

MEMORANDUM 4C-2/73

Date : 12th May, 1976
From : Anton Schofield *AS*
Subject : Review of agreed rules concerning CINDA
quantity codes.

References - 11th 4-Centre Meeting (INDC(NDS)-68) 1975
page 11 (ACT, RIR).
- Memo 4C-3/164 (REM, NPR)
- Memo 4C-3/155 (RIA, RIG, RIR)
- Memo 4C-2/71 (LDL, NXN, FPB)

1. Codes not to be used from now on

ACT, 'Activation' is usually nowadays reductible to either
RIR 'n-gamma' or any other specified reaction leading to a
known activated nucleus.

The indexing and use of the following sum cross-sections
have proved to be unpractical :

NPR It has been demonstrated that most entries made for this
quantity can be considered to refer either to NEM or to
other components such as SCT, N2N + NNP + ..., NU.

REM This quantity can be used only when the sum of the
component reaction does not effectively amount to ABS, i.e.
when reactions such as N2N, N3N, NNP ... occur. A careful
analysis of the experiment described is required from
the indexer, and the coding of elementary processes
would in this case be more informative to the user (as is
presently done for e.g. 'elastic + some inelastic' or
'ND + N2N' where indexing is made under the separate
component quantities with appropriate comment).

2. Further precisions on quantity definitions

The following information will be added to the quantity
definitions given at the end of the CINDA book or supplement,
and in the CINDA Reader's Manual :

RIG Should only be used for fissionable nuclides

RIA Should not be used for fissionable nuclides except when
really equal to RIG + RIF +(possible other contributions),
and should always be used for lighter nuclides ($A < 40$).

Distribution

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See Tables 1, 2 and 3 for coding rules for Resonance Integrals.

LDL The nuclide to which this quantity refers to should be coded, and not the target nucleus as has usually been done when a neutron induced reaction is analysed. A long term clean-up of the file will have to be carried out by the Centres, and CINDA users are encouraged to point out to the Centres the cases which depart from the presently accepted rule. LDL concerns exclusively statistical information on unresolved levels.

TSL The use of this quantity in CINDA should be restricted to the cases where direct information is given on the angular or energy dependence of the cross-section, or on the Egelstaff formalism $S(\alpha, \beta)$.

3. New quantity codes

NXN Will be used for $X \geq 2$ with 'N3N' or 'N4N' or 'N3N+N4N+' in the comment.

FPB Fission product betas will be coded together with the fissioning nucleus (target nucleus, except for spontaneous fission).

Table 1		Use of RIA, RIG	
Code	nuclides	non fissioning	fissioning
	RIG		not used
RIA		used	only if includes RIG+RIF+..

Table 2		$R_{Ix} = \int_{E_{min.}}^{E_{max.}} \sigma(x, E) \phi(E) dE$		
$\phi(E)$ x (process)	$1/E$ (infinite debate)	$\neq 1/E$ given	$\neq 1/E$ not given	
A/F/G	RIA/RIF/RIG	RIA/RIF/RIG	$\sigma(x), E$ Cinda = 'PILE'	
\neq (A/F/G)	$\sigma(x), E$ Cinda = 'PILE'	$\sigma(x), E$ Cinda = 'PILE'	$\sigma(x), E$ Cinda = 'PILE'	
Suggested comment :	'INF.DILUTE RES.INT'	'RES.INT., SPEC. GIVEN'	'RES.INT., SPEC UNDEFINED'	

Table 3		CINDA energy notation for Res. Int.		
Value Energy	given	not given	∞	
E min.	E min.	if not epi-Cd code 'NDG'		
E max.	E max.	blank	blank	

