

**NATIONAL NUCLEAR DATA CENTER**

Status Report  
to the  
Advisory Group Meeting on  
Network of Nuclear Reaction Data Centers  
15-19 May 2000

**General**

Since the last meeting of the Nuclear Reaction Data Centers in May 2000, Mulki Bhat and Said Mughabghab have retired. Said remains at the Center as a Guest Scientist. Pavel Oblozhinsky has been hired as the new Deputy Head of the Center. We have also hired a full-time scientific staff member to work on nuclear structure evaluation. There are currently 11 FTE scientific/professional and 4 support staff. See Table I for list of visitors for this period.

**Computer Facilities**

NNDC is in the process of installing new Gateway Celeron 433 MHz PC's for all staff members. We have also acquired a Dell Poweredge 4300 Pentium III 600 MHz Windows NT server. These are linked to the VAX Alpha using the Exceed software package.

The Alpha system has recently been upgraded to Open VMS 7.2, and the OSU HTTPD Web Server to version 3-6B.

**Bibliographies**

The NSR activity has continued.

The CINDA compilation activity continues with respect to those references associated with the experimental data compiled at the Center. In the period from June 1999 through May 2000, 4 CINDA transmissions were sent (BNL159-162).

**Experimental Nuclear Reaction Data**

The NNDC continues to compile neutron and charged-particle reaction data produced in the U.S. and Canada. In the period from June 1999 through May 2000, 13 neutron data transmission tapes (TRANS 1276-1288) and 14 charged-particle transmission tapes (C032-C039, P002, T001-T005) were sent containing new and corrected entries. Work continues with a consultant from Oak Ridge National Laboratory on entering the ORELA total cross section data of Harvey; more than 140 data sets have been received so far in EXFOR format.

Updates to the EXFOR Manual [1] and to EXFOR Basics [2] have been issued in May 2000.

Work on the compilation of relativistic heavy-ion data has been suspended.

## Evaluated Nuclear Reaction Data

NNDC continues to coordinate the work of the Cross Section Evaluation Working Group. ZVView has been installed on the VAX Alpha and is now used to produce the plots overlaying the experimental data with proposed ENDF evaluations that are sent to reviewers.

ENDF/B-VI, Release 7, was distributed in April, 2000, and includes updates to the neutron and proton sublibraries; see Table 2.

Said Mughabghab, in collaboration with S.Y. Oh and J. Chang of KAERI, has updated the thermal and resonance region for 19 fission product nuclei; four of these are included in release 7.

## Nuclear Structure Data

NNDC continues to publish the *Nuclear Data Sheets*. As of May, 2000, issues through Volume 90, #1 have been published by Academic Press.

The Sixth Edition of the Nuclear Wallet Cards [3] was issued in April and has been put up on the NNDC Web page.

## Customer Services

The use of the Telnet Online Service is decreasing, primarily due to the availability of most databases on the Web. There are now about 860 active customer accounts with about 1020 users. The number of combined retrievals from the NNDC World Wide Web, Telnet On-line Service, and FTP continues to increase exponentially, there are currently about 18,000 retrievals per month from the combined services. A chart of Online Data Service retrievals is attached.

The following updates have been made to the NNDC Web pages.

1. Links have been established between NSR, CINDA, CSISRS, ENSDF, XUNDL, and the online journals from Europhysics Letters and Annales de Physique (Paris) in addition to the links already existing to American Physical Society journals and European Journal of Physics.
2. A new NSR-SQL Server has been added to the Web server as a test of alternatives to the existing DBMS-based retrieval option.
3. Calculational tools for internal conversion coefficients and  $Log ft$ 's have been added.
4. An HTML/GIF MIRD output option has been added. In addition to providing HTML tables and GIF images of the data, this option will also provide links to related information in the CSISRS, ENSDF, NSR, and NuDat databases.

Agreement has been reached with the American Physical Society on establishing links with Physical Review C for data given in papers submitted to that journal. Details are given in a separate paper submitted to this meeting.

The exchange of personnel between the NNDC and NDS to collaborate on online services continues; see Table I for details.

## References

- [1] V. McLane, EXFOR Systems Manual: Nuclear Reaction Data Exchange Format, Brookhaven National Laboratory report **BNL-NCS-63330** (May 2000)
- [2] V. McLane, EXFOR Basics: a Short Guide to the Nuclear Reaction Data Exchange Format, Brookhaven National Laboratory report **BNL-NCS-63380** (May 2000)
- [3] J.K. Tuli, Nuclear Wallet Cards, 6<sup>th</sup> edition (Brookhaven National Laboratory, January 2000)

**Table I.**

Exchange Visits: NNDC with Other Centers  
June 1999 to May 2000

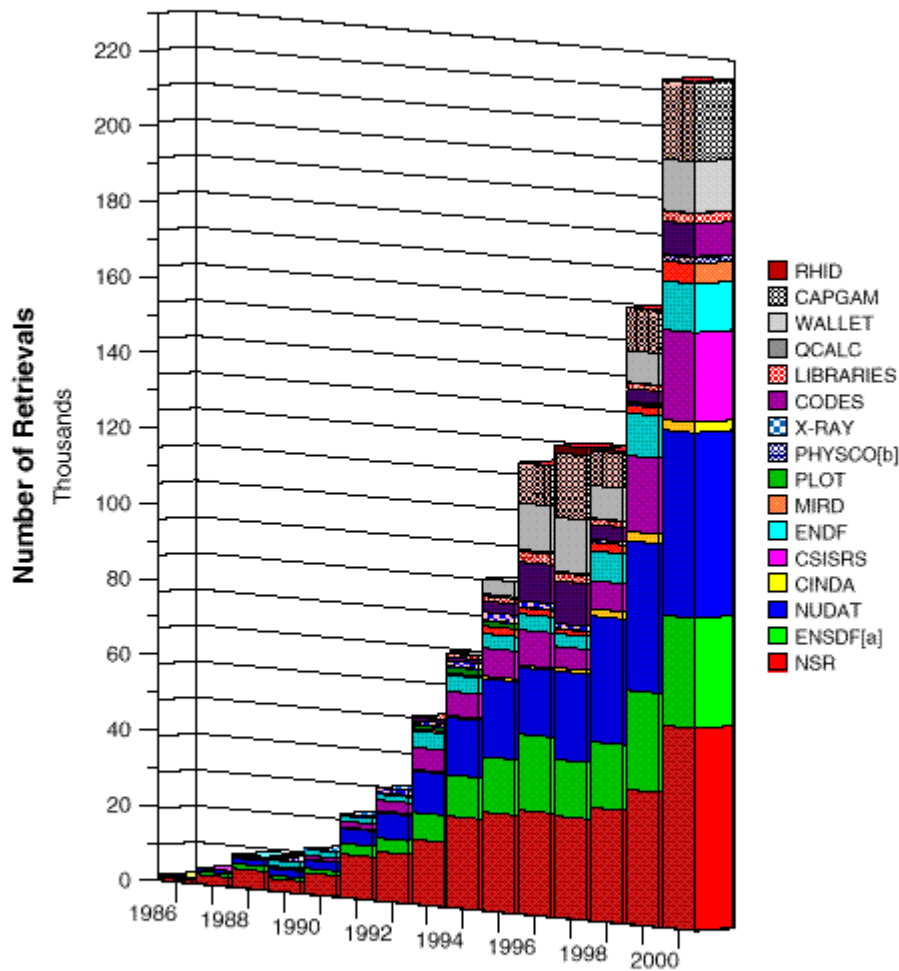
Visitor	Host	Duration	Topic
Viktor Zerkin, NDS	T. Burrows, V. McLane	2 weeks	EXFOR CDRom, ZVView, Web services
S.Y. Oh	S. Mughabghab	1 week	ENDF Evaluation
T.W. Burrows	IAEA/NDS	1 weeks	Web services

**Table 2**

Contents of ENDF/B-VI Release 7

Sublibrary	Tape	Material	Source	Evaluators		
Neutron	154	<sup>133</sup> Cs	KAERI,BNL	S.Y. Oh, S.F. Mughabghab		
		<sup>134</sup> Cs	ORNL	R.Q. Wright		
		<sup>135</sup> Cs	ORNL	R.Q. Wright		
		<sup>134</sup> Ba	ORNL	R.Q. Wright		
		<sup>141</sup> Pr	KAERI,BNL	S.Y. Oh, S.F. Mughabghab		
		<sup>149</sup> Sm	KAERI,BNL	J. Chang, S.F. Mughabghab		
		<sup>153</sup> Eu	KAERI,BNL	S.Y. Oh, S.F. Mughabghab		
		<sup>154</sup> Eu	ORNL	R.Q. Wright		
		<sup>155</sup> Eu	ORNL	R.Q. Wright		
		<sup>160</sup> Dy	ORNL	R.Q. Wright		
		<sup>161</sup> Dy	ORNL	R.Q. Wright		
		<sup>162</sup> Dy	ORNL	R.Q. Wright		
		<sup>163</sup> Dy	ORNL	R.Q. Wright		
		<sup>164</sup> Dy	ORNL	R.Q. Wright		
		<sup>175</sup> Lu	ORNL	R.Q. Wright		
		<sup>176</sup> Lu	ORNL	R.Q. Wright		
			155	<sup>209</sup> Bi	LANL	M.B. Chadwick, P.G. Young
				<sup>243</sup> Cm	Belarus	V. Maslov
<sup>245</sup> Cm	Belarus			V. Maslov		
<sup>246</sup> Cm	Belarus			V. Maslov		
Proton	309	<sup>209</sup> Bi	LANL	M.B. Chadwick, P.G. Young		

## *NNDC On-Line Data Service, World Wide Web (W<sup>3</sup>), and FTP Retrievals 1986-2000\**



\* Extrapolated as of April 30, 2000.

<sup>a</sup> Includes XUNDL retrievals since January 1 (OnLine) and January 11 (Web), 1999.

<sup>b</sup> Added to Web August 18, 1999.