

Japan Nuclear Reaction Data Centre (JCPRG)

Progress Report

*Nuclear Reaction Data Centre (JCPRG),
Faculty of Science, Hokkaido University
<https://www.jcprg.org>*

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0. General

The Japan Nuclear Reaction Data Centre (JCPRG), based at Hokkaido University in Sapporo, is a research center dedicated to nuclear data activities. Its main objectives are:

- a) Compiling nuclear reaction data for the NRDF and EXFOR databases
- b) Evaluating nuclear reaction data
- c) Developing software and systems for data compilation and evaluation
- d) Educating graduate students

1. Compilation

1.1 NRDF

The NRDF database is JCPRG's original nuclear reaction database. Initially, our EXFOR entries were produced by converting data from the NRDF format. Currently, both NRDF and EXFOR formats are generated in parallel using the database editor HENDEL. From May 2024 to June 2025, we compiled data from 38 new papers on charged-particle-induced nuclear reactions.

1.2 EXFOR

Since the last NRDC meeting, we have transmitted 38 new and 95 revised entries as 13 trans and prelim files (E142-E153 and R031) to the NDS open area. Our transmissions are summarized in Table 1.

Table 1. EXFOR E- and R-entries transmitted from JCPRG to IAEA-NDS in 2024-2025.

TRANS	TRANS Status	ENTRY Tot.	ENTRY New	ENTRY Rev.
E142	Final (2024/5/3)	9	9	0
E143	Final (2024/5/5)	19	0	19
E144	Final (2024/5/5)	17	0	17
E145	Final (2024/6/25)	10	1	9

E146	Final (2024/6/25)	10	3	7
E147	Final (2024/6/25)	7	0	7
E148	Final (2024/8/9)	10	2	8
E149	Final (2024/8/12)	6	0	6
E150	Final (2024/8/15)	5	3	2
E151	Final (2024/12/30)	11	11	0
E152	Prelim (2025/5/27)	6	6	0
E153	Prelim (2025/6/2)	13	3	10
R031	Final (2024/12/30)	10	0	10

2. System Development

2.1 Data Retrieval System

We have 3 data retrieval systems below.

- NRDF (<https://www.jcprg.org/nrdf/>)
- NRDF/A (<https://www.jcprg.org/nrdfa/>)
- EXFOR/ENDF (<https://www.jcprg.org/exfor/>)

The relational database management system MySQL is used to search and retrieve data from the NRDF, EXFOR, and ENDF databases. For EXFOR, new TRANS files are periodically copied from the NDS open area, and the MySQL database is updated accordingly.

2.2 Coding Software

The following coding editor and digitizing software are available for data compilation purposes. In addition, a new editor is currently under development.

- Coding editor "HENDEL" (<https://www.jcprg.org/manuals/hendel/>)
- Digitization software "GSYS" (<https://www.jcprg.org/gsys/2.4/>)