National Nuclear Data Center Report to USNDP Meeting 2003

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NNDC Report: 1. NNDC Operations

Personnel Changes

- Judy Tallarine (NSR support) retired, replaced by Joann Totans
- Ivan Sirakov completed his term
- Mike Herman (PhD nuclear reaction physics) hired on March 1, 2003 → ENDF/B manager, code EMPIRE and evaluations
- Yako Sanborn (system admin) retired, replaced by Boris Peterson (PhD nuclear structure physics, MSU) → Linux system admin, applications development
- Sue Cataldo left, replaced by Gail Brown as part-time secretary
- Current NNDC staff level reduced to 12.25 FTE

Coordination and Reporting

- Coordination of USNDP and CSEWG continued
- USNDP Annual Report 2002 issued, December 2002
- USNDP Workplan 2004 issued, March 2003
- USNDP Budget Briefing held at DOE, March 2003
- Work started on Annual Report 2003 and Workplan 2005

NNDC Report: 1. NNDC Operations ctn'd

- **Computer Support**
  - HP Alpha Server 4100 under OpenVMS continued to serve as central computer
  - Support to database migration
    - Relational Database Software Sybase
    - New DELL servers under Linux
  - New DELL PCs

NNDC Report: 2. Database Migration

- **Presentation by Charlie Dunford** (Friday, Nov 7, 2003)

- **Major NNDC Project**
  - Migrate databases into new relational database software Sybase
  - Migrate computer operations into Linux
  - Migrate structure databases (2003)
  - Migrate reaction databases (2004)

- **Milestones**

• New computer system operational	March 2004
• Migration of all databases completed	December 2004
• Testing of new system completed	June 2005
• Current Alpha under OpenVMS retired	December 2005

NNDC Report: 3. Nuclear Structure Data

- **Evaluations**
  - Completed: A=82, ^{132,133,134}In, ^{140}Dy, ^{142}Ho, ^{70}Ni, ^{78}Sr, ^{78,80}Y, ^{129}Ag,^{140}Xe, ^{145}Sm
  - Published: A=68,82,138
  - Submitted for publication: A=60,134

- **Nuclear Data Sheets**
  - 12 issues published

- **ENSDF and NuDat**
  - Updated continuously
  - Distributed in March, August, December 2002, and in August 2003

- **Nuclear Wallet Cards**
  - In March 2002 adopted by DOE Office of Security as official decay data standards

NNDC Report: 3. Nuclear Structure Data ctn'

- **ENSDF Analysis and Utility Codes**
  - Maintained and upgraded
- **Nuclear Science References**
  - FY02: 4512 new references added, 3276 with keywords
  - FY03: 3673 new references added, 2803 with keywords

NNDC Report: 4. Nuclear Reaction Data

Database Codes

- Updates of CINDA, CSISRS and ENDF related codes provided to other data centers
- Version 6.13 of ENDF utility codes released

CSISRS Compilation and ENDF Management

- FY02 compilation: 153 neutron and charged particle references
- FY03 compilation: 42 neutron and 52 charged particle references
- New ENDF manager took over in March 2003
- ENDF/B-VII Webpage created (presentation by Mike Herman – ENDF/B-VII)

Evaluation

- Model code development (presentation by Mike Herman – code EMPIRE)
  - Collaboration with Los Alamos, Vienna
  - Validation of Monte Carlo preeq module in McGNASH (~150 nucleon induced reactions on 35 targets, incident energies up to 30 MeV)
  - EMPIRE improved: new GUI, merging of resonance and fast regions, plotting of spectra and angular distributions added)

NNDC Report: 4. Nuclear Reaction Data ctn'

■ Evaluation

- Fission products evaluations (presentation by Pavel Oblozinsky)
  - 99Tc, 153Eu, 157Gd submitted by BNL
  - 16 others submitted by KAERI (format errors, no impact on data)

- Review of fission products evaluations (presentation by Pavel Oblozinsky)
  - WPEC Subgroup 21: reviewed 107 fission products evaluations, best recommended

- New BNL-325 evaluations (presentation by Said Mughabghab)
  - Extensive re-evaluation of thermal and resonance region
  - Updated files and new book

- Homeland security
  - Photo-resonance data for explosives detections (presentation by Pavel Oblozinsky)
  - Gamma production data for Ge detector simulations (presentation by Mike Herman)

NNDC Report: 5. Data Dissemination

Retrieval in FY03 increased by 17.2% compared to FY02.