

Balance Tables in the ICSBEP Handbook

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Neutron Balance in the System

$$k_{eff} = \frac{P + 2 \times N^2 N}{F + C + L}$$

Neutron Balance in the System

$$P_i = \sum_R N_i^R V^R \sum_g \bar{\phi}_g^R (\nu \sigma_f)_{ig}^R$$

$$F_i = \sum_R N_i^R V^R \sum_g \bar{\phi}_g^R (\sigma_f)_{ig}^R$$

$$C_i = \sum_R N_i^R V^R \sum_g \bar{\phi}_g^R (\sigma_c)_{ig}^R$$

$$N2N_i = \sum_R N_i^R V^R \sum_g \bar{\phi}_g^R (\sigma_{n,2n})_{ig}^R$$

Balance Data in Russian Codes

- Russian codes traditionally provide balance data for each material zone and total for the entire system
- The following data are tabulated
 - Neutron balance
 - Masses of nuclides
 - Average cross-sections

Balance Table from TRIGEX for ZPR-3-54

ZONE - 1

ISOTOP	CAPTURE	FISSION	NU*SIG-F	(N,2N)	DISBALANS	SIG-C	SIG-F	ALFA	SIG-2N	NU
PU40	9.8533	4.3090	13.3825	0.0027	0.0000	1.1233	0.4912	2.2867	0.0003	3.1057
PU41	0.5096	2.4634	7.3304	0.0009	0.0000	0.7379	3.5667	0.2069	0.0014	2.9758
U235	0.4320	1.3316	3.2744	0.0010	0.0000	0.8712	2.6852	0.3245	0.0019	2.4591
U238	89.6955	15.3129	42.5596	0.5052	0.0000	0.4190	0.0715	5.8575	0.0024	2.7793
PU39	125.9065	315.7869	933.0553	0.0865	0.0000	0.9246	2.3191	0.3987	0.0006	2.9547
PU42	0.0291	0.0102	0.0312	0.0000	0.0000	1.0345	0.3608	2.8674	0.0008	3.0741
AM41	0.7027	0.1077	0.3665	0.0000	0.0000	2.9516	0.4523	6.5254	0.0002	3.4039
CR	2.6859	0.0000	0.0000	0.0015	0.0000	0.0177	0.0000	0.0000	0.0000	0.0000
NI	2.4971	0.0000	0.0000	0.0000	0.0000	0.0382	0.0000	0.0000	0.0000	0.0000
FE	7.8801	0.0000	0.0000	0.0013	0.0000	0.0131	0.0000	0.0000	0.0000	0.0000
AL	0.0421	0.0000	0.0000	0.0000	0.0000	0.0046	0.0000	0.0000	0.0000	0.0000
C	0.8560	0.0000	0.0000	0.0000	0.0000	0.0002	0.0000	0.0000	0.0000	0.0000
MO	4.2782	0.0000	0.0000	0.0000	0.0000	0.2482	0.0000	0.0000	0.0000	0.0000
MN	1.5879	0.0000	0.0000	0.0000	0.0000	0.1953	0.0000	0.0000	0.0000	0.0000
CU	0.0263	0.0000	0.0000	0.0000	0.0000	0.1145	0.0000	0.0000	0.0000	0.0000
H	0.0000	0.0000	0.0000	0.0000	0.0000	0.0004	0.0000	0.0000	0.0000	0.0000
SI	0.0317	0.0000	0.0000	0.0000	0.0000	0.0042	0.0000	0.0000	0.0000	0.0000
CL	0.0000	0.0000	0.0000	0.0000	0.0000	0.0274	0.0000	0.0000	0.0000	0.0000
F	0.0000	0.0000	0.0000	0.0000	0.0000	0.0049	0.0000	0.0000	0.0000	0.0000
SUM	247.0140	339.3215	999.9999	0.5990	0.0000					

Balance Table from TRIGEX for ZPR-3-54

ZONE - 2

ISOTOP :	CAPTURE :	FISSION :	NU*SIG-F :	(N,2N) :	DISBALANS :	SIG-C :	SIG-F :	ALFA :	SIG-2N :	NU :
PU40 :	0.0000 :	0.0000 :	0.0000 :	0.0000 :	0.0000 :	27.0387 :	0.2677 :	101.0173 :	0.0001 :	2.9947 :
PU41 :	0.0000 :	0.0000 :	0.0000 :	0.0000 :	0.0000 :	2.5905 :	10.4158 :	0.2487 :	0.0002 :	2.9432 :
U235 :	0.0000 :	0.0000 :	0.0000 :	0.0000 :	0.0000 :	2.5410 :	5.5522 :	0.4577 :	0.0003 :	2.4368 :
U238 :	0.0000 :	0.0000 :	0.0000 :	0.0000 :	0.0000 :	4.6015 :	0.0156 :	295.2414 :	0.0004 :	2.7411 :
PU39 :	0.0000 :	0.0000 :	0.0000 :	0.0000 :	0.0000 :	3.9459 :	6.1884 :	0.6376 :	0.0001 :	2.8869 :
PU42 :	0.0000 :	0.0000 :	0.0000 :	0.0000 :	0.0000 :	8.4214 :	0.1536 :	54.8172 :	0.0001 :	2.9671 :
AM41 :	0.0000 :	0.0000 :	0.0000 :	0.0000 :	0.0000 :	11.2367 :	0.2151 :	52.2318 :	0.0000 :	3.2600 :
CR :	2.3779 :	0.0000 :	0.0000 :	0.0002 :	0.0000 :	0.0265 :	0.0000 :	0.0000 :	0.0000 :	0.0000 :
NI :	1.4191 :	0.0000 :	0.0000 :	0.0000 :	0.0000 :	0.0394 :	0.0000 :	0.0000 :	0.0000 :	0.0000 :
FE :	93.5688 :	0.0000 :	0.0000 :	0.0023 :	0.0000 :	0.0159 :	0.0000 :	0.0000 :	0.0000 :	0.0000 :
AL :	0.0000 :	0.0000 :	0.0000 :	0.0000 :	0.0000 :	0.0043 :	0.0000 :	0.0000 :	0.0000 :	0.0000 :
C :	0.0021 :	0.0000 :	0.0000 :	0.0000 :	0.0000 :	0.0000 :	0.0000 :	0.0000 :	0.0000 :	0.0000 :
MO :	0.0005 :	0.0000 :	0.0000 :	0.0000 :	0.0000 :	0.6616 :	0.0000 :	0.0000 :	0.0000 :	0.0000 :
MN :	11.0108 :	0.0000 :	0.0000 :	0.0000 :	0.0000 :	0.2527 :	0.0000 :	0.0000 :	0.0000 :	0.0000 :
CU :	0.0003 :	0.0000 :	0.0000 :	0.0000 :	0.0000 :	0.1329 :	0.0000 :	0.0000 :	0.0000 :	0.0000 :
H :	0.0000 :	0.0000 :	0.0000 :	0.0000 :	0.0000 :	0.0015 :	0.0000 :	0.0000 :	0.0000 :	0.0000 :
SI :	0.0136 :	0.0000 :	0.0000 :	0.0000 :	0.0000 :	0.0028 :	0.0000 :	0.0000 :	0.0000 :	0.0000 :
CL :	0.0015 :	0.0000 :	0.0000 :	0.0000 :	0.0000 :	0.1143 :	0.0000 :	0.0000 :	0.0000 :	0.0000 :
F :	0.0001 :	0.0000 :	0.0000 :	0.0000 :	0.0000 :	0.0029 :	0.0000 :	0.0000 :	0.0000 :	0.0000 :
SUM :	108.3946 :	0.0000 :	0.0000 :	0.0025 :	0.0000 :					

Balance Table from TRIGEX for ZPR-3-54

ZONE - 3

ISOTOP :	CAPTURE :	FISSION :	NU*SIG-F :	(N,2N) :	DISBALANS :	SIG-C :	SIG-F :	ALFA :	SIG-2N :	NU :
PU40 :	0.0000 :	0.0000 :	0.0000 :	0.0000 :	0.0000 :	22.9924 :	0.2956 :	77.7836 :	0.0001 :	3.0105 :
PU41 :	0.0000 :	0.0000 :	0.0000 :	0.0000 :	0.0000 :	2.3733 :	9.6553 :	0.2458 :	0.0003 :	2.9445 :
U235 :	0.0000 :	0.0000 :	0.0000 :	0.0000 :	0.0000 :	2.3854 :	5.2970 :	0.4503 :	0.0005 :	2.4379 :
U238 :	0.0000 :	0.0000 :	0.0000 :	0.0000 :	0.0000 :	4.2090 :	0.0205 :	205.0262 :	0.0006 :	2.7453 :
PU39 :	0.0000 :	0.0000 :	0.0000 :	0.0000 :	0.0000 :	3.6761 :	5.8116 :	0.6325 :	0.0002 :	2.8899 :
PU42 :	0.0000 :	0.0000 :	0.0000 :	0.0000 :	0.0000 :	7.3529 :	0.1792 :	41.0423 :	0.0002 :	2.9824 :
AM41 :	0.0000 :	0.0000 :	0.0000 :	0.0000 :	0.0000 :	10.1748 :	0.2419 :	42.0676 :	0.0000 :	3.2827 :
CR :	0.8465 :	0.0000 :	0.0000 :	0.0001 :	0.0000 :	0.0254 :	0.0000 :	0.0000 :	0.0000 :	0.0000 :
NI :	0.5394 :	0.0000 :	0.0000 :	0.0000 :	0.0000 :	0.0384 :	0.0000 :	0.0000 :	0.0000 :	0.0000 :
FE :	25.8024 :	0.0000 :	0.0000 :	0.0009 :	0.0000 :	0.0151 :	0.0000 :	0.0000 :	0.0000 :	0.0000 :
AL :	0.0000 :	0.0000 :	0.0000 :	0.0000 :	0.0000 :	0.0042 :	0.0000 :	0.0000 :	0.0000 :	0.0000 :
C :	0.0007 :	0.0000 :	0.0000 :	0.0000 :	0.0000 :	0.0001 :	0.0000 :	0.0000 :	0.0000 :	0.0000 :
MO :	0.0001 :	0.0000 :	0.0000 :	0.0000 :	0.0000 :	0.6331 :	0.0000 :	0.0000 :	0.0000 :	0.0000 :
MN :	3.2083 :	0.0000 :	0.0000 :	0.0000 :	0.0000 :	0.2490 :	0.0000 :	0.0000 :	0.0000 :	0.0000 :
CU :	0.0008 :	0.0000 :	0.0000 :	0.0000 :	0.0000 :	0.1327 :	0.0000 :	0.0000 :	0.0000 :	0.0000 :
H :	0.0000 :	0.0000 :	0.0000 :	0.0000 :	0.0000 :	0.0013 :	0.0000 :	0.0000 :	0.0000 :	0.0000 :
SI :	0.0050 :	0.0000 :	0.0000 :	0.0000 :	0.0000 :	0.0029 :	0.0000 :	0.0000 :	0.0000 :	0.0000 :
CL :	0.0058 :	0.0000 :	0.0000 :	0.0000 :	0.0000 :	0.1029 :	0.0000 :	0.0000 :	0.0000 :	0.0000 :
F :	0.0005 :	0.0000 :	0.0000 :	0.0000 :	0.0000 :	0.0029 :	0.0000 :	0.0000 :	0.0000 :	0.0000 :
SUM :	30.4096 :	0.0000 :	0.0000 :	0.0010 :	0.0000 :					

Balance Table from TRIGEX for ZPR-3-54

ZONE - 4

ISOTOP	CAPTURE	FISSION	NU*SIG-F	(N,2N)	DISBALANS	SIG-C	SIG-F	ALFA	SIG-2N	NU
PU40	0.0000	0.0000	0.0000	0.0000	0.0000	27.4582	0.1786	153.7439	0.0000	2.9252
PU41	0.0000	0.0000	0.0000	0.0000	0.0000	2.5488	10.1452	0.2512	0.0000	2.9412
U235	0.0000	0.0000	0.0000	0.0000	0.0000	2.4237	5.2945	0.4578	0.0000	2.4344
U238	0.0000	0.0000	0.0000	0.0000	0.0000	4.4166	0.0018	2476.0974	0.0000	2.6477
PU39	0.0000	0.0000	0.0000	0.0000	0.0000	3.7165	5.8900	0.6310	0.0000	2.8830
PU42	0.0000	0.0000	0.0000	0.0000	0.0000	8.5089	0.0747	113.9266	0.0000	2.8744
AM41	0.0000	0.0000	0.0000	0.0000	0.0000	11.2332	0.1193	94.1955	0.0000	3.1562
CR	0.1709	0.0000	0.0000	0.0000	0.0000	0.0235	0.0000	0.0000	0.0000	0.0000
NI	0.1122	0.0000	0.0000	0.0000	0.0000	0.0377	0.0000	0.0000	0.0000	0.0000
FE	0.4888	0.0000	0.0000	0.0000	0.0000	0.0165	0.0000	0.0000	0.0000	0.0000
AL	0.0000	0.0000	0.0000	0.0000	0.0000	0.0046	0.0000	0.0000	0.0000	0.0000
C	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
MO	0.0000	0.0000	0.0000	0.0000	0.0000	0.6100	0.0000	0.0000	0.0000	0.0000
MN	0.0626	0.0000	0.0000	0.0000	0.0000	0.2195	0.0000	0.0000	0.0000	0.0000
CU	0.0000	0.0000	0.0000	0.0000	0.0000	0.1226	0.0000	0.0000	0.0000	0.0000
H	0.0000	0.0000	0.0000	0.0000	0.0000	0.0014	0.0000	0.0000	0.0000	0.0000
SI	0.0010	0.0000	0.0000	0.0000	0.0000	0.0025	0.0000	0.0000	0.0000	0.0000
CL	0.0000	0.0000	0.0000	0.0000	0.0000	0.1117	0.0000	0.0000	0.0000	0.0000
F	0.0000	0.0000	0.0000	0.0000	0.0000	0.0029	0.0000	0.0000	0.0000	0.0000
SUM	0.8354	0.0000	0.0000	0.0000	0.0000					

Balance Table from TRIGEX for ZPR-3-54

OVER ALL REACTOR

ISOTOP :	CAPTURE	: FISSON	: NU*SIG-F	: (N,2N)	: DISBALANS	:
PU40 :	9.8533	: 4.3090	: 13.3825	: 0.0027	: 0.0000	:
PU41 :	0.5096	: 2.4634	: 7.3304	: 0.0009	: 0.0000	:
U235 :	0.4320	: 1.3316	: 3.2744	: 0.0010	: 0.0000	:
U238 :	89.6955	: 15.3129	: 42.5596	: 0.5052	: 0.0000	:
PU39 :	125.9065	: 315.7869	: 933.0553	: 0.0865	: 0.0000	:
PU42 :	0.0291	: 0.0102	: 0.0312	: 0.0000	: 0.0000	:
AM41 :	0.7027	: 0.1077	: 0.3665	: 0.0000	: 0.0000	:
CR :	6.0813	: 0.0000	: 0.0000	: 0.0017	: 0.0000	:
NI :	4.5677	: 0.0000	: 0.0000	: 0.0000	: 0.0000	:
FE :	127.7401	: 0.0000	: 0.0000	: 0.0046	: 0.0000	:
AL :	0.0421	: 0.0000	: 0.0000	: 0.0000	: 0.0000	:
C :	0.8588	: 0.0000	: 0.0000	: 0.0000	: 0.0000	:
MO :	4.2788	: 0.0000	: 0.0000	: 0.0000	: 0.0000	:
MN :	15.8696	: 0.0000	: 0.0000	: 0.0000	: 0.0000	:
CU :	0.0274	: 0.0000	: 0.0000	: 0.0000	: 0.0000	:
H :	0.0001	: 0.0000	: 0.0000	: 0.0000	: 0.0000	:
SI :	0.0513	: 0.0000	: 0.0000	: 0.0000	: 0.0000	:
CL :	0.0073	: 0.0000	: 0.0000	: 0.0000	: 0.0000	:
F :	0.0006	: 0.0000	: 0.0000	: 0.0000	: 0.0000	:
SUM	: 386.6537	: 339.3215	: 999.9999	: 0.6025	: 0.0000	:

BALANS

$$(NU*SIG-F) / K-EF + N2N = 1037.24402$$

$$CAPTURE + FISSON = 725.97522$$

$$LEAKAGE = 311.26877$$

$$K-ef = 0.96465$$

Balance Table from TRIGEX for ZPR-3-54

ISOTOPE MASS AND VOLUMES OF ZONES

: ZONE:	1	:	2	:	3	:	4	:
: PU40:	8.4379	:	0.0000	:	0.0000	:	0.0000	:
: PU41:	0.6672	:	0.0000	:	0.0000	:	0.0000	:
: U235:	0.4671	:	0.0000	:	0.0000	:	0.0000	:
: U238:	204.2188	:	0.0000	:	0.0000	:	0.0000	:
: PU39:	130.4429	:	0.0000	:	0.0000	:	0.0000	:
: PU42:	0.0273	:	0.0000	:	0.0000	:	0.0000	:
: AM41:	0.2300	:	0.0000	:	0.0000	:	0.0000	:
: CR :	31.6652	:	120.0687	:	25.7096	:	265.7437	:
: NI :	15.3545	:	54.4180	:	12.2109	:	122.6022	:
: FE :	134.4667	:	8440.5410	:	1416.1647	:	1165.1426	:
: AL :	0.9830	:	0.0000	:	0.0000	:	0.0000	:
: C :	219.9292	:	13.5907	:	2.2508	:	0.0000	:
: MO :	6.6308	:	0.0019	:	0.0001	:	0.0000	:
: MN :	1.7901	:	61.6479	:	10.4894	:	11.0065	:
: CU :	0.0585	:	0.0038	:	0.0059	:	0.0000	:
: H :	0.0000	:	0.0002	:	0.0005	:	0.0000	:
: SI :	0.8582	:	3.4794	:	0.7098	:	7.8613	:
: CL :	0.0000	:	0.0119	:	0.0295	:	0.0000	:
: F :	0.0000	:	0.0189	:	0.0468	:	0.0000	:
: SUM :	756.2274	:	8693.7813	:	1467.6182	:	1572.3563	:
: VOL :		:		:		:		:
: M**3:	0.1986	:	1.2184	:	0.2021	:	2.7742	:

Balance Data in Russian Codes

- The balance data are useful for
 - Validation of input data
 - Verification of cross-sections
 - Understanding of neutronics of the system

Balance Data in ICSBEP

- ICSBEP pays a lot of attention to the classification of the benchmark experiments
- Collection of the spectral characteristics of each experiment was started very soon after the project initiation
 - Yevgeniy Rozhikhin, Anatoli Tsiboulia, Tatiana Ivanova, J.Blair Briggs, Virginia F. Dean, “Detailed Spectra Data for The International Handbook of Evaluated Criticality Safety Benchmark Experiments,” ICNC’99 – Sixth International Conference on Nuclear Criticality Safety, September 20-24, 1999, Versailles, France

Balance Data in ICSBEP

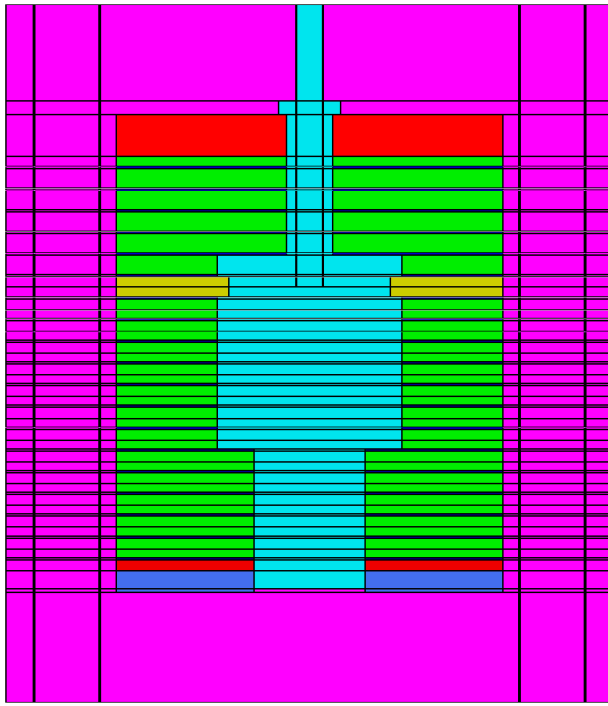
- Calculations were performed with the ABBN-93 299-energy-group cross section data using neutron transport codes
 - KENO-V.a
 - KENO-VI
 - MCNP
 - MMK-KENO
- Inputs are available on the ICSBEP Handbook CD-ROM

Data Necessary for Calculation of Balance and Spectra Data

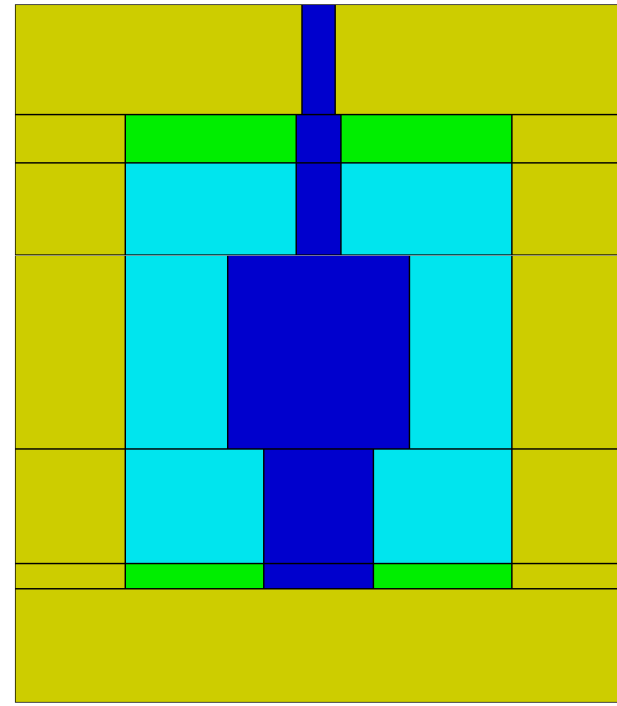
- Group microscopic cross-sections for all mixtures in the problem
 - From CONSYST (processing code of the ABBN cross sections) output
- Atomic densities of nuclides for all mixtures in the problem
 - From CONSYST (processing code of the ABBN cross sections) output
- Association of the mixture with the geometry region
 - From MMK, KENO5, KENO6, MCNP output
- Group neutron fluxes for all geometry regions
 - From MMK, KENO5, KENO6, MCNP output
- Volumes of all geometry regions
 - From MMK, KENO5, KENO6, MCNP output

Balance Data in ICSBEP

- Active core of the system was distinguished in the inputs



Big-10 Detailed Model



Big-10 Improved Model

Balance Data in ICSBEP

- In the September 2018 edition of the Handbook there are no balance data for
 - 252 cases out of 4916
- from
 - 51 evaluations out of 574

Balance Table Example for IEU-MET-FAST-007 - Big-10 Detailed Model (1/7)

DIMENSIONS:

VOLUME - cm³
MASS - kg
ATOMIC DENSITY - 1/barn-cm
CROSS SECTIONS - barn

SIG-X is the one group cross-section for reaction X, obtained by weighting the cross-section with the flux in the specific region.

NORMALISATION:

All reactions rates are normalised to 1000 neutrons emitted in the system. Furthermore, the following relation holds:

$$(\text{PRODUCT} + (n,2n)) / (\text{CAPTURE} + \text{FISSION} + \text{LEAKAGE}) = \text{KEFF}$$

BALANCE TABLE

NUMBER OF ZONES IN THE CORE: 5

THE CORE CONSISTS OF ZONES: 1 2 3 4 5

ZONE 1 VOLUME=1.1135E+04							FLUX=3.0660E-01			
ISOTOP	CONC	MASS	CAPTURE	FISSION	(n,2n)	PRODUCT	Sig-C	Sig-F	Sig-2N	NU
U234	4.9814E-4	2.156	0.53	0.81	0.00	2.06	0.314	0.474	0.000	2.555
U235	4.5034E-2	195.716	41.38	209.99	0.37	522.89	0.269	1.366	0.002	2.490
U236	1.3236E-4	0.578	0.10	0.06	0.00	0.16	0.215	0.138	0.002	2.639
U238	2.6056E-3	11.469	1.33	0.54	0.03	1.52	0.150	0.060	0.003	2.824
SI	0.0	0.000	0.00	0.00	0.00	0.00	0.003	0.000	0.000	0.000
CR	0.0	0.000	0.00	0.00	0.00	0.00	0.007	0.000	0.000	0.000
MN	0.0	0.000	0.00	0.00	0.00	0.00	0.009	0.000	0.000	0.000
FE	0.0	0.000	0.00	0.00	0.00	0.00	0.008	0.000	0.000	0.000
NI	0.0	0.000	0.00	0.00	0.00	0.00	0.030	0.000	0.000	0.000
NB	0.0	0.000	0.00	0.00	0.00	0.00	0.088	0.000	0.000	0.000
TOTAL		209.918	43.34	211.40	0.40	526.63				

Balance Table Example for IEU-MET-FAST-007 - Big-10 Detailed Model (2/7)

ZONE 2 VOLUME=1.7586E+04							FLUX=5.1716E-01			
ISOTOP	CONC	MASS	CAPTURE	FISSION	(n,2n)	PRODUCT	Sig-C	Sig-F	Sig-2N	NU
U234	2.4761E-5	0.169	0.07	0.10	0.00	0.26	0.316	0.456	0.000	2.540
U235	4.8461E-3	33.263	11.90	60.03	0.09	149.18	0.270	1.362	0.002	2.485
U236	4.3348E-5	0.299	0.08	0.05	0.00	0.13	0.215	0.122	0.001	2.626
U238	4.2695E-2	296.798	56.88	19.82	1.00	55.86	0.146	0.051	0.003	2.818
SI	0.0	0.000	0.00	0.00	0.00	0.00	0.003	0.000	0.000	0.000
CR	0.0	0.000	0.00	0.00	0.00	0.00	0.007	0.000	0.000	0.000
MN	0.0	0.000	0.00	0.00	0.00	0.00	0.009	0.000	0.000	0.000
FE	0.0	0.000	0.00	0.00	0.00	0.00	0.008	0.000	0.000	0.000
NI	0.0	0.000	0.00	0.00	0.00	0.00	0.027	0.000	0.000	0.000
NB	0.0	0.000	0.00	0.00	0.00	0.00	0.087	0.000	0.000	0.000
TOTAL		330.529	68.93	80.00	1.09	205.43				

ZONE 3 VOLUME=9.1879E+04							FLUX=2.9800E-01			
ISOTOP	CONC	MASS	CAPTURE	FISSION	(n,2n)	PRODUCT	Sig-C	Sig-F	Sig-2N	NU
U234	2.6518E-6	0.095	0.02	0.03	0.00	0.08	0.322	0.434	0.000	2.536
U235	3.4701E-4	12.444	2.65	13.07	0.02	32.43	0.279	1.376	0.002	2.482
U236	0.0	0.000	0.00	0.00	0.00	0.00	0.222	0.114	0.001	2.624
U238	4.7846E-2	1737.745	197.05	61.72	3.15	173.96	0.150	0.047	0.002	2.819
SI	0.0	0.000	0.00	0.00	0.00	0.00	0.003	0.000	0.000	0.000
CR	0.0	0.000	0.00	0.00	0.00	0.00	0.007	0.000	0.000	0.000
MN	0.0	0.000	0.00	0.00	0.00	0.00	0.009	0.000	0.000	0.000
FE	0.0	0.000	0.00	0.00	0.00	0.00	0.008	0.000	0.000	0.000
NI	0.0	0.000	0.00	0.00	0.00	0.00	0.027	0.000	0.000	0.000
NB	0.0	0.000	0.00	0.00	0.00	0.00	0.091	0.000	0.000	0.000
TOTAL		1750.284	199.73	74.82	3.17	206.47				

Balance Table Example for IEU-MET-FAST-007 - Big-10 Detailed Model

(3/7)

ZONE 4 VOLUME=4.9906E+03							FLUX=3.3942E-01			
ISOTOP	CONC	MASS	CAPTURE	FISSION	(n,2n)	PRODUCT	Sig-C	Sig-F	Sig-2N	NU
U234	2.8672E-7	0.001	0.00	0.00	0.00	0.00	0.323	0.432	0.000	2.535
U235	1.0058E-4	0.196	0.05	0.23	0.00	0.58	0.279	1.375	0.002	2.481
U236	1.1468E-6	0.002	0.00	0.00	0.00	0.00	0.221	0.112	0.001	2.623
U238	4.7677E-2	94.057	12.14	3.74	0.19	10.53	0.150	0.046	0.002	2.818
SI	0.0	0.000	0.00	0.00	0.00	0.00	0.003	0.000	0.000	0.000
CR	0.0	0.000	0.00	0.00	0.00	0.00	0.007	0.000	0.000	0.000
MN	0.0	0.000	0.00	0.00	0.00	0.00	0.009	0.000	0.000	0.000
FE	0.0	0.000	0.00	0.00	0.00	0.00	0.008	0.000	0.000	0.000
NI	0.0	0.000	0.00	0.00	0.00	0.00	0.026	0.000	0.000	0.000
NB	0.0	0.000	0.00	0.00	0.00	0.00	0.091	0.000	0.000	0.000
TOTAL		94.256	12.19	3.97	0.19	11.11				

ZONE 5 VOLUME=4.0941E+03							FLUX=1.5068E-01			
ISOTOP	CONC	MASS	CAPTURE	FISSION	(n,2n)	PRODUCT	Sig-C	Sig-F	Sig-2N	NU
U234	2.6458E-6	0.004	0.00	0.00	0.00	0.00	0.338	0.373	0.000	2.524
U235	3.4623E-4	0.553	0.06	0.30	0.00	0.74	0.303	1.409	0.001	2.472
U236	0.0	0.000	0.00	0.00	0.00	0.00	0.238	0.090	0.001	2.617
U238	4.7738E-2	77.260	4.75	1.07	0.06	3.00	0.161	0.036	0.002	2.818
SI	0.0	0.000	0.00	0.00	0.00	0.00	0.002	0.000	0.000	0.000
CR	0.0	0.000	0.00	0.00	0.00	0.00	0.007	0.000	0.000	0.000
MN	0.0	0.000	0.00	0.00	0.00	0.00	0.010	0.000	0.000	0.000
FE	0.0	0.000	0.00	0.00	0.00	0.00	0.008	0.000	0.000	0.000
NI	0.0	0.000	0.00	0.00	0.00	0.00	0.025	0.000	0.000	0.000
NB	0.0	0.000	0.00	0.00	0.00	0.00	0.101	0.000	0.000	0.000
TOTAL		77.817	4.81	1.37	0.06	3.75				

Balance Table Example for IEU-MET-FAST-007 - Big-10 Detailed Model (4/7)

ZONE 6 VOLUME=1.3078E+03							FLUX=5.4573E-02			
ISOTOP	CONC	MASS	CAPTURE	FISSION	(n,2n)	PRODUCT	Sig-C	Sig-F	Sig-2N	NU
U234	0.0	0.000	0.00	0.00	0.00	0.00	0.365	0.272	0.000	2.487
U235	0.0	0.000	0.00	0.00	0.00	0.00	0.343	1.465	0.001	2.457
U236	0.0	0.000	0.00	0.00	0.00	0.00	0.266	0.050	0.001	2.581
U238	0.0	0.000	0.00	0.00	0.00	0.00	0.187	0.017	0.001	2.813
SI	1.7154E-3	0.105	0.00	0.00	0.00	0.00	0.002	0.000	0.000	0.000
CR	1.6678E-2	1.883	0.01	0.00	0.00	0.00	0.007	0.000	0.000	0.000
MN	1.7539E-3	0.209	0.00	0.00	0.00	0.00	0.012	0.000	0.000	0.000
FE	5.7798E-2	7.010	0.02	0.00	0.00	0.00	0.006	0.000	0.000	0.000
NI	9.0296E-3	1.151	0.01	0.00	0.00	0.00	0.021	0.000	0.000	0.000
NB	5.1855E-4	0.105	0.00	0.00	0.00	0.00	0.118	0.000	0.000	0.000
TOTAL		10.462	0.05	0.00	0.00	0.00				

ZONE 7 VOLUME=4.0586E+01							FLUX=2.5877E-01			
ISOTOP	CONC	MASS	CAPTURE	FISSION	(n,2n)	PRODUCT	Sig-C	Sig-F	Sig-2N	NU
U234	0.0	0.000	0.00	0.00	0.00	0.00	0.324	0.430	0.000	2.535
U235	0.0	0.000	0.00	0.00	0.00	0.00	0.282	1.379	0.002	2.481
U236	0.0	0.000	0.00	0.00	0.00	0.00	0.223	0.112	0.001	2.623
U238	0.0	0.000	0.00	0.00	0.00	0.00	0.156	0.046	0.002	2.817
SI	1.7154E-3	0.003	0.00	0.00	0.00	0.00	0.003	0.000	0.000	0.000
CR	1.7604E-2	0.062	0.00	0.00	0.00	0.00	0.006	0.000	0.000	0.000
MN	1.7539E-3	0.006	0.00	0.00	0.00	0.00	0.009	0.000	0.000	0.000
FE	5.9308E-2	0.223	0.00	0.00	0.00	0.00	0.006	0.000	0.000	0.000
NI	7.5930E-3	0.030	0.00	0.00	0.00	0.00	0.026	0.000	0.000	0.000
NB	0.0	0.000	0.00	0.00	0.00	0.00	0.092	0.000	0.000	0.000
TOTAL		0.325	0.01	0.00	0.00	0.00				

Balance Table Example for IEU-MET-FAST-007 - Big-10 Detailed Model (5/7)

ZONE 9 VOLUME=1.2774E+04							FLUX=1.2074E-01			
ISOTOP	CONC	MASS	CAPTURE	FISSION	(n,2n)	PRODUCT	Sig-C	Sig-F	Sig-2N	NU
U234	2.6518E-6	0.013	0.00	0.00	0.00	0.00	0.352	0.318	0.000	2.503
U235	3.4701E-4	1.730	0.17	0.77	0.00	1.89	0.324	1.437	0.001	2.463
U236	0.0	0.000	0.00	0.00	0.00	0.00	0.252	0.066	0.001	2.597
U238	4.7846E-2	241.606	12.57	1.79	0.09	5.05	0.170	0.024	0.001	2.814
SI	0.0	0.000	0.00	0.00	0.00	0.00	0.002	0.000	0.000	0.000
CR	0.0	0.000	0.00	0.00	0.00	0.00	0.008	0.000	0.000	0.000
MN	0.0	0.000	0.00	0.00	0.00	0.00	0.011	0.000	0.000	0.000
FE	0.0	0.000	0.00	0.00	0.00	0.00	0.008	0.000	0.000	0.000
NI	0.0	0.000	0.00	0.00	0.00	0.00	0.023	0.000	0.000	0.000
NB	0.0	0.000	0.00	0.00	0.00	0.00	0.110	0.000	0.000	0.000
TOTAL		243.349	12.75	2.56	0.09	6.95				

ZONE 10 VOLUME=3.8214E+05							FLUX=4.7709E-02			
ISOTOP	CONC	MASS	CAPTURE	FISSION	(n,2n)	PRODUCT	Sig-C	Sig-F	Sig-2N	NU
U234	2.8672E-7	0.043	0.00	0.00	0.00	0.00	0.365	0.273	0.000	2.489
U235	1.0058E-4	15.002	0.63	2.69	0.00	6.60	0.342	1.464	0.001	2.457
U236	1.1468E-6	0.172	0.01	0.00	0.00	0.00	0.265	0.050	0.001	2.583
U238	4.7677E-2	7202.094	155.43	14.89	0.82	41.91	0.179	0.017	0.001	2.814
SI	0.0	0.000	0.00	0.00	0.00	0.00	0.002	0.000	0.000	0.000
CR	0.0	0.000	0.00	0.00	0.00	0.00	0.008	0.000	0.000	0.000
MN	0.0	0.000	0.00	0.00	0.00	0.00	0.012	0.000	0.000	0.000
FE	0.0	0.000	0.00	0.00	0.00	0.00	0.008	0.000	0.000	0.000
NI	0.0	0.000	0.00	0.00	0.00	0.00	0.022	0.000	0.000	0.000
NB	0.0	0.000	0.00	0.00	0.00	0.00	0.118	0.000	0.000	0.000
TOTAL		7217.310	156.06	17.58	0.82	48.51				

Balance Table Example for IEU-MET-FAST-007 - Big-10 Detailed Model

(6/7)

ZONE 11 VOLUME=5.1685E+03							FLUX=1.3349E-01			
ISOTOP	CONC	MASS	CAPTURE	FISSION	(n,2n)	PRODUCT	Sig-C	Sig-F	Sig-2N	NU
U234	2.6458E-6	0.005	0.00	0.00	0.00	0.00	0.347	0.337	0.000	2.509
U235	3.4623E-4	0.698	0.08	0.34	0.00	0.84	0.315	1.425	0.001	2.466
U236	0.0	0.000	0.00	0.00	0.00	0.00	0.247	0.074	0.001	2.603
U238	4.7738E-2	97.533	5.49	0.91	0.05	2.57	0.167	0.028	0.001	2.814
SI	0.0	0.000	0.00	0.00	0.00	0.00	0.002	0.000	0.000	0.000
CR	0.0	0.000	0.00	0.00	0.00	0.00	0.008	0.000	0.000	0.000
MN	0.0	0.000	0.00	0.00	0.00	0.00	0.011	0.000	0.000	0.000
FE	0.0	0.000	0.00	0.00	0.00	0.00	0.008	0.000	0.000	0.000
NI	0.0	0.000	0.00	0.00	0.00	0.00	0.023	0.000	0.000	0.000
NB	0.0	0.000	0.00	0.00	0.00	0.00	0.106	0.000	0.000	0.000
TOTAL		98.237	5.56	1.25	0.05	3.41				

CORE VOLUME=1.2968E+05							FLUX=3.2540E-01			
ISOTOP	CONC	MASS	CAPTURE	FISSION	(n,2n)	PRODUCT				
U234	4.8102E-5	2.424	0.63	0.94	0.00	2.40				
U235	4.7844E-3	242.171	56.05	283.62	0.48	705.80				
U236	1.7287E-5	0.879	0.18	0.11	0.00	0.29				
U238	4.3253E-2	2217.328	272.15	86.88	4.43	244.87				
SI	0.0	0.000	0.00	0.00	0.00	0.00				
CR	0.0	0.000	0.00	0.00	0.00	0.00				
MN	0.0	0.000	0.00	0.00	0.00	0.00				
FE	0.0	0.000	0.00	0.00	0.00	0.00				
NI	0.0	0.000	0.00	0.00	0.00	0.00				
NB	0.0	0.000	0.00	0.00	0.00	0.00				
TOTAL		2462.803	329.01	371.55	4.91	953.36				

Balance Table Example for IEU-MET-FAST-007 - Big-10 Detailed Model

(7/7)

OVER ALL REACTOR (10 ZONES)				FLUX=9.3261E-02	
ISOTOP	MASS	CAPTURE	FISSION	(n,2n)	PRODUCT
U234	2.485	0.63	0.94	0.00	2.41
U235	259.602	56.92	287.40	0.48	715.13
U236	1.051	0.19	0.11	0.00	0.29
U238	9758.564	445.62	104.48	5.39	294.38
SI	0.108	0.00	0.00	0.00	0.00
CR	1.945	0.01	0.00	0.00	0.00
MN	0.216	0.00	0.00	0.00	0.00
FE	7.233	0.03	0.00	0.00	0.00
NI	1.181	0.02	0.00	0.00	0.00
NB	0.105	0.00	0.00	0.00	0.00
TOTAL		503.42	392.94	5.87	1012.21

K-EFF = 1.0122837

LEAKAGE = 109.408

Balance Table Example for IEU-MET-FAST-007 - Big-10 Improved Model (1/2)

DIMENSIONS:

VOLUME - cm³
MASS - kg
ATOMIC DENSITY - 1/barn-cm
CROSS SECTIONS - barn

SIG-X is the one group cross-section for reaction X, obtained by weighting the cross-section with the flux in the specific region.

NORMALISATION:

All reactions rates are normalised to 1000 neutrons emitted in the system. Furthermore, the following relation holds:

$$(\text{PRODUCT} + (n,2n)) / (\text{CAPTURE} + \text{FISSION} + \text{LEAKAGE}) = \text{KEFF}$$

BALANCE TABLE

NUMBER OF ZONES IN THE CORE: 2
THE CORE CONSISTS OF ZONES: 1 2

ZONE 1 VOLUME=1.7586E+04							FLUX=5.1506E-01			
ISOTOP	CONC	MASS	CAPTURE	FISSION	(n,2n)	PRODUCT	Sig-C	Sig-F	Sig-2N	NU
U234	2.4761E-5	0.169	0.07	0.10	0.00	0.26	0.316	0.455	0.000	2.539
U235	4.8461E-3	33.263	11.87	59.79	0.09	148.56	0.270	1.362	0.002	2.485
U236	4.3348E-5	0.299	0.08	0.05	0.00	0.13	0.215	0.121	0.001	2.625
U238	4.2695E-2	296.799	56.68	19.52	0.98	54.99	0.147	0.050	0.003	2.817
TOTAL		330.529	68.70	79.46	1.07	203.94				

ZONE 2 VOLUME=1.0732E+05							FLUX=3.0306E-01			
ISOTOP	CONC	MASS	CAPTURE	FISSION	(n,2n)	PRODUCT	Sig-C	Sig-F	Sig-2N	NU
U234	5.4058E-5	2.255	0.56	0.77	0.00	1.97	0.321	0.440	0.000	2.538
U235	4.9831E-3	208.730	44.87	222.37	0.31	552.09	0.277	1.372	0.002	2.483
U236	1.3733E-5	0.578	0.10	0.05	0.00	0.14	0.220	0.117	0.001	2.625
U238	4.3108E-2	1828.787	209.71	68.15	3.42	191.99	0.150	0.049	0.002	2.817
TOTAL		2040.350	255.23	291.34	3.72	746.18				

Balance Table Example for IEU-MET-FAST-007 - Big-10 Improved Model (2/2)

ZONE 3 VOLUME=2.1805E+04							FLUX=1.2548E-01			
ISOTOP	CONC	MASS	CAPTURE	FISSION	(n,2n)	PRODUCT	Sig-C	Sig-F	Sig-2N	NU
U234	2.6518E-6	0.022	0.00	0.00	0.00	0.01	0.350	0.324	0.000	2.505
U235	3.4701E-4	2.953	0.30	1.36	0.00	3.35	0.321	1.433	0.001	2.464
U236	0.0	0.000	0.00	0.00	0.00	0.00	0.250	0.069	0.001	2.599
U238	4.7846E-2	412.408	22.12	3.32	0.17	9.34	0.169	0.025	0.001	2.813
TOTAL		415.384	22.43	4.68	0.17	12.70				

ZONE 4 VOLUME=3.8589E+05							FLUX=4.7810E-02			
ISOTOP	CONC	MASS	CAPTURE	FISSION	(n,2n)	PRODUCT	Sig-C	Sig-F	Sig-2N	NU
U234	2.8672E-7	0.043	0.00	0.00	0.00	0.00	0.364	0.274	0.000	2.488
U235	1.0058E-4	15.149	0.63	2.71	0.00	6.67	0.341	1.463	0.001	2.457
U236	1.1468E-6	0.173	0.01	0.00	0.00	0.00	0.265	0.050	0.001	2.582
U238	4.7677E-2	7272.764	156.94	15.04	0.81	42.31	0.178	0.017	0.001	2.813
TOTAL		7288.129	157.58	17.76	0.81	48.99				

CORE VOLUME=1.2491E+05							FLUX=3.3291E-01			
ISOTOP	CONC	MASS	CAPTURE	FISSION	(n,2n)	PRODUCT				
U234	4.9933E-5	2.424	0.63	0.88	0.00	2.22				
U235	4.9638E-3	241.992	56.73	282.16	0.39	700.65				
U236	1.7903E-5	0.876	0.18	0.10	0.00	0.26				
U238	4.3050E-2	2125.586	266.38	87.67	4.40	246.98				
TOTAL		2370.879	323.93	370.80	4.79	950.11				

OVER ALL REACTOR (4 ZONES)							FLUX=9.3537E-02			
ISOTOP	MASS	CAPTURE	FISSION	(n,2n)	PRODUCT					
U234	2.489	0.64	0.88	0.00	2.23					
U235	260.095	57.67	286.23	0.39	710.67					
U236	1.050	0.19	0.10	0.00	0.26					
U238	9810.757	445.45	106.03	5.38	298.64					
TOTAL		503.94	393.24	5.78	1011.80					

K-EFF = 1.0117725

LEAKAGE = 108.562

Comparison of the Detailed and Improved Models of IEU-MET-FAST-007

CORE	VOLUME=1.2968E+05		FLUX=3.2540E-01				CORE	VOLUME=1.2491E+05		FLUX=3.3291E-01			
ISOTOP	CONC	MASS	CAPTURE	FISSION	(n,2n)	PRODUCT	ISOTOP	CONC	MASS	CAPTURE	FISSION	(n,2n)	PRODUCT
U234	4.8102E-5	2.424	0.63	0.94	0.00	2.40	U234	4.9933E-5	2.424	0.63	0.88	0.00	2.22
U235	4.7844E-3	242.171	56.05	283.62	0.48	705.80	U235	4.9638E-3	241.992	56.73	282.16	0.39	700.65
U236	1.7287E-5	0.879	0.18	0.11	0.00	0.29	U236	1.7903E-5	0.876	0.18	0.10	0.00	0.26
U238	4.3253E-2	2217.328	272.15	86.88	4.43	244.87	U238	4.3050E-2	2125.586	266.38	87.67	4.40	246.98
TOTAL		2462.803	329.01	371.55	4.91	953.36	TOTAL		2370.879	323.93	370.80	4.79	950.11

OVER ALL REACTOR (10 ZONES)		FLUX=9.3261E-02			
ISOTOP	MASS	CAPTURE	FISSION	(n,2n)	PRODUCT
U234	2.485	0.63	0.94	0.00	2.41
U235	259.602	56.92	287.40	0.48	715.13
U236	1.051	0.19	0.11	0.00	0.29
U238	9758.564	445.62	104.48	5.39	294.38
SI	0.108	0.00	0.00	0.00	0.00
CR	1.945	0.01	0.00	0.00	0.00
MN	0.216	0.00	0.00	0.00	0.00
FE	7.233	0.03	0.00	0.00	0.00
NI	1.181	0.02	0.00	0.00	0.00
NB	0.105	0.00	0.00	0.00	0.00
TOTAL		503.42	392.94	5.87	1012.21

K-EFF = 1.0122837

LEAKAGE = 109.408

OVER ALL REACTOR (4 ZONES)		FLUX=9.3537E-02			
ISOTOP	MASS	CAPTURE	FISSION	(n,2n)	PRODUCT
U234	2.489	0.64	0.88	0.00	2.23
U235	260.095	57.67	286.23	0.39	710.67
U236	1.050	0.19	0.10	0.00	0.26
U238	9810.757	445.45	106.03	5.38	298.64
TOTAL		503.94	393.24	5.78	1011.80

K-EFF = 1.0117725

LEAKAGE = 108.562

Balance Data in DICE

DICE Database=LocalShared Personal=Keff Window Help

Critical / Subcritical Alarm / Shielding Fundamental Physics Correlation Matrix Rank Similar Keff trends plots

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Fuel composition (isotope wt%)

- ☒ Fuel concentration (g/l)
- ☒ Pu(U+Pu) ratio
- ☐ Moderator/coolant
- ☐ Moderator/coolant
- ☐ Moderator ratio type
- ☐ Moderator ratio
- ☐ Moderator to fuel ratio
- ☐ Moderator to fissile ratio
- ☐ Neutron absorbing mat.
- ☐ Solid poison
- ☐ Soluble poison
- ☐ Concentration (g/l)
- ☐ Cladding
- ☐ Reflector
- ☐ Separator
- ☐ Geometry
- ☐ Core geometry
- ☐ Core description
- ☐ Number of fissile units
- ☐ Pitch type
- ☐ Pitch (cm)
- ☐ Fuel unit geometry
- ☐ Model temperature (K)
- ☐ Fuel area composition
- ☐ % Fissions
- ☐ % Captures
- ☐ Benchmark Keff and uncertainty
- ☐ Benchmark Keff
- ☐ Benchmark Keff uncertainty
- ☐ Calculations
- ☐ Calculated Keff
- ☐ Calculated Keff uncertainty
- ☐ C/E
- ☐ Energy, spectra, sensitivities
- ☐ EALF (eV)
- ☐ AFGE (eV)
- ☐ Flux < 0.625 eV
- ☐ Flux 0.625 eV - 100 keV
- ☐ Flux > 100 keV
- ☐ Fission < 0.625 eV
- ☐ Fission 0.625 eV - 100 keV
- ☐ Fission > 100 keV
- ☐ Capture < 0.625 eV
- ☐ Capture 0.625 eV - 100 keV
- ☐ Capture > 100 keV
- ☐ Neutron gas temperature (K)
- ☐ Avg fiss. neut. per neut. absorbed in the core
- ☐ Keff Sensitivity < 0.625 eV (%dk/%Z)
- ☐ Keff Sensitivity 0.625 eV - 100 keV (%dk/%Z)
- ☐ Keff Sensitivity > 100 keV (%dk/%Z)
- ☐ Total Keff Sensitivity over all energy (%dk/%Z)
- ☐ Calculation Files
- ☒ Inputs
- ☒ Balances
- ☒ Sensitivities
- ☒ Spectra
- ☐ Correlation Matrices
- ☐ Uncertainties Evaluation
- ☐ Uncertainties Case Numeric
- ☐ Sensitivities Case Numeric

Uncheck all Apply

23 Evaluations, 41 Cases

Subcase identification	Case label	Input Code	Input Library	Input	Balance Code	Balance Library	Sensitivities Code	Sensitivities Library	Sensitivities	Spectra Code	Spectra Library	Spectra	wt% U234	wt% U235	
IEU-MET-FAST-001					KENO	ABBH-93 / 299-Group	Balance	KENO	ENDF/B-VI.0 / 238-Group	Sensitivity	KENO	ABBH-93 / 299-Group	Spectra	0.05%	10.06%

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Balance Data in DICE

The screenshot shows the DICE software interface with the 'Balance file' window open. The window displays a list of evaluation identifiers on the left, a central text area with balance data, and a table of balance data on the right.

Balance Data:

Zone 1:

ISOTOP	CONC	MASS	CAPTURE	FISSION	(n,2n)	PRODUCT	Sig-C	Sig-F	Sig-2N	NU
U234	4.9814E-04	2.156	0.54	0.82	0.00	2.09	0.316	0.482	0.000	2.553
U235	4.5034E-02	195.714	41.35	209.97	0.37	522.84	0.269	1.366	0.002	2.490
U236	1.3236E-04	0.578	0.10	0.06	0.00	0.17	0.213	0.139	0.001	2.650
U238	2.6056E-03	11.469	1.33	0.54	0.03	1.52	0.150	0.060	0.003	2.824
SI	0.0000E+00	0.000	0.00	0.00	0.00	0.00	0.003	0.000	0.000	0.000
CR	0.0000E+00	0.000	0.00	0.00	0.00	0.00	0.007	0.000	0.000	0.000
MN	0.0000E+00	0.000	0.00	0.00	0.00	0.00	0.009	0.000	0.000	0.000
FE	0.0000E+00	0.000	0.00	0.00	0.00	0.00	0.008	0.000	0.000	0.000
NI	0.0000E+00	0.000	0.00	0.00	0.00	0.00	0.030	0.000	0.000	0.000
NB	0.0000E+00	0.000	0.00	0.00	0.00	0.00	0.087	0.000	0.000	0.000
TOTAL:			43.32	211.39	0.40	526.62				

Zone 2:

ISOTOP	CONC	MASS	CAPTURE	FISSION	(n,2n)	PRODUCT	Sig-C	Sig-F	Sig-2N	NU
U234	2.4761E-05	0.169	0.07	0.10	0.00	0.27	0.318	0.465	0.000	2.537
U235	4.8461E-03	33.262	11.87	59.90	0.09	148.86	0.270	1.362	0.002	2.485
U236	4.3348E-05	0.299	0.08	0.05	0.00	0.13	0.213	0.124	0.001	2.637
U238	4.2695E-02	296.796	56.75	19.77	0.98	55.67	0.146	0.051	0.003	2.817
SI	0.0000E+00	0.000	0.00	0.00	0.00	0.00	0.003	0.000	0.000	0.000
CR	0.0000E+00	0.000	0.00	0.00	0.00	0.00	0.007	0.000	0.000	0.000
MN	0.0000E+00	0.000	0.00	0.00	0.00	0.00	0.009	0.000	0.000	0.000
FE	0.0000E+00	0.000	0.00	0.00	0.00	0.00	0.008	0.000	0.000	0.000
NI	0.0000E+00	0.000	0.00	0.00	0.00	0.00	0.027	0.000	0.000	0.000
NB	0.0000E+00	0.000	0.00	0.00	0.00	0.00	0.087	0.000	0.000	0.000
TOTAL:			68.77	79.82	1.07	204.93				

Zone 3:

ISOTOP	CONC	MASS	CAPTURE	FISSION	(n,2n)	PRODUCT	Sig-C	Sig-F	Sig-2N	NU
U234	2.6518E-06	0.095	0.02	0.03	0.00	0.08	0.324	0.442	0.000	2.534
U235	3.4701E-04	12.444	2.45	13.07	0.02	32.43	0.279	1.375	0.002	2.482
U236	0.0000E+00	0.000	0.00	0.00	0.00	0.00	0.220	0.116	0.001	0.000
U238	4.7846E-02	1737.729	197.01	61.76	3.15	174.08	0.150	0.047	0.002	2.818
SI	0.0000E+00	0.000	0.00	0.00	0.00	0.00	0.003	0.000	0.000	0.000
CR	0.0000E+00	0.000	0.00	0.00	0.00	0.00	0.007	0.000	0.000	0.000
MN	0.0000E+00	0.000	0.00	0.00	0.00	0.00	0.009	0.000	0.000	0.000
FE	0.0000E+00	0.000	0.00	0.00	0.00	0.00	0.008	0.000	0.000	0.000
NI	0.0000E+00	0.000	0.00	0.00	0.00	0.00	0.027	0.000	0.000	0.000
NB	0.0000E+00	0.000	0.00	0.00	0.00	0.00	0.091	0.000	0.000	0.000
TOTAL:			199.68	74.86	3.17	206.59				

The interface also shows a list of evaluation identifiers on the left, including 'EU-MET-FAST-001' through 'EU-MET-FAST-023'. The bottom status bar indicates '23 Evaluations, 41 Cases'.

Known Issues

- DICE contains data for only one configuration of the case
- No revision control for inputs and balance data

Current Work

- Input files for the 299-group ABBN-93 cross-sections are converted for calculations with the continuous-energy ROSFOND cross-sections
- Calculations are in progress

Thank you for your attention!
