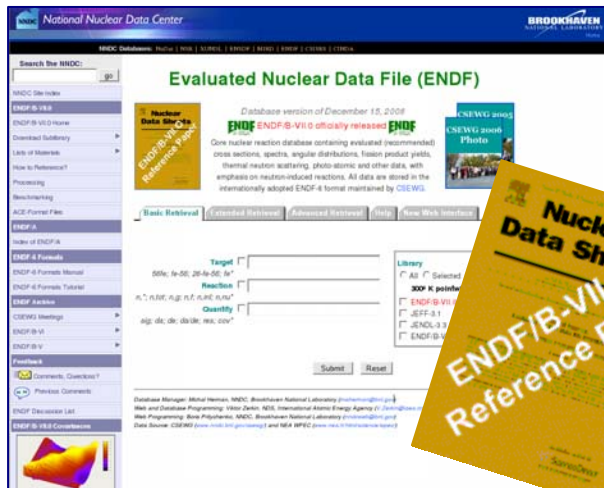


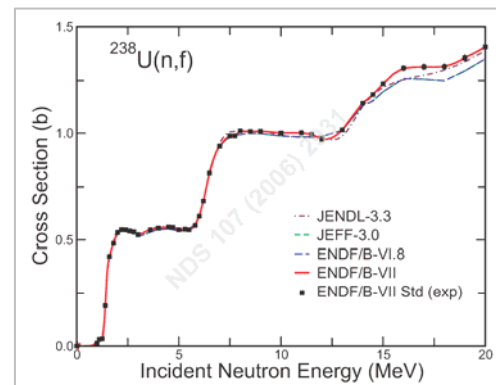
## Release of the ENDF/B-VII.0 library (The first major release since 1990)

In December 2006, the NNDC released the next generation evaluated nuclear data library for nuclear science and technology, ENDF/B-VII.0 - the major US library dedicated to nuclear reactions. This remarkable event coincides with the renewed interest in the nuclear energy option (AFC, GNEP, Gen-IV). The ENDF/B-VII.0 has been developed by CSEWG with a significant contribution from the **USNDP** laboratories (LANL, BNL, NIST, LLNL).

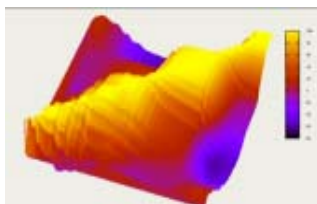


### The principal advances over the previous ENDF/B-VI library:

1. New cross sections for U, Pu, Th, Np and Am, with improved performance in benchmark tests (**USNDP**)

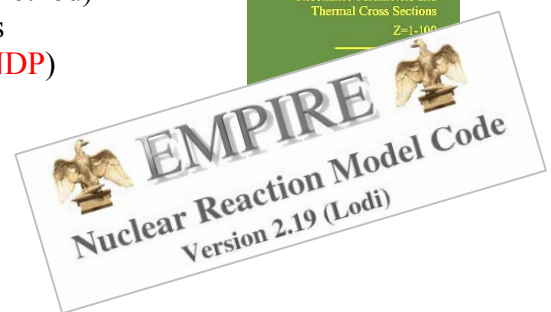
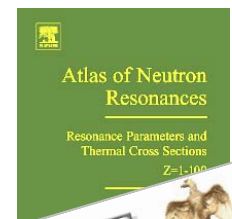


2. More precise standard cross sections for neutron reactions on H,  $^6\text{Li}$ ,  $^{10}\text{B}$ , Au and for  $^{235,238}\text{U}$  fission (**USNDP**)
3. Improved thermal neutron scattering
4. Large suite of photonuclear reactions
5. Extensive set of neutron cross sections on fission products (**USNDP**, 70 BNL evaluations with EMPIRE-Atlas method)
6. Many new light nucleus neutron and proton reactions
7. Post-fission beta-delayed photon decay spectra (**USNDP**)
8. New radioactive decay data (**USNDP**)



9. New methods for uncertainties and covariances (**USNDP**)

10. New actinide fission energy deposition.

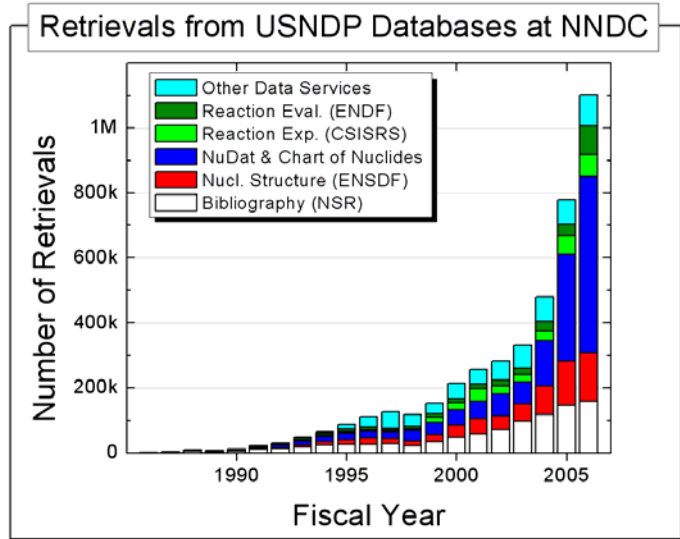


**Validation** carried out in US and Europe (hundreds of integral experiments) proved absolute superiority of the ENDF/B-VII.0 over earlier libraries.

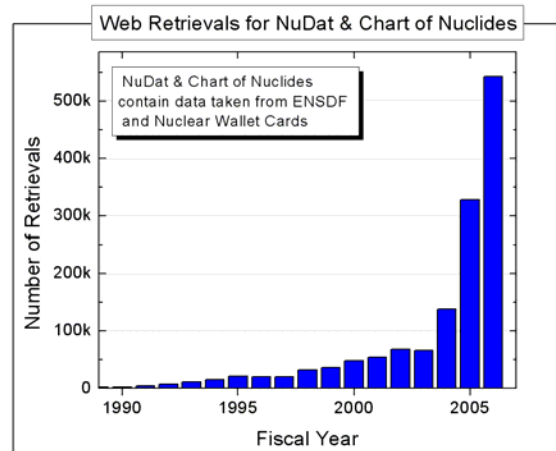
**Extensive paper**, already known as the “big paper”, on ENDF/B-VII.0 appeared in the special issue of Nuclear Data Sheets in December 2006.

## 1 Million retrievals from the USNDP databases served by the NNDC

In FY2006, the NNDC web service reached an important **milestone**: 1 million data retrievals from the **US Nuclear Data Program** databases. This accomplishment is the result of several factors: Continuing effort of the USNDP in updating and maintaining the databases; extensive NNDC database migration project that culminated by introducing the new web service in April 2004; unprecedented success of the new NuDat interface that offers nuclear structure and decay data; continuing improvement of the NNDC service.



**NuDat** is a derived database largely based on the Evaluated Nuclear Structure Data File, ENSDF, and to less extent on the Nuclear Wallet Cards. The related **NuDat2** web interface offers data in easily understandable and convenient ways, with appeal to both the scientific and applied communities. For less sophisticated users, the Chart of Nuclides was posted on the web in 2006. Thanks to this, the growth kept momentum and the combined product delivered 540,000 retrievals in 2006, more than the entire NNDC web service in 2004.



**Geographical distribution** of the NNDC data retrievals shows that the users are primarily from the US/Canada and Europe. The US demand is coming mostly from the US Government organizations (national laboratories - LANL, ORNL, LLNL, LBNL, ANL) and the Universities (Yale, Texas A&M, Duke, Michigan and Florida State Universities), with a notable demand from the industry, military and others.

