converting them into JSON, and retrieving them from SQL databases. **Derived From:** NSR	
Sigma	**POC:** Donnie Mason (dmason@bnl.gov)	**URL:** https://www.nndc.bnl.gov/sigma/
	Description: Evaluated (recommended) nuclear reaction and decay data from ENDF/B-VII.0, JEFF-3.1, JENDL-4.0, JENDL-3.3, CENDL-3.1, ROSFOND 2008 and ENDF/B-VI.8 libraries. Advanced plotting, browsing, and search options. **Derived From:** ENDF, EXFOR	
Q Value Calculator (QCalc)	**POC:** Benjamin Shu (bshu@bnl.gov)	**URL:** https://www.nndc.bnl.gov/qcalc/
	Description: QCalc calculates Q-values for nuclear reactions or decay. It uses mass values from the 2020 Atomic Mass Evaluation by M. Wang et al. **Derived From:** AME	
x4i	**POC:** David Brown (dbrown@bnl.gov)	**URL:** https://github.com/brown170/x4i
	Description: x4i provides a "simple" python interface to the EXFOR library, allowing users to search for and then translate EXFOR files into an easy to understand (and then plot) form. **Derived From:** EXFOR	

Los Alamos National Laboratory		
CoH3	**POC:** Toshihiko Kawano (kawano@lanl.gov)	**URL:** https://github.com/toshihikokawano/coh3
	Description: Code for calculating comprehensive nuclear reactions in the keV to MeV energy range using the coupled-channels optical model and statistical Hauser-Feshbach theory with the pre-equilibrium process. The subcode BeoH, calculates statistical decay of compound nucleus that is produced by beta-decay, fission, or any other nuclear reaction mechanisms. We maintained	

	CoH3 up-to-date and provided the most recent version to the users through Github. These updates include better algorithms to calculate gamma-ray productions, more accurate energy balance, production of double differential cross sections that can be directly compared with experimental particle emission spectra, and so on. BeoH has enhanced fission gamma-ray production capability, which has been applied to estimate 239Pu(n,xn) cross sections from the GEANIE measurements published in 2000.	
CGMF	**POC:** Michael E. Rising (mrising@lanl.gov)	**URL:** https://github.com/lanl/CGMF
	Description: Code for simulating emission of prompt fission neutrons and gamma rays from excited fission fragments right after scission. An event-generator module of CGM(F) in MCNP has been updated to fix several issues reported in the past, and it will be used to produce gamma-rays for any nuclear reactions.	
DeCE	**POC:** Toshihiko Kawano (kawano@lanl.gov)	**URL:** https://github.com/toshihikokawano/DeCE
	Description: Interactive ENDF-6 formatted data manupulation code to edit/create ENDF files. LANL produced a proto-type of the nuclear data evaluation system, LACE (Los Alamos CoH-base Evaluation), where a complete ENDF file can be generated from a simple CoH input. For this purpose, DeCE and related tools have been updated to process radio-isotope production data from CoH outputs, as well as fission-related nuclear data from BeoH outputs.	
CENS	**POC:** Toshihiko Kawano (kawano@lanl.gov)	**URL:** https://github.com/toshihikokawano/CENS
	Description: Code to translate adopted discrete levels in ENSDF into a Hauser-Feshbach code readable format, such as the discrete level section in RIPL	
LACE (Los Alamos CoH-based Evaluation)	**POC:** Toshihiko Kawano (kawano@lanl.gov)	**URL:** None
	Description: A prototype of the model code-based system to produce the evaluated nuclear data files. The LACE library includes neutron-induced reaction cross section, isotope production cross section, scattering angular distribution, secondary particle energy distribution, prompt and delayed fission neutron spectra and multiplicities, prompt and delayed fission photon spectra and multiplicities, and fission energy release in ENDF-6 format. In 2026, we made LACE functional, and LACE has been tested by the mass-production of more than 400 ENDF-formatted files. It is also tested to produce several complete ENDF files of 233U and 240Pu for neutron induced reactions, and we confirmed that these files are capable for use in the MCNP transport simulations.	
KALMAN	**POC:** Toshihiko Kawano (kawano@lanl.gov)	**URL:** None
	Description: Parameter adjustment and production of covariance based on the Bayesian approach. KALMAN was replaced by the Python version made by A.E. Lovell, and this version is used in the nuclear data evaluation process a lot.	
SOK/PySOK	**POC:** Toshihiko Kawano (kawano@lanl.gov)	**URL:** None

	Description: Least-squares fitting code for arbitrary shape data, and production of covariance

Lawrence Berkeley National Laboratory		
Atlas of Gamma-Ray Spectra from the Inelastic Scattering of Reactor Fast Neutrons (Baghdad Atlas)	**POC:** Aaron Hurst (amhurst@lbl.gov)	**URL:** https://nucleardata.berkeley.edu/atlas/index.html
	Description: A relational database based on the original (n,n'γ) work carried out by A.M. Demidov et al., at the Nuclear Research Institute in Baghdad, Iraq. Downloadable SQLite software platform shipped with CSV-style ASCII files for 105 datasets based on irradiation of 76 natural and 29 isotopically enriched targets. Bundled with SQL scripts and a Jupyter Notebook enabling interaction and manipulation of the data.	
Attenuation code for Prompt Gamma Activation Analysis	**POC:** Aaron Hurst (amhurst@lbl.gov)	**URL:** https://github.com/AaronMHurst/attenuation_integration
	Description: A C++ program to calculate the attenuation integrated over the sample thickness for elemental and compound samples irradiated in prompt gamma activation analysis measurements. The software is shipped complete with mass-attenuation coefficients covering 1 keV to 20 MeV for all elements in the XMuDat database.	
Fission Product Yield Covavriance Matrices (COM)	**POC:** Mathis Wiedeking (MWiedeking@lbl.gov)	**URL:** https://nucleardata.berkeley.edu/FYCoM/index.html
	Description: Covariance matrices for all of the fissioning systems of the ENDF/B-VIII.0 and JEFF-3.3 evaluations created using a constrained Monte-Carlo resampling approach.	
Fission Induced Electromagnetic Response (FIER)	**POC:** Mathis Wiedeking (MWiedeking@lbl.gov)	**URL:** https://nucleardata.berkeley.edu/fier/index.html
	Description: FIER analytically predicts delayed gamma-ray spectra following fission using evaluated nuclear data and solutions to the Bateman equations to calculate the time-dependent populations of fission products and their decay daughters resulting from irradiation of a fissionable isotope.	
Berkeley Evaluated Alpha and proton Radioactivity database (BEApR)	**POC:** Jon Batchelder (JCBatchelder@lbl.gov)	**URL:** https://nucleardata.berkeley.edu/research/betap.html
	Description: A complete evaluation of decay data detailing information on all known beta-delayed and direct heavy-particle emitters (p, alpha, cluster, fission), comprising > 1200 nuclei with >4200 unique references. The evaluated data encompasses branching ratios, half-lives, and all relevant Q-values and particle-separation energies. In addition, for nuclei with known discrete proton and alpha transitions, the particle-emission energies, intensities, and associated initial and final states are also provided. A comparison with other databases (ENSDF adopted and decay, Nudat) shows that ~25% of the values in BEApR are from more recent published results than the other databases.	

Isotope Production Nuclear Data Issues (IPNDI)	**POC:** Andrew Voyles (ASVoyles@lbl.gov)	**URL:** https://nucleardata.berkeley.edu/ipndi/index.html
	Description: The purpose of the IPNDI website is to provide a mechanism for the data users of the Isotope Production community to submit requests when they the lack the nuclear data to carry out R&D. I	
NucScholar	**POC:** Bethany Goldblum (Bethany@lbl.gov)	**URL:** https://nucscholar.lbl.gov/
	Description: NucScholar is a project to automate the processing of nuclear science literature to simultaneously boost researcher productivity while lowering the effort required to maintain important databases.	
Nuclear Structure Experimental Issues (NSEI)	**POC:** Aaron Hurst (amhurst@lbl.gov)	**URL:** https://nucleardata.berkeley.edu/nsei/
	Description: The NSEI website provides a mechanism for nuclear data evaluators and the low-energy community, in general, to raise awareness of issues in nuclear structure data. Users enter a brief description of the issue they would like to raise, and a committee will make researchers in the field who might be interested in helping to resolve the problem aware of the issue.	
Photon Strength Function library	**POC:** Mathis Wiedeking (mwiedeking@lbl.gov), Thibault Laplace (lapthi@berkeley.edu), Kgashane Malatji (malatji@lbl.gov)	**URL:** https://www-nds.iaea.org/PSFdatabase
	Description: The library provides measured photon strength functions of 100's of nuclei with various experimental methods. Each data file is accompanied by readme files with pertinent information such as publication, measurement and analytical information. The library also includes two recommended theoretical models.	
Python Archive of Coincident Emissions from ENSDF (paceENSDF)	**POC:** Aaron Hurst (amhurst@lbl.gov)	**URL:** https://pypi.org/project/paceENSDF/ and https://github.com/AaronMHurst/pace_ensdf
	Description: paceENSDF is an open-source Python-based software package enabling access, manipulation, analysis, and visualization of the radioactive decay data from the Evaluated Nuclear Structure Data File (ENSDF) archive and corresponding gamma-gamma and gamma-X-ray coincidence relationships derived from the original ENSDF-sourced datasets. The library is based on a representative JSON-format for 3254 radioactive-decay datasets (parsed from the September 2023 ENSDF archive) encompassing 834 alpha-, 1141 beta-minus and 1279 electron-capture/beta-plus decay datasets. The software package is also bundled with a Reference Input Parameter Library (RIPL)-translated format of the corresponding decay-scheme data in addition to JSON data structures for the derived coincidence gamma-gamma and gamma-X-ray datasets.	
Python library for the Evaluated Gamma-ray	**POC:** Aaron Hurst (amhurst@lbl.gov)	**URL:** https://pypi.org/project/pyEGAF/ and https://github.com/AaronMHurst/python_egaf
	Description: pyEGAF is an open-source Python-based software package enabling interaction, maipulation, analysis, and visualization of the thermal neutron-	

Activation File (pyEGAF)	capture gamma-ray data in the Evaluated Gamma-ray Activation File (EGAF) based on the prompt gamma activation analysis measurements carried out at the Budapest Research Reactor (BRR). The library comes complete with ENSDF-, RIPL-, and JSON-formatted databases for all 245 isotopes measured at the BRR.	
Python project for Gamma-Ray Angular Distributions (PyGammaRAD)	**POC:** Aaron Hurst (amhurst@lbl.gov)	**URL:** https://pypi.org/project/PyGammaRAD/ and https://github.com/AaronMHurst/PyGammaRAD
	Description: PyGammaRAD is utility tool implemented in Python that combines the complete apparatus of gamma-ray angular distribution and statistical tensor formalism with a vector-coupling calculator for the exact evaluation of Clebsch-Gordan, Racah, Wigner 3-j, 6-j, 9-j, and Gaunt coefficients. The tool is useful for cases of both maximal and partial alignment, and has been extensively tested against a plethora of published literature. In particular, the data tables in the canonical reference literature by Yamazaki, Rose and Brink, and Der Mateosian and Sunyar, are fully reproducible; the corresponding coefficients can be calculated on demand or downloaded in JSON or CSV format. PyGammaRAD also readily supports very large integer arguments.	
Scintillator library	**POC:** Bethany Goldblum (bethany@lbl.gov), Thibault Laplace (lapthi@berkeley.edu)	**URL:** https://scintillator.lbl.gov/
	Description: The website provides measured scintillation properties of many inorganic and organic scintillating materials including scintillator response to recoil nuclei along with citations to published papers in which the original measurements were reported.	
WestcottFactors	**POC:** David Matters (matters@usna.edu) and Aaron Hurst (amhurst@lbl.gov)	**URL:** https://pypi.org/project/wescott/
	Description: Program for calculating Westcott g-factors, which adjust thermal-neutron capture cross sections for non-1/v behavior at low energies. These are needed in Neutron Activation Analysis (NAA) and Prompt Gamma-ray Activation Analysis (PGAA) when measuring nuclei that have low-energy resonances in their cross sections. Code calculates g-factors for Maxwellian neutron energy distributions and individual arbitrary experimental neutron source spectra from reactors. The program is packaged with the complete capture-gamma library of ENDF/B-VIII.1 in addition to the Reich-Moore and Breit-Wigner resonance parameters of the ENDF/B-VIII.1 library. Although WestcottFactors is a standalone Python package, it has also been hooked into a development version of the LANL-developed code DeCE for direct handling of the original ENDF-6 format as well.	

Lawrence Livermore National Laboratory		
	POC: Ian Thompson (thompson97@llnl.gov)	**URL:** https://github.com/LLNL/ferdinand

Ferdinand, Translate R-matrix Evaluations	**Description:** Code for reading input files for R-matrix codes fresco, sfresco, eda, amur, rac, azure and standard formats endf and gnds, to translate between them. Can also convert between widths and amplitudes, and generate various kinds of reconstructed cross sections.	
Rflow, R-matrix methods for fitting EXFOR data using tensorflow	**POC:** Ian Thompson (thompson97@llnl.gov)	**URL:** https://github.com/LLNL/Rflow
	Description: An R-matrix evaluation and fitting code that reads and writes gnds parameter files. Calculations performed using Tensorflow, which uses GPUs when available otherwise using CPUs with openmp.	
Frescox, Scattering code for coupled-channels calculations	**POC:** Ian Thompson (thompson97@llnl.gov)	**URL:** https://github.com/LLNL/Frescox
	Description: Documentation at https://www.fresco.org.uk/frescox.htm	

Michigan State University, Facility for Rare Isotope Beams		
McMaster-MSU JAVA-NDS code	**POC:** Jun Chen (chenj@frib.msu.edu)	**URL:** https://github.com/IAEA-NSDDNetwork/McMaster-MSU-Java-NDS
	Description: The official program to generate PDF outputs from ENSDF file(s) for the Nuclear Data Sheets journal and web-display of ENSDF and XUNDL databases on NNDC retrieval webpages. This program was initiated by Balraj Singh and his students at McMaster University in 2007 and was re-started by Jun Chen in 2017 at MSU.	
Java-RULER code	**POC:** Jun Chen (chenj@frib.msu.edu)	**URL:** https://github.com/IAEA-NSDDNetwork/Java-RULER
	Description: The program recommended by USNDP and NSDD to calculate gamma-ray transition strengths in ENSDF file with proper propagations of large/asymmetric uncertainties including the Monte-Carlo approach for ENSDF evaluation.	
ConsistencyCheck code	**POC:** Jun Chen (chenj@frib.msu.edu)	**URL:** https://github.com/IAEA-NSDDNetwork/ConsistencyCheck
	Description: The program recommended by USNDP and NSDD to check data consistency among ENSDF datasets, group levels and gammas, and average values from different datasets (with user selections), and more.	
AME-NUBASE-viewer	**POC:** Jun Chen (chenj@frib.msu.edu)	**URL:** https://github.com/IAEA-NSDDNetwork/AME-NUBASE-viewer
	Description: A useful program to provide easy and customized retrieval of AME (Atomic Mass Evaluation) entries and NUBASE (evaluation of ground-state and isomer properties) entries. It can also be used to update Q records in Adopted datasets automatically for ENSDF evaluation.	
EXCEL2ENSDF code	**POC:** Jun Chen (chenj@frib.msu.edu)	**URL:** https://github.com/IAEA-NSDDNetwork/Excel2ENSDF
	Description: A program widely used by XUNDL compilers and ENSDF evaluators to convert an Excel file (formatted data) to an ENSDF file and vice versa. It can be also used to perform simple operations on column data in Excel, such as multiplying a factor or adding a constant. It was originally developed for XUNDL compilation to convert Excel to ENSDF but the current	

	version is also useful for extracting data from an ENSDF dataset to an Excel table.	
FormatCheck code	**POC:** Jun Chen (chenj@frib.msu.edu)	**URL:** https://github.com/IAEA-NSDDNetwork/FormatCheck
	Description: A Java code used to check ENSDF datasets for format errors. The same checking function is also included in the ConsistenchCheck code among the default checking.	
GLSC code	**POC:** Jun Chen (chenj@frib.msu.edu)	**URL:** https://github.com/IAEA-NSDDNetwork/GLSC
	Description: GLSC (Gamma to Level Scheme Computation) is a Java code for fitting gammas to obtain level energies and calculating level feedings, and also calculating absolute gamma emission probabilities from decay. It is an alternative to the GTOL and GABS Fortran code combined, with lots of improvements and new interactive features and options for user to control the fitting parameters.	
KeynumberCheck code	**POC:** Jun Chen (chenj@frib.msu.edu)	**URL:** https://github.com/IAEA-NSDDNetwork/KeynumberCheck
	Description: checks NSR key-numbers in ENSDF datasets for format errors, irrelevant or nonexistence by searching in an input list of key-numbers or in the NSR database directly.	
RadiationReport code	**POC:** Jun Chen (chenj@frib.msu.edu)	**URL:** https://github.com/IAEA-NSDDNetwork/RadiationReport
	Description: RadiationReport is Java code to calculate energies, intensities and doses of all radiations as well as logft values for a decay dataset. It is an alternative to the RADLIST and LOGFT Fortran codes combined. It can calculate logft values for forbidden-unique decays with order>2 which are calculated incorrectly as allowed decays by the legacy LOGFT code.	
AlphaHF code	**POC:** Jun Chen (chenj@frib.msu.edu)	**URL:** https://github.com/IAEA-NSDDNetwork/AlphaHF
	Description: AlphaHF is a Java code to calculate Hindrance Factor and nuclear radius parameter R0 for alpha decay. It is intended to replace the ALPHAD_RADD, ALPHAD, and RADD fortran codes.	
Discovery of Nuclide Project (in collaboration with Michael Thoennessen of FRIB)	**POC:** Michael Thoennessen (non-USNDP member), Jun Chen (chenj@frib.msu.edu)	**URL:** https://frib.msu.edu/users/nuclides
	Description: The Discovery of Nuclides Project documents the discovery of all isotopes, with information about discovery year, authors, laboratory, country, publising journal, as well as an abstract briefly descriping each discovery and history. The project was started and led by Michael Thoennessen since 2007. Jun Chen joined in this project in 2023, has modernized the database with JSON and created a viewer/editor of the database as well as webpages to display and query those data, and will maintain the database and webpages regularly. Jun Chen's effort is within the scope of data activities supported by his grant from DOE/NP.	
ENSDF-Agent	**POC:** Lijie Sun (sunli@frib.msu.edu), Jun Chen (chenj@frib.msu.edu)	**URL:** https://github.com/FRIBND/ENSDF-Agent

	Description: The first AI Agent designed for Evaluated Nuclear Structure Data File (ENSDF) workflows. Developed and refined through daily evaluation tasks at FRIB Nuclear Data Group.

Oak Ridge National Laboratory		
Computational Infrastructure for Nuclear Astrophysics (CINA)	**POC:** Augusto Macchiavelli (interim)	**URL:** https://nucastrodata.org/infrastructure.html
	Description: unique online nuclear astrophysics data pipeline that enables point-and-click investigations of astrophysical impacts of nuclear data sets via the uploading, manipulation, processing, and sharing of nuclear data sets, thermonuclear reaction rates, and astrophysical simulations	
Nuclear Astrophysics Datasets	**POC:** Augusto Macchiavelli (interim)	**URL:** https://nucastrodata.org/datasets.html
	Description: collection of nuclear data sets needed for research in nuclear astrophysics	

Triangle Universities Nuclear Laboratory		
Energy Levels of Light Nuclei website	**POC:** John Kelley (jhkelley@ncsu.edu)	**URL:** https://nucldata.tunl.duke.edu/
	Description: Access to html navigable archive of Fay Ajzenberg-Selove (UPenn) and TUNL "Energy Levels of Light Nuclei" publications, documentation and up-to-date lifetimes of A=3-20 nuclei. The site includes some compiled and evaluated data on light nuclei related to p-, alpha- and n-capture reactions, and ground-state decays; we also host an archive of TUNL dissertations.	

Appendix C – Fiscal Year 2026 Articles authored by USNDP staff

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[2025DY01] P. Dyszel et al., "First beta-Delayed Two-Neutron Spectroscopy of the r-Process Nucleus ^{134}In and Observation of the i{13/2} Single-Particle Neutron State in ^{133}Sn", Phys. Rev. Lett. 135, 152501 (2025); 10.1103/l24v-5m31

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[2025MO32] C. Morse, "Nuclear Structure and Decay Data for A=240", Nuclear Data Sheets 206, 359-467 (2025); https://doi.org/10.1016/j.nds.2025.11.002

[2025SA50] H. Sasaki, T. Kawano, M. Dupuis, "Modeling direct and pre-equilibrium processes of neutron-induced reactions with noniterative finite amplitude method and distorted-wave Born approximation", Phys. Rev. C 112, 54607 (2025); https://doi.org/10.1103/jjd9-9hrs

[2025SO24] K. Song, R. Longland, C. Marshall, K. Setoodehnia, F.P.Chaves, A. Fraud, "Indirect measurement of the ^{23}Na(p, γ)^{24}Mg direct capture reaction rate via (^{3}He, d) spectroscopy", Phys. Rev. C 112, 65805 (2025); https://doi.org/10.1103/1tx5-lcgh

[2025WU19] Jin Wu, "Nuclear Structure and Decay Data for A=175 Isobars", Nuclear Data Sheets 206, 1-358 (2025); https://doi.org/10.1016/j.nds.2025.11.001

[2026BE08] M.A.Bentley, R.Taniuchi, R.Wadsworth, H.Iwasaki, D.D.Dao, F.Nowacki, M.J.Basson, T.Beck, B.Cederwall, J.Chen, S.Chen, J.Dobaczewski, M.Doncel, A.Douglas, P.Farris, A.Gade, S.A.Gillespie, A.M.Hill, D.G.Jenkins, J.Chung-Jung, S.M.Lenzi, W.Marshall, S.Paschalis, J.Pereira, X.Pereira-Lopez, M.Petri, R.Salinas, A.Sanchez, J.A.Swartz, C.Tinson, D.Weisshaar, K.Wimmer, "Collapse of Nuclear Collectivity along the N=Z Line", Phys. Rev. Lett. 136, 152501 (2026); https://doi.org/10.1103/r6ns-ypw8

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