

# Status of ENSDF Analysis and Utility Codes

(September 30, 2003 to March 23, 2011)

## Report Prepared for the 2011 IAEA-sponsored Nuclear Structure and Decay (NSDD) network Biannual Meeting

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### Previous Status Reports

- [Nov. 10, 1998:](#) Status report for the 1998 meeting of the IAEA-sponsored Nuclear Structure and Decay Data (NSDD) Network.
- [April 21, 1999:](#) Status report for the 1999 USNDP Coordination Meeting
- [April 14, 2000:](#) Status report for the 2000 USNDP Coordination Meeting
- [Oct. 24, 2000:](#) Status report for the 2000 meeting of the IAEA-sponsored Nuclear Structure and Decay Data (NSDD) Network.
- [March 21, 2001:](#) Status report for the 2001 USNDP Coordination Meeting
- [March 15, 2002:](#) Status report for the 2002 USNDP Coordination Meeting
- [Sept. 30, 2003:](#) Status report for the 2003 USNDP Annual Meeting
- [Sept. 30, 2003](#) Status report for the 2003 meeting of the IAEA-sponsored Nuclear Structure and Decay Data (NSDD) Network
- [October 28, 2004](#) Status report for the 2004 USNDP Annual Meeting
- [May 15, 2005](#) Status report for the 2005 meeting of the IAEA-sponsored Nuclear Structure and Decay Data (NSDD) network
- [Oct. 24, 2005](#) Status report for the 2005 USNDB Annual Meeting
- [Oct. 25, 2006](#) Status report for the 2006 USNDP Annual Meeting
- [May. 15, 2007](#) Status report for the 2007 IAEA-sponsored Nuclear Structure and Decay Data (NSDD) Network

Links to status reports from 1998 through 2002 are contained in the above reports

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### Current Status

- A. With the exception of RadList and BrICC all Linux, and MS Windows versions are current with those maintained in-house at the NNDC.
- B. No major code changes

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## **In Progress and Future Plans**

### **A. GABS:**

Work is in progress to assign 1.4% uncertainty to CC's of pure multipolarity transitions. Also to add in quadrature 1.4% uncertainty to those of mixed-multipolarity since the reported uncertainties in their CC values typically reflect uncertainties in the values of the mixing ratios alone.

### **B. RULER:**

Port to Java, while fixing problems with bounded uncertainties in mixing ratios. Part of this effort will be to provide a Web interface to calculate transition strengths.

## Tables

Analysis Codes							
Code	Function	Version No./Date	FORTRAN				Documentation
			ANS <sup>a</sup>	DVF <sup>b</sup>	VMS <sup>c</sup>	UNX <sup>d</sup>	
<a href="#">ALPHAD</a>	Calculates $\alpha R_0$ 's, HF's and theoretical $T_{1/2}(\alpha)$ 's	1.6 20010207	<a href="#">X</a>	<a href="#">X</a>		<a href="#">X</a>	No (See " <a href="#">Read Me</a> " file)
<a href="#">BRICC</a>	Interpolates internal conversion-coefficients using "Frozen Orbitals" approximation.	2.2 2002-04-02		<a href="#">X</a>		<a href="#">X</a>	<a href="#">Yes</a>
<a href="#">DELTA</a>	Analyzes angular correlation data.	1.01 19930415	<a href="#">X</a>	<a href="#">X</a>		<a href="#">X</a>	LUNFD/(NFFR-3048) 1-27
<a href="#">GABS</a>	Calculates absolute $\Delta I_\gamma$ 's.	9.2 20010207	<a href="#">X</a>	<a href="#">X</a>		<a href="#">X</a>	<a href="#">Yes</a>
<a href="#">GTOL</a>	Determines level energies from a least-squares fit to $E_\gamma$ 's & feedings.	6.4a 20010611	<a href="#">X</a>	<a href="#">X</a>		<a href="#">X</a>	BNL-NCS-23375/R LUNFD/(NFFR-3049) 1-27
<a href="#">HSICC</a>	Interpolates internal conversion coefficients	11.13f 20011009	<a href="#">X</a>	<a href="#">X</a>		<a href="#">X</a>	<a href="#">Nucl. Data A4, 1</a> <a href="#">Nucl. Data Tables A6, 235</a> <a href="#">Nucl. Data Tables A9, 119</a> BNL-NCS-23375/R (1977)
<a href="#">LOGFT</a>	Calculates $\log ft$ .	7.2a 20010220	<a href="#">X</a>	<a href="#">X</a>		<a href="#">X</a>	<a href="#">Nucl. Data Tables A10, 206</a> BNL-NCS-23375/R (1977)
NSDFLIB	Support subprograms for many codes	1.5d 19990628	<a href="#">X</a>				<a href="#">Yes</a>
<a href="#">PANDORA</a>	Physics check of ENSDF data sets. Aids with adopted gammas & XREF.	6.6b 20010827	<a href="#">X</a>	<a href="#">X</a>		<a href="#">X</a>	<a href="#">Yes</a>
<a href="#">RadList</a>	Calculates atomic & nuclear radiations. Checks energy balance.	5.5 19881005	<a href="#">X</a>	<a href="#">X</a>			<a href="#">BNL-NCS-52142</a>

<a href="#">RULER</a>	Calculates reduced transition probabilities.	1.31a 20020715	<a href="#">X</a>	<a href="#">X</a>		<a href="#">X</a>	<a href="#">Yes</a>
a ANSI-standard FORTRAN 77			c OpenVMS Fortran				
b Compaq/Digital Visual Fortran (Win9x/ME/NT/2000/XP)			d Linux GNU f77 Fortran				

Utility Codes							
Code	Function	Version No./Date	FORTRAN				Documentation
			ANS <sup>a</sup>	DVF <sup>b</sup>	VMS <sup>c</sup>	UNIX <sup>d</sup>	
<a href="#">ADDGAM</a>	Adds gammas to adopted data set.	1.4 20010207	<a href="#">X</a>	<a href="#">X</a>		<a href="#">X</a>	No (See <a href="#">"Read Me"</a> file)
<a href="#">COMTRANS</a>	Converts the text comments of an ENSDF dataset to a "rich text format"	7.0 20030808		<a href="#">X</a> <sup>e</sup>		<a href="#">X</a> <sup>e,f</sup>	No (See <a href="#">"Read Me"</a> file)
<a href="#">ENSDAT</a>	Produces tables and drawings	12.0 20030826		<a href="#">X</a> <sup>e</sup>		<a href="#">X</a> <sup>e,f</sup>	No (See <a href="#">"Read Me"</a> file)
<a href="#">FMTCHK</a>	ENSDF format checking	9.0g 20030804	<a href="#">X</a>	<a href="#">X</a>		<a href="#">X</a>	No (See <a href="#">"Read Me"</a> file or <a href="#">"Read Me"</a> in HTML)
NSDFLIB	Support subprograms for many codes	1.5d 19990628	<a href="#">X</a>				<a href="#">Yes</a>
<a href="#">TREND</a>	Tabular display of ENSDF data.	8.3 20010207	<a href="#">X</a>	<a href="#">X</a>		<a href="#">X</a>	No (See <a href="#">"Read Me"</a> file)
a ANSI-standard FORTRAN 77			d Linux GNU f77 Fortran, except as noted				
b Compaq/Digital Visual Fortran (Win9x/ME/NT/2000/XP)			e Only the executables are available				
c OpenVMS Fortran			f Lahey Fortran 95				

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The latest version of this report is maintained at

[http://www.nndc.bnl.gov/nndcscr/ensdf\\_pgm/code\\_status.html](http://www.nndc.bnl.gov/nndcscr/ensdf_pgm/code_status.html).