NNDC Report FY2011

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Brookhaven National Laboratory
Nuclear Data Week, Nov. 14-18, 2011

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U.S. DEPARTMENT OF ENERGY | Office of Science

NNDC Personnel Status

Personnel changes

- Pavel Oblozinsky retired April 2011, staff position, reaction data
- Marco Pigni left NNDC in April 2011, staff position, reaction data
- Elizabeth McCutchen joined NNDC in May 2011, staff position, structure data
- Annalia Palumbo joined NNDC in June 2011, postdoc position, nuclear reaction data
- Gustavo Nobre joined NNDC in June 2011, postdoc position, nuclear reaction data
- David Brown joined NNDC in August 2011, staff position, nuclear reaction data

Staff	FTE	Heads (30/9/11)	FTE (USNDP)
Permanent	8.05	9	5.23
Temporary	0.50	2	0.30
Professional	3.73	4	3.73
Contractors	2.50	12	2.50
Total	14.78	27	11.76

FY2010

Staff	FTE	Heads	FTE (USNDP)
Permanent	7.35	10	6.00
Temporary	2.33	2	2.33
Professional	3.70	4	3.70
Contractors	2.25	10	2.25
Total	15.63	26	14.28

GForge server

- Number of projects: 27
  - Structure: 11
  - Reactions: 16
- Number of accounts: 67
  - Structure: 18
  - Reactions: 49
- Most downloaded (1/1/10–11/9/11)
  - ENDF-6 Manual: 1,239 times
  - ENDF/B-VII.1: 1,108 times
    - Beta0: 394
    - Beta1: 67
    - Beta2: 139
    - Beta3: 250
    - Beta4: 215
    - Beta5: 43
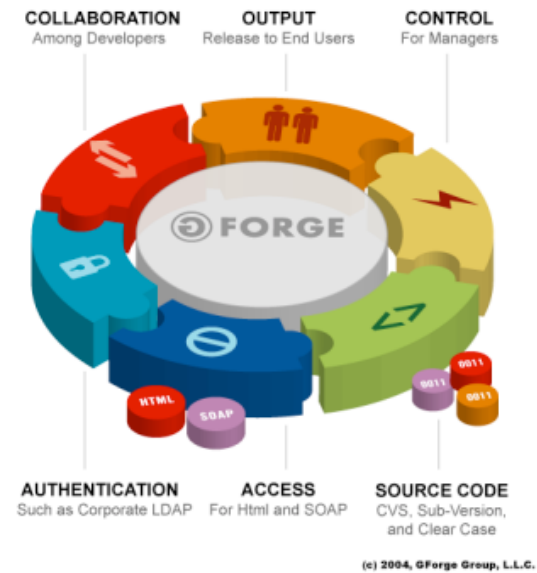
- Immediate plans - link current SVN versions from the NNDC Web site
  - STANEF
  - CHECKR
  - FIZCON
  - PSYCHE
  - ENDF-6 Manual

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New GForge server
(since October 18, 2011)

- Processors: Intel Xeon, two 6-core, 3.46 GHz each

- RAM: 64 Gigabytes

- Total Disk Storage: 15.2 Terabytes

- Network Card: 1 Gigabit/sec

- Collaboration Software: GForge Professional Server 6.0

Old GForge server

- Processor: Intel Xeon, one quad-core, 2.5 GHz

- RAM: 8 Gigabytes

- Total Disk Storage: 300 Gigabytes

- Network Card: 1 Gigabit/sec

- Collaboration Software: GForge Professional Server 5.6

Coordination and reporting

- CSEWG-USNDP Annual Meetings held in Santa Fe (Nov 2010) Summary and Minutes issued (Jan 2011)

- USNDP Budget Briefing FY13 held at DOE-SC (Feb 2011)

- USNDP Report FY10 & Workplan FY12 issued (March 2011)

- Work on Report FY11 will start in November

- Work on Work plan FY13 will start early next year

Web based!

Web based!

Annual Report for FY2010

Prepared by:
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National Nuclear Data Center
Brookhaven National Laboratory
March 2011

With contributions from:
Allan D. Carlson, NIST
Richard Firestone, LBNL
Toshihiko Kawano, LANL
John Kelley, TUNL
Filip G. Kondev, ANL
Balraj Singh, McMaster U.
Michael Smith, ORNL
Alejandro Sonzogni, BNL
Neil Summers, LLNL

www.nndc.bnl.gov/usndp

USNDP Work Plan for Fiscal Year

Prepared by:
Michal Herman
National Nuclear Data Center
Brookhaven National Laboratory
February 2010

www.nndc.bnl.gov/usndp

Budget Briefing FY2

DOE HQ, Germantown

Contents
1. Presentations
2. Accomplishments
3. Budget Justification
4. Budget Spreadsheets FY1

www.nndc.bnl.gov/usndp

Databases and services

- Data retrievals increased by 17%; 2.771 million retrievals in FY11

- Covariance review system (COMMARA-2, beta4, beta5)

- Sigma-3.2 released in October 2010
  - JENDL-4.0 evaluated neutron library.
  - Improved mathematical operations.

- myENSDF and myENDF Web sites (uploading user data and running codes on the NNDC server)

- Active communication with users available for NNDC-general, CSISRS, ENDF, Wallet Cards

More details in talk by Boris

MyENDF: integrated Web-tool for evaluators
by V.Zerkin, IAEA-NDS, 2010-2011
Upload your ENDF data file, run remotely ENDF utilities, plot and compare your data with EXFOR and ENDF databases
Checkr, Fizcon, Stanef, Psyche, Inter, Prepro, Endver, ZVView, Web-EXFOR-ENDF

Submit   Reset   ☐ Submit in new Window
Your name (optional): Mike
Your ENDF File: Choose File   n-040_Zr_090.endf
Your ENDF file. Examples: text web-links: txt e6 b5std zip CGI ftp

Web and Database Programming: Viktor Zerkin, NDS, International Atomic Energy Agency (V.Zerkin@iaea.org)
Last updated: 10/31/2011 15:49:07

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ENSDF

5 mass chains completed and submitted (4 NNDC, 1 collaboration)

Evaluated:

- A= 62 (8 nuclides Nichols,Tuli; *Canada)
- A=143 (16 nuclides, Browne,Tuli)
- A=148 (15 nuclides, Nica)
- A=220 (8 nuclides, Browne,Tuli)
- A=246(8 nuclides, Browne,Tuli)
- Trieste (8 nuclides, Browne,Johnson,Sonzogni,Tuli)

*collaboration

NNDC share of nuclides =63, (last year= 92)

Published: 5 mass chains (A=99,142,161,220,246)

Reviewed: 11 mass chains

Browne 2(27,85); Basu 1(99); McCutchan 1(192); Nica 1(150); Nichols 1(207); Reich 1(92); Sonzogni 1(61); Tuli 3(143,220,245)

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ENDF/B-VII.1

- Preparation for the release of ENDF/B-VII.1
  - maintaining GForge ENDF/B site
  - ENDF/B-VII.1beta1,2,3,4,5 releases
  - phase 1 testing on each beta version
  - integral testing of the whole library with LANL suite of 119 benchmarks
  - QA procedure and corrections
  - covariance review Web site;
  - review of covariances (98 nuclides)
- NNDC contribution to ENDF/B-VII.1
  - set of AFCI-related covariances
  - Zr evaluations
  - Tl evaluations
  - Tm evaluations
  - decay data sublibrary (3817 nuclides)

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NNDC Compilations

NSR (Pritychenko, Betak*)

- 3802 entries (last year 3818)
- 2191 key-worded

EXFOR (Hlavac*, Schwerer*)

- 104 papers compiled (last year 126)

*) contractors

Incident particle	No of entries
neutron	40
charged	53
gamma	11
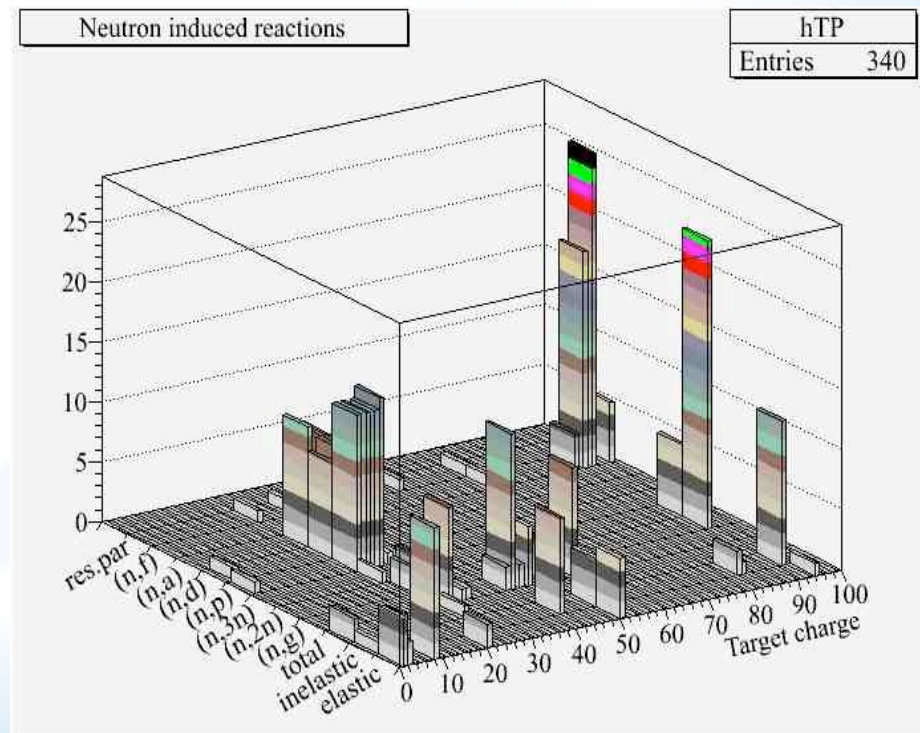
Major changes in EMPIRE code
(278 Svn commits in FY11)

- OPTMAN CC code implemented

- Upgrade of checking codes

- Direct access to C4 file with exp data instead of fancy but unstable MySql retrieval

- KERCEN code included in the source (not linked through the GUI)

- Thorough work on tightening cross section balance

- New parametrization of EGSM level densities

EMPIRE-3.1 (Rivoli)
Release in Dec.2011/Jan.2012

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Major publications

- 11 issues of NDS with A-chain evaluations

- Special issue on ENDF/B-VII.1 to be published in Dec. 2011 (editorial work Oblozinsky/ Pritychenko)

  - ENDF/B-VII.1 Nuclear Data for Science and Technology: Cross Sections, Covariances, Fission Product Yields and Decay Data (NNDC contribution)

  - Neutron Cross Section Covariances for Structural Materials and Fission Products (NNDC)

  - +

- Wallet Cards 2011 (in print)