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# NNDC Report

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# NNDC Operations

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## Personnel

- Charlie Dunford retired in June 2005, not replaced due to decrease in funding in FY06
- Dave Winchell announced his decision to leave the NNDC, search for replacement underway, 2 candidates scheduled for review in Nov

## Coordination and reporting

- CSEWG-USNDP Annual Meetings'05 held (Nov 2005)
- Summary (hardcopy) and Minutes (web) issued (Dec 2005)
- USNDP Report FY05 & Workplan FY07 issued (Jan 2005)
- USNDP Budget Briefing FY08 held at DOE-SC (Feb 2006)
- CSEWG Validation Meeting held in June 2006
- No work yet on Report FY06 and Workplan FY08

# Databases and Services

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## Database management

- NSR, XUNDL, ENSDF, NuDat maintained and distributed regularly
- CSISRS maintained regularly
- Major effort devoted to release of 2 testing versions of ENDF/B-VII (beta2 and beta3)

## NNDC Web service (more details in talk by Boris)

- Data retrievals increased considerably, 1mil retrievals reached in FY06
  - Driven by NuDat and Chart of Nuclides
  - ENDF retrievals up by ~150%
- Several new products
  - Super-heavy nuclei, BRICC, Chart of Nuclides, Thermal n-capture  $\gamma$ 's
  - Sigma, new ENDF interface under development (NuDat-like)
- Communication with users
  - Available for NNDC-general, CSISRS, ENDF, Wallet Cards

# Nuclear Structure Data

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## ENSDF evaluations

- Completed and submitted 9 mass chains (6 NNDC, 3 collaboration), NNDC share = 89 nuclides (last year 113)
  - ✓ A = 47 (12 nuclides Burrows)
  - ✓ A = 48 (13 nuclides Burrows) - published
  - ✓ A = 94 (14 nuclides Abriola/Sonzogni) - published
  - ✓ A = 140 (16 nuclides, Nica)
  - ✓ A = 221 ( 5 nuclides Tuli, collaboration)
  - ✓ A = 234 (10 nuclides, Browne/Tuli)
  - ✓ A = 236 ( 9 nuclides, Browne/Tuli) - published
  - ✓ A = 251 ( 5 nuclides Tuli, collaboration) - published
  - ✓ A = 253 ( 5 nuclides Tuli, collaboration) - published
- Published 5 mass chains
  - ✓ A = 48, 94, 236, 251, 253
- Reviewed 13 mass chains
  - ✓ A = 52, 64, 94 (Reich) and 74 (Winchell)
  - ✓ A = 101, 109, 112, 213, 216, 218, 232, 233 (Tuli)

# Nuclear Structure Data, ctn'd

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## NSR bibliography compilation

- Compiled 3,093 keyword abstracts, 3,993 in total
- 3 European journals compiled by the IAEA Nuclear Data Section

## NuDat

- Upgrade to NuDat 2.2
- The most successful web product (combined with Chart of Nuclides)

## ENSDF processing and maintenance

- On average ~20 mass chains are in the production pipeline
- Currently 2992 nuclides in ENSDF

## Nuclear Data Sheets

- 11 issues published on ENSDF evaluations, total number of pages 2930
- 1 issue devoted to ENDF/B-VII.0, 187 pages

# Nuclear Reaction Data

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## CSISRS compilation (experimental data)

- 171 papers compiled (52-n, 112-cp, 7- $\gamma$  papers, total 535 reactions)

## Evaluations for ENDF/B-VII.0, more details in talk by Mike

- New evaluations (complete re-evaluation of 32 materials) in the range of fission products ( $Z = 31 - 68$ ), collaboration with KAERI
- New evaluations for  $^{89}\text{Y}$ ,  $^{99}\text{Tc}$ ,  $^{191}\text{Ir}$ ,  $^{193}\text{Ir}$ , including covariances in the entire energy range using BNL-LANL methodology

## Database management and ENDF/B-VII.0 release

- This release is of historical importance, ENDF/B-VI was released in 1990
- NNDC provided unprecedented level of support
- NNDC performed complete Phase 1 testing (data verification), including checking with 3 checking codes, processing with NJOY-99.161 and basic runs with MCNP5 and MCNPX simulation code
- Two testing versions were released (beta2, beta3), with web interface
- NNDC served as a focal place for producing 'Big paper' on ENDF/B-VII.0