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Uncertainty Estimates on the Main Integral Parameters of Fast Systems using AFCI-1.3 Covariance Matrices

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AFCI covariance matrix

- A first release of the matrix (AFCI1.0) was made in November 2008 in a 33 energy group structure.

- An updated version of the matrix, called AFCI1.1, was released by BNL and LALN in May 2009: Pu239 (only ν), Fe56, Cr50, Ni58, C, O, Na23, B10, Zr90 and Mn55 were reprocessed.

- The AFCI1.2 matrix was released in August 2009: 14 MAs were updated as guided by Maslov review and missing correlation matrices were recovered; U235 capture and Pu239 ν were updated; Structural materials (Cr, Fe, Ni, Pb, Bi) were reviewed and updated.

- The latest version AFCI1.3 was released in April 2010: U233, U234, U235, U236, U238, Np237, Pu238, Pu239, Pu240, Pu241, Pu242, Am243, Cm242, Cm244, Fe54, Fe56, Cr52, Ni58, Na23, Mn55 have been reviewed. All other isotopes remain as in the AFCI1.2 matrix.

- The present work shows an extensive application of the recent AFCI1.3 matrix, with the determination of the uncertainty for the main integral parameters (multiplication factor, power peaking factor, Doppler reactivity coefficient, coolant void reactivity worth and burnup reactivity swing) of a series of fast reactors (ABR metal core, ABR oxide core, SFR, EFR, GFR, LFR, ADMAB).
  The obtained AFCI1.3 parameter uncertainties are also compared with the results obtained with the BOLNA and AFCI1.2 covariance matrices.

Features of the Investigated Systems

System	Coolant	Fuel Type	%TRU in (U+TRU)	% MA[a] in (U+TRU)	Power [MW_{th}]
ABR Metal Core	Na	Metal	18.5 – 24.2 [b]	1.5 – 2.2 [b]	1000
ABR Oxide Core	Na	MOX	23.2 – 37.1[b]	2.2 – 4.1 [b]	1000
SFR	Na	Metal	60.5	10.6	840
EFR	Na	MOX	23.7	1.2	3600
GFR	He	Carbide	21.7	5.0	2400
LFR	Pb	Metal	23.3	2.4	900
ADMAB	LBE	Nitride	100	68.0	380

[a] MA: Minor Actinides;

[b] Inner Core – Outer Core.

Total Nuclear Data Uncertainties (%) for Sodium Cooled Fast Neutron Systems

Reactor		Multiplication Factor	Power Peaking Factor	Doppler Coefficient	Coolant Void Worth	Burnup Reactivity Swing [a]
ABR Metal [b]	BOLNA	1.47			13.10	
	AFCI1.2	1.54			10.32	
	AFCI1.3	1.34			13.07	
ABR Oxide [b]	BOLNA	1.44			7.82	
	AFCI1.2	1.49			5.60	
	AFCI1.3	1.19			6.17	
SFR	BOLNA	1.86	0.45	5.57	17.11	4.59
	AFCI1.2	2.16	0.22	6.88	14.02	5.11
	AFCI1.3	1.81	0.30	6.62	14.29	4.38
EFR	BOLNA	1.27	1.18	3.80	7.83	7.29
	AFCI1.2	1.29	1.01	4.03	5.40	6.36
	AFCI1.3	1.14	1.09	3.84	5.97	5.52

[a] Sensitivity coefficients calculated with the Depletion Perturbation Theory implemented in the ANL code REBUS3-DPT;

[b] Sensitivity coefficients determined with DIF3D/VARI3D code;

Sensitivity coefficients of all other parameters were determined in the Sg26 activities with the ERANOS/BISTRO code.

Total Nuclear Data Uncertainties (%) for Fast Neutron Systems

Reactor		Multiplication Factor	Power Peaking Factor	Doppler Coefficient	Coolant Void Worth	Burnup Reactivity Swing [a]
GFR	BOLNA	1.89	1.68	5.51	7.67	35.99
	AFCI1.2	1.95	1.71	5.44	6.75	35.33
	AFCI1.3	1.74	1.69	5.02	6.53	25.63
LFR	BOLNA	1.40	0.64	4.35	7.18	8.61
	AFCI1.2	1.67	0.58	6.20	9.81	9.52
	AFCI1.3	1.43	0.59	6.24	9.71	6.89
ABMAB	BOLNA	2.90	21.42	-	15.49	
	AFCI1.2	2.46	17.99	-	13.89	
	AFCI1.3	2.23	16.37		13.86	

[a] Sensitivity coefficients calculated with the Depletion Perturbation Theory implemented in the ANL code REBUS3-DPT; Sensitivity coefficients of all other parameters were determined in the Sg26 activities with the ERANOS/BISTRO code.

Sensitivity/Uncertainty Analysis of Burnup Reactivity Swing

In the present study, the sensitivity coefficients for the burnup reactivity swing were calculated using the depletion perturbation theory code DPT, based on the non-equilibrium and equilibrium fuel cycle analysis methodologies of REBUS-3 in **diffusion** theory. Cross-sections were processed with the MC^2-2 code using ENDF/B-VII nuclear data.

For a multiplication factor, k, DPT is able to determine the direct ("static"), density, flux and power terms of the sensitivity coefficients according to the general formulation:

Direct "Static" Term

Flux Term

$$S_k = \left(\frac{\delta k}{\delta \sigma} \cdot \frac{\sigma}{k}\right) = \frac{\sigma}{k}\left(\frac{\partial k}{\partial \sigma} + \frac{\partial k}{\partial N}\frac{\partial N}{\partial \sigma} + \frac{\partial k}{\partial \Phi}\frac{\partial \Phi}{\partial \sigma} + \frac{\partial k}{\partial \Phi^*}\frac{\partial \Phi^*}{\partial \sigma} + \frac{\partial k}{\partial P}\frac{\partial P}{\partial \sigma}\right)$$

Density Term

Power Term

Sensitivity/Uncertainty Analysis of Burnup Reactivity Swing

- Direct term, $\frac{\sigma}{k}.\frac{\partial k}{\partial \sigma}$: explicit derivative of the response parameter with respect to cross sections;
- Nuclide density term, $\frac{\sigma}{k}\left(\frac{\partial k}{\partial N}\frac{\partial N}{\partial \sigma}\right)$: variation of the response through the nuclide transmutation rate changes;
- Flux term, $\frac{\sigma}{k}\left(\frac{\partial k}{\partial \Phi}\frac{\partial \Phi}{\partial \sigma}+\frac{\partial k}{\partial \Phi^*}\frac{\partial \Phi^*}{\partial \sigma}\right)$: variation of the response during burnup through the changes in flux distribution in space and energy for fixed flux level;
- Power terms, $\frac{\sigma}{k}\left(\frac{\partial k}{\partial P}\frac{\partial P}{\partial \sigma}\right)$: variation of the response during burnup through the changes in flux level for given power level.

In the case of the BOC multiplication factor, only the direct ("static") term is to be determined.

The sensitivity coefficients for a burnup reactivity swing are obtained as:

$$S_{\Delta\rho}=\frac{\partial(\Delta\rho)}{\partial\sigma}\cdot\frac{\sigma}{\Delta\rho} \quad = \quad \frac{1}{\Delta\rho}\left(\frac{1}{k_{EOC}}S_{k_{EOC}}-\frac{1}{k_{BOC}}S_{k_{BOC}}\right)$$

$$\Delta\rho=-\frac{1}{k_{EOC}}+\frac{1}{k_{BOC}}$$

Sensitivity/Uncertainty Analysis of Burnup Reactivity Swing

For the Sg26 activity, the sensitivity coefficients were calculated with the ERANOS code system, that presently doesn't include the depletion perturbation theory. As consequence, for the burnup reactivity swing sensitivities, the flux and power terms were neglected, the direct "static" term was determined with no approximations and the density term:

$$S_{\Delta\rho(\Delta N)} = \frac{\sigma}{\Delta\rho} \cdot \left[\frac{\partial(\Delta\rho)}{\partial N} \frac{\partial N}{\partial \sigma} \right]$$

was obtained using an approximate approach.

With more details, the term $\partial N/\partial\sigma$ was calculated with the cell depletion code NUTS, using 1 energy group core averaged cross-sections and fluxes obtained from the spatial calculations.

Then, the term $\partial(\Delta\rho)/\partial N$ was estimated with the ERANOS perturbation modules by determining the change in reactivity $\delta(\Delta\rho)$ subsequent to a variation δN in the number density of each isotope. This variation δN was arbitrary chosen as the uncertainty ΔN obtained by folding the NUTS sensitivity coefficients, $\partial N/\partial\sigma$, with the BOLNA covariance matrix.

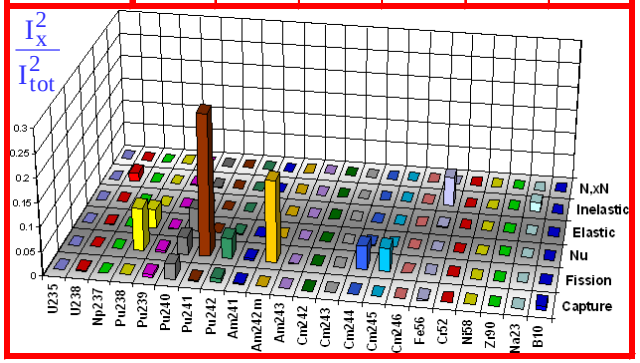
Breakdown of DPT Uncertainty Components for the Burnup Reactivity Swing with AFCI1.3

	SFR	EFR	GFR	LFR
Direct Term	3.41	1.42	16.31	1.77
Density Term	3.75	5.74	14.81	6.86
Flux Term	0.26	2.56	9.96	4.09
Power Term	2.01	0.52	0.86	1.10
Total	**4.38**	**5.52**	**25.63**	**6.89**

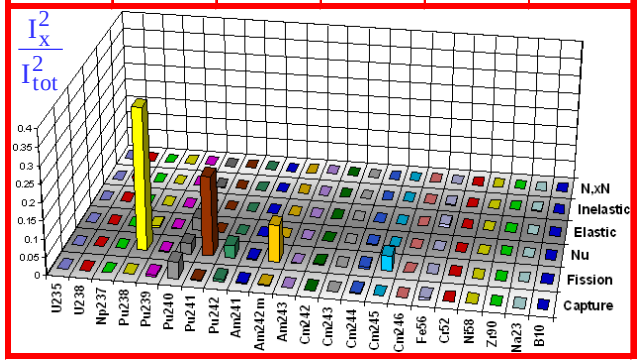
- Flux and power terms are not negligible;
- The density term brings most of the uncertainty on the burnup reactivity swing.

Uncertainty Breakdown

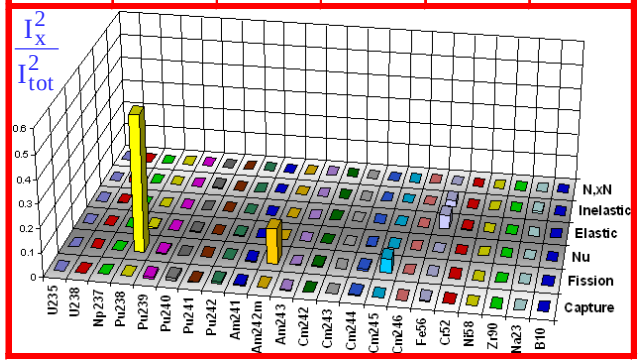
SFR k_{eff}: BOLNA Uncertainties (%) by Isotope						
Isotope	σ_{capt}	σ_{fiss}	ν	σ_{el}	σ_{inel}	**Total**
U238	[a]				0.24	**0.26**
Pu238		0.56	0.36			**0.67**
Pu239	0.13	0.13				**0.20**
Pu240	0.33	0.35	0.41			**0.63**
Pu241	0.06	1.01				**1.01**
Pu242	0.18	0.38				**0.43**
Am241	0.07	0.09				**0.11**
Am242m	0.05	0.77				**0.77**
Cm242		0.04				**0.04**
Cm244	0.04	0.41	0.08			**0.42**
Cm245		0.41				**0.41**
Fe56	0.10			0.09	0.46	**0.48**
Cr52				0.05		**0.06**
Na23					0.26	**0.26**
B10	0.18					**0.18**
Total	**0.47**	**1.60**	**0.57**	**0.12**	**0.58**	**1.86**



SFR k_{eff}: AFCI1.2 Uncertainties (%) by Isotope					
σ_{capt}	σ_{fiss}	ν	σ_{el}	σ_{inel}	**Total**
				0.25	**0.26**
	1.36	0.16			**1.37**
0.13	0.13				**0.21**
0.46	0.38	0.42			**0.73**
0.12	1.02				**1.02**
0.20	0.40				**0.46**
0.11	0.10				**0.16**
0.10	0.69				**0.70**
	0.12				**0.12**
0.13	0.15	0.12			**0.23**
	0.43				**0.44**
0.17			0.19	0.08	**0.27**
			0.02		**0.03**
				0.11	**0.12**
0.02					**0.02**
0.61	**1.98**	**0.49**	**0.21**	**0.30**	**2.16**



SFR k_{eff}: AFCI1.3 Uncertainties (%) by Isotope					
σ_{capt}	σ_{fiss}	ν	σ_{el}	σ_{inel}	**Total**
				0.25	**0.26**
	1.36	0.16			**1.37**
0.13	0.13				**0.21**
0.19	0.09	0.11			**0.28**
0.12	0.06				**0.14**
0.19	0.08				**0.22**
0.11	0.10				**0.16**
0.10	0.69				**0.70**
	0.12				**0.12**
0.13	0.15	0.12			**0.23**
	0.43				**0.44**
0.15			0.43	0.30	**0.55**
			0.12		**0.12**
				0.16	**0.16**
0.02					**0.02**
0.42	**1.61**	**0.27**	**0.46**	**0.45**	**1.81**



[a] **Contribution nul or less than 0.1%**

Isotope/Reaction Contributing to 90% of Multiplication Factor Uncertainty with BOLNA, AFCI1.2 and AFCI1.3

	ABR Metal			ABR Oxide			SFR	EFR
	BOLNA	AFCI1.2	AFCI1.3	BOLNA	AFCI1.2	AFCI1.3	AFCI1.3	AFCI1.3
U238 σ_{capt}	0.28	0.18	0.18	0.33	0.21	0.21		0.25
U238 σ_{inel}	0.97	1.00	1.00	0.76	0.78	0.78		0.90
Pu238 σ_{fiss}	0.22	0.56	0.56	0.23	0.57	0.57	1.36	0.34
Pu239 σ_{capt}				0.19	0.19	0.19		0.25
Pu239 σ_{fiss}	0.21	0.21	0.20					0.20
Pu240 σ_{capt}				0.25	0.30	0.14		
Pu240 σ_{fiss}	0.27	0.28	0.07	0.26	0.30	0.08		
Pu240 ν	0.30	0.31	0.09	0.31	0.31	0.08		
Pu241 σ_{fiss}	0.65	0.67	0.04	0.77	0.77	0.06		
Am242m σ_{fiss}							0.69	
Cm245 σ_{fiss}				0.26	0.28	0.28	0.43	
Fe56 σ_{el}	0.05	0.13	0.28				0.43	
Fe56 σ_{inel}	0.35	0.07	0.24	0.35	0.07	0.24		
Total [(a)]	**1.33**	**1.39**	**1.22**	**1.30**	**1.35**	**1.07**	**1.64**	**1.04**
Overall [(b)]	**1.47**	**1.54**	**1.34**	**1.44**	**1.49**	**1.19**	**1.81**	**1.14**

[(a)] Total uncertainties yield by the cross sections listed in the Table;

[(b)] Overall uncertainties yield by all cross sections.

Uncertainty Breakdown

Isotope/Reaction Contributing to 90% of Multiplication Factor Uncertainty with BOLNA, AFCI1.2 and AFCI1.3

	GFR			LFR			ADMAB		
	BOLNA	AFCI1.2	AFCI1.3	BOLNA	AFCI1.2	AFCI1.3	BOLNA	AFCI1.2	AFCI1.3
U238 σ_{capt}	0.41	0.29	0.29	0.25	0.16	0.16			
U238 σ_{inel}	1.42	1.49	1.49	0.73	0.74	0.74			
Pu238 σ_{fiss}	0.20	0.53	0.53	0.34	0.94	0.94	0.21	0.53	0.53
Pu238 ν				0.23	0.10	0.10			
Pu240 σ_{capt}				0.27	0.39	0.13			
Pu240 σ_{fiss}				0.29	0.30	0.08			
Pu240 ν				0.33	0.34	0.11			
Pu241 σ_{fiss}	0.82	0.79	0.07	0.61	0.64	0.03	1.04	1.05	0.06
Am241 σ_{capt}							0.45	0.79	0.79
Am241 σ_{fiss}							0.82	0.94	0.94
Am243 σ_{fiss}							0.32	0.44	0.44
Cm244 σ_{fiss}							1.90	0.65	0.65
Cm244 ν							0.36	0.50	0.50
Cm245 σ_{fiss}				0.22	0.23	0.23	1.04	1.09	1.09
Fe56 σ_{inel}							0.83	0.12	0.50
C σ_{el}	0.31	0.05	0.05						
Pb206 σ_{inel}				0.18	0.41	0.41			
Pb208 σ_{el}				0.13	0.24	0.24			
B10 σ_{capt}				0.44	0.04	0.04			
Total [(a)]	**1.72**	**1.77**	**1.58**	**1.28**	**1.51**	**1.29**	**2.67**	**2.22**	**2.02**
Overall [(b)]	**1.89**	**1.95**	**1.74**	**1.40**	**1.67**	**1.43**	**2.90**	**2.46**	**2.23**

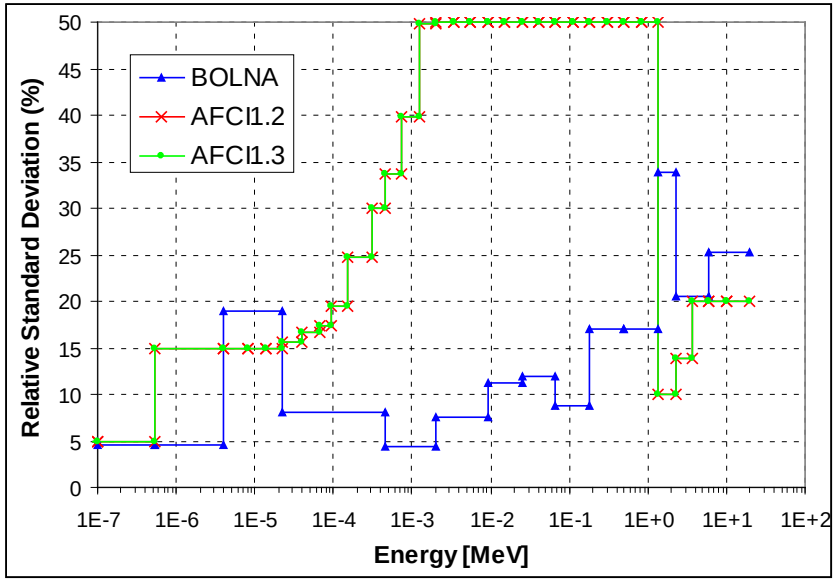
[(a)] Total uncertainties yield by the cross sections listed in the Table;

[(b)] Overall uncertainties yield by all cross sections.

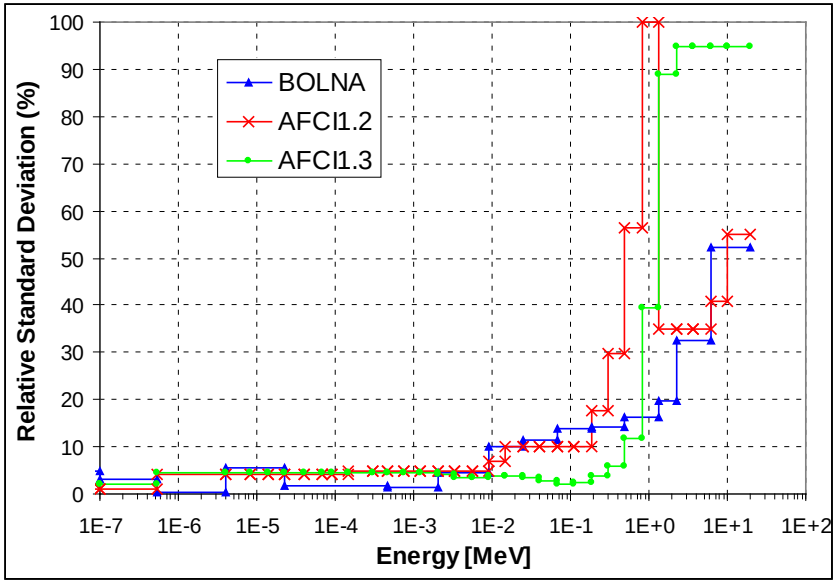
Uncertainty Breakdown

- Pu isotopes above 240, especially for fission and in some cases for capture and ν, yield uncertainties with AFCI1.3 that are much smaller than with the other matrices.
- For the Pu238 fission no changes have been made in AFCI1.3 with respect to AFCI1.2 and the cross section still brings much larger uncertainties than with BOLNA.
- For Cm242 and Cm244 fission no changes are observed using AFCI1.3 with respect to AFCI1.2, despite the relevant discrepancies observed with the BOLNA values.
- The elastic and inelastic reactions of structural isotopes as Fe56, Cr52 and Na bring with AFCI1.3 rather larger uncertainties than with AFCI1.2.
- Using AFCI1.2, Pb206 inelastic yields much larger and B10 capture much smaller uncertainties than with BOLNA and nothing has been changed for these reactions in AFCI1.3 with respect to AFCI1.2.

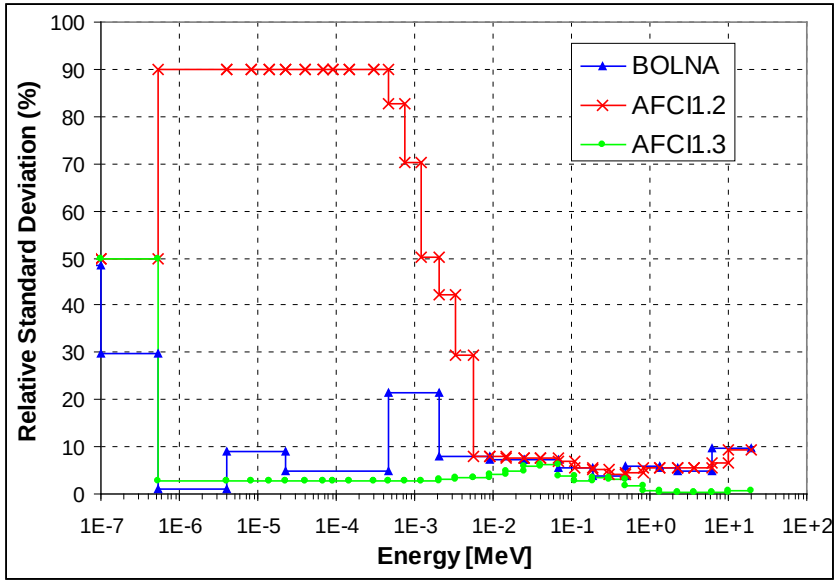
Relative Standard Deviations



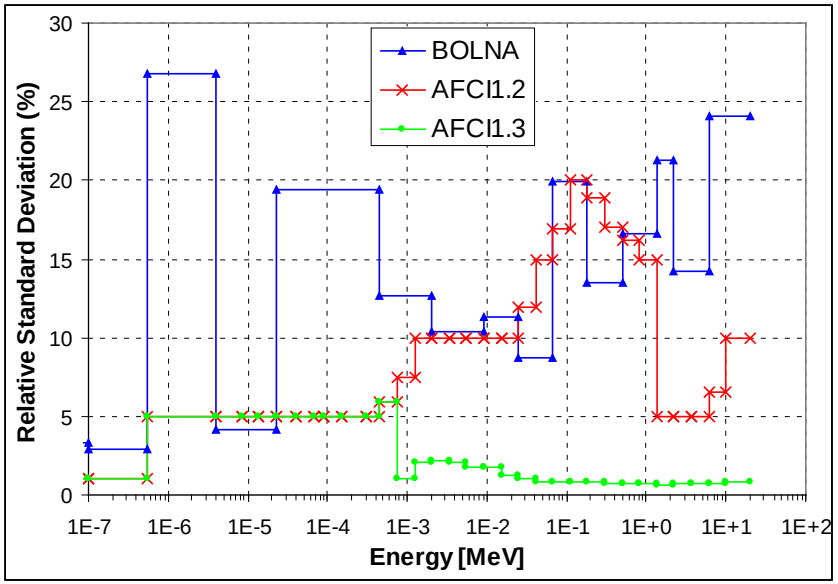
Pu238 Fission



Pu240 Capture

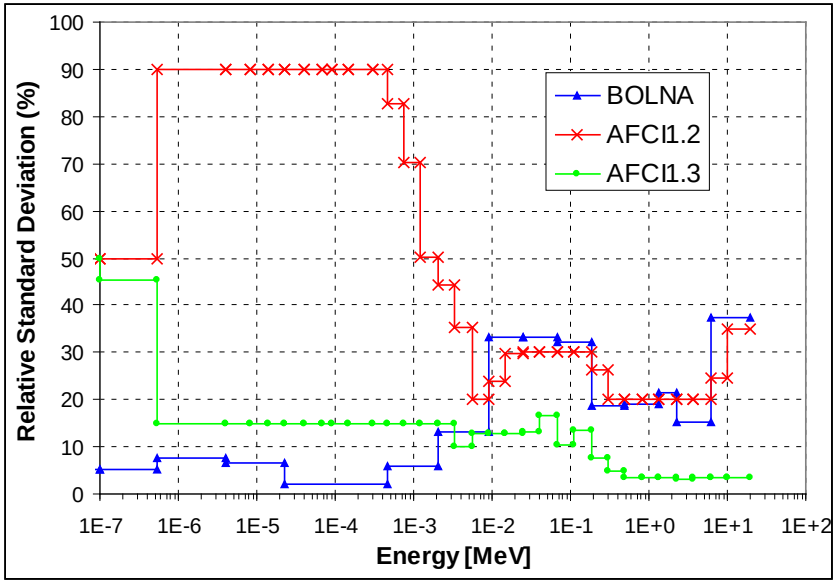


Pu240 Fission

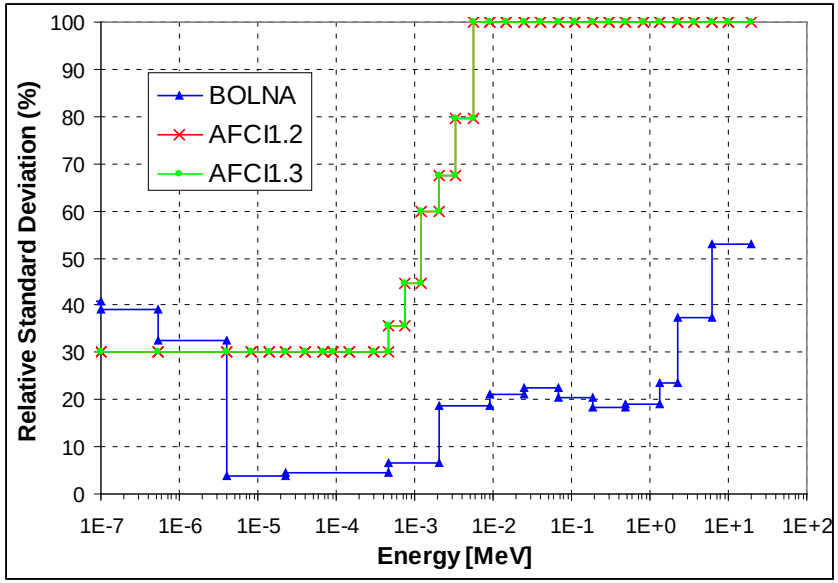


Pu241 Fission

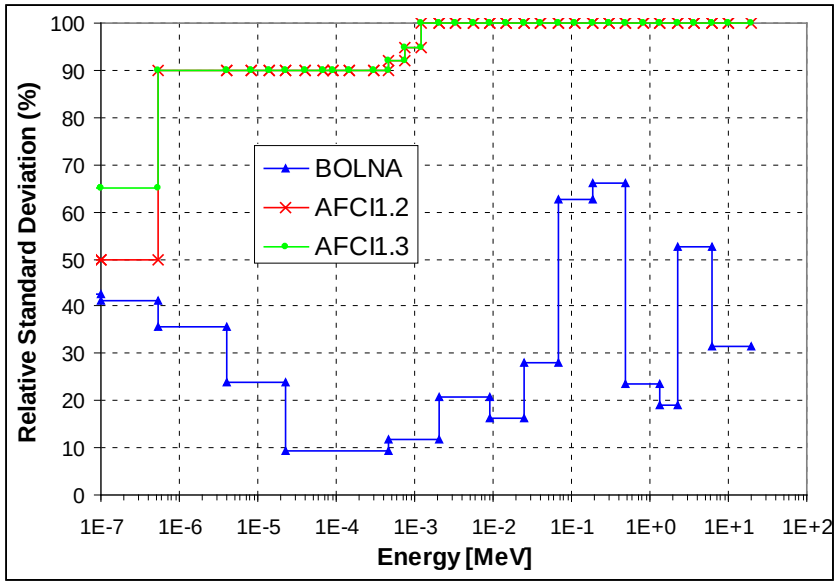
Relative Standard Deviations



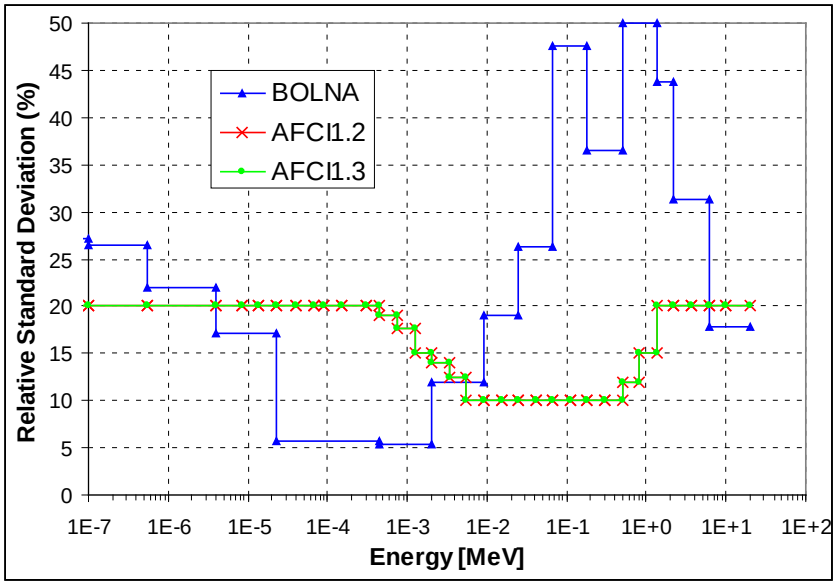
Pu242 Fission



Cm242 Capture

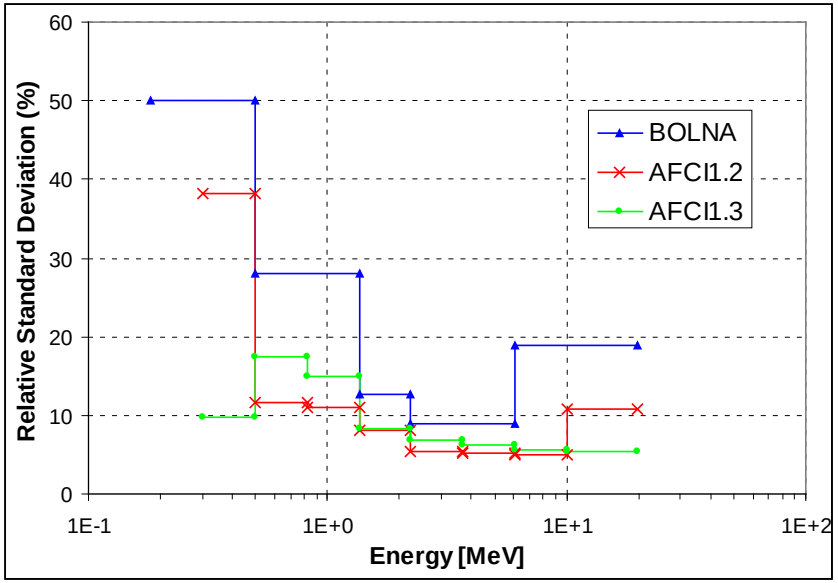


Cm242 Fission

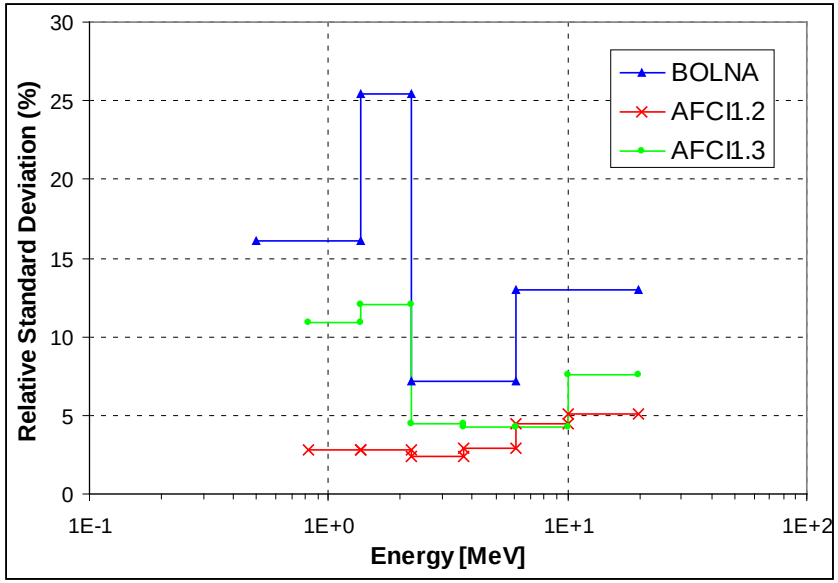


Cm244 Fission

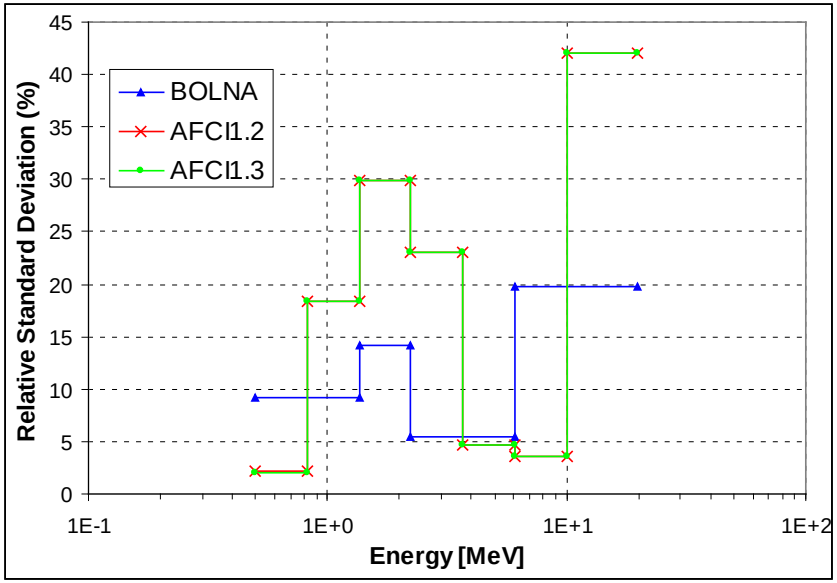
Relative Standard Deviations



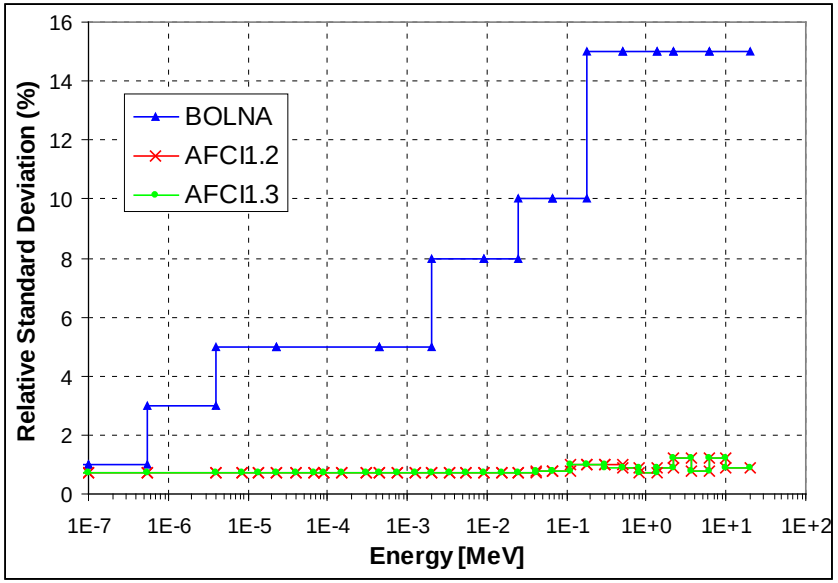
Na23 Inelastic



Fe56 Inelastic

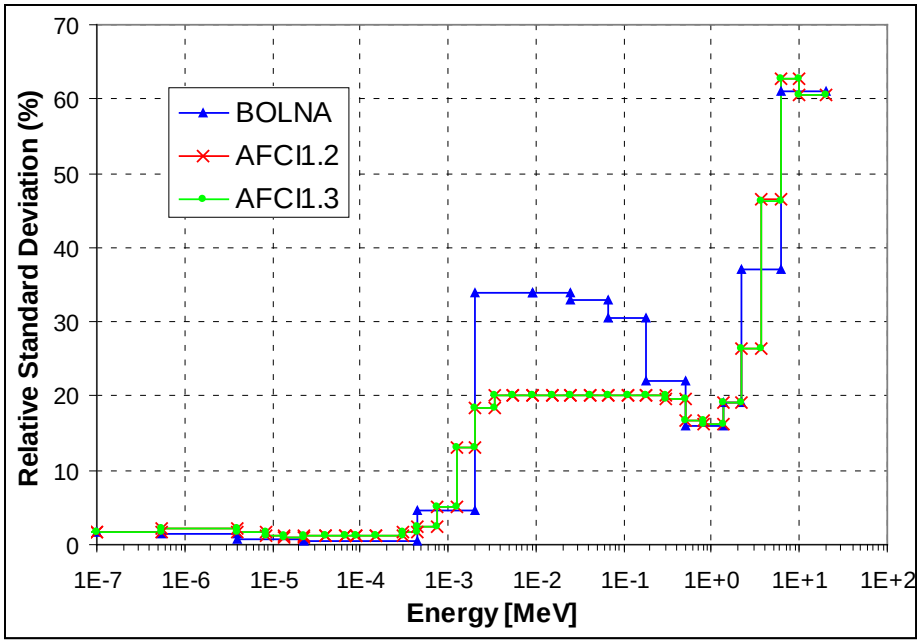


Pb206 Inelastic



B10 Capture

Relative Standard Deviations



U235 Capture Relative Standard Deviations

GODIVA Multiplication Factor Uncertainties (%)

	BOLNA diagonal	AFCI1.3 diagonal	BOLNA full	AFCI1.3 full
Isotope	**U235**	**U235**	**U235**	**U235**
ν	0.27	0.06	0.55	0.08
σ_{fiss}	0.14	0.11	0.26	0.26
σ_{inel}	0.34	0.26	0.46	0.47
σ_{el}	0.16	0.12	0.09	0.18i
σ_{capt}	0.44	0.26	0.90	0.71
Total	**0.65**	**0.41**	**1.18**	**0.88**
Overall [(a)]	**0.66**	**0.41**	**1.19**	**0.89**

[(a)] Total of all isotopes

- Unless the energy correlation terms are updated, we will always get large components of uncertainty from U235 capture on the GODIVA multiplication factor.

Isotope/Reaction Contributing to 90% of Power Peaking Factor Uncertainty with AFCI1.3

	SFR	EFR	GFR	LFR	ADMAB
U238 σ_{inel}	0.07	0.90	1.60		
Pu238 σ_{fiss}					3.83
Am241 σ_{capt}					6.12
Am241 σ_{fiss}					6.61
Am243 σ_{fiss}					3.08
Cm244 σ_{capt}					2.85
Cm244 σ_{fiss}					4.59
Cm244 ν					3.64
Cm245 σ_{fiss}					7.91
Fe56 σ_{el}	0.19	0.42		0.14	
Fe56 σ_{inel}	0.07				3.84
Na23 σ_{el}	0.15				
Pb208 σ_{el}				0.52	
Total [(a)]	**0.27**	**0.99**	**1.60**	**0.54**	**15.00**
Overall [(b)]	**0.30**	**1.09**	**1.69**	**0.59**	**16.37**

[(a)] Total uncertainties yield by the cross sections listed in the Table;

[(b)] Overall uncertainties yield by all cross sections.

Isotope/Reaction Contributing to 90% of Doppler Uncertainty with AFCI1.3

	SFR	EFR	GFR	LFR
U238 σ_{inel}		2.80	4.24	2.65
Pu238 σ_{fiss}	3.44	0.89	1.27	2.19
Am241 σ_{capt}			1.56	
Am242m σ_{fiss}	1.71			
Fe56 σ_{capt}	1.48			
Fe56 σ_{el}	3.65	0.95		2.32
Na23 σ_{el}	2.48	1.12		
O16 σ_{el}		1.12		
Pb207 σ_{el}				1.64
Pb208 σ_{el}				3.62
Total [(a)]	**6.04**	**3.47**	**4.69**	**5.75**
Overall [(b)]	**6.62**	**3.84**	**5.02**	**6.24**

[(a)] Total uncertainties yield by the cross sections listed in the Table;

[(b)] Overall uncertainties yield by all cross sections.

Uncertainty Breakdown

Isotope/Reaction Contributing to 90% of Coolant Void Reactivity Worth Uncertainty with AFCI1.3

	ABR Metal	ABR Oxide	SFR	EFR	GFR	LFR	ADMAB
U238 σ_{capt}		1.56		1.36			
U238 σ_{inel}	3.75	2.16		2.45	6.02	4.75	
Pu238 σ_{fiss}	3.37	1.33	8.87				
Am241 σ_{capt}							2.89
Cm245 σ_{fiss}							2.58
Fe56 σ_{el}	8.02	2.00	3.52				2.56
Fe56 σ_{inel}			3.01				
Cr52 σ_{el}	2.90						
Na23 σ_{el}		1.38		1.77			
Na23 σ_{inel}	6.54	4.10	8.18	4.29			
Pb206 σ_{inel}						6.30	
Pb207 σ_{inel}						2.37	
Pb208 σ_{el}						3.72	
Pb σ_{capt}							4.55
Pb σ_{inel}							2.39
Bi209 σ_{capt}							3.82
Bi209 σ_{inel}							9.83
Total [(a)]	**11.88**	**5.62**	**12.92**	**5.42**	**6.02**	**9.04**	**12.62**
Overall [(b)]	**13.07**	**6.17**	**14.29**	**5.97**	**6.53**	**9.71**	**13.86**

[(a)] Total uncertainties yield by the cross sections listed in the Table;

[(b)] Overall uncertainties yield by all cross sections.

Uncertainty Breakdown

Isotope/Reaction Contributing to 90% of DPT Direct Term Burnup Uncertainty with AFCI1.3

	SFR	EFR	GFR	LFR
U238 σ_{el}		0.28i		
U238 σ_{inel}		0.69	6.09	0.34
Pu238 σ_{fiss}	2.92	0.49	10.10	1.42
Pu239 σ_{fiss}		0.24		
Pu241 σ_{fiss}		0.22		
Am241 σ_{capt}		0.24		
Am242m σ_{fiss}			5.79	0.35
Cm242 σ_{fiss}			6.99	
Cm245 σ_{fiss}	0.97	0.33		
Fe56 σ_{el}		0.41		
Fe56 σ_{inel}		0.35		
Na23 σ_{el}		0.36		
Na23 σ_{inel}		0.29		
O16 σ_{el}		0.49		
Pb206 σ_{inel}				0.50
Pb208 σ_{el}				0.27
Total [a]	**3.08**	**1.35**	**14.88**	**1.60**
Overall [b]	**3.41**	**1.42**	**16.31**	**1.77**

[a] Total uncertainties yield by the cross sections listed in the Table;

[b] Overall uncertainties yield by all cross sections.

Isotope/Reaction Contributing to 90% of DPT Density Term Burnup Uncertainty with AFCI1.3

	SFR	EFR	GFR	LFR
U238 σ_{capt}		4.38	9.99	3.57
Pu238 σ_{fiss}	1.86			3.80
Pu239 σ_{capt}		2.71	6.44	2.72
Pu240 σ_{capt}	1.00	1.73		2.19
Am241 σ_{capt}			6.17	
Am242m σ_{capt}	0.93			
Am242m σ_{fiss}	2.55			
Total [a]	**3.44**	**5.43**	**13.39**	**6.28**
Overall [b]	**3.75**	**5.74**	**14.81**	**6.86**

[a] Total uncertainties yield by the cross sections listed in the Table;

[b] Overall uncertainties yield by all cross sections.

Uncertainty Breakdown

Isotope/Reaction Contributing to 90% of DPT Flux Term Burnup Uncertainty with AFCI1.3

	SFR	EFR	GFR	LFR
U238 σ_{capt}		0.61		
U238 σ_{inel}	0.10	2.14	9.61	2.22
Pu239 σ_{inel}				0.87
Fe56 σ_{el}	0.12	0.56		1.55
Fe56 σ_{inel}	0.11			
Na23 σ_{el}	0.13			
Na23 σ_{inel}	0.06			
O16 σ_{el}		0.56		
Pb207 σ_{el}				0.96
Pb208 σ_{el}				2.26
Total [(a)]	**0.24**	**2.36**	**9.61**	**3.75**
Overall [(b)]	**0.26**	**2.56**	**9.96**	**4.09**

[(a)] Total uncertainties yield by the cross sections listed in the Table;
[(b)] Overall uncertainties yield by all cross sections.

Isotope/Reaction Contributing to 90% of DPT Power Term Burnup Uncertainty with AFCI1.3

	SFR	EFR	GFR	LFR
	AFCI1.3	AFCI1.3	AFCI1.3	AFCI1.3
Pu238 σ_{fiss}	1.78	0.41	0.73	1.04
Pu239 σ_{fiss}		0.27		
Am241 σ_{fiss}			0.32	
Am242m σ_{fiss}	0.76			
Total [(a)]	**1.93**	**0.49**	**0.79**	**1.04**
Overall [(b)]	**2.01**	**0.52**	**0.86**	**1.10**

[(a)] Total uncertainties yield by the cross sections listed in the Table;
[(b)] Overall uncertainties yield by all cross sections.

Uncertainty Breakdown

Isotope/Reaction Contributing to 90% of DPT Burnup Uncertainty with AFCI1.3

	SFR	EFR	GFR	LFR
U238 σ_{capt}		3.78	9.72	3.04
U238 σ_{inel}			15.68	1.91
Pu238 σ_{fiss}	2.85		6.42	1.57
Pu239 σ_{capt}		2.91	7.95	3.15
Pu240 σ_{capt}	0.90	1.60		2.04
Am241 σ_{capt}			8.90	
Am242m σ_{capt}	0.75			
Am242m σ_{fiss}	2.44			
Cm242 σ_{fiss}			6.84	
Cm245 σ_{fiss}				1.22
Fe56 σ_{el}				1.39
Fe56 σ_{inel}	0.77			
Pb208 σ_{el}				2.53
Total [(a)]	**4.00**	**5.03**	**23.89**	**6.27**
Overall [(b)]	**4.38**	**5.52**	**25.63**	**6.89**

[(a)] Total uncertainties yield by the cross sections listed in the Table;
[(b)] Overall uncertainties yield by all cross sections.

Conclusions

The present work shows the first application of the recent AFCI1.3 matrix, with the determination of the uncertainty for the main integral parameters (multiplication factor, power peaking factor, Doppler reactivity coefficient, coolant void reactivity worth and burnup reactivity swing) of a series of fast reactors (ABR metal core, ABR oxide core, SFR, EFR, GFR, LFR, ADMAB). The obtained AFCI1.3 parameter uncertainties are also compared with the results presented in previous studies with the AFCI1.2 and BOLNA correlation matrices.

Using the AFCI1.3 matrix, the overall multiplication factor uncertainties are larger than 1% for all investigated systems (even larger than 2% for the ADMAB). Rather small uncertainties are obtained for the power peaking factor (except for the ADMAB), Doppler coefficient and burnup reactivity swing (except for the GFR). For the coolant void worth the overall uncertainties range from 6 to 14%.

The parameter uncertainties estimated with the AFCI1.3 data in general are smaller than with AFCI1.2 and BOLNA. However, using the three covariance matrices the obtained parameter uncertainties are quite comparable: non negligible discrepancies are found only for specific parameters (ABR oxide and ADMAB multiplication factors, GFR coolant void worth, etc.)

Pu isotopes above 240, especially for fission and in some cases for capture and ν, yield uncertainties with AFCI1.3 that are much smaller than with the other matrices. In particular, the uncertainty on the fission cross-section of Pu240 and Pu241 in AFCI1.3 is comparable to that of U235 fission, that is to that of the best known fission cross-sections.

Available covariance data are evolving and improving in both quantity and quality. Reliable uncertainty quantification is dependent on the continued improvement in these data.

Conclusions

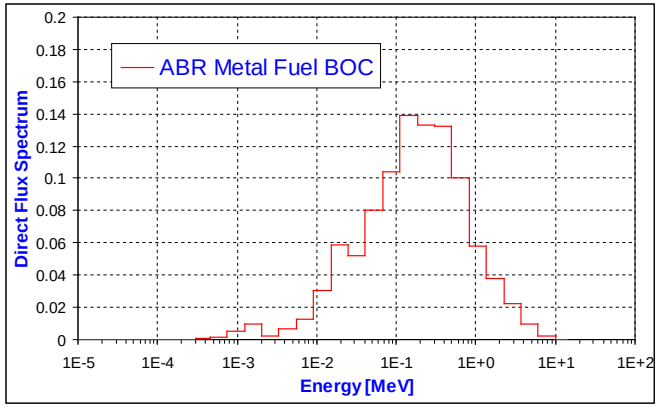
For the Pu238 fission no changes have been made in AFCI1.3 with respect to AFCI1.2 and the cross section still brings much larger uncertainties than with BOLNA. With more details, in the AFCI1.3 matrix the fission cross-sections of all Pu isotopes have uncertainties at 1 MeV less than 1%, with the only exception of Pu238 fission where the uncertainty is significantly larger and precisely 50%.

For Cm242 and Cm244 fission no changes are observed using AFCI1.3 with respect to AFCI1.2, despite the relevant discrepancies observed with the BOLNA values. Particularly, above 1 Kev the AFCI1.3 matrix shows 100% uncertainty for Cm242 fission and only 10% uncertainty for Cm244 fission.

The elastic and inelastic reactions of structural isotopes as Fe56, Cr52 and Na bring with AFCI1.3 rather larger uncertainties than with AFCI1.2. Using AFCI1.2, Pb206 inelastic yields much larger and B10 capture much smaller uncertainties than with BOLNA and nothing has been changed for these reactions in AFCI1.3 with respect to AFCI1.2.

Concerning the multiplication factor, the AFCI1.3 results show that U238 inelastic scattering and Pu238 fission cross-sections are the major sources of uncertainty for most of the systems considered. As expected, minor actinides cross-sections are the dominant contributors for the ADMAB and also play a significant role in the case of SFR. Concerning structural materials, the Fe56 elastic scattering cross-section makes a significant contribution for ABR metal core and SFR, Fe56 inelastic scattering for the two ABRs and ADMAB, and lead elastic and inelastic scattering for LFR.

Backup Slides


ABR Metal Fuel BOC
Direct Flux Spectrum
Energy [MeV]
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0.18
0.16
0.14
0.12
0.1
0.08
0.06
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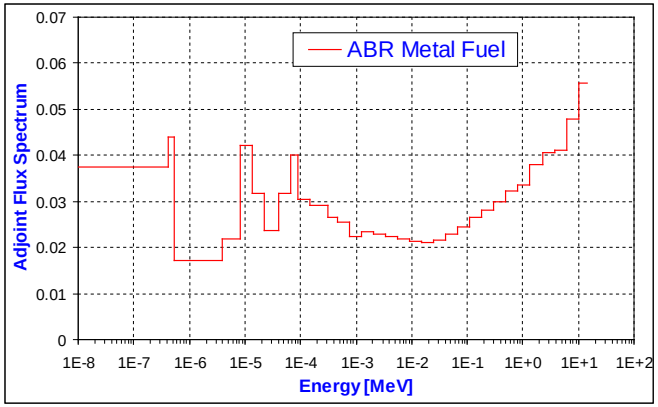
ABR Metal Fuel
Adjoint Flux Spectrum
Energy [MeV]
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0.06
0.05
0.04
0.03
0.02
0.01
0
1E-8
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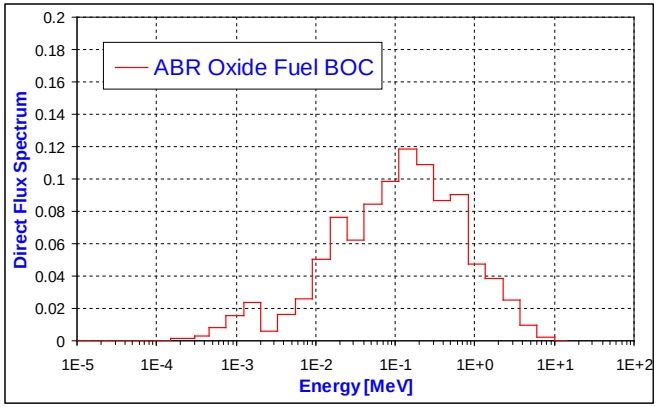
1E+2


ABR Oxide Fuel BOC
Direct Flux Spectrum
Energy [MeV]
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0.18
0.16
0.14
0.12
0.1
0.08
0.06
0.04
0.02
0
1E-5
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1E-3
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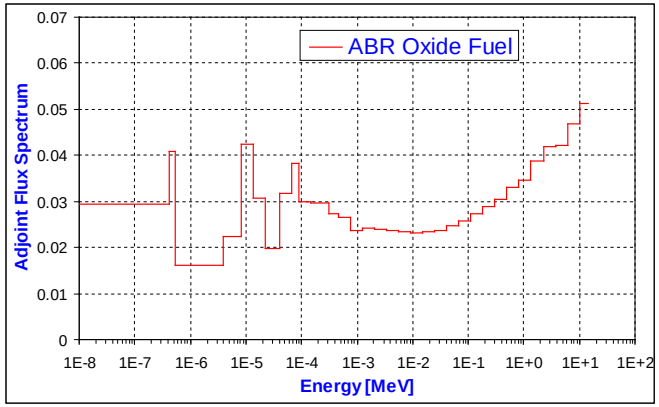
1E-1
1E+0
1E+1
1E+2


ABR Oxide Fuel
Adjoint Flux Spectrum
Energy [MeV]
0.07
0.06
0.05
0.04
0.03
0.02
0.01
0
1E-8
1E-7
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1E-5
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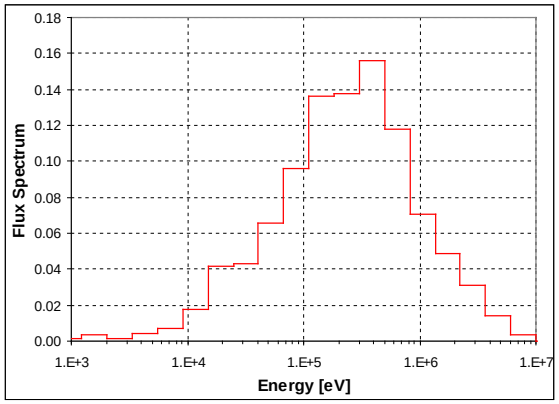
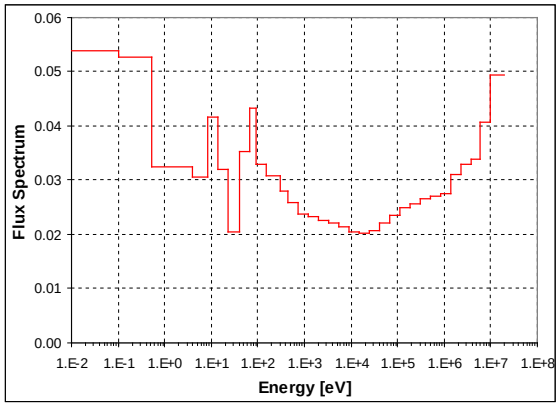
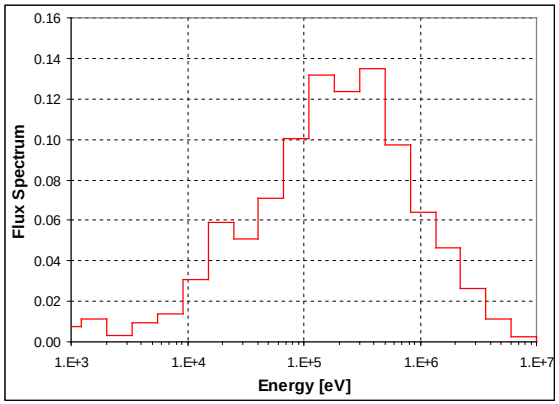
1E-3
1E-2
1E-1
1E+0
1E+1
1E+2



ABTR Direct Flux Distribution



ABTR Adjoint Flux Distribution



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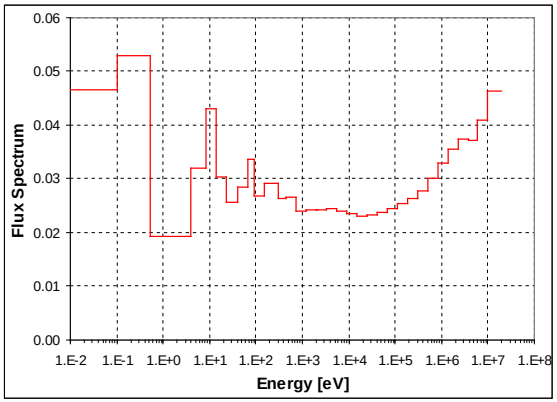
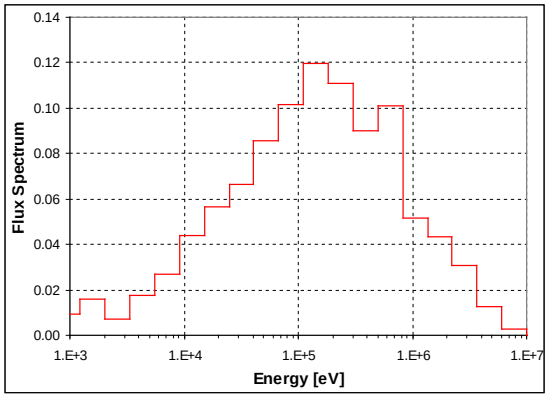
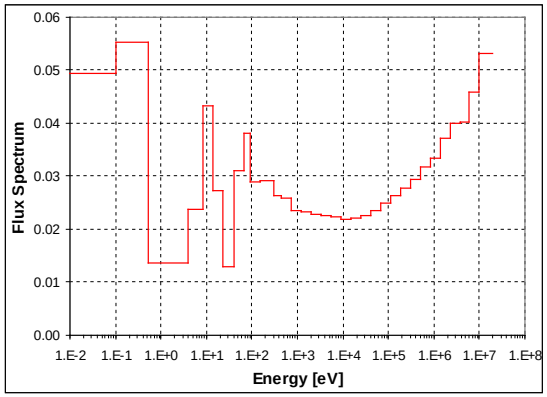


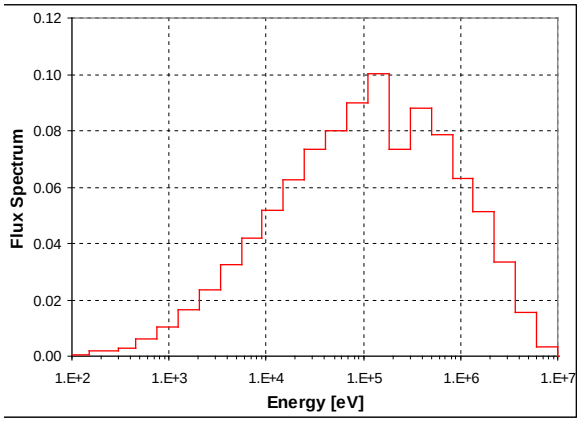
SFR Adjoint Flux Distribution



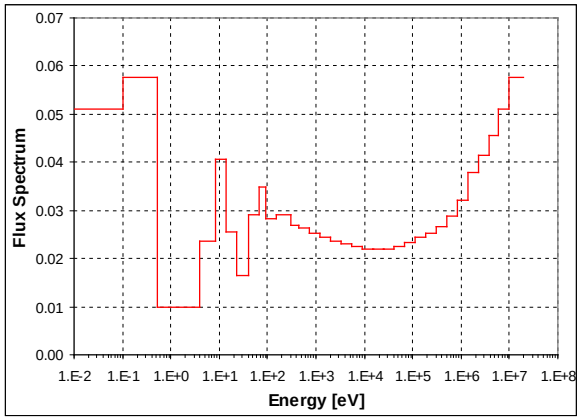
EFR Direct Flux Distribution



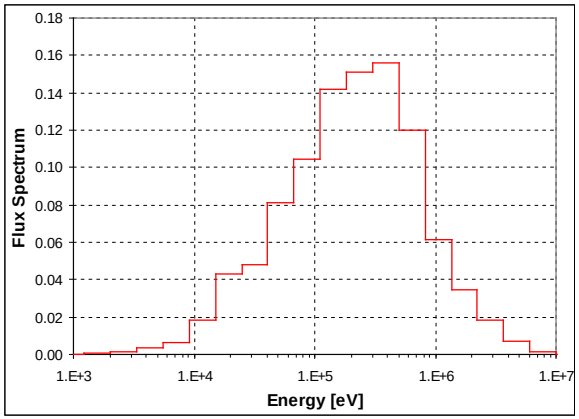
EFR Adjoint Flux Distribution



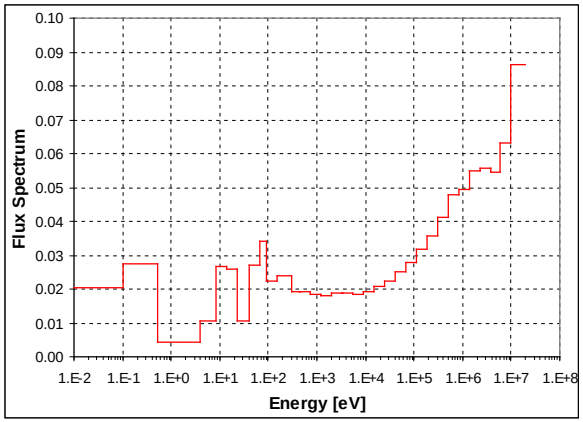
GFR Direct Flux Distribution



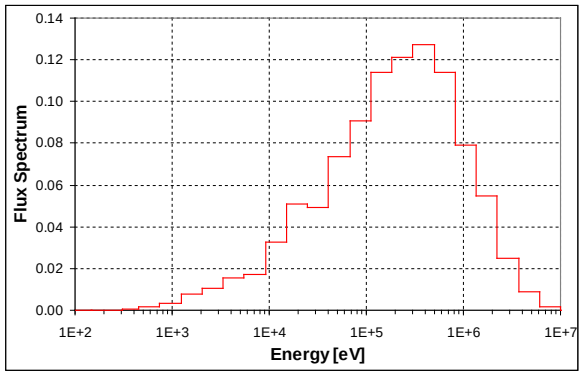
GFR Adjoint Flux Distribution



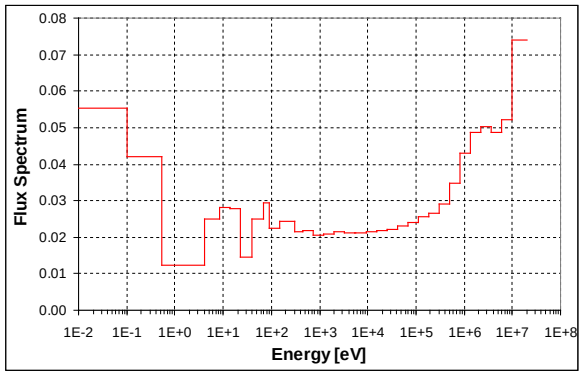
LFR Direct Flux Distribution



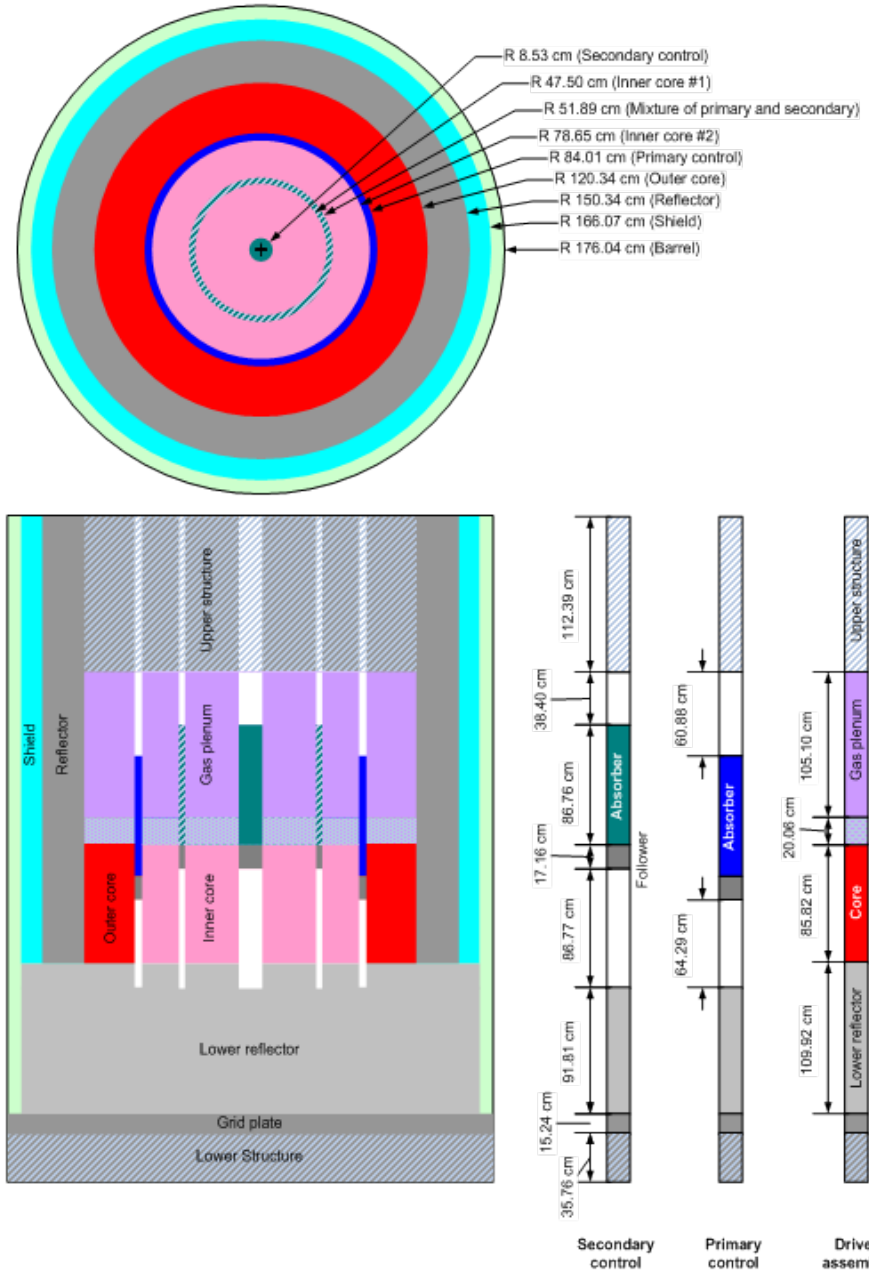
LFR Adjoint Flux Distribution



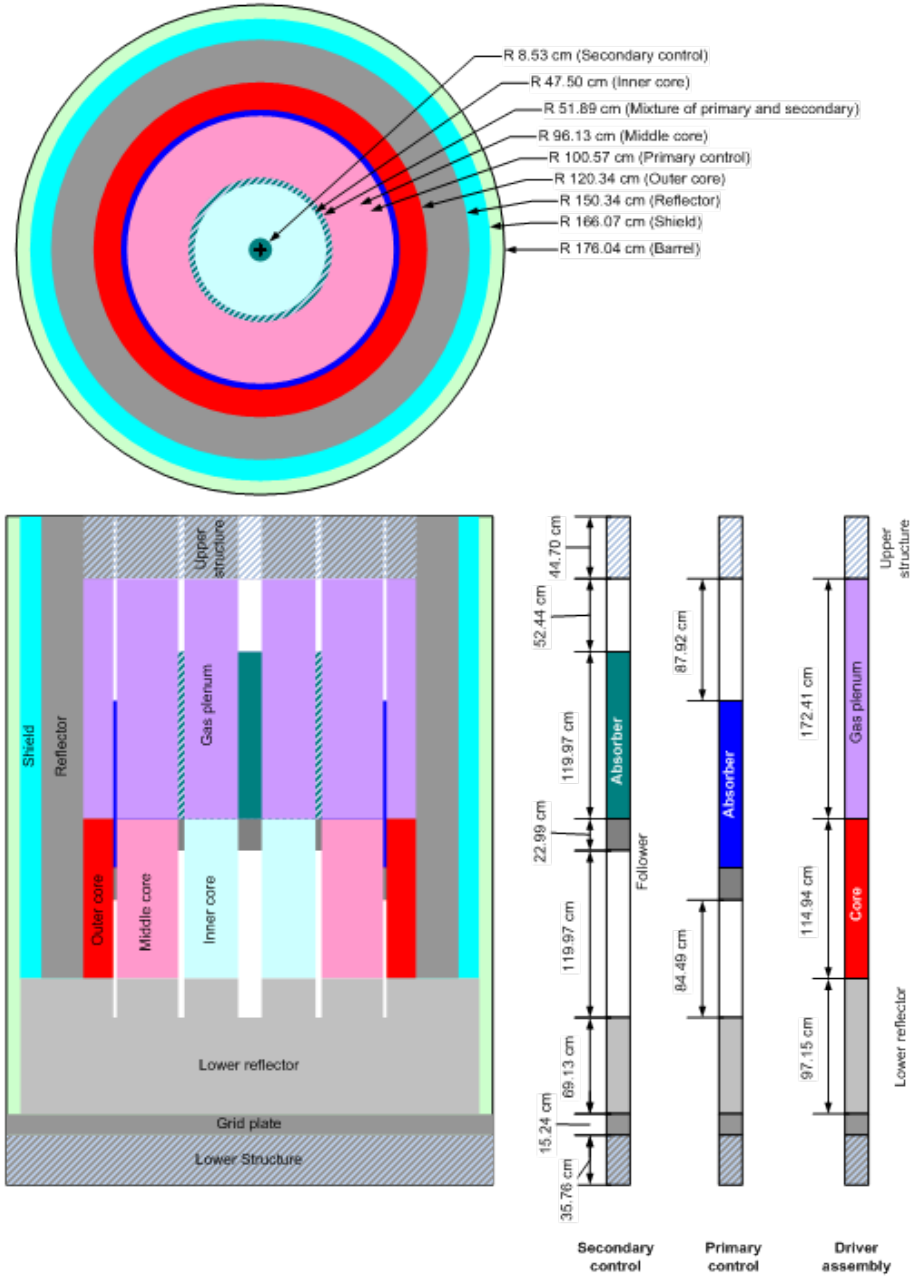
ADMAB Direct Flux Distribution



ADMAB Adjoint Flux Distribution



ABR Metal Core



ABR Oxide Core

Table B-13. ABR Metal Fuel: Inner Core Compositions [10^{24} atoms/cm^3].

Material	Nuclide	Axial node from core bottom				
		1	2	3	4	5
Coolant	Na23	7.8712E-03	7.8712E-03	7.8712E-03	7.8712E-03	7.8712E-03
Structure	Fe	1.7889E-02	1.7889E-02	1.7889E-02	1.7889E-02	1.7889E-02
	Cr	2.6599E-03	2.6599E-03	2.6599E-03	2.6599E-03	2.6599E-03
	Mn55	1.1784E-04	1.1784E-04	1.1784E-04	1.1784E-04	1.1784E-04
	Ni	1.1030E-04	1.1030E-04	1.1030E-04	1.1030E-04	1.1030E-04
	Mo	1.2575E-04	1.2575E-04	1.2575E-04	1.2575E-04	1.2575E-04
Fuel	U234	4.4340E-07	4.2339E-07	4.1835E-07	4.3009E-07	4.5857E-07
	U235	1.1864E-05	1.1441E-05	1.1294E-05	1.1727E-05	1.2703E-05
	U236	9.7091E-07	9.7956E-07	9.9587E-07	9.2738E-07	7.8881E-07
	U238	7.6489E-03	7.5947E-03	7.5789E-03	7.6245E-03	7.7222E-03
	Np237	1.8207E-05	1.8315E-05	1.8244E-05	1.8565E-05	1.9069E-05
	Pu236	1.9382E-10	2.1794E-10	2.2113E-10	2.1479E-10	1.9022E-10
	Pu238	4.5610E-05	4.4007E-05	4.3663E-05	4.4343E-05	4.6133E-05
	Pu239	8.6094E-04	8.5074E-04	8.4838E-04	8.5068E-04	8.5842E-04
	Pu240	5.1650E-04	5.0522E-04	5.0316E-04	5.0645E-04	5.1665E-04
	Pu241	7.5562E-05	7.2576E-05	7.2218E-05	7.2292E-05	7.3493E-05
	Pu242	1.1418E-04	1.1275E-04	1.1239E-04	1.1325E-04	1.1532E-04
	Am241	4.2085E-05	4.0813E-05	4.0377E-05	4.1673E-05	4.4542E-05
	Am242m	3.6265E-06	3.5430E-06	3.5187E-06	3.5784E-06	3.7006E-06
	Am243	3.9066E-05	3.8346E-05	3.8216E-05	3.8465E-05	3.9125E-05
	Cm242	2.1937E-06	2.2701E-06	2.3195E-06	2.1411E-06	1.7712E-06
	Cm243	2.1185E-07	1.9595E-07	1.9553E-07	1.9061E-07	1.8907E-07
	Cm244	2.6223E-05	2.5631E-05	2.5592E-05	2.5486E-05	2.5503E-05
	Cm245	6.7847E-06	6.5294E-06	6.4983E-06	6.5115E-06	6.6400E-06
	Cm246	3.5990E-06	3.5655E-06	3.5609E-06	3.5631E-06	3.5803E-06
	Zr	2.8392E-03	2.8392E-03	2.8392E-03	2.8392E-03	2.8392E-03
Fission product	LFP35 [a)]	3.4661E-06	3.8788E-06	4.0072E-06	3.6516E-06	2.8257E-06
	LFP38 [b)]	5.3933E-05	7.2981E-05	7.6877E-05	6.7987E-05	4.4940E-05
	LFP39 [c)]	2.3280E-04	2.8112E-04	2.9480E-04	2.6012E-04	1.8373E-04
	LFP40 [d)]	2.9987E-05	3.9888E-05	4.2109E-05	3.7164E-05	2.4846E-05
	LFP41 [e)]	4.2005E-05	4.9227E-05	5.1423E-05	4.5454E-05	3.2507E-05

a) LFP35: all lumped fission products from U234, U235, U236, and Pu236
b) LFP38: all lumped fission products from U238, Np237, and Pu238
c) LFP39: lumped fission product from Pu239
d) LFP40: lumped fission product from Pu240
e) LFP41: all lumped fission products from Pu24a and higher actinides

ABR Metal Fuel: Outer Core Compositions [10^{24} atoms/cm^3].

Material	Nuclide	Axial node from core bottom				
		1	2	3	4	5
Coolant	Na23	7.8712E-03	7.8712E-03	7.8712E-03	7.8712E-03	7.8712E-03
Structure	Fe	1.7889E-02	1.7889E-02	1.7889E-02	1.7889E-02	1.7889E-02
	Cr	2.6599E-03	2.6599E-03	2.6599E-03	2.6599E-03	2.6599E-03
	Mn55	1.1784E-04	1.1784E-04	1.1784E-04	1.1784E-04	1.1784E-04
	Ni	1.1030E-04	1.1030E-04	1.1030E-04	1.1030E-04	1.1030E-04
	Mo	1.2575E-04	1.2575E-04	1.2575E-04	1.2575E-04	1.2575E-04
Fuel	U234	6.3634E-07	6.1485E-07	6.0989E-07	6.1985E-07	6.4550E-07
	U235	1.2020E-05	1.1649E-05	1.1529E-05	1.1852E-05	1.2577E-05
	U236	6.9735E-07	7.2281E-07	7.3870E-07	6.8359E-07	5.7369E-07
	U238	7.1149E-03	7.0760E-03	7.0648E-03	7.0945E-03	7.1597E-03
	Np237	3.8314E-05	3.7946E-05	3.7742E-05	3.8407E-05	3.9680E-05
	Pu236	2.7758E-10	3.2176E-10	3.2869E-10	3.1473E-10	2.6540E-10
	Pu238	6.4099E-05	6.2501E-05	6.2200E-05	6.2646E-05	6.4021E-05
	Pu239	1.0977E-03	1.0789E-03	1.0740E-03	1.0836E-03	1.1082E-03
	Pu240	6.8120E-04	6.7043E-04	6.6827E-04	6.7198E-04	6.8278E-04
	Pu241	1.1301E-04	1.0974E-04	1.0925E-04	1.0973E-04	1.1192E-04
	Pu242	1.5894E-04	1.5760E-04	1.5725E-04	1.5806E-04	1.6001E-04
	Am241	7.2565E-05	7.0692E-05	7.0083E-05	7.1745E-05	7.5419E-05
	Am242m	4.7521E-06	4.6974E-06	4.6882E-06	4.6949E-06	4.7049E-06
	Am243	5.1611E-05	5.0772E-05	5.0640E-05	5.0839E-05	5.1503E-05
	Cm242	2.5228E-06	2.6765E-06	2.7515E-06	2.5133E-06	2.0270E-06
	Cm243	2.4753E-07	2.3748E-07	2.3751E-07	2.3303E-07	2.3155E-07
	Cm244	3.1241E-05	3.0766E-05	3.0750E-05	3.0606E-05	3.0559E-05
	Cm245	7.8779E-06	7.6742E-06	7.6489E-06	7.6576E-06	7.7659E-06
	Cm246	4.0725E-06	4.0446E-06	4.0405E-06	4.0431E-06	4.0599E-06
	Zr	2.8392E-03	2.8392E-03	2.8392E-03	2.8392E-03	2.8392E-03
Fission product	LFP35	2.3081E-06	2.6552E-06	2.7596E-06	2.4926E-06	1.8776E-06
	LFP38	4.1243E-05	5.6135E-05	5.9289E-05	5.2503E-05	3.4549E-05
	LFP39	2.0376E-04	2.4886E-04	2.6130E-04	2.3197E-04	1.6444E-04
	LFP40	2.8773E-05	3.8814E-05	4.1090E-05	3.6312E-05	2.4062E-05
	LFP41	4.1853E-05	5.0314E-05	5.2747E-05	4.6705E-05	3.3135E-05

ABR Metal Fuel: Structural Material Compositions [10^{24} atoms/cm^3].

Lower Structure, Grid Plate, and Lower Reflector				Above Driver Fuel			
Nuclide	**Lower structure**	**Grid plate**	**Lower reflector**	**Nuclide**	**Gas Plenum with replaced bond**	**Gas plenum**	**Upper structure**
Na23	1.5591E-02	1.5591E-02	7.8712E-03	Na23	1.6557E-02	7.8712E-03	7.8712E-03
Fe	1.5878E-02	1.5878E-02	4.5077E-02	Fe	1.7889E-02	1.7889E-02	4.5077E-02
Cr	3.2355E-03	3.2355E-03	6.7023E-03	Cr	2.6599E-03	2.6599E-03	6.7023E-03
Mn55	5.0846E-04	5.0846E-04	2.9693E-04	Mn55	1.1784E-04	1.1784E-04	2.9693E-04
Ni	3.2604E-03	3.2604E-03	2.7793E-04	Ni	1.1030E-04	1.1030E-04	2.7793E-04
Mo	4.3524E-04	4.3524E-04	3.1687E-04	Mo	1.2575E-04	1.2575E-04	3.1687E-04

Radial Reflector, Shield, and Barrel			
Nuclide	**Radial reflector**	**Shield**	**Barrel**
Na23	3.4517E-03	3.8077E-03	1.2356E-02
Fe	5.8910E-02	2.0690E-02	1.8302E-02
Cr	8.7592E-03	3.0764E-03	3.7294E-03
Mn55	3.8805E-04	1.3629E-04	5.8607E-04
Ni	3.6322E-04	1.2757E-04	3.7580E-03
Mo	4.1411E-04	1.4544E-04	-
C12	-	1.0858E-02	-
B10	-	2.2744E-02	-
B11	-	2.0686E-02	-

ABR Metal Fuel: Control Assemblies Compositions [10^{24} atoms/cm^3].

Nuclide	**Under follower**	**Follower**	**Absorber**		**Above absorber**	**Upper structure**
			Secondary	**Primary**		
Na23	2.0209E-02	1.6411E-02	6.4201E-03	6.4201E-03	6.4201E-03	7.8712E-03
Fe	6.4582E-03	1.8348E-02	1.4481E-02	1.4481E-02	1.4481E-02	4.5077E-02
Cr	9.6026E-04	2.7281E-03	2.1531E-03	2.1531E-03	2.1531E-03	6.7023E-03
Mn55	4.2541E-05	1.2086E-04	9.5387E-05	9.5387E-05	9.5387E-05	2.9693E-04
Ni	3.9819E-05	1.1313E-04	8.9284E-05	8.9284E-05	8.9284E-05	2.7793E-04
Mo	4.5399E-05	1.2898E-04	1.0179E-04	1.0179E-04	1.0179E-04	3.1687E-04
C12	-	-	1.0537E-02	1.0869E-02	-	-
B10	-	-	8.3873E-03	2.7065E-02	-	-
B11	-	-	3.3760E-02	1.6410E-02	-	-

ABR Oxide Fuel: Inner Core Compositions [10^{24} atoms/cm^3].

Material	Nuclide	Axial node from core bottom				
		1	2	3	4	5
Coolant	Na23	8.1322E-03	8.1322E-03	8.1322E-03	8.1322E-03	8.1322E-03
Structure	Fe	1.8573E-02	1.8573E-02	1.8573E-02	1.8573E-02	1.8573E-02
	Cr	2.7616E-03	2.7616E-03	2.7616E-03	2.7616E-03	2.7616E-03
	Mn55	1.2234E-04	1.2234E-04	1.2234E-04	1.2234E-04	1.2234E-04
	Ni	1.1452E-04	1.1452E-04	1.1452E-04	1.1452E-04	1.1452E-04
	Mo	1.3056E-04	1.3056E-04	1.3056E-04	1.3056E-04	1.3056E-04
Fuel	U234	6.4319E-07	6.0429E-07	5.9246E-07	6.1463E-07	6.6954E-07
	U235	8.2377E-06	7.5720E-06	7.3559E-06	7.7711E-06	8.8939E-06
	U236	9.0366E-07	9.9269E-07	1.0280E-06	9.5752E-07	7.5727E-07
	U238	5.5788E-03	5.4894E-03	5.4608E-03	5.5146E-03	5.6426E-03
	Np237	1.3251E-05	1.2756E-05	1.2532E-05	1.2966E-05	1.4022E-05
	Pu236	1.1814E-10	1.3241E-10	1.3410E-10	1.3073E-10	1.1558E-10
	Pu238	5.0045E-05	4.8018E-05	4.7474E-05	4.8468E-05	5.0863E-05
	Pu239	7.0883E-04	7.0714E-04	7.0646E-04	7.0745E-04	7.0825E-04
	Pu240	5.3934E-04	5.2951E-04	5.2752E-04	5.3103E-04	5.4112E-04
	Pu241	8.9976E-05	8.8296E-05	8.8408E-05	8.8026E-05	8.7409E-05
	Pu242	1.3138E-04	1.2931E-04	1.2871E-04	1.2982E-04	1.3262E-04
	Am241	4.7040E-05	4.3767E-05	4.2701E-05	4.4746E-05	5.0108E-05
	Am242m	4.0083E-06	3.8425E-06	3.7845E-06	3.8921E-06	4.1120E-06
	Am243	4.4696E-05	4.3813E-05	4.3637E-05	4.3958E-05	4.4794E-05
	Cm242	2.4461E-06	2.7751E-06	2.8955E-06	2.6591E-06	2.0095E-06
	Cm243	3.0981E-07	3.1436E-07	3.2302E-07	3.0570E-07	2.7710E-07
	Cm244	3.4300E-05	3.4309E-05	3.4478E-05	3.4126E-05	3.3355E-05
	Cm245	1.0142E-05	9.9622E-06	9.9750E-06	9.9395E-06	9.9578E-06
	Cm246	6.1911E-06	6.1773E-06	6.1804E-06	6.1746E-06	6.1733E-06
	O	1.5205E-02	1.5205E-02	1.5205E-02	1.5205E-02	1.5205E-02
Fission product	LFP35 [a)]	2.7919E-06	3.3563E-06	3.5303E-06	3.1979E-06	2.2933E-06
	LFP38 [b)]	4.1564E-05	5.9267E-05	6.3578E-05	5.5523E-05	3.4233E-05
	LFP39 [c)]	1.9748E-04	2.6283E-04	2.8346E-04	2.4526E-04	1.5538E-04
	LFP40 [d)]	2.8395E-05	4.0454E-05	4.3542E-05	3.7849E-05	2.3346E-05
	LFP41 [e)]	5.4126E-05	7.0362E-05	7.5814E-05	6.5582E-05	4.1719E-05

a) LFP35: all lumped fission products from U234, U235, U236, and Pu236
b) LFP38: all lumped fission products from U238, Np237, and Pu238
c) LFP39: lumped fission product from Pu239
d) LFP40: lumped fission product from Pu240
e) LFP41: all lumped fission products from Pu24a and higher actinides

ABR Oxide Fuel: Middle Core Compositions [10^{24} atoms/cm^3].

Material	Nuclide	Axial node from core bottom				
		1	2	3	4	5
Coolant	Na23	8.1322E-03	8.1322E-03	8.1322E-03	8.1322E-03	8.1322E-03
Structure	Fe	1.8573E-02	1.8573E-02	1.8573E-02	1.8573E-02	1.8573E-02
	Cr	2.7616E-03	2.7616E-03	2.7616E-03	2.7616E-03	2.7616E-03
	Mn55	1.2234E-04	1.2234E-04	1.2234E-04	1.2234E-04	1.2234E-04
	Ni	1.1452E-04	1.1452E-04	1.1452E-04	1.1452E-04	1.1452E-04
	Mo	1.3056E-04	1.3056E-04	1.3056E-04	1.3056E-04	1.3056E-04
Fuel	U234	7.2436E-07	6.8348E-07	6.7144E-07	6.9355E-07	7.4990E-07
	U235	8.4243E-06	7.7788E-06	7.5734E-06	7.9608E-06	9.0285E-06
	U236	7.9339E-07	8.8688E-07	9.2208E-07	8.5334E-07	6.5603E-07
	U238	5.4589E-03	5.3797E-03	5.3547E-03	5.4010E-03	5.5148E-03
	Np237	1.5088E-05	1.4514E-05	1.4274E-05	1.4733E-05	1.5892E-05
	Pu236	1.3171E-10	1.4811E-10	1.5031E-10	1.4608E-10	1.2822E-10
	Pu238	5.5515E-05	5.3452E-05	5.2914E-05	5.3877E-05	5.6260E-05
	Pu239	7.5244E-04	7.4540E-04	7.4334E-04	7.4687E-04	7.5519E-04
	Pu240	5.9181E-04	5.8062E-04	5.7817E-04	5.8246E-04	5.9441E-04
	Pu241	9.6761E-05	9.5219E-05	9.5311E-05	9.4966E-05	9.4289E-05
	Pu242	1.4508E-04	1.4290E-04	1.4227E-04	1.4341E-04	1.4635E-04
	Am241	5.3951E-05	5.0420E-05	4.9293E-05	5.1418E-05	5.7114E-05
	Am242m	4.4755E-06	4.3196E-06	4.2663E-06	4.3629E-06	4.5560E-06
	Am243	4.9278E-05	4.8383E-05	4.8202E-05	4.8525E-05	4.9392E-05
	Cm242	2.3574E-06	2.7301E-06	2.8625E-06	2.6077E-06	1.8962E-06
	Cm243	3.1564E-07	3.1937E-07	3.2647E-07	3.1252E-07	2.9142E-07
	Cm244	3.6933E-05	3.6974E-05	3.7139E-05	3.6798E-05	3.6021E-05
	Cm245	1.0983E-05	1.0786E-05	1.0788E-05	1.0773E-05	1.0833E-05
	Cm246	6.7801E-06	6.7589E-06	6.7595E-06	6.7581E-06	6.7658E-06
	O	1.5205E-02	1.5205E-02	1.5205E-02	1.5205E-02	1.5205E-02
Fission product	LFP35	2.4015E-06	2.9471E-06	3.1133E-06	2.8019E-06	1.9394E-06
	LFP38	3.8540E-05	5.5371E-05	5.9480E-05	5.1951E-05	3.1654E-05
	LFP39	1.8253E-04	2.4497E-04	2.6422E-04	2.2909E-04	1.4304E-04
	LFP40	2.8576E-05	4.1006E-05	4.4171E-05	3.8441E-05	2.3447E-05
	LFP41	5.0892E-05	6.7355E-05	7.2694E-05	6.2840E-05	3.9027E-05

ABR Oxide Fuel: Outer Core Compositions [10^{24} atoms/cm^3].

Material	Nuclide	Axial node from core bottom				
		1	2	3	4	5
Coolant	Na23	8.1322E-03	8.1322E-03	8.1322E-03	8.1322E-03	8.1322E-03
Structure	Fe	1.8573E-02	1.8573E-02	1.8573E-02	1.8573E-02	1.8573E-02
	Cr	2.7616E-03	2.7616E-03	2.7616E-03	2.7616E-03	2.7616E-03
	Mn55	1.2234E-04	1.2234E-04	1.2234E-04	1.2234E-04	1.2234E-04
	Ni	1.1452E-04	1.1452E-04	1.1452E-04	1.1452E-04	1.1452E-04
	Mo	1.3056E-04	1.3056E-04	1.3056E-04	1.3056E-04	1.3056E-04
Fuel	U234	1.1303E-06	1.0941E-06	1.0847E-06	1.1009E-06	1.1421E-06
	U235	7.6389E-06	7.1780E-06	7.0335E-06	7.2933E-06	7.9544E-06
	U236	5.6786E-07	6.4334E-07	6.7063E-07	6.2053E-07	4.9571E-07
	U238	4.5422E-03	4.4948E-03	4.4800E-03	4.5063E-03	4.5693E-03
	Np237	4.8957E-05	4.6780E-05	4.6027E-05	4.7391E-05	5.0686E-05
	Pu236	2.5009E-10	3.0342E-10	3.1247E-10	2.9597E-10	2.3346E-10
	Pu238	8.5618E-05	8.4378E-05	8.4173E-05	8.4481E-05	8.5296E-05
	Pu239	1.1142E-03	1.0788E-03	1.0686E-03	1.0867E-03	1.1339E-03
	Pu240	8.4812E-04	8.3515E-04	8.3211E-04	8.3729E-04	8.5140E-04
	Pu241	1.6073E-04	1.5773E-04	1.5740E-04	1.5787E-04	1.6002E-04
	Pu242	2.1785E-04	2.1556E-04	2.1492E-04	2.1604E-04	2.1888E-04
	Am241	1.0593E-04	1.0042E-04	9.8670E-05	1.0181E-04	1.0968E-04
	Am242m	6.1910E-06	6.2158E-06	6.2220E-06	6.2046E-06	6.0838E-06
	Am243	6.8657E-05	6.7880E-05	6.7768E-05	6.7954E-05	6.8611E-05
	Cm242	3.0806E-06	3.6982E-06	3.9138E-06	3.5211E-06	2.5457E-06
	Cm243	3.8842E-07	3.9839E-07	4.0717E-07	3.9129E-07	3.7072E-07
	Cm244	4.4791E-05	4.5091E-05	4.5338E-05	4.4876E-05	4.4011E-05
	Cm245	1.2811E-05	1.2667E-05	1.2679E-05	1.2651E-05	1.2709E-05
	Cm246	7.6435E-06	7.6202E-06	7.6200E-06	7.6203E-06	7.6370E-06
	O	1.5205E-02	1.5205E-02	1.5205E-02	1.5205E-02	1.5205E-02
Fission product	LFP35	1.4560E-06	1.8497E-06	1.9689E-06	1.7556E-06	1.2064E-06
	LFP38	3.0330E-05	4.3537E-05	4.6793E-05	4.1048E-05	2.5399E-05
	LFP39	1.9033E-04	2.5417E-04	2.7287E-04	2.3990E-04	1.5705E-04
	LFP40	3.0958E-05	4.4616E-05	4.8030E-05	4.2051E-05	2.5981E-05
	LFP41	5.6459E-05	7.5735E-05	8.1708E-05	7.1125E-05	4.5652E-05

ABR Oxide Fuel: Structural Material Compositions [10^{24} atoms/cm^3].

Lower Structure, Grid Plate, and Lower Reflector				Above Driver Fuel		
Nuclide	Lower structure	Grid plate	Lower reflector	Nuclide	Gas plenum	Upper structure
Na23	1.5591E-02	1.5591E-02	8.1322E-03	Na23	8.1322E-03	8.1322E-03
Fe	1.5878E-02	1.5878E-02	4.4260E-02	Fe	1.8573E-02	4.4260E-02
Cr	3.2355E-03	3.2355E-03	6.5809E-03	Cr	2.7616E-03	6.5809E-03
Mn55	5.0846E-04	5.0846E-04	2.9155E-04	Mn55	1.2234E-04	2.9155E-04
Ni	3.2604E-03	3.2604E-03	2.7289E-04	Ni	1.1452E-04	2.7289E-04
Mo	4.3524E-04	4.3524E-04	3.1113E-04	Mo	1.3056E-04	3.1113E-04

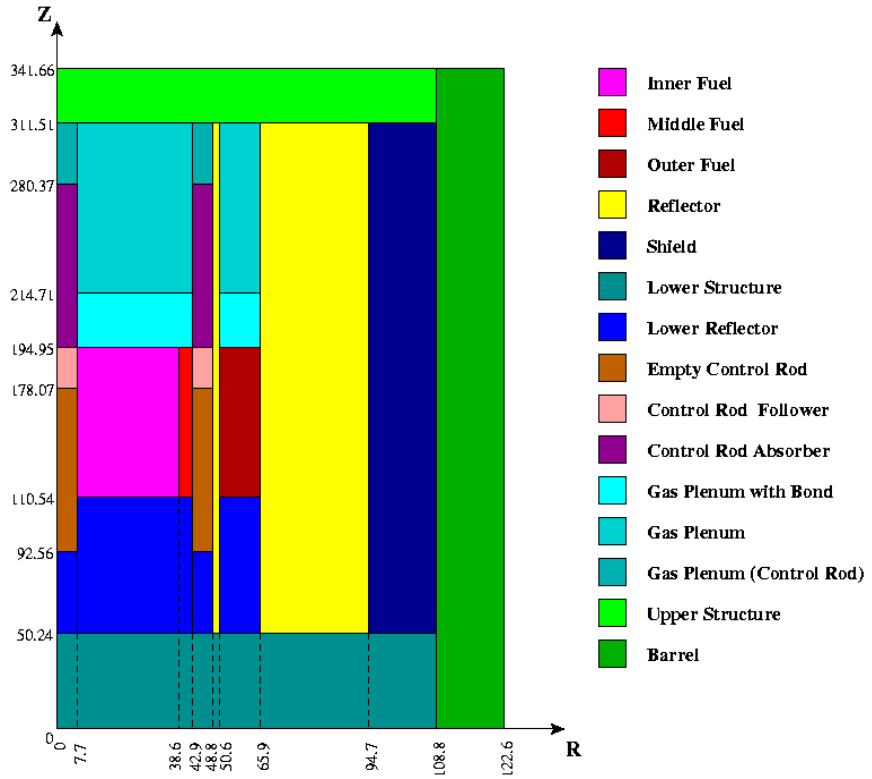
Radial Reflector, Shield, and Barrel			
Nuclide	Radial reflector	Shield	Barrel
Na23	3.45173E-03	3.80767E-03	1.23563E-02
Fe	5.89102E-02	2.06903E-02	1.83018E-02
Cr	8.75918E-03	3.07638E-03	3.72938E-03
Mn55	3.88047E-04	1.36289E-04	5.86069E-04
Ni	3.63219E-04	1.27569E-04	3.75801E-03
Mo	4.14113E-04	1.45444E-04	5.01672E-04
C12	-	1.67189E-03	-
B10	-	7.05028E-03	-
B11	-	2.83782E-02	-

ABR Oxide Fuel: Control Assemblies Compositions [10^{24} atoms/cm^3].

Nuclide	Under follower	Follower	Absorber		Above absorber	Upper structure
			Secondary	Primary		
Na23	2.02091E-02	1.64105E-02	6.42006E-03	6.42006E-03	6.42006E-02	7.87124E-03
Fe	6.45825E-03	1.83482E-02	1.44809E-02	1.44809E-02	1.44809E-03	4.50768E-02
Cr	9.60257E-04	2.72814E-03	2.15312E-03	2.15312E-03	2.15312E-04	6.70233E-03
Mn55	4.25411E-05	1.20862E-04	9.53870E-05	9.53870E-05	9.53870E-03	2.77927E-04
Ni	3.98192E-05	1.13129E-04	8.92839E-05	8.92839E-05	8.92839E-04	2.96925E-04
Mo	4.53987E-05	1.28980E-04	1.01794E-04	1.01794E-04	1.01794E-04	3.16870E-04
C12	-	-	1.05367E-02	1.05367E-02	-	-
B10	-	-	8.38725E-03	2.70650E-02	-	-
B11	-	-	3.37598E-02	1.64104E-02	-	-

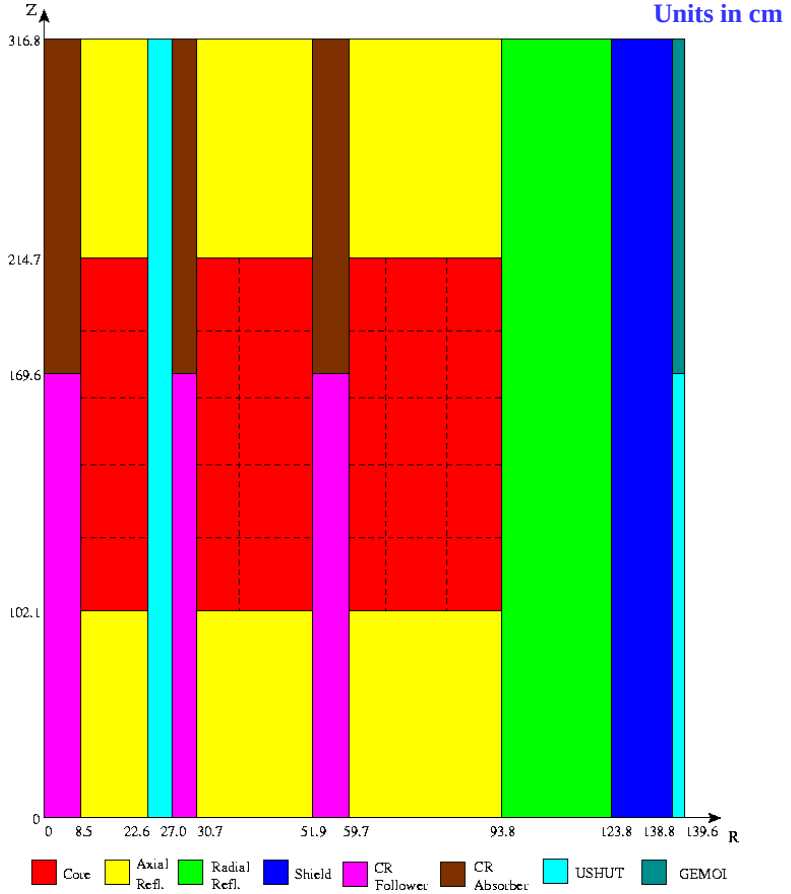
ABTR Geometry and Compositions [10^{24} at/cm^3]

	Inner Fuel	Middle Fuel	Outer Fuel	Lower Structure	Lower Reflector	Gas Plenum with Na Bond	Gas Plenum	Empty Control Rod	Control Rod Follower	Control Rod Absorber	Gas Plenum (Control Rod)	Reflector	Shield	Barrel
Na	7.148E-3	7.148E-3	7.148E-3	1.559E-2	7.148E-3	1.711E-2	7.148E-3	2.053E-2	1.105E-2	8.170E-3	8.170E-3	3.497E-3	3.857E-3	1.815E-2
Fe	1.618E-2	1.618E-2	1.618E-2	1.588E-2	4.743E-2	1.618E-2	1.618E-2	5.467E-3	2.762E-2	1.875E-2	1.875E-2	5.888E-2	2.124E-2	9.641E-3
Ni	9.976E-5	9.976E-5	9.976E-5	3.260E-3	2.924E-4	9.976E-5	9.976E-5	3.370E-5	4.582E-3	1.156E-4	1.156E-4	3.630E-4	1.309E-4	1.980E-3
Cr	2.406E-3	2.406E-3	2.406E-3	3.235E-3	7.052E-3	2.406E-3	2.406E-3	8.127E-4	5.326E-3	2.788E-3	2.788E-3	8.754E-3	3.158E-3	1.964E-3
Mn	1.066E-4	1.066E-4	1.066E-4	5.085E-4	3.124E-4	1.066E-4	1.066E-4	3.601E-5	7.453E-4	1.235E-4	1.235E-4	3.878E-4	1.399E-4	3.087E-4
Mo	5.505E-4	4.880E-4	5.530E-4	4.352E-4	3.334E-4	1.137E-4	1.137E-4	3.843E-5	6.456E-4	1.318E-4	1.318E-4	4.139E-4	1.493E-4	2.643E-4
C	-	-	-	-	-	-	-	-	-	1.422E-3	-	-	1.942E-3	-
B10	-	-	-	-	-	-	-	-	-	5.996E-3	-	-	8.191E-3	-
B11	-	-	-	-	-	-	-	-	-	2.414E-2	-	-	3.297E-2	-
Zr	3.263E-3	3.263E-3	3.263E-3											
U234	5.470E-9	4.486E-7	6.710E-9											
U235	1.443E-5	1.433E-5	1.421E-5											
U236	9.199E-7	8.718E-7	8.319E-7											
U238	9.048E-3	8.834E-3	8.643E-3											
Np237	1.718E-6	8.095E-5	1.399E-6											
Pu236	6.227E-12	4.061E-10	4.075E-12											
Pu238	4.289E-7	4.050E-5	4.418E-7											
Pu239	1.566E-3	1.053E-3	1.927E-3											
Pu240	1.673E-4	4.868E-4	2.041E-4											
Pu241	1.098E-5	1.317E-4	1.322E-5											
Pu242	7.849E-7	9.807E-5	9.224E-7											
Am241	6.357E-7	9.533E-5	9.966E-7											
Am242m	1.274E-8	2.610E-6	1.824E-8											
Am243	2.744E-8	1.952E-5	3.382E-8											
Cm242	2.107E-8	3.291E-6	2.519E-8											
Cm243	3.317E-10	1.093E-7	4.051E-10											
Cm244	2.161E-9	4.915E-6	2.474E-9											
Cm245	8.530E-11	4.372E-7	8.936E-11											
Cm246	1.168E-12	3.028E-8	1.077E-12											



Units in cm

SFR Geometry and Compositions [10^{24} at/cm^3]

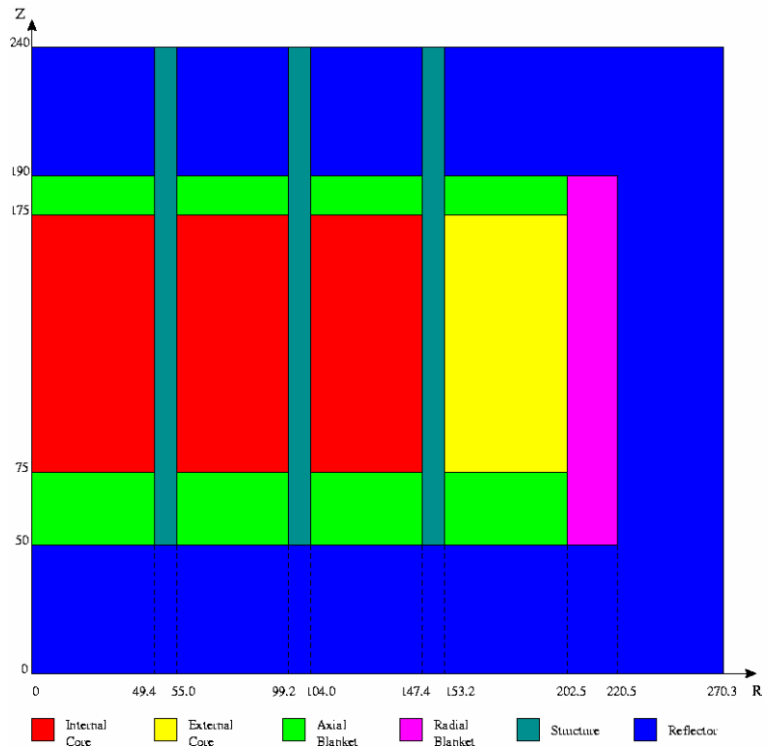


Average Fuel Compositions		
Isotope	BOC	EOC
U234	1.545E-5	1.531E-5
U235	5.030E-6	4.890E-6
U236	1.119E-5	1.109E-5
U238	1.697E-3	1.677E-3
Np237	8.626E-5	8.125E-5
Pu238	1.414E-4	1.382E-4
Pu239	7.325E-4	6.862E-4
Pu240	8.822E-4	8.589E-4
Pu241	1.610E-4	1.533E-4
Pu242	2.726E-4	2.674E-4
Am241	1.069E-4	1.019E-4
Am242m	7.408E-5	6.561E-5
Am243	9.517E-5	9.384E-5
Cm242	5.827E-6	6.134E-6
Cm243	5.688E-7	5.612E-7
Cm244	6.698E-5	6.747E-5
Cm245	1.738E-5	1.663E-5
Cm246	9.456E-6	9.336E-6
FP (*)	4.126E-4	6.631E-4
Fe	2.061E-2	2.061E-2
Cr	2.994E-3	2.994E-3
Ni	1.153E-4	1.153E-4
Mo	2.117E-4	2.117E-4
Zr	2.478E-3	2.478E-3
Na	1.099E-2	1.099E-2
Mn	2.218E-4	2.218E-4

Isotope	Axial Refl. (Bottom)	Axial Refl. (Top)	Radial Refl.	Shield	CR Absorber	CR Follower	USHUT	GEM0I
Fe	4.444E-2	1.909E-2	5.885E-2	1.789E-2	2.343E-2	2.343E-2	7.981E-3	7.981E-3
Cr	6.457E-3	2.774E-3	8.552E-3	2.599E-3	3.404E-3	3.404E-3	1.160E-3	1.160E-3
Ni	2.487E-4	1.068E-4	3.294E-4	1.001E-4	1.311E-4	1.311E-4	4.468E-5	4.468E-5
Mo	4.565E-4	1.961E-4	6.046E-4	1.837E-4	2.406E-4	2.406E-4	8.199E-5	8.199E-5
Na	8.120E-3	1.618E-2	3.635E-3	4.078E-3	6.493E-3	6.493E-3	1.968E-2	1.320E-3
Mn	4.783E-4	2.054E-4	6.335E-4	1.925E-4	2.521E-4	2.521E-4	8.591E-5	8.591E-5
B10				9.768E-3		6.326E-3		
B11				3.932E-2		2.546E-2		
C				1.227E-2		7.947E-3		

(*) Fission Products

EFR Geometry and Compositions [10^{24} at/cm^3]



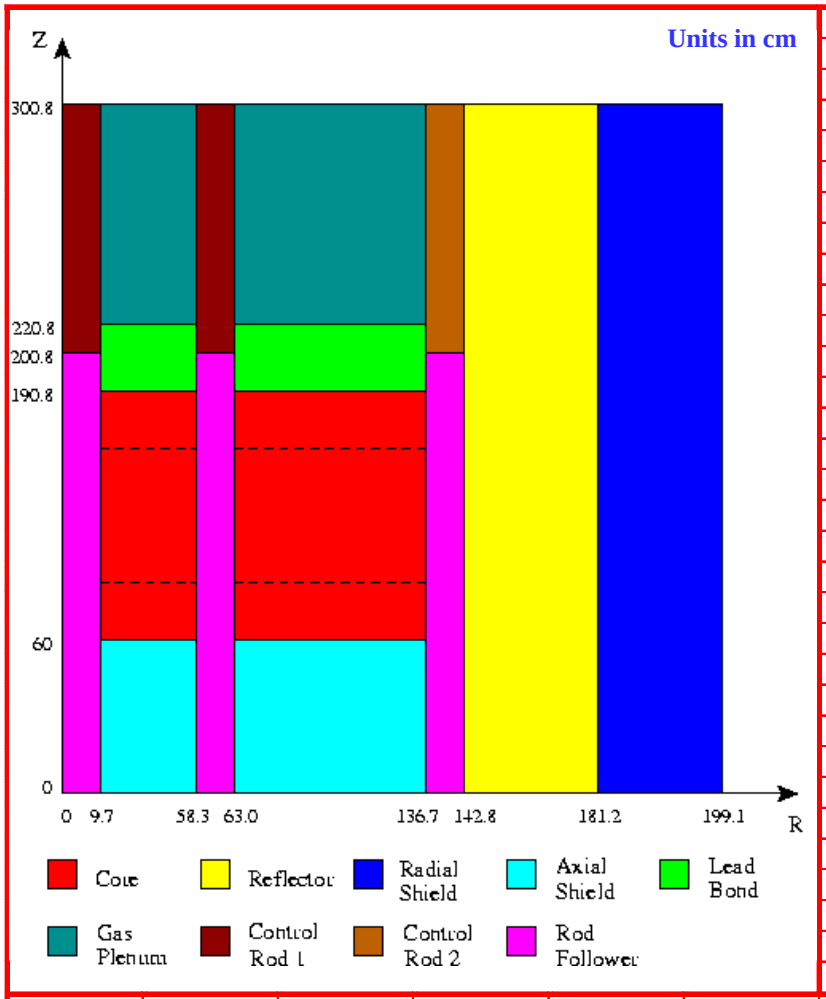
Units in cm

Isotopes	Reflector	Structure	Isotopes	Reflector	Structure
Fe	2.759E-2	4.967E-3	Ti	1.957E-4	3.523E-5
Cr	6.536E-3	1.176E-3	Si	7.092E-4	1.277E-4
Ni	6.192E-3	1.115E-3	Mn	6.398E-4	1.152E-4
Mo	3.664E-4	6.595E-5	Na	1.093E-2	1.995E-2

Average Fuel Compositions				
Isotopes	Fuel		Blanket	
	BOC	EOC	BOC	EOC
U234	9.517E-6	7.239E-6	6.577E-8	5.542E-8
U235	5.975E-6	3.357E-6	8.748E-6	5.322E-6
U236	6.585E-6	6.347E-6	2.798E-6	3.273E-6
U238	6.613E-3	5.701E-3	9.555E-3	8.951E-3
Np237	9.356E-6	8.880E-6	1.089E-14	1.268E-6
Pu238	3.902E-5	3.561E-5	1.084E-14	2.887E-7
Pu239	1.109E-3	8.623E-4	1.079E-14	4.211E-4
Pu240	6.633E-4	6.015E-4	1.075E-14	4.081E-5
Pu241	6.598E-5	8.287E-5	1.070E-14	3.299E-6
Pu242	7.264E-5	6.870E-5	1.066E-14	1.621E-7
Am241	5.991E-5	3.354E-5	1.070E-14	2.032E-7
Am242m	2.974E-6	3.073E-6	1.066E-14	3.787E-9
Am243	1.685E-5	1.745E-5	1.062E-14	6.707E-9
Cm242	7.985E-9	2.774E-6	1.066E-14	8.353E-9
Cm243	4.087E-7	3.707E-7	1.062E-14	3.101E-10
Cm244	1.217E-5	1.554E-5	1.057E-14	8.114E-10
Cm245	2.816E-6	2.577E-6	1.053E-14	3.483E-11
Cm246	1.776E-6	1.544E-6	1.049E-14	6.773E-13
Cm247	1.893E-7	2.583E-7	1.044E-14	2.496E-14
Cm248	1.107E-7	1.587E-7	1.040E-14	1.021E-14
FP (*)	1.190E-13	2.474E-3	7.581E-14	2.764E-4
O	1.721E-2	1.721E-2	1.894E-2	1.894E-2
Fe	1.298E-2	1.298E-2	1.246E-2	1.246E-2
Cr	3.075E-3	3.075E-3	2.951E-3	2.951E-3
Ni	2.913E-3	2.913E-3	2.796E-3	2.796E-3
Mo	1.724E-4	1.724E-4	1.654E-4	1.654E-4
Ti	9.206E-5	9.206E-5	8.837E-5	8.837E-5
Si	3.336E-4	3.336E-4	3.203E-4	3.203E-4
Mn	3.010E-4	3.010E-4	2.889E-4	2.889E-4
Na	7.180E-3	7.180E-3	7.162E-3	7.162E-3

(*) Fission Products

LFR Geometry and Compositions [10^{24} at/cm^3]

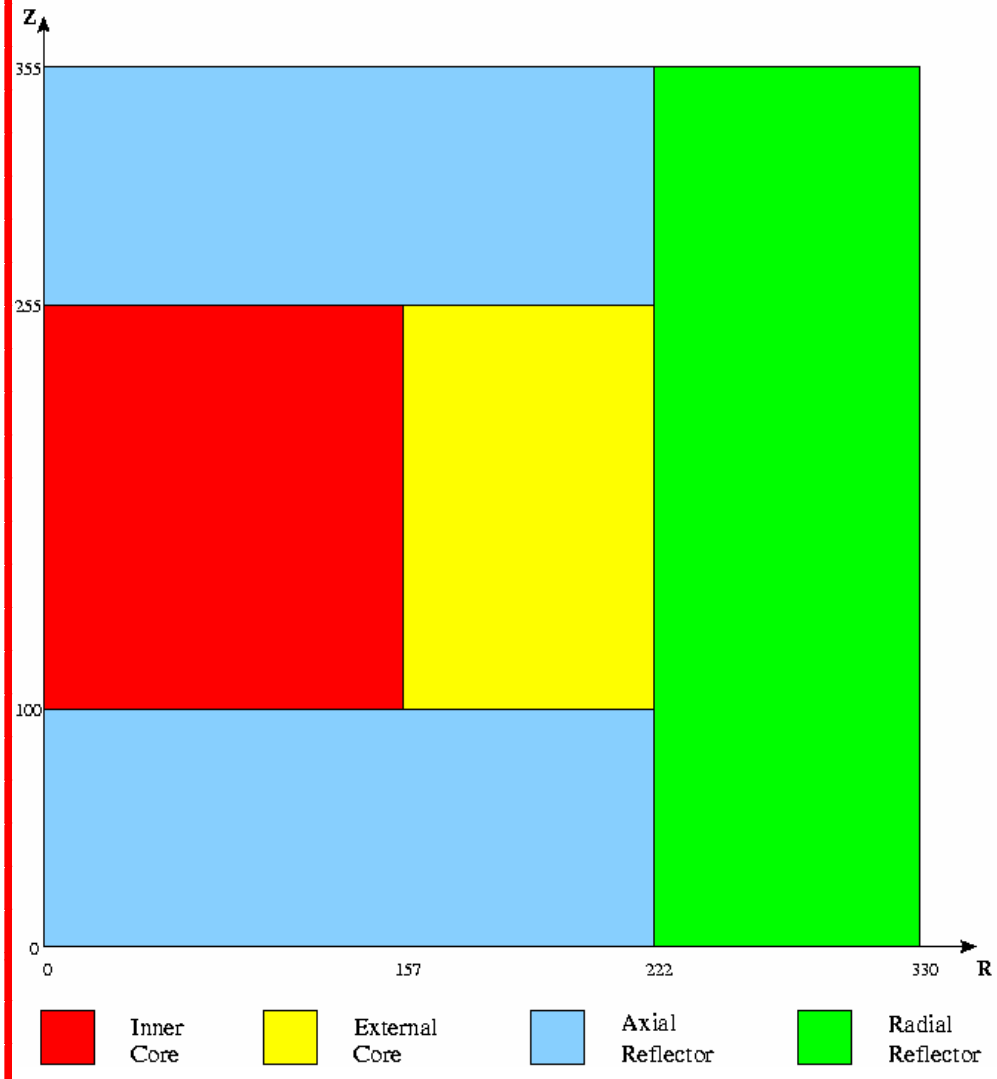


Average Fuel Compositions		
Isotope	BOC	EOC
U234	1.035E-5	1.025E-5
U235	7.754E-6	7.182E-6
U236	2.698E-5	2.659E-5
U238	4.686E-3	4.623E-3
Np237	3.436E-5	3.251E-5
Pu238	5.432E-5	5.380E-5
Pu239	6.332E-4	6.181E-4
Pu240	4.592E-4	4.501E-4
Pu241	5.229E-5	5.183E-5
Pu242	8.888E-5	8.751E-5
Am241	5.521E-5	5.203E-5
Am242m	3.702E-6	3.701E-6
Am243	2.652E-5	2.608E-5
Cm242	1.675E-6	2.150E-6
Cm243	1.338E-7	1.398E-7
Cm244	1.722E-5	1.754E-5
Cm245	5.066E-6	4.769E-6
Cm246	2.938E-6	2.910E-6
FP (*)	2.223E-4	4.136E-4
Zr	3.830E-3	3.830E-3
Pb	1.674E-2	1.674E-2
Fe	8.632E-3	8.632E-3
Ni	4.831E-5	4.831E-5
Cr	1.254E-3	1.254E-3
Mo	8.867E-5	8.867E-5
Mn55	9.291E-5	9.291E-5
B10	2.019E-4	2.019E-4
B11	2.172E-4	2.172E-4
C	1.217E-4	1.217E-4
Li7	6.782E-5	6.782E-5

Isotope	Reflector	Rad. Schield	Ax. Shield	Gas Plenum	Lead Bond	CR1	CR2	Follower
Pb	2.755E-2	3.841E-3	1.674E-2	1.674E-2	2.729E-2	1.248E-2	1.248E-2	2.755E-2
Fe	8.020E-3	6.270E-2	2.863E-2	8.632E-3	8.632E-3	2.184E-2	2.184E-2	8.020E-3
Ni	4.489E-5	3.509E-4	1.602E-4	4.831E-5	4.831E-5	1.222E-4	1.222E-4	4.489E-5
Cr	1.166E-3	9.111E-3	4.160E-3	1.254E-3	1.254E-3	3.173E-3	3.173E-3	1.165E-3
Mo	8.239E-5	6.441E-4	2.941E-4	8.867E-5	8.867E-5	2.243E-4	2.243E-4	8.239E-5
Mn55	8.633E-5	6.749E-4	3.081E-4	9.291E-5	9.291E-5	2.351E-4	2.351E-4	8.633E-5
B10						4.787E-3	1.082E-2	
B11						1.927E-2	1.323E-2	
C						6.014E-3	6.014E-3	

(*) Fission Products

GFR Geometry and Compositions [10^{24} at/cm^3]



Average Fuel Compositions		
Isotope	BOC	EOC
U234	5.041E-15	3.515E-7
U235	3.323E-5	2.829E-5
U236	5.041E-15	1.163E-6
U238	4.715E-3	4.613E-3
Np237	4.939E-5	4.430E-5
Pu238	3.673E-5	4.503E-5
Pu239	4.855E-4	4.996E-4
Pu240	3.026E-4	3.031E-4
Pu241	8.362E-5	7.431E-5
Pu242	1.050E-4	1.051E-4
Am241	1.855E-4	1.640E-4
Am242m	7.007E-7	3.486E-6
Am243	4.597E-5	4.379E-5
Cm242	5.041E-8	7.094E-6
Cm243	2.067E-7	3.045E-7
Cm244	1.504E-5	1.829E-5
Cm245	3.680E-6	3.571E-6
Cm246	2.823E-7	3.450E-7
FP (*)	3.041E-14	2.147E-4
He4	2.140E-4	2.140E-4
Si	1.218E-2	1.218E-2
C	1.824E-2	1.824E-2
Isotope	**Axial Refl.**	**Radial Refl.**
Si	1.252E-2	1.252E-2
He4	2.140E-4	2.140E-4
Zr	1.878E-2	1.878E-2

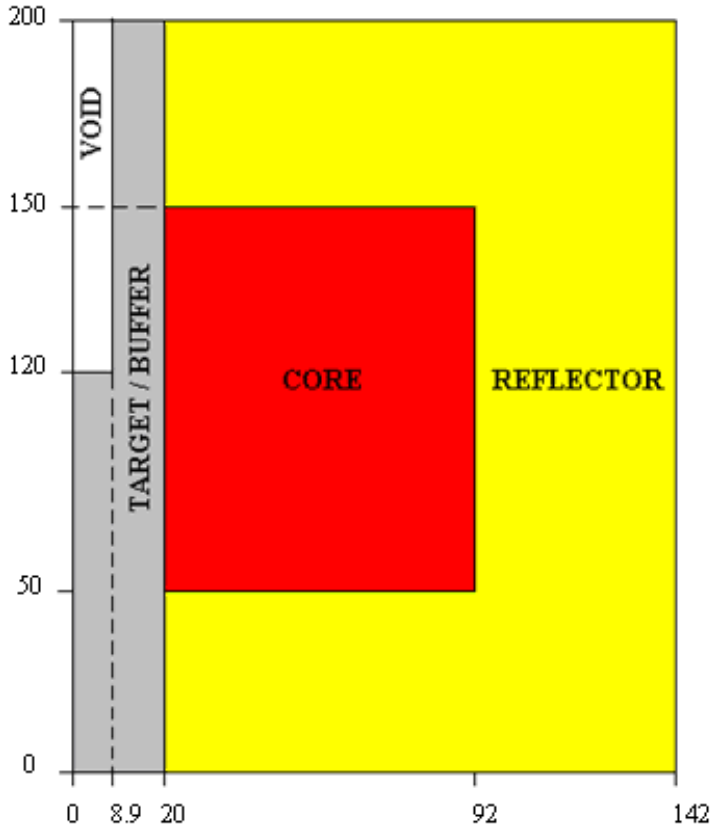
(*) Fission Products

ADMAB Geometry and Homogenized Compositions [10^{24} at/cm^3]

	Fuel		Reflector		Reflector		Reflector	
	BOC	EOC						
Np237	4.377E-4	3.971E-4	Fe54	2.990E-3	Ni58	1.977E-4	Bi	5.039E-3
Pu238	4.226E-5	9.415E-5	Fe56	4.560E-2	Ni60	7.305E-5	W182	2.140E-5
Pu239	5.051E-4	4.451E-4	Fe57	1.075E-3	Ni61	3.111E-6	W183	1.155E-5
Pu240	2.321E-4	2.399E-4	Fe58	1.344E-4	Ni62	9.724E-6	W184	2.465E-5
Pu241	1.232E-4	1.051E-4	Cr50	3.458E-4	Ni64	2.388E-6	W186	2.280E-5
Pu242	9.102E-5	1.006E-4	Cr52	6.422E-3	Mo	3.565E-4	Target/Buffer	
Am241	8.084E-4	7.220E-4	Cr53	7.134E-4	Mn	3.412E-4	Pb	1.320E-2
Am242m	1.089E-5	1.923E-5	Cr54	1.741E-4	Pb	4.075E-3	Bi	1.632E-2
Am243	5.827E-4	5.303E-4						
Cm242	4.079E-8	2.686E-5						
Cm243	3.326E-6	3.141E-6						
Cm244	2.371E-4	2.599E-4						
Cm245	3.164E-5	3.314E-5						
Cm246	5.355E-7	1.032E-6						
Zr	7.477E-3	7.477E-3						
N15	1.058E-2	1.058E-2						
Fe54	9.759E-4	9.759E-4						
Fe56	1.488E-2	1.488E-2						
Fe57	3.507E-4	3.507E-4						
Fe58	4.386E-5	4.386E-5						
Cr50	1.128E-4	1.128E-4						
Cr52	2.096E-3	2.096E-3						
Cr53	2.328E-4	2.328E-4						
Cr54	5.682E-5	5.682E-5						
Ni58	6.451E-5	6.451E-5						
Ni60	2.384E-5	2.384E-5						
Ni61	1.015E-6	1.015E-6						
Ni62	3.173E-6	3.173E-6						
Ni64	7.792E-7	7.792E-7						
Mo	1.163E-4	1.163E-4						
Mn	1.114E-4	1.114E-4						
Pb	6.360E-3	6.360E-3						
Bi	7.865E-3	7.865E-3						
W182	6.984E-6	6.984E-6						
W183	3.770E-6	3.770E-6						
W184	8.045E-6	8.045E-6						
W186	7.439E-6	7.439E-6						
FP (*)	-	2.636E-4						

(*) Fission Products

Units in cm



AFCI1.3 Relative Standard Deviations (%)

		Th232						U233						U234						U235						U236						U238					
Gr	E [MeV]	ν	σ_f	σ_{inel}	σ_{el}	σ_{capt}	$\sigma_{n,2n}$	ν	σ_f	σ_{inel}	σ_{el}	σ_{capt}	$\sigma_{n,2n}$	ν	σ_f	σ_{inel}	σ_{el}	σ_{capt}	$\sigma_{n,2n}$	ν	σ_f	σ_{inel}	σ_{el}	σ_{capt}	$\sigma_{n,2n}$	ν	σ_f	σ_{inel}	σ_{el}	σ_{capt}	$\sigma_{n,2n}$	ν	σ_f	σ_{inel}	σ_{el}	σ_{capt}	$\sigma_{n,2n}$
1	1.96E+1	1.2	2.1		1.7	17.8	27.5	4.8	0.9	13.0	3.5	80.0	39.8	3.0	15.0	20.0	5.0	60.0	35.0	0.8	0.5	25.5	7.5	60.6	28.7	3.0	15.0	15.0	5.0	50.0	18.0	1.4	0.6	31.6	7.4	22.3	3.4
2	1.00E+1	1.0	2.1		2.0	17.8	0.0	0.7	1.0	16.1	5.2	22.4	56.0	3.0	11.5	16.5	5.0	52.9	35.0	0.2	0.6	15.9	6.5	62.7	4.1	3.0	15.0	15.0	5.0	42.9	18.0	1.4	0.7	30.3	12.3	21.2	12.6
3	6.07E+0	0.8	2.1		1.3	33.0	0.0	0.6	0.7	16.1	5.5	17.7	5.1	3.0	10.0	15.0	5.0	50.0	0.0	0.2	0.5	8.9	5.0	46.3	14.2	3.0	15.0	15.0	5.0	39.9	0.0	1.3	0.6	20.1	13.1	19.9	0.0
4	3.68E+0	0.7	2.1		2.4	29.1	0.0	0.3	1.0	15.2	5.8	19.4	0.0	3.0	13.1	21.3	5.0	43.8	0.0	0.2	0.5	6.4	4.0	26.5	0.0	3.0	24.4	21.3	5.0	27.5	0.0	1.3	0.6	19.4	15.1	5.9	0.0
5	2.23E+0	0.7	2.1		4.0	3.7	0.0	0.3	1.0	15.3	6.5	20.0	0.0	3.0	15.0	25.0	5.0	40.0	0.0	0.2	0.5	6.4	4.5	19.1	0.0	3.0	30.0	25.0	5.0	20.0	0.0	1.3	0.6	20.6	18.8	6.0	0.0
6	1.35E+0	0.8	2.5		3.1	3.1	0.0	0.3	1.0	17.3	5.9	15.1	0.0	1.8	35.0	25.0	5.0	35.0	0.0	0.1	0.5	7.0	4.0	16.2	0.0	1.8	30.0	25.0	5.0	8.0	0.0	1.1	1.8	16.9	9.5	3.1	0.0
7	8.21E-1	0.8	8.3		1.3	1.5	0.0	0.3	1.0	18.7	4.9	14.9	0.0	1.8	35.0	18.8	5.0	31.9	0.0	0.1	0.5	8.5	3.3	16.8	0.0	1.8	30.0	25.0	5.0	8.0	0.0	2.0	4.9	5.6	2.6	1.7	0.0
8	4.98E-1	0.8	73.3		1.9	1.5	0.0	0.3	1.0	22.8	5.4	15.2	0.0	1.8	35.0	15.1	5.0	30.0	0.0	0.1	0.6	10.5	3.1	19.6	0.0	1.8	30.0	25.0	5.0	8.0	0.0	2.0	5.1	4.3	2.2	1.5	0.0
9	3.02E-1	0.8	67.6		2.2	1.4	0.0	0.3	1.1	23.0	5.0	15.0	0.0	1.8	38.1	27.5	5.0	26.9	0.0	0.2	0.5	12.7	2.7	20.0	0.0	1.8	33.1	25.0	5.3	6.1	0.0	2.0	6.8	4.1	1.8	1.5	0.0
10	1.83E-1	0.8	77.0		1.9	1.2	0.0	0.3	1.1	24.5	4.3	14.4	0.0	1.8	40.0	35.0	5.0	25.0	0.0	0.3	0.6	15.0	2.3	20.0	0.0	1.8	35.0	25.0	5.5	5.0	0.0	2.0	5.2	6.0	1.9	1.7	0.0
11	1.11E-1	0.8	26.6		0.8	2.0	0.0	0.3	1.1	37.8	4.6	16.0	0.0	1.8	40.0	0.0	5.0	21.9	0.0	0.2	0.6	15.1	2.1	20.0	0.0	1.8	38.1	0.0	5.2	5.0	0.0	2.0	5.1	19.2	2.8	1.7	0.0
12	6.74E-2	0.8	0.0		0.5	1.4	0.0	0.3	1.1	50.0	4.9	16.2	0.0	1.8	40.0	0.0	5.0	20.0	0.0	0.3	0.5	15.1	2.1	20.0	0.0	1.8	40.0	0.0	5.0	5.0	0.0	2.0	5.1	17.9	3.4	1.7	0.0
13	4.09E-2	0.8	0.0		0.4	1.4	0.0	0.2	10.5	1.1	0.4	8.2	0.0	1.8	46.2	0.0	5.0	16.9	0.0	0.3	0.5	19.4	2.2	20.0	0.0	1.8	46.2	0.0	5.6	5.0	0.0	2.0	5.1	0.0	4.3	1.6	0.0
14	2.48E-2	0.8	0.0		0.3	1.5	0.0	0.6	8.4	0.0	0.2	8.1	0.0	1.8	30.0	0.0	5.0	15.0	0.0	0.2	0.7	50.0	2.4	20.0	0.0	1.8	50.0	0.0	6.0	5.0	0.0	2.0	100.0	0.0	2.3	3.2	0.0
15	1.50E-2	0.8	0.0		0.3	1.4	0.0	0.6	6.4	0.0	0.2	8.2	0.0	1.8	30.0	0.0	5.0	11.9	0.0	0.3	0.5	50.0	2.6	20.0	0.0	1.8	50.0	0.0	7.3	4.4	0.0	2.0	98.8	0.0	0.9	3.9	0.0
16	9.12E-3	0.8	0.0		0.2	1.5	0.0	0.6	5.0	0.0	0.2	7.9	0.0	1.8	30.0	0.0	5.0	10.0	0.0	0.3	0.5	50.0	2.9	20.0	0.0	1.8	50.0	0.0	8.0	4.0	0.0	2.0	100.0	0.0	0.8	3.3	0.0
17	5.53E-3	0.8	0.0		0.5	6.9	0.0	0.6	4.4	0.0	0.3	7.8	0.0	3.4	20.0	0.0	7.5	8.0	0.0	0.3	0.5	50.0	3.3	20.0	0.0	1.6	50.0	0.0	9.0	4.0	0.0	2.0	14.5	0.0	0.7	2.8	0.0
18	3.35E-3	0.0	0.0		2.3	23.0	0.0	0.6	4.1	0.0	0.3	7.8	0.0	4.4	20.0	0.0	9.1	6.7	0.0	0.3	5.7	41.8	4.7	18.3	0.0	1.5	50.0	0.0	9.6	4.0	0.0	2.0	66.8	0.0	0.8	2.9	0.0
19	2.03E-3	0.0	0.0		2.2	10.2	0.0	0.6	4.0	0.0	0.3	8.1	0.0	5.0	15.0	0.0	10.0	6.0	0.0	0.6	3.1	0.0	3.8	13.1	0.0	1.5	50.0	0.0	10.0	4.0	0.0	2.0	68.0	0.0	0.8	2.9	0.0
20	1.23E-3	0.0	0.0		2.6	4.6	0.0	0.6	3.9	0.0	0.3	8.1	0.0	5.0	15.0	0.0	10.0	5.0	0.0	0.4	0.4	0.0	2.3	5.2	0.0	1.5	50.0	0.0	10.0	4.0	0.0	2.0	6.9	0.0	1.0	2.8	0.0
21	7.49E-4	0.0	0.0		3.4	3.3	0.0	0.6	2.0	0.0	0.9	4.1	0.0	5.0	15.0	0.0	10.0	4.4	0.0	0.7	0.3	0.0	1.6	2.5	0.0	1.5	50.0	0.0	10.0	4.0	0.0	2.0	8.3	0.0	1.1	2.7	0.0
22	4.54E-4	0.0	0.0		5.4	3.6	0.0	0.6	1.1	0.0	1.3	2.6	0.0	5.0	15.0	0.0	10.0	4.0	0.0	1.1	0.3	0.0	1.5	1.6	0.0	1.5	50.0	0.0	10.0	4.0	0.0	2.0	6.7	0.0	1.4	3.4	0.0
23	3.04E-4	0.0	0.0		5.6	3.4	0.0	0.6	1.0	0.0	1.2	2.5	0.0	5.0	15.0	0.0	10.0	4.0	0.0	1.1	0.3	0.0	1.4	1.3	0.0	1.5	50.0	0.0	10.0	4.0	0.0	2.0	13.2	0.0	1.0	2.9	0.0
24	1.49E-4	0.0	0.0		11.3	5.7	0.0	0.5	1.0	0.0	1.4	2.5	0.0	5.0	15.0	0.0	10.0	4.0	0.0	0.1	0.4	0.0	1.4	1.1	0.0	1.5	50.0	0.0	10.0	4.0	0.0	2.0	29.6	0.0	0.7	4.1	0.0
25	9.17E-5	0.0	0.0		12.2	6.3	0.0	0.3	1.1	0.0	1.6	2.6	0.0	5.0	15.0	0.0	10.0	4.0	0.0	0.1	0.4	0.0	1.5	1.3	0.0	1.5	50.0	0.0	10.0	4.0	0.0	2.0	22.2	0.0	0.8	5.1	0.0
26	6.79E-5	0.0	0.0		7.2	15.3	0.0	0.3	1.1	0.0	1.8	2.6	0.0	5.0	15.0	0.0	10.0	4.0	0.0	0.1	0.4	0.0	1.4	1.1	0.0	1.5	50.0	0.0	10.0	4.0	0.0	2.0	53.5	0.0	0.7	3.6	0.0
27	4.02E-5	0.0	0.0		3.6	2.8	0.0	0.3	0.9	0.0	2.1	2.5	0.0	5.0	15.0	0.0	10.0	4.0	0.0	0.1	0.5	0.0	1.6	1.1	0.0	1.5	50.0	0.0	10.0	4.0	0.0	2.0	6.3	0.0	0.9	3.6	0.0
28	2.26E-5	0.0	0.0		2.8	4.0	0.0	0.3	1.1	0.0	2.6	2.8	0.0	5.0	15.0	0.0	10.0	4.0	0.0	0.1	0.6	0.0	1.6	1.0	0.0	1.5	50.0	0.0	10.0	4.0	0.0	2.0	31.3	0.0	1.5	3.6	0.0
29	1.37E-5	0.0	0.0		0.9	2.1	0.0	0.2	1.8	0.0	3.1	3.0	0.0	5.0	15.0	0.0	10.0	4.0	0.0	0.1	0.4	0.0	1.5	1.2	0.0	1.5	50.0	0.0	10.0	4.0	0.0	2.0	100.0	0.0	0.9	2.7	0.0
30	8.32E-6	0.0	0.0		0.9	2.9	0.0	0.5	2.1	0.0	3.6	2.7	0.0	5.0	15.0	0.0	10.0	4.0	0.0	0.1	1.2	0.0	1.6	1.8	0.0	1.5	50.0	0.0	10.0	4.0	0.0	2.0	48.8	0.0	0.8	1.0	0.0
31	4.00E-6	0.0	0.0		0.9	1.4	0.0	0.5	1.4	0.0	4.5	2.5	0.0	5.0	15.0	0.0	10.0	4.0	0.0	0.1	0.8	0.0	1.7	2.2	0.0	1.5	50.0	0.0	10.0	4.0	0.0	2.0	55.7	0.0	0.9	2.8	0.0
32	5.40E-7	0.0	0.0		0.8	1.1	0.0	0.5	0.5	0.0	5.5	2.4	0.0	5.0	21.0	0.0	6.0	2.0	0.0	0.1	0.4	0.0	3.1	1.6	0.0	1.5	20.0	0.0	5.0	2.0	0.0	2.0	62.0	0.0	1.0	2.0	0.0
33	1.00E-7	0.0	0.0		0.6	0.1	0.0	0.5	0.4	0.0	5.6	2.2	0.0	5.0	21.0	0.0	6.0	2.0	0.0	0.1	0.4	0.0	4.8	1.7	0.0	1.5	20.0	0.0	5.0	2.0	0.0	2.0	62.3	0.0	1.1	1.8	0.0

AFCI1.3 Relative Standard Deviations (%)

		Np237						Pu238						Pu239						Pu240						Pu241						Pu242					
Gr	E [MeV]	ν	σ_f	σ_{inel}	σ_{el}	σ_{capt}	$\sigma_{n,2n}$	ν	σ_f	σ_{inel}	σ_{el}	σ_{capt}	$\sigma_{n,2n}$	ν	σ_f	σ_{inel}	σ_{el}	σ_{capt}	$\sigma_{n,2n}$	ν	σ_f	σ_{inel}	σ_{el}	σ_{capt}	$\sigma_{n,2n}$	ν	σ_f	σ_{inel}	σ_{el}	σ_{capt}	$\sigma_{n,2n}$	ν	σ_f	σ_{inel}	σ_{el}	σ_{capt}	$\sigma_{n,2n}$
1	1.96E+1	3.0	3.0	15.7	8.4	36.7	15.1	5.0	20.0	100.0	5.0	100.0	20.0	0.4	0.7	24.1	5.6	36.3	7.2	1.2	0.6	17.2	6.6	94.8	24.2	0.5	0.8	25.0	6.0	55.0	40.0	10.0	3.5	17.2	11.9	94.2	27.1
2	1.00E+1	3.0	2.9	15.0	9.8	18.2	21.6	3.6	20.0	100.0	5.0	100.0	20.0	0.2	0.9	27.6	8.7	39.9	20.9	0.4	0.5	34.3	14.8	94.9	24.5	0.3	0.7	21.5	5.3	55.0	36.5	5.0	3.3	15.0	11.6	64.3	17.9
3	6.07E+0	3.0	2.8	15.0	7.0	24.1	0.0	3.0	20.0	99.8	5.0	100.0	0.0	0.2	0.8	25.6	10.8	42.0	7.0	0.4	0.5	31.4	16.8	94.7	0.0	0.3	0.7	20.0	5.0	55.1	0.0	3.0	3.3	15.0	10.4	59.2	0.0
4	3.68E+0	2.0	2.3	15.0	6.6	19.5	0.0	3.0	13.8	62.5	5.0	100.0	0.0	0.2	0.9	19.5	9.3	34.2	0.0	0.3	0.5	30.8	16.3	94.7	0.0	0.3	0.7	26.3	5.0	83.1	0.0	2.5	3.1	15.0	11.7	46.6	0.0
5	2.23E+0	1.5	2.5	15.0	8.7	12.9	0.0	3.0	10.0	40.0	5.0	100.0	0.0	0.2	0.9	19.0	10.7	26.6	0.0	0.3	0.5	32.0	18.5	89.1	0.0	0.3	0.6	30.0	5.0	100.0	0.0	2.2	3.3	15.0	12.8	40.5	0.0
6	1.35E+0	0.7	3.2	15.0	8.7	9.5	0.0	3.0	50.0	100.0	5.0	50.0	0.0	0.2	0.8	27.0	11.7	20.5	0.0	0.4	0.6	40.9	17.9	39.4	0.0	0.3	0.7	30.0	10.0	80.0	0.0	3.1	3.3	15.0	10.8	36.5	0.0
7	8.21E-1	0.6	4.9	15.0	6.2	7.6	0.0	3.0	50.0	100.0	5.0	43.8	0.0	0.2	0.8	32.6	9.2	15.5	0.0	0.7	1.6	33.9	9.5	11.9	0.0	0.3	0.7	67.3	10.0	48.9	0.0	3.7	3.6	15.0	7.8	32.5	0.0
8	4.98E-1	0.6	3.9	15.0	4.6	5.7	0.0	3.0	50.0	99.8	5.0	39.9	0.0	0.2	0.9	32.7	6.4	12.1	0.0	6.6	3.0	21.9	4.6	6.0	0.0	0.3	0.7	89.9	10.0	30.0	0.0	4.0	4.7	14.5	7.2	29.9	0.0
9	3.02E-1	0.6	4.0	17.7	4.4	5.4	0.0	3.0	50.0	68.7	5.0	21.2	0.0	0.3	0.8	36.2	5.2	11.3	0.0	6.6	3.6	15.7	5.8	3.9	0.0	0.3	0.8	65.0	10.0	30.0	0.0	4.0	7.7	18.6	7.6	28.7	0.0
10	1.83E-1	0.6	4.9	21.6	4.3	5.4	0.0	3.0	50.0	50.0	5.0	10.0	0.0	0.7	1.0	43.7	4.5	9.6	0.0	6.6	2.8	12.5	5.8	2.3	0.0	0.3	0.8	50.0	10.0	30.0	0.0	4.0	13.5	23.5	8.4	27.7	0.0
11	1.11E-1	0.6	5.8	23.4	4.2	6.0	0.0	3.0	50.0	0.0	14.3	10.0	0.0	0.5	0.9	50.0	3.6	10.8	0.0	1.8	3.9	16.0	5.8	2.2	0.0	0.3	0.8	50.0	10.0	23.8	0.0	4.0	10.5	22.7	8.8	27.3	0.0
12	6.74E-2	0.6	7.5	36.6	4.3	5.0	0.0	3.0	50.0	0.0	20.0	10.0	0.0	0.7	0.7	45.1	2.6	11.4	0.0	0.7	6.1	79.8	5.8	2.9	0.0	0.3	0.8	0.0	10.0	20.0	0.0	4.0	16.5	42.7	9.9	23.9	0.0
13	4.09E-2	0.6	9.0	23.4	4.7	5.0	0.0	3.0	50.0	0.0	20.0	13.1	0.0	0.6	0.9	31.9	2.1	8.9	0.0	0.7	6.0	0.0	5.8	3.6	0.0	0.3	1.0	0.0	10.0	13.8	0.0	4.0	13.2	0.0	13.1	21.5	0.0
14	2.48E-2	0.6	9.7	0.0	4.9	5.0	0.0	3.0	50.0	0.0	20.0	15.0	0.0	1.2	0.9	30.1	2.1	7.2	0.0	0.7	5.0	0.0	5.8	3.7	0.0	0.3	1.2	0.0	10.0	10.0	0.0	4.0	12.8	0.0	14.0	21.2	0.0
15	1.50E-2	0.6	10.7	0.0	5.1	5.0	0.0	3.0	50.0	0.0	20.0	18.1	0.0	2.0	1.2	26.7	2.3	7.8	0.0	0.7	4.0	0.0	5.8	3.8	0.0	0.3	1.8	0.0	10.0	10.0	0.0	4.0	12.9	0.0	17.2	20.1	0.0
16	9.12E-3	0.6	12.0	0.0	5.3	5.0	0.0	3.0	50.0	0.0	20.0	20.0	0.0	0.9	0.8	17.1	3.7	16.5	0.0	0.7	3.5	0.0	5.8	3.3	0.0	0.3	1.8	0.0	10.0	10.0	0.0	4.0	12.9	0.0	21.1	19.4	0.0
17	5.53E-3	0.8	13.3	0.0	5.6	5.0	0.0	2.5	50.0	0.0	20.0	17.5	0.0	1.0	0.8	0.0	4.2	16.5	0.0	0.7	3.3	0.0	5.8	3.5	0.0	0.3	2.1	0.0	10.0	10.0	0.0	4.0	9.9	0.0	19.3	15.6	0.0
18	3.35E-3	0.9	14.8	0.0	6.0	5.0	0.0	2.2	50.0	0.0	20.0	15.9	0.0	1.4	0.7	0.0	3.2	10.7	0.0	0.7	3.1	0.0	5.8	4.0	0.0	0.3	2.2	0.0	10.0	10.0	0.0	4.0	15.0	0.0	15.0	12.0	0.0
19	2.03E-3	1.0	16.1	0.0	6.5	5.0	0.0	2.0	49.9	0.0	20.0	15.0	0.0	1.0	1.2	0.0	0.5	1.5	0.0	0.7	2.9	0.0	5.8	4.6	0.0	0.3	2.1	0.0	10.0	10.0	0.0	4.0	15.0	0.0	15.0	12.0	0.0
20	1.23E-3	1.0	16.6	0.0	6.8	5.0	0.0	2.0	39.8	0.0	17.4	12.4	0.0	1.1	1.3	0.0	0.7	1.5	0.0	0.7	2.9	0.0	5.8	4.6	0.0	0.3	1.0	0.0	12.6	10.0	0.0	4.0	15.0	0.0	15.0	12.0	0.0
21	7.49E-4	1.0	24.4	0.0	8.3	5.0	0.0	2.0	33.7	0.0	15.9	10.9	0.0	1.2	1.3	0.0	1.2	1.6	0.0	0.7	2.9	0.0	5.8	4.6	0.0	0.3	5.9	0.0	14.1	10.0	0.0	4.0	15.0	0.0	15.0	12.0	0.0
22	4.54E-4	1.0	20.0	0.0	6.0	5.0	0.0	2.0	30.0	0.0	15.0	10.0	0.0	0.5	1.5	0.0	0.9	1.6	0.0	0.7	2.9	0.0	5.8	4.6	0.0	0.3	5.0	0.0	15.0	10.0	0.0	4.0	15.0	0.0	15.0	12.0	0.0
23	3.04E-4	1.0	20.0	0.0	6.0	5.0	0.0	2.0	24.8	0.0	15.0	10.0	0.0	0.3	1.3	0.0	1.6	1.6	0.0	0.7	2.9	0.0	5.8	4.6	0.0	0.3	5.0	0.0	15.0	10.0	0.0	4.0	15.0	0.0	15.0	12.0	0.0
24	1.49E-4	1.0	20.0	0.0	6.0	5.0	0.0	2.0	19.4	0.0	15.0	10.0	0.0	0.3	1.6	0.0	1.1	1.9	0.0	0.7	2.9	0.0	5.8	4.6	0.0	0.3	5.0	0.0	15.0	10.0	0.0	4.0	15.0	0.0	15.0	12.0	0.0
25	9.17E-5	1.0	20.0	0.0	6.0	5.0	0.0	2.0	17.4	0.0	15.0	10.0	0.0	0.2	1.8	0.0	2.3	5.5	0.0	0.7	2.9	0.0	5.8	4.6	0.0	0.3	5.0	0.0	15.0	10.0	0.0	4.0	15.0	0.0	15.0	12.0	0.0
26	6.79E-5	1.0	20.0	0.0	6.0	5.0	0.0	2.0	16.6	0.0	15.0	10.0	0.0	0.2	1.6	0.0	0.8	3.2	0.0	0.7	2.9	0.0	5.8	4.6	0.0	0.3	5.0	0.0	15.0	10.0	0.0	4.0	15.0	0.0	15.0	12.0	0.0
27	4.02E-5	1.0	20.0	0.0	6.0	5.0	0.0	2.0	15.6	0.0	15.0	10.0	0.0	0.2	2.6	0.0	0.3	2.1	0.0	0.7	2.9	0.0	5.8	4.6	0.0	0.3	5.0	0.0	15.0	10.0	0.0	4.0	15.0	0.0	15.0	12.0	0.0
28	2.26E-5	1.0	20.0	0.0	6.0	5.0	0.0	2.0	15.0	0.0	15.0	10.0	0.0	0.2	1.7	0.0	0.3	1.3	0.0	0.7	2.9	0.0	5.8	4.6	0.0	0.3	5.0	0.0	15.0	10.0	0.0	4.0	15.0	0.0	15.0	12.0	0.0
29	1.37E-5	1.0	20.0	0.0	6.0	5.0	0.0	2.0	15.0	0.0	15.0	10.0	0.0	0.2	1.0	0.0	0.3	0.7	0.0	0.7	2.9	0.0	5.8	4.6	0.0	0.3	5.0	0.0	15.0	10.0	0.0	4.0	15.0	0.0	15.0	12.0	0.0
30	8.32E-6	1.0	20.0	0.0	6.0	5.0	0.0	2.0	15.0	0.0	15.0	10.0	0.0	0.2	1.5	0.0	0.3	1.0	0.0	0.7	2.9	0.0	5.8	4.6	0.0	0.3	5.0	0.0	15.0	10.0	0.0	4.0	15.0	0.0	15.0	12.0	0.0
31	4.00E-6	1.0	17.4	0.0	5.2	4.5	0.0	2.0	15.0	0.0	15.0	10.0	0.0	0.2	1.8	0.0	0.3	1.5	0.0	0.7	2.9	0.0	5.8	4.6	0.0	0.3	5.0	0.0	15.0	10.0	0.0	4.0	15.0	0.0	15.0	12.0	0.0
32	5.40E-7	1.0	5.0	0.0	3.0	8.0	0.0	2.0	5.0	0.0	10.0	4.0	0.0	0.2	0.8	0.0	0.4	1.3	0.0	0.7	50.0	0.0	5.3	2.0	0.0	0.3	1.0	0.0	10.0	2.0	0.0	4.0	45.5	0.0	4.7	3.8	0.0
33	1.00E-7	1.0	3.7	0.0	2.2	6.0	0.0	2.0	5.0	0.0	10.0	4.0	0.0	0.1	1.1	0.0	0.7	1.5	0.0	0.7	50.0	0.0	8.0	2.0	0.0	0.3	1.0	0.0	10.0	2.0	0.0	4.0	50.0	0.0	5.0	4.0	0.0

AFCI1.3 Relative Standard Deviations (%)

		Am241						Am242m						Am243						Cm242						Cm243						Cm244					
Gr	E [MeV]	ν	σ_f	σ_{inel}	σ_{el}	σ_{capt}	$\sigma_{n,2n}$	ν	σ_f	σ_{inel}	σ_{el}	σ_{capt}	$\sigma_{n,2n}$	ν	σ_f	σ_{inel}	σ_{el}	σ_{capt}	$\sigma_{n,2n}$	ν	σ_f	σ_{inel}	σ_{el}	σ_{capt}	$\sigma_{n,2n}$	ν	σ_f	σ_{inel}	σ_{el}	σ_{capt}	$\sigma_{n,2n}$	ν	σ_f	σ_{inel}	σ_{el}	σ_{capt}	$\sigma_{n,2n}$
1	1.96E+1	3.0	20.0	25.0	5.0	80.0	20.0	10.4	40.0	25.0	10.0	100.0	30.0	1.9	20.0	25.0	5.0	60.0	50.0	11.0	100.0	100.0	10.0	100.0	50.0	9.5	10.0	15.0	5.0	80.0	50.0	11.0	20.0	50.0	5.0	100.0	30.0
2	1.00E+1	3.0	14.3	21.5	5.0	58.7	20.0	3.7	29.4	28.5	10.0	100.0	33.5	2.0	16.5	21.5	5.0	45.8	50.0	11.4	100.0	100.0	6.5	100.0	50.0	5.6	10.0	18.5	5.0	58.7	39.4	11.7	20.0	35.8	5.0	100.0	30.0
3	6.07E+0	3.0	12.0	20.0	5.0	49.9	0.0	0.9	25.0	30.0	10.0	99.9	33.5	2.0	15.0	20.0	5.0	39.9	0.0	11.5	100.0	100.0	5.0	100.0	0.0	4.0	10.0	20.0	5.0	49.9	0.0	12.0	20.0	30.0	5.0	100.0	0.0
4	3.68E+0	3.0	10.8	20.0	5.0	37.5	0.0	0.8	21.9	30.0	10.0	68.8	0.0	1.9	11.9	20.0	5.0	27.5	0.0	11.2	100.0	100.0	5.0	100.0	0.0	3.4	10.0	16.9	5.0	37.5	0.0	10.8	20.0	23.8	5.0	100.0	0.0
5	2.23E+0	3.0	10.0	20.0	5.0	30.0	0.0	0.7	20.0	30.0	10.0	50.0	0.0	1.9	10.0	20.0	5.0	20.0	0.0	11.0	100.0	100.0	5.0	100.0	0.0	3.0	10.0	15.0	5.0	30.0	0.0	10.0	20.0	20.0	5.0	100.0	0.0
6	1.35E+0	3.0	10.0	20.0	5.0	30.0	0.0	0.7	15.0	30.0	10.0	50.0	0.0	1.1	10.0	20.0	5.0	15.0	0.0	10.0	100.0	100.0	5.0	100.0	0.0	3.0	15.0	30.0	5.0	30.0	0.0	10.0	15.0	30.0	10.0	100.0	0.0
7	8.21E-1	3.0	10.0	26.2	8.1	23.8	0.0	0.7	15.0	30.0	10.0	50.0	0.0	1.2	10.0	26.2	5.0	11.9	0.0	10.0	100.0	68.9	5.0	100.0	0.0	3.0	18.1	30.0	5.0	30.0	0.0	10.0	11.9	30.0	10.0	68.9	0.0
8	4.98E-1	3.0	10.0	30.0	10.0	20.0	0.0	0.7	15.0	30.0	10.0	50.0	0.0	1.2	10.0	30.0	5.0	10.0	0.0	10.0	100.0	50.0	5.0	100.0	0.0	3.0	20.0	30.1	5.0	30.0	0.0	10.0	10.0	30.1	10.0	50.0	0.0
9	3.02E-1	3.0	10.0	30.0	10.0	13.7	0.0	0.7	15.0	30.0	13.1	50.0	0.0	1.2	10.0	30.0	8.1	10.0	0.0	10.0	100.0	50.0	5.0	100.0	0.0	3.0	16.9	42.5	5.0	23.7	0.0	10.0	10.0	48.8	10.0	50.0	0.0
10	1.83E-1	3.0	10.0	30.0	10.0	10.0	0.0	0.7	15.0	30.0	15.0	50.0	0.0	1.2	10.0	30.0	10.0	10.0	0.0	10.0	100.0	50.0	5.0	100.0	0.0	3.0	15.0	50.0	5.0	20.0	0.0	10.0	10.0	60.0	10.0	50.0	0.0
11	1.11E-1	3.0	11.2	30.0	10.0	8.8	0.0	0.7	15.0	30.0	15.0	50.0	0.0	1.2	10.0	30.0	16.2	10.0	0.0	10.0	100.0	37.5	5.0	100.0	0.0	3.0	13.1	50.0	5.0	20.0	0.0	10.0	10.0	60.0	10.0	50.0	0.0
12	6.74E-2	3.0	12.0	0.0	10.0	8.0	0.0	0.7	15.0	30.0	15.0	50.0	0.0	1.2	10.0	0.0	20.0	10.0	0.0	10.0	100.0	0.0	5.0	100.0	0.0	3.0	12.0	0.0	5.0	20.0	0.0	10.0	10.0	0.0	10.0	50.1	0.0
13	4.09E-2	3.0	13.9	0.0	10.0	8.0	0.0	0.7	13.1	36.2	18.1	50.0	0.0	1.2	13.1	0.0	20.0	8.8	0.0	10.0	100.0	0.0	5.0	100.0	0.0	3.0	12.0	0.0	5.0	20.0	0.0	10.0	10.0	0.0	13.1	81.2	0.0
14	2.48E-2	3.0	15.0	0.0	10.0	8.0	0.0	0.7	12.0	0.0	20.0	50.0	0.0	1.2	15.0	0.0	20.0	8.0	0.0	10.0	100.0	0.0	5.0	100.0	0.0	3.0	12.0	0.0	5.0	20.0	0.0	10.0	10.0	0.0	15.0	100.0	0.0
15	1.50E-2	3.0	15.0	0.0	10.0	8.0	0.0	0.7	12.0	0.0	20.0	50.0	0.0	1.2	15.0	0.0	20.0	8.0	0.0	10.0	100.0	0.0	5.0	100.0	0.0	3.0	12.0	0.0	5.0	20.0	0.0	10.0	10.0	0.0	15.0	100.0	0.0
16	9.12E-3	3.0	15.0	0.0	10.0	8.0	0.0	0.7	12.0	0.0	20.0	50.0	0.0	1.2	15.0	0.0	20.0	8.0	0.0	10.0	100.0	0.0	5.0	99.9	0.0	3.0	12.0	0.0	5.0	20.0	0.0	10.0	10.0	0.0	15.0	99.9	0.0
17	5.53E-3	2.2	13.5	0.0	10.0	8.0	0.0	0.9	11.0	0.0	20.0	50.0	0.0	1.4	15.0	0.0	20.0	8.0	0.0	8.0	100.0	0.0	5.0	79.7	0.0	3.0	12.0	0.0	7.5	17.5	0.0	8.0	12.5	0.0	15.0	74.6	0.0
18	3.35E-3	1.8	12.6	0.0	10.0	8.0	0.0	0.9	10.4	0.0	20.0	50.0	0.0	1.4	15.0	0.0	20.0	8.0	0.0	6.7	100.0	0.0	5.0	67.4	0.0	3.0	12.0	0.0	9.1	15.9	0.0	6.7	14.1	0.0	15.0	59.3	0.0
19	2.03E-3	1.5	12.0	0.0	10.1	8.0	0.0	1.0	10.0	0.0	20.0	49.8	0.0	1.5	15.0	0.0	20.0	8.0	0.0	6.0	99.9	0.0	5.2	59.8	0.0	3.0	12.0	0.0	10.1	15.0	0.0	6.0	15.0	0.0	15.0	49.7	0.0
20	1.23E-3	1.5	11.0	0.0	15.1	8.0	0.0	1.0	8.0	0.0	20.0	37.2	0.0	1.5	12.4	0.0	20.0	6.0	0.0	6.0	94.9	0.0	17.8	44.7	0.0	3.0	10.0	0.0	15.1	12.4	0.0	6.0	17.6	0.0	17.6	29.6	0.0
21	7.49E-4	1.5	10.4	0.0	18.1	8.0	0.0	1.0	6.7	0.0	20.0	29.6	0.0	1.5	10.9	0.0	20.0	4.7	0.0	6.0	91.9	0.0	25.4	35.6	0.0	3.0	8.7	0.0	18.1	10.9	0.0	6.0	19.1	0.0	19.1	17.4	0.0
22	4.54E-4	1.5	10.0	0.0	20.0	8.0	0.0	1.0	6.0	0.0	20.0	25.0	0.0	1.5	10.0	0.0	20.0	4.0	0.0	6.0	90.0	0.0	30.0	30.0	0.0	3.0	8.0	0.0	20.0	10.0	0.0	6.0	20.0	0.0	20.0	10.0	0.0
23	3.04E-4	1.5	10.0	0.0	20.0	8.0	0.0	1.0	6.0	0.0	20.0	25.0	0.0	1.5	10.0	0.0	20.0	4.0	0.0	6.0	90.0	0.0	30.0	30.0	0.0	3.0	8.0	0.0	20.0	10.0	0.0	6.0	20.0	0.0	20.0	10.0	0.0
24	1.49E-4	1.5	10.0	0.0	20.0	8.0	0.0	1.0	6.0	0.0	20.0	25.0	0.0	1.5	10.0	0.0	20.0	4.0	0.0	6.0	90.0	0.0	40.0	30.0	0.0	3.0	8.0	0.0	20.0	10.0	0.0	6.0	20.0	0.0	20.0	10.0	0.0
25	9.17E-5	1.5	10.0	0.0	20.0	8.0	0.0	1.0	6.0	0.0	20.0	25.0	0.0	1.5	10.0	0.0	20.0	4.0	0.0	6.0	90.0	0.0	40.0	30.0	0.0	3.0	8.0	0.0	20.0	10.0	0.0	6.0	20.0	0.0	20.0	10.0	0.0
26	6.79E-5	1.5	10.0	0.0	20.0	8.0	0.0	1.0	6.0	0.0	20.0	25.0	0.0	1.5	10.0	0.0	20.0	4.0	0.0	6.0	90.0	0.0	40.0	30.0	0.0	3.0	8.0	0.0	20.0	10.0	0.0	6.0	20.0	0.0	20.0	10.0	0.0
27	4.02E-5	1.5	10.0	0.0	20.0	8.0	0.0	1.0	6.0	0.0	20.0	25.0	0.0	1.5	10.0	0.0	20.0	4.0	0.0	6.0	90.0	0.0	40.0	30.0	0.0	3.0	8.0	0.0	20.0	10.0	0.0	6.0	20.0	0.0	20.0	10.0	0.0
28	2.26E-5	1.5	10.0	0.0	20.0	8.0	0.0	1.0	6.0	0.0	20.0	25.0	0.0	1.5	10.0	0.0	20.0	4.0	0.0	6.0	90.0	0.0	40.0	30.0	0.0	3.0	8.0	0.0	20.0	10.0	0.0	6.0	20.0	0.0	20.0	10.0	0.0
29	1.37E-5	1.5	10.0	0.0	20.0	8.0	0.0	1.0	6.0	0.0	20.0	25.0	0.0	1.5	10.0	0.0	20.0	4.0	0.0	6.0	90.0	0.0	40.0	30.0	0.0	3.0	8.0	0.0	20.0	10.0	0.0	6.0	20.0	0.0	20.0	10.0	0.0
30	8.32E-6	1.5	10.0	0.0	20.0	8.0	0.0	1.0	6.0	0.0	20.0	25.0	0.0	1.5	10.0	0.0	20.0	4.0	0.0	6.0	90.0	0.0	40.0	30.0	0.0	3.0	8.0	0.0	20.0	10.0	0.0	6.0	20.0	0.0	20.0	10.0	0.0
31	4.00E-6	1.5	10.0	0.0	20.0	8.0	0.0	1.0	6.0	0.0	20.0	25.0	0.0	1.5	10.0	0.0	20.0	4.0	0.0	6.0	90.0	0.0	40.0	30.0	0.0	3.0	8.0	0.0	20.0	10.0	0.0	6.0	20.0	0.0	20.0	10.0	0.0
32	5.40E-7	1.5	3.0	0.0	5.0	5.0	0.0	1.0	5.0	0.0	5.0	25.0	0.0	1.5	4.0	0.0	5.0	3.0	0.0	6.0	65.0	0.0	30.0	30.0	0.0	1.5	4.0	0.0	5.0	8.0	0.0	6.0	20.0	0.0	10.0	10.0	0.0
33	1.00E-7	1.5	3.0	0.0	5.0	5.0	0.0	1.0	5.0	0.0	5.0	25.0	0.0	1.5	4.0	0.0	5.0	3.0	0.0	6.0	65.0	0.0	30.0	30.0	0.0	1.5	4.0	0.0	5.0	8.0	0.0	6.0	20.0	0.0	10.0	10.0	0.0

AFCI1.3 Relative Standard Deviations (%)

		Cm245						Cm246						Fe54				Fe56				Fe57				Cr50				Cr52				Ni58			
Gr	E [MeV]	ν	σ_f	σ_{inel}	σ_{el}	σ_{capt}	$\sigma_{n,2n}$	ν	σ_f	σ_{inel}	σ_{el}	σ_{capt}	$\sigma_{n,2n}$	σ_{inel}	σ_{el}	σ_{capt}	$\sigma_{n,2n}$	σ_{inel}	σ_{el}	σ_{capt}	$\sigma_{n,2n}$	σ_{inel}	σ_{el}	σ_{capt}	$\sigma_{n,2n}$	σ_{inel}	σ_{el}	σ_{capt}	$\sigma_{n,2n}$	σ_{inel}	σ_{el}	σ_{capt}	$\sigma_{n,2n}$	σ_{inel}	σ_{el}	σ_{capt}	$\sigma_{n,2n}$
1	1.96E+1	9.6	30.0	25.0	5.0	80.0	25.0	20.0	14.0	17.6	20.0	80.0	13.7	29.6	10.0	41.6	28.1	7.6	5.4	61.5	6.9	10.0	10.3	40.0	9.8	18.5	9.6	35.4	19.9	8.0	8.2	59.7	5.7	21.3	8.4	47.1	5.7
2	1.00E+1	4.9	30.0	21.5	5.0	51.6	74.7	20.0	14.2	13.7	19.3	45.4	21.0	16.5	6.2	35.7	0.0	4.3	5.9	23.8	0.0	4.2	6.1	38.9	6.8	7.8	7.8	28.6	0.0	7.3	10.5	29.9	0.0	9.1	7.4	19.9	0.0
3	6.07E+0	2.9	30.1	20.0	5.0	40.0	0.0	20.0	13.2	13.1	20.0	41.9	0.0	3.6	5.0	27.7	0.0	4.3	4.8	18.2	0.0	3.6	5.8	14.8	0.0	7.0	6.0	19.0	0.0	8.5	10.4	29.9	0.0	12.6	6.9	12.1	0.0
4	3.68E+0	2.9	42.5	20.0	5.0	33.8	0.0	20.0	14.2	13.3	20.0	38.6	0.0	4.6	7.4	22.8	0.0	4.5	6.1	21.1	0.0	5.8	9.6	9.0	0.0	7.0	6.0	15.1	0.0	9.2	7.0	29.9	0.0	12.6	5.7	14.1	0.0
5	2.23E+0	2.9	50.0	20.0	5.0	30.0	0.0	20.0	14.4	13.2	20.0	31.3	0.0	8.1	5.0	19.4	0.0	12.0	8.8	16.6	0.0	7.4	2.7	9.0	0.0	10.3	6.0	12.5	0.0	10.0	8.4	14.2	0.0	13.2	6.9	11.5	0.0
6	1.35E+0	2.9	50.0	30.0	5.0	25.0	0.0	20.0	11.2	12.8	20.0	19.2	0.0	0.0	8.0	16.6	0.0	10.9	5.9	18.9	0.0	4.8	11.2	9.0	0.0	15.1	10.5	11.0	0.0	0.0	13.8	26.5	0.0	0.0	5.9	9.7	0.0
7	8.21E-1	3.0	50.0	30.0	5.0	21.9	0.0	20.0	15.0	12.6	20.0	17.8	0.0	0.0	10.0	20.0	0.0	0.0	12.5	25.2	0.0	4.1	18.1	9.0	0.0	0.8	4.8	20.1	0.0	0.0	15.8	26.4	0.0	0.0	9.1	23.6	0.0
8	4.98E-1	3.0	50.0	30.1	5.0	20.0	0.0	20.0	15.0	13.4	20.1	17.3	0.0	0.0	10.0	20.0	0.0	0.0	14.1	25.2	0.0	8.4	15.4	9.0	0.0	0.0	5.0	22.1	0.0	0.0	15.8	22.4	0.0	0.0	8.2	12.8	0.0
9	3.02E-1	3.0	50.0	42.5	5.0	20.0	0.0	20.0	15.0	13.4	20.0	17.4	0.0	0.0	10.0	20.0	0.0	0.0	13.3	13.5	0.0	15.5	11.5	9.0	0.0	0.0	5.0	22.1	0.0	0.0	14.2	12.7	0.0	0.0	7.9	5.9	0.0
10	1.83E-1	3.0	50.0	50.0	5.0	20.0	0.0	20.0	15.0	13.4	20.0	19.1	0.0	0.0	10.0	20.0	0.0	0.0	12.4	10.6	0.0	26.8	20.0	10.1	0.0	0.0	5.0	22.1	0.0	0.0	9.6	15.7	0.0	0.0	7.6	6.8	0.0
11	1.11E-1	3.0	37.5	50.0	5.0	16.9	0.0	20.0	15.0	37.5	20.0	24.2	0.0	0.0	10.0	20.0	0.0	0.0	11.5	7.0	0.0	28.2	20.0	10.1	0.0	0.0	5.0	22.1	0.0	0.0	9.0	16.3	0.0	0.0	8.2	6.0	0.0
12	6.74E-2	3.0	30.0	0.0	5.0	15.0	0.0	20.0	15.0	45.9	20.0	33.7	0.0	0.0	10.0	8.1	0.0	0.0	16.5	7.6	0.0	30.1	20.0	10.1	0.0	0.0	5.0	22.1	0.0	0.0	13.7	9.3	0.0	0.0	7.1	5.2	0.0
13	4.09E-2	3.0	23.8	0.0	5.0	11.9	0.0	20.0	15.0	0.0	20.0	50.3	0.0	0.0	10.0	8.1	0.0	0.0	10.1	10.3	0.0	31.3	20.0	10.1	0.0	0.0	5.0	22.1	0.0	0.0	13.7	10.7	0.0	0.0	7.1	3.3	0.0
14	2.48E-2	3.0	20.0	0.0	5.0	10.0	0.0	20.0	15.0	0.0	20.0	50.3	0.0	0.0	10.0	8.1	0.0	0.0	7.7	12.4	0.0	29.7	20.0	10.1	0.0	0.0	5.0	22.1	0.0	0.0	13.7	1.9	0.0	0.0	3.1	5.0	0.0
15	1.50E-2	3.0	16.9	0.0	5.0	10.0	0.0	20.0	15.0	0.0	20.0	49.3	0.0	0.0	10.0	8.1	0.0	0.0	7.7	12.4	0.0	3.1	20.0	10.1	0.0	0.0	5.0	22.1	0.0	0.0	13.7	6.1	0.0	0.0	2.7	7.7	0.0
16	9.12E-3	3.0	15.0	0.0	5.0	10.0	0.0	20.0	15.0	0.0	20.0	44.4	0.0	0.0	10.0	8.1	0.0	0.0	7.7	12.4	0.0	0.0	20.0	10.1	0.0	0.0	5.0	22.1	0.0	0.0	13.7	10.0	0.0	0.0	2.7	5.0	0.0
17	5.53E-3	3.5	14.0	0.0	5.0	10.0	0.0	20.0	4.7	0.0	8.7	11.7	0.0	0.0	4.6	8.1	0.0	0.0	7.7	12.4	0.0	0.0	20.0	10.1	0.0	0.0	5.0	22.1	0.0	0.0	13.7	10.0	0.0	0.0	2.7	4.0	0.0
18	3.35E-3	3.8	13.4	0.0	5.0	10.0	0.0	20.0	3.9	0.0	9.3	5.9	0.0	0.0	4.6	8.1	0.0	0.0	7.7	12.4	0.0	0.0	20.0	10.1	0.0	0.0	5.0	22.1	0.0	0.0	13.7	10.0	0.0	0.0	2.7	4.0	0.0
19	2.03E-3	4.0	13.0	0.0	5.0	10.0	0.0	20.0	3.9	0.0	9.3	5.9	0.0	0.0	4.6	8.1	0.0	0.0	7.7	9.4	0.0	0.0	20.0	10.1	0.0	0.0	5.0	22.1	0.0	0.0	7.2	3.8	0.0	0.0	2.7	4.0	0.0
20	1.23E-3	4.0	11.5	0.0	7.6	10.0	0.0	20.0	3.9	0.0	9.3	5.9	0.0	0.0	4.6	8.1	0.0	0.0	7.7	4.8	0.0	0.0	20.0	10.1	0.0	0.0	5.0	22.1	0.0	0.0	2.5	3.0	0.0	0.0	1.5	4.0	0.0
21	7.49E-4	4.0	10.6	0.0	9.1	10.0	0.0	20.0	3.9	0.0	9.3	5.9	0.0	0.0	4.6	8.1	0.0	0.0	7.7	5.4	0.0	0.0	20.0	10.1	0.0	0.0	5.0	22.1	0.0	0.0	2.5	3.0	0.0	0.0	1.6	4.0	0.0
22	4.54E-4	4.0	10.0	0.0	10.0	10.0	0.0	20.0	3.9	0.0	9.3	5.9	0.0	0.0	4.6	8.1	0.0	0.0	7.7	5.4	0.0	0.0	20.0	10.1	0.0	0.0	5.0	22.1	0.0	0.0	2.5	3.0	0.0	0.0	1.6	4.0	0.0
23	3.04E-4	4.0	10.0	0.0	13.5	10.0	0.0	20.0	3.9	0.0	9.3	5.9	0.0	0.0	4.6	8.1	0.0	0.0	3.8	5.4	0.0	0.0	20.0	10.1	0.0	0.0	5.0	22.1	0.0	0.0	2.5	3.0	0.0	0.0	1.6	4.0	0.0
24	1.49E-4	4.0	10.0	0.0	17.1	10.0	0.0	20.0	3.9	0.0	9.3	5.9	0.0	0.0	4.6	8.1	0.0	0.0	3.9	5.4	0.0	0.0	20.0	10.1	0.0	0.0	5.0	22.1	0.0	0.0	2.5	3.0	0.0	0.0	1.6	4.0	0.0
25	9.17E-5	4.0	10.0	0.0	18.4	10.0	0.0	20.0	3.9	0.0	9.3	5.9	0.0	0.0	4.6	8.1	0.0	0.0	3.9	5.4	0.0	0.0	20.0	10.1	0.0	0.0	5.0	22.1	0.0	0.0	2.5	3.0	0.0	0.0	1.6	4.0	0.0
26	6.79E-5	4.0	10.0	0.0	19.0	10.0	0.0	20.0	3.9	0.0	9.3	5.9	0.0	0.0	4.6	8.1	0.0	0.0	3.9	5.4	0.0	0.0	20.0	10.1	0.0	0.0	5.0	22.1	0.0	0.0	2.5	3.0	0.0	0.0	1.6	4.0	0.0
27	4.02E-5	4.0	10.0	0.0	19.6	10.0	0.0	20.0	3.9	0.0	9.3	5.9	0.0	0.0	4.6	8.1	0.0	0.0	3.9	5.4	0.0	0.0	20.0	10.1	0.0	0.0	5.0	22.1	0.0	0.0	2.5	3.0	0.0	0.0	1.6	4.0	0.0
28	2.26E-5	4.0	10.0	0.0	20.0	10.0	0.0	20.0	3.9	0.0	9.3	5.9	0.0	0.0	4.6	8.1	0.0	0.0	3.9	4.8	0.0	0.0	20.0	10.1	0.0	0.0	5.0	22.1	0.0	0.0	2.5	3.0	0.0	0.0	1.6	4.0	0.0
29	1.37E-5	4.0	10.0	0.0	20.0	10.0	0.0	20.0	3.9	0.0	9.3	5.9	0.0	0.0	4.6	8.1	0.0	0.0	3.9	5.4	0.0	0.0	20.0	10.1	0.0	0.0	5.0	22.1	0.0	0.0	2.5	3.0	0.0	0.0	1.6	4.0	0.0
30	8.32E-6	4.0	10.0	0.0	20.0	10.0	0.0	20.0	3.9	0.0	9.3	5.9	0.0	0.0	4.6	8.1	0.0	0.0	3.9	5.4	0.0	0.0	20.0	10.1	0.0	0.0	5.0	22.1	0.0	0.0	2.5	3.0	0.0	0.0	1.6	4.0	0.0
31	4.00E-6	4.0	10.0	0.0	20.0	10.0	0.0	20.0	3.9	0.0	9.3	5.9	0.0	0.0	4.6	8.1	0.0	0.0	3.9	5.4	0.0	0.0	20.0	10.1	0.0	0.0	5.0	22.1	0.0	0.0	2.5	3.0	0.0	0.0	1.6	4.0	0.0
32	5.40E-7	4.0	3.0	0.0	3.0	5.0	0.0	20.0	32.0	0.0	8.5	11.5	0.0	0.0	4.2	7.3	0.0	0.0	3.9	5.4	0.0	0.0	9.3	11.2	0.0	0.0	4.6	2.5	0.0	0.0	2.5	3.0	0.0	0.0	1.6	4.0	0.0
33	1.00E-7	4.0	3.0	0.0	3.0	5.0	0.0	20.0	35.2	0.0	9.3	12.6	0.0	0.0	4.6	8.0	0.0	0.0	3.9	5.4	0.0	0.0	10.0	12.2	0.0	0.0	5.0	1.7	0.0	0.0	2.5	3.0	0.0	0.0	1.6	4.0	0.0

AFCI1.3 Relative Standard Deviations (%)

		Ni60				Na23				C				O				Si28				Si29				Si30				Mo92				Mo94			
Gr	E [MeV]	σ_{inel}	σ_{el}	σ_{capt}	$\sigma_{n,2n}$	σ_{inel}	σ_{el}	σ_{capt}	$\sigma_{n,2n}$	σ_{inel}	σ_{el}	σ_{capt}	$\sigma_{n,2n}$	σ_{inel}	σ_{el}	σ_{capt}	$\sigma_{n,2n}$	σ_{inel}	σ_{el}	σ_{capt}	$\sigma_{n,2n}$	σ_{inel}	σ_{el}	σ_{capt}	$\sigma_{n,2n}$	σ_{inel}	σ_{el}	σ_{capt}	$\sigma_{n,2n}$	σ_{inel}	σ_{el}	σ_{capt}	$\sigma_{n,2n}$	σ_{inel}	σ_{el}	σ_{capt}	$\sigma_{n,2n}$
1	1.96E+1	10.8	10.4	48.3	15.5	5.5	8.3	7.2	8.0	20.6	8.1	20.0		14.8	3.2	50.0	7.1	9.4	3.0	30.6	9.5	7.6	3.0	35.7	11.2	5.9	3.0	36.4	9.6	21.0	6.6	67.7	18.8	9.8	6.6	68.3	13.9
2	1.00E+1	6.0	5.0	37.6	0.0	5.6	9.6	6.1	0.0	18.3	5.0	20.0		8.8	1.5	50.0	0.0	4.2	9.1	23.5	0.0	3.9	9.9	26.8	5.9	3.3	10.3	24.4	0.0	4.7	6.6	52.6	0.0	4.2	6.7	49.8	2.8
3	6.07E+0	6.0	7.1	25.8	0.0	6.3	10.4	3.5	0.0	80.0	2.5	17.4		0.0	1.5	50.0	0.0	3.2	8.9	20.9	0.0	3.2	9.9	23.1	0.0	3.0	9.7	20.9	0.0	3.0	3.2	35.2	0.0	3.4	2.7	33.0	0.0
4	3.68E+0	7.2	9.7	18.0	0.0	6.9	10.0	0.0	0.0	0.0	1.0	20.0		0.0	1.6	50.0	0.0	3.0	5.1	20.3	0.0	3.5	5.4	21.7	0.0	7.2	4.2	20.0	0.0	3.4	11.7	28.2	0.0	5.3	15.3	28.1	0.0
5	2.23E+0	16.7	5.0	13.6	0.0	8.3	9.3	0.0	0.0	0.0	1.0	20.0		0.0	2.0	50.0	0.0	9.1	2.3	19.5	0.0	9.1	4.0	20.6	0.0	0.0	4.0	16.5	0.0	13.7	15.2	22.0	0.0	3.6	17.5	24.6	0.0
6	1.35E+0	0.0	5.0	10.7	0.0	14.9	6.4	0.0	0.0	0.0	0.8	16.0		0.0	2.0	50.0	0.0	0.0	3.7	19.4	0.0	3.3	4.5	17.0	0.0	0.0	4.0	4.9	0.0	0.0	13.8	20.6	0.0	14.2	12.8	21.2	0.0
7	8.21E-1	0.0	6.9	9.6	0.0	17.5	3.0	0.0	0.0	0.0	0.5	20.0		0.0	2.0	50.0	0.0	0.0	4.6	18.9	0.0	0.0	5.0	18.7	0.0	0.0	4.0	4.9	0.0	0.0	11.9	19.9	0.0	0.0	10.2	18.7	0.0
8	4.98E-1	0.0	5.0	11.0	0.0	9.8	5.2	0.0	0.0	0.0	0.5	20.0		0.0	2.0	18.5	0.0	0.0	4.2	18.6	0.0	0.0	5.0	18.7	0.0	0.0	1.6	4.9	0.0	0.0	12.6	19.2	0.0	0.0	10.6	18.2	0.0
9	3.02E-1	0.0	7.2	14.3	0.0	0.0	3.9	0.0	0.0	0.0	0.5	20.0		0.0	2.0	10.0	0.0	0.0	3.9	18.9	0.0	0.0	5.0	18.7	0.0	0.0	1.6	4.9	0.0	0.0	13.4	19.4	0.0	0.0	11.4	18.4	0.0
10	1.83E-1	0.0	7.2	14.3	0.0	0.0	5.5	0.0	0.0	0.0	0.5	20.0		0.0	2.0	10.0	0.0	0.0	3.4	19.3	0.0	0.0	5.0	18.7	0.0	0.0	1.6	4.9	0.0	0.0	13.6	21.3	0.0	0.0	12.0	20.5	0.0
11	1.11E-1	0.0	7.2	14.3	0.0	0.0	5.6	0.0	0.0	0.0	0.5	20.0		0.0	2.0	10.0	0.0	0.0	3.3	19.1	0.0	0.0	5.0	18.7	0.0	0.0	1.6	4.9	0.0	0.0	12.7	22.1	0.0	0.0	11.4	21.2	0.0
12	6.74E-2	0.0	7.2	14.3	0.0	0.0	3.9	0.0	0.0	0.0	0.5	20.0		0.0	2.0	10.0	0.0	0.0	3.1	19.3	0.0	0.0	5.0	18.7	0.0	0.0	1.6	4.9	0.0	0.0	9.7	23.8	0.0	0.0	9.1	22.4	0.0
13	4.09E-2	0.0	7.2	14.3	0.0	0.0	5.5	0.0	0.0	0.0	0.5	20.0		0.0	2.0	10.0	0.0	0.0	3.4	19.4	0.0	0.0	5.0	18.7	0.0	0.0	1.6	4.9	0.0	0.0	5.8	23.7	0.0	0.0	5.6	21.9	0.0
14	2.48E-2	0.0	7.2	14.3	0.0	0.0	5.4	0.0	0.0	0.0	0.5	20.0		0.0	2.0	10.0	0.0	0.0	3.8	19.3	0.0	0.0	5.0	18.7	0.0	0.0	1.6	4.9	0.0	0.0	4.0	23.2	0.0	0.0	4.0	21.8	0.0
15	1.50E-2	0.0	7.2	14.3	0.0	0.0	5.1	0.0	0.0	0.0	0.5	20.0		0.0	2.0	10.0	0.0	0.0	4.3	19.1	0.0	0.0	5.0	18.7	0.0	0.0	1.6	4.9	0.0	0.0	3.3	23.4	0.0	0.0	3.4	22.3	0.0
16	9.12E-3	0.0	7.2	14.3	0.0	0.0	4.4	0.0	0.0	0.0	0.5	20.0		0.0	2.0	10.0	0.0	0.0	4.9	18.6	0.0	0.0	5.0	18.7	0.0	0.0	1.6	4.9	0.0	0.0	4.3	24.2	0.0	0.0	4.2	22.7	0.0
17	5.53E-3	0.0	7.2	14.3	0.0	0.0	3.2	0.0	0.0	0.0	0.5	20.0		0.0	2.0	10.0	0.0	0.0	1.4	14.5	0.0	0.0	5.0	18.7	0.0	0.0	1.6	4.9	0.0	0.0	3.2	12.8	0.0	0.0	1.9	11.4	0.0
18	3.35E-3	0.0	7.2	14.3	0.0	0.0	1.6	0.0	0.0	0.0	0.5	20.0		0.0	2.0	10.0	0.0	0.0	0.9	18.2	0.0	0.0	5.0	18.7	0.0	0.0	1.6	4.9	0.0	0.0	3.9	15.0	0.0	0.0	2.1	13.2	0.0
19	2.03E-3	0.0	7.2	14.3	0.0	0.0	3.5	0.0	0.0	0.0	0.5	20.0		0.0	2.0	10.0	0.0	0.0	0.9	18.2	0.0	0.0	5.0	18.7	0.0	0.0	1.6	4.9	0.0	0.0	3.9	15.0	0.0	0.0	2.1	13.2	0.0
20	1.23E-3	0.0	7.2	14.3	0.0	0.0	2.1	0.0	0.0	0.0	0.5	9.8		0.0	2.0	10.0	0.0	0.0	0.9	18.2	0.0	0.0	5.0	18.7	0.0	0.0	1.6	4.9	0.0	0.0	3.9	15.0	0.0	0.0	2.1	13.2	0.0
21	7.49E-4	0.0	7.2	14.3	0.0	0.0	1.4	0.0	0.0	0.0	0.5	3.0		0.0	2.0	10.0	0.0	0.0	0.9	18.2	0.0	0.0	5.0	18.7	0.0	0.0	1.6	4.9	0.0	0.0	3.9	15.0	0.0	0.0	2.1	13.2	0.0
22	4.54E-4	0.0	7.2	14.3	0.0	0.0	1.0	0.0	0.0	0.0	0.5	3.0		0.0	2.0	10.0	0.0	0.0	0.9	18.2	0.0	0.0	5.0	18.7	0.0	0.0	1.6	4.9	0.0	0.0	3.9	15.0	0.0	0.0	2.1	13.2	0.0
23	3.04E-4	0.0	7.2	14.3	0.0	0.0	0.8	0.0	0.0	0.0	0.5	3.0		0.0	2.0	10.0	0.0	0.0	0.9	18.2	0.0	0.0	5.0	18.7	0.0	0.0	1.6	4.9	0.0	0.0	3.9	15.0	0.0	0.0	2.1	13.2	0.0
24	1.49E-4	0.0	7.2	14.3	0.0	0.0	0.7	0.0	0.0	0.0	0.5	3.0		0.0	2.0	10.0	0.0	0.0	0.9	18.2	0.0	0.0	5.0	18.7	0.0	0.0	1.6	4.9	0.0	0.0	3.9	15.0	0.0	0.0	2.1	13.2	0.0
25	9.17E-5	0.0	7.2	14.3	0.0	0.0	0.7	0.0	0.0	0.0	0.5	3.0		0.0	2.0	10.0	0.0	0.0	0.9	18.2	0.0	0.0	5.0	18.7	0.0	0.0	1.6	4.9	0.0	0.0	3.9	15.0	0.0	0.0	2.1	13.2	0.0
26	6.79E-5	0.0	7.2	14.3	0.0	0.0	0.6	0.0	0.0	0.0	0.5	3.0		0.0	2.0	10.0	0.0	0.0	0.9	18.2	0.0	0.0	5.0	18.7	0.0	0.0	1.6	4.9	0.0	0.0	3.9	15.0	0.0	0.0	2.1	13.2	0.0
27	4.02E-5	0.0	7.2	14.3	0.0	0.0	0.6	0.0	0.0	0.0	0.5	3.0		0.0	2.0	10.0	0.0	0.0	0.9	18.2	0.0	0.0	5.0	18.7	0.0	0.0	1.6	4.9	0.0	0.0	3.9	15.0	0.0	0.0	2.1	13.2	0.0
28	2.26E-5	0.0	7.2	14.3	0.0	0.0	0.6	0.0	0.0	0.0	0.5	3.0		0.0	2.0	10.0	0.0	0.0	0.9	18.2	0.0	0.0	5.0	18.7	0.0	0.0	1.6	4.9	0.0	0.0	3.9	15.0	0.0	0.0	2.1	13.2	0.0
29	1.37E-5	0.0	7.2	14.3	0.0	0.0	0.6	0.0	0.0	0.0	0.5	3.0		0.0	2.0	10.0	0.0	0.0	0.9	18.2	0.0	0.0	5.0	18.7	0.0	0.0	1.6	4.9	0.0	0.0	3.9	15.0	0.0	0.0	2.1	13.2	0.0
30	8.32E-6	0.0	7.2	14.3	0.0	0.0	0.6	0.0	0.0	0.0	0.5	3.0		0.0	2.0	10.0	0.0	0.0	0.9	18.2	0.0	0.0	5.0	18.7	0.0	0.0	1.6	4.9	0.0	0.0	3.9	15.0	0.0	0.0	2.1	13.2	0.0
31	4.00E-6	0.0	7.2	14.3	0.0	0.0	0.6	0.0	0.0	0.0	0.5	3.0		0.0	2.0	10.0	0.0	0.0	0.9	18.2	0.0	0.0	5.0	18.7	0.0	0.0	1.6	4.9	0.0	0.0	3.9	15.0	0.0	0.0	2.1	13.2	0.0
32	5.40E-7	0.0	6.5	4.8	0.0	0.0	0.6	0.0	0.0	0.0	0.5	3.0		0.0	2.0	10.0	0.0	0.0	0.8	5.3	0.0	0.0	4.6	2.8	0.0	0.0	1.5	1.8	0.0	0.0	3.6	22.8	0.0	0.0	1.9	16.1	0.0
33	1.00E-7	0.0	7.2	5.0	0.0	0.0	0.2	0.0	0.0	0.0	0.5	3.0		0.0	2.0	10.0	0.0	0.0	0.9	5.5	0.0	0.0	5.0	2.5	0.0	0.0	1.6	1.9	0.0	0.0	3.9	25.0	0.0	0.0	2.1	17.6	0.0

AFCI1.3 Relative Standard Deviations (%)

		Mo95				Mo96				Mo97				Mo98				Mo100				Mn55				Pb204				Pb206				Pb207			
Gr	E [MeV]	σ_{inel}	σ_{el}	σ_{capt}	$\sigma_{n,2n}$	σ_{inel}	σ_{el}	σ_{capt}	$\sigma_{n,2n}$	σ_{inel}	σ_{el}	σ_{capt}	$\sigma_{n,2n}$	σ_{inel}	σ_{el}	σ_{capt}	$\sigma_{n,2n}$	σ_{inel}	σ_{el}	σ_{capt}	$\sigma_{n,2n}$	σ_{inel}	σ_{el}	σ_{capt}	$\sigma_{n,2n}$	σ_{inel}	σ_{el}	σ_{capt}	$\sigma_{n,2n}$	σ_{inel}	σ_{el}	σ_{capt}	$\sigma_{n,2n}$	σ_{inel}	σ_{el}	σ_{capt}	$\sigma_{n,2n}$
1	1.96E+1	15.5	6.6	62.5	9.2	17.0	6.6	59.3	10.2	21.8	6.6	56.9	7.0	24.3	6.6	52.2	7.2	31.9	6.6	53.0	5.3	37.5	22.8	14.2	8.5	35.5	3.2	90.7	6.3	42.0	3.2	86.1	5.3	50.4	3.2	87.7	4.7
2	1.00E+1	4.2	6.7	52.8	10.8	4.1	6.7	41.7	9.5	4.4	6.7	47.4	15.4	4.1	6.7	31.6	6.9	4.1	6.7	28.8	8.8	18.3	14.0	10.5	0.0	3.4	14.8	77.3	10.6	3.6	14.9	86.7	12.6	4.8	14.8	87.3	17.1
3	6.07E+0	3.6	2.5	30.3	0.0	3.6	2.6	26.9	0.0	3.7	2.5	25.7	0.0	3.7	2.5	17.7	0.0	3.8	2.5	18.4	0.0	15.4	10.4	9.3	0.0	5.0	9.9	54.0	0.0	4.6	9.7	56.9	0.0	4.8	9.4	51.2	0.0
4	3.68E+0	5.9	17.8	26.9	0.0	6.8	16.4	21.5	0.0	7.3	18.3	20.3	0.0	7.9	16.5	11.6	0.0	9.2	16.8	11.9	0.0	19.4	11.0	8.4	0.0	22.5	6.1	40.0	0.0	23.1	5.3	40.2	0.0	24.2	3.8	36.2	0.0
5	2.23E+0	3.2	20.8	22.8	0.0	4.1	18.6	18.9	0.0	4.7	21.4	16.6	0.0	6.2	18.1	10.8	0.0	8.0	18.7	10.8	0.0	28.4	11.4	7.5	0.0	28.0	13.0	30.8	0.0	29.9	11.3	30.8	0.0	32.6	10.4	27.9	0.0
6	1.35E+0	3.8	14.2	20.0	0.0	11.1	12.1	17.2	0.0	3.7	13.8	14.1	0.0	5.7	11.6	10.5	0.0	7.5	11.8	11.0	0.0	27.0	8.4	5.9	0.0	12.1	9.2	17.8	0.0	18.4	7.8	20.6	0.0	11.6	8.8	24.7	0.0
7	8.21E-1	7.4	9.6	18.2	0.0	2.6	8.3	15.3	0.0	18.2	7.4	13.2	0.0	9.0	6.6	10.5	0.0	11.6	5.2	9.5	0.0	23.3	7.1	9.0	0.0	0.0	3.1	13.5	0.0	2.1	5.0	11.8	0.0	31.4	2.4	20.6	0.0
8	4.98E-1	26.0	9.4	18.3	0.0	0.0	8.5	15.0	0.0	3.1	7.6	13.3	0.0	0.0	6.7	10.5	0.0	0.0	5.8	10.1	0.0	28.1	5.8	9.0	0.0	0.0	4.8	12.0	0.0	0.0	5.0	11.8	0.0	0.0	13.3	22.2	0.0
9	3.02E-1	40.3	10.4	18.9	0.0	0.0	9.3	14.9	0.0	0.0	8.3	13.5	0.0	0.0	7.3	10.1	0.0	0.0	6.2	9.7	0.0	50.0	6.9	8.3	0.0	0.0	8.6	12.0	0.0	0.0	5.0	11.8	0.0	0.0	15.7	25.0	0.0
10	1.83E-1	0.0	11.2	19.5	0.0	0.0	10.1	15.9	0.0	0.0	9.1	13.9	0.0	0.0	8.1	9.8	0.0	0.0	6.5	9.5	0.0	38.1	14.1	11.7	0.0	0.0	10.0	12.0	0.0	0.0	5.0	11.8	0.0	0.0	20.0	25.0	0.0
11	1.11E-1	0.0	10.7	19.3	0.0	0.0	9.7	16.3	0.0	0.0	8.9	14.0	0.0	0.0	7.9	9.7	0.0	0.0	6.4	9.2	0.0	0.0	10.8	9.8	0.0	0.0	10.0	12.0	0.0	0.0	5.0	11.8	0.0	0.0	12.8	25.0	0.0
12	6.74E-2	0.0	8.6	18.8	0.0	0.0	8.0	17.2	0.0	0.0	7.4	14.5	0.0	0.0	6.8	10.1	0.0	0.0	5.6	9.5	0.0	0.0	7.5	9.6	0.0	0.0	10.0	14.6	0.0	0.0	5.0	11.8	0.0	0.0	6.0	25.0	0.0
13	4.09E-2	0.0	5.4	18.5	0.0	0.0	5.3	17.9	0.0	0.0	4.9	15.1	0.0	0.0	4.7	11.2	0.0	0.0	4.3	10.6	0.0	0.0	6.8	12.8	0.0	0.0	10.0	8.0	0.0	0.0	5.0	11.8	0.0	0.0	29.7	25.0	0.0
14	2.48E-2	0.0	3.9	18.6	0.0	0.0	4.0	18.3	0.0	0.0	3.9	15.8	0.0	0.0	3.9	12.5	0.0	0.0	3.9	11.6	0.0	0.0	6.3	6.5	0.0	0.0	10.0	8.0	0.0	0.0	5.0	11.8	0.0	0.0	18.8	25.0	0.0
15	1.50E-2	0.0	3.7	19.0	0.0	0.0	3.4	19.1	0.0	0.0	3.9	16.7	0.0	0.0	3.6	14.2	0.0	0.0	3.8	12.8	0.0	0.0	5.1	5.8	0.0	0.0	10.0	8.0	0.0	0.0	5.0	11.8	0.0	0.0	7.0	25.0	0.0
16	9.12E-3	0.0	5.0	19.3	0.0	0.0	4.1	19.5	0.0	0.0	5.1	17.3	0.0	0.0	4.0	15.1	0.0	0.0	4.2	13.3	0.0	0.0	2.5	6.2	0.0	0.0	10.0	8.0	0.0	0.0	5.0	11.8	0.0	0.0	7.0	25.0	0.0
17	5.53E-3	0.0	4.6	6.6	0.0	0.0	1.8	14.0	0.0	0.0	2.1	14.8	0.0	0.0	2.0	5.1	0.0	0.0	8.4	4.4	0.0	0.0	2.7	9.0	0.0	0.0	10.0	8.0	0.0	0.0	5.0	11.8	0.0	0.0	7.0	25.0	0.0
18	3.35E-3	0.0	5.8	6.1	0.0	0.0	1.9	17.4	0.0	0.0	2.1	18.8	0.0	0.0	2.2	4.5	0.0	0.0	11.1	3.9	0.0	0.0	4.6	20.5	0.0	0.0	10.0	8.0	0.0	0.0	5.0	11.8	0.0	0.0	7.0	25.0	0.0
19	2.03E-3	0.0	5.8	6.1	0.0	0.0	1.9	17.4	0.0	0.0	2.1	18.8	0.0	0.0	2.2	4.5	0.0	0.0	11.1	3.9	0.0	0.0	4.6	20.5	0.0	0.0	10.0	8.0	0.0	0.0	5.0	11.8	0.0	0.0	7.0	25.0	0.0
20	1.23E-3	0.0	5.8	6.1	0.0	0.0	1.9	17.4	0.0	0.0	2.1	18.8	0.0	0.0	2.2	4.5	0.0	0.0	11.1	3.9	0.0	0.0	4.6	20.5	0.0	0.0	10.0	8.0	0.0	0.0	5.0	11.8	0.0	0.0	7.0	25.0	0.0
21	7.49E-4	0.0	5.8	6.1	0.0	0.0	1.9	17.4	0.0	0.0	2.1	18.8	0.0	0.0	2.2	4.5	0.0	0.0	11.1	3.9	0.0	0.0	2.0	4.9	0.0	0.0	2.0	8.0	0.0	0.0	5.0	11.8	0.0	0.0	7.0	25.0	0.0
22	4.54E-4	0.0	5.8	6.1	0.0	0.0	1.9	17.4	0.0	0.0	2.1	18.8	0.0	0.0	2.2	4.5	0.0	0.0	11.1	3.9	0.0	0.0	2.0	4.9	0.0	0.0	2.0	8.0	0.0	0.0	5.0	11.8	0.0	0.0	7.0	25.0	0.0
23	3.04E-4	0.0	5.8	6.1	0.0	0.0	1.9	17.4	0.0	0.0	2.1	18.8	0.0	0.0	2.2	4.5	0.0	0.0	11.1	3.9	0.0	0.0	2.0	4.9	0.0	0.0	2.0	8.0	0.0	0.0	5.0	11.8	0.0	0.0	7.0	25.0	0.0
24	1.49E-4	0.0	5.8	6.1	0.0	0.0	1.9	17.4	0.0	0.0	2.1	18.8	0.0	0.0	2.2	4.5	0.0	0.0	11.1	3.9	0.0	0.0	2.0	4.2	0.0	0.0	2.0	8.0	0.0	0.0	5.0	11.8	0.0	0.0	7.0	25.0	0.0
25	9.17E-5	0.0	5.8	6.1	0.0	0.0	1.9	17.4	0.0	0.0	2.1	18.8	0.0	0.0	2.2	4.5	0.0	0.0	11.1	3.9	0.0	0.0	2.0	0.8	0.0	0.0	2.0	8.0	0.0	0.0	5.0	11.8	0.0	0.0	7.0	25.0	0.0
26	6.79E-5	0.0	5.8	6.1	0.0	0.0	1.9	17.4	0.0	0.0	2.1	18.8	0.0	0.0	2.2	4.5	0.0	0.0	11.1	3.9	0.0	0.0	2.0	0.8	0.0	0.0	2.0	8.0	0.0	0.0	5.0	11.8	0.0	0.0	7.0	25.0	0.0
27	4.02E-5	0.0	5.8	6.1	0.0	0.0	1.9	17.4	0.0	0.0	2.1	18.8	0.0	0.0	2.2	4.5	0.0	0.0	11.1	3.9	0.0	0.0	3.0	0.8	0.0	0.0	2.0	8.0	0.0	0.0	5.0	11.8	0.0	0.0	7.0	25.0	0.0
28	2.26E-5	0.0	5.8	6.1	0.0	0.0	1.9	17.4	0.0	0.0	2.1	18.8	0.0	0.0	2.2	4.5	0.0	0.0	11.1	3.9	0.0	0.0	3.0	0.8	0.0	0.0	2.0	8.0	0.0	0.0	5.0	11.8	0.0	0.0	7.0	25.0	0.0
29	1.37E-5	0.0	5.8	6.1	0.0	0.0	1.9	17.4	0.0	0.0	2.1	18.8	0.0	0.0	2.2	4.5	0.0	0.0	11.1	3.9	0.0	0.0	3.0	0.8	0.0	0.0	2.0	8.0	0.0	0.0	5.0	11.8	0.0	0.0	7.0	25.0	0.0
30	8.32E-6	0.0	5.8	6.1	0.0	0.0	1.9	17.4	0.0	0.0	2.1	18.8	0.0	0.0	2.2	4.5	0.0	0.0	11.1	3.9	0.0	0.0	3.0	0.8	0.0	0.0	2.0	8.0	0.0	0.0	5.0	11.8	0.0	0.0	7.0	25.0	0.0
31	4.00E-6	0.0	5.8	6.1	0.0	0.0	1.9	17.4	0.0	0.0	2.1	18.8	0.0	0.0	2.2	4.5	0.0	0.0	11.1	3.9	0.0	0.0	3.0	0.8	0.0	0.0	2.0	8.0	0.0	0.0	5.0	11.8	0.0	0.0	7.0	25.0	0.0
32	5.40E-7	0.0	5.3	2.1	0.0	0.0	1.7	33.2	0.0	0.0	1.9	8.4	0.0	0.0	2.0	4.2	0.0	0.0	10.1	1.4	0.0	0.0	3.0	0.8	0.0	0.0	2.0	4.6	0.0	0.0	1.7	5.3	0.0	0.0	1.9	9.4	0.0
33	1.00E-7	0.0	5.8	2.2	0.0	0.0	1.9	36.5	0.0	0.0	2.1	9.1	0.0	0.0	2.2	4.6	0.0	0.0	11.1	1.5	0.0	0.0	3.0	0.8	0.0	0.0	2.0	5.0	0.0	0.0	1.8	5.7	0.0	0.0	2.0	10.0	0.0

AFCI1.3 Relative Standard Deviations (%)

		Pb208				Bi209				Zr90				Zr91				Zr92				Zr94				B10				B11				Al27			
Gr	E [MeV]	σ_{inel}	σ_{el}	σ_{capt}	$\sigma_{n,2n}$	σ_{inel}	σ_{el}	σ_{capt}	$\sigma_{n,2n}$	σ_{inel}	σ_{el}	σ_{capt}	$\sigma_{n,2n}$	σ_{inel}	σ_{el}	σ_{capt}	$\sigma_{n,2n}$	σ_{inel}	σ_{el}	σ_{capt}	$\sigma_{n,2n}$	σ_{inel}	σ_{el}	σ_{capt}	$\sigma_{n,2n}$	σ_{inel}	σ_{el}	σ_{capt}	$\sigma_{n,2n}$	σ_{inel}	σ_{el}	σ_{capt}	$\sigma_{n,2n}$	σ_{inel}	σ_{el}	σ_{capt}	$\sigma_{n,2n}$
1	1.96E+1	53.3	3.2	82.9	4.7	59.6	3.2	82.9	5.6	10.6	8.1	100.0	10.0	10.8	7.3	63.1	10.4	15.5	7.3	59.5	10.2	22.2	7.3	59.1	7.0	17.4	6.1	0.9		6.1	13.5	25.6	29.9	7.7	3.1	30.5	13.7
2	1.00E+1	4.7	14.7	70.2	11.9	4.2	14.8	73.4	9.4	6.9	7.2	100.0	0.0	4.0	6.1	56.9	13.4	4.1	6.2	44.7	11.4	3.9	6.3	43.9	10.5	27.7	7.5	1.2		5.0	3.4	35.1	0.0	3.7	8.5	24.0	0.0
3	6.07E+0	6.9	11.0	36.9	0.0	4.0	9.0	38.7	0.0	5.1	6.3	60.7	0.0	2.8	3.8	34.5	0.0	3.1	3.5	30.9	0.0	3.4	3.5	32.3	0.0	48.3	4.7	0.8		4.0	1.4	0.0	0.0	2.9	10.3	21.9	0.0
4	3.68E+0	16.3	5.5	25.7	0.0	16.9	4.0	28.5	0.0	13.3	6.0	44.3	0.0	5.7	11.8	27.8	0.0	2.6	15.2	23.1	0.0	3.0	15.4	25.5	0.0	100.0	6.1	1.2		5.9	0.9	0.0	0.0	2.7	6.7	20.9	0.0
5	2.23E+0	0.0	4.9	20.2	0.0	24.3	5.0	23.8	0.0	24.8	6.0	28.6	0.0	19.6	17.9	19.7	0.0	11.4	20.2	17.4	0.0	8.4	20.3	20.5	0.0	100.0	3.3	0.9		0.0	1.0	0.0	0.0	4.3	4.5	20.5	0.0
6	1.35E+0	0.0	7.1	27.7	0.0	12.7	4.7	21.2	0.0	10.4	6.0	20.3	0.0	12.7	18.9	19.3	0.0	21.5	17.8	14.4	0.0	19.6	16.9	17.1	0.0	100.0	2.7	0.7		0.0	0.9	0.0	0.0	15.2	4.1	20.2	0.0
7	8.21E-1	0.0	15.0	69.7	0.0	0.0	4.1	20.4	0.0	0.0	6.0	15.8	0.0	0.0	18.8	18.7	0.0	0.0	18.1	14.7	0.0	0.0	16.5	16.8	0.0	100.0	1.4	0.9		0.0	1.0	0.0	0.0	0.0	5.3	20.0	0.0
8	4.98E-1	0.0	15.0	69.7	0.0	0.0	2.5	20.0	0.0	0.0	6.0	14.0	0.0	0.0	20.2	18.2	0.0	0.0	19.6	14.1	0.0	0.0	18.0	16.3	0.0	0.0	1.2	0.9		0.0	2.0	0.0	0.0	0.0	6.1	19.9	0.0
9	3.02E-1	0.0	15.0	69.7	0.0	0.0	6.0	20.6	0.0	0.0	6.0	13.5	0.0	0.0	20.9	18.1	0.0	0.0	20.4	13.4	0.0	0.0	19.1	15.6	0.0	0.0	1.2	1.0		0.0	2.0	0.0	0.0	0.0	6.2	19.8	0.0
10	1.83E-1	0.0	15.0	69.7	0.0	0.0	12.8	21.1	0.0	0.0	6.0	13.9	0.0	0.0	19.4	18.7	0.0	0.0	19.3	13.4	0.0	0.0	18.8	15.6	0.0	0.0	1.3	1.0		0.0	2.0	0.0	0.0	0.0	5.3	19.9	0.0
11	1.11E-1	0.0	15.0	69.7	0.0	0.0	14.7	37.7	0.0	0.0	6.0	14.2	0.0	0.0	17.3	18.8	0.0	0.0	17.4	13.4	0.0	0.0	17.2	15.3	0.0	0.0	1.5	0.8		0.0	1.2	0.0	0.0	0.0	4.6	19.8	0.0
12	6.74E-2	0.0	15.0	69.7	0.0	0.0	10.0	50.0	0.0	0.0	6.0	7.4	0.0	0.0	12.0	19.3	0.0	0.0	12.4	14.0	0.0	0.0	12.9	16.0	0.0	0.0	1.7	0.8		0.0	1.0	0.0	0.0	0.0	3.5	19.6	0.0
13	4.09E-2	0.0	15.0	69.7	0.0	0.0	10.0	50.0	0.0	0.0	6.1	6.7	0.0	0.0	6.2	19.5	0.0	0.0	6.7	15.1	0.0	0.0	7.4	17.0	0.0	0.0	2.0	0.7		0.0	1.0	0.0	0.0	0.0	3.5	19.6	0.0
14	2.48E-2	0.0	15.0	69.7	0.0	0.0	10.0	50.0	0.0	0.0	6.3	4.9	0.0	0.0	3.7	19.7	0.0	0.0	4.1	16.8	0.0	0.0	4.8	17.3	0.0	0.0	2.0	0.7		0.0	1.0	0.0	0.0	0.0	3.8	19.6	0.0
15	1.50E-2	0.0	15.0	69.7	0.0	0.0	9.4	50.0	0.0	0.0	6.4	8.2	0.0	0.0	3.5	20.3	0.0	0.0	3.2	19.6	0.0	0.0	3.2	18.2	0.0	0.0	2.0	0.7		0.0	1.0	0.0	0.0	0.0	4.2	19.6	0.0
16	9.12E-3	0.0	15.0	69.7	0.0	0.0	6.0	50.0	0.0	0.0	6.2	9.8	0.0	0.0	5.6	21.1	0.0	0.0	5.0	22.6	0.0	0.0	4.1	19.9	0.0	0.0	2.0	0.7		0.0	1.0	0.0	0.0	0.0	4.6	19.3	0.0
17	5.53E-3	0.0	15.0	69.7	0.0	0.0	6.0	50.0	0.0	0.0	8.0	10.1	0.0	0.0	4.7	7.4	0.0	0.0	4.4	8.1	0.0	0.0	3.8	8.8	0.0	0.0	2.0	0.7		0.0	1.0	0.0	0.0	0.0	1.2	7.4	0.0
18	3.35E-3	0.0	15.0	69.7	0.0	0.0	6.0	50.0	0.0	0.0	6.1	11.4	0.0	0.0	5.9	6.9	0.0	0.0	5.5	7.5	0.0	0.0	4.8	9.5	0.0	0.0	2.0	0.7		0.0	1.0	0.0	0.0	0.0	0.4	7.5	0.0
19	2.03E-3	0.0	15.0	69.7	0.0	0.0	6.0	50.0	0.0	0.0	6.0	7.6	0.0	0.0	5.9	6.9	0.0	0.0	5.5	7.5	0.0	0.0	4.8	9.5	0.0	0.0	2.0	0.7		0.0	1.0	0.0	0.0	0.0	0.4	7.5	0.0
20	1.23E-3	0.0	15.0	69.7	0.0	0.0	3.9	50.0	0.0	0.0	6.0	6.4	0.0	0.0	5.9	6.9	0.0	0.0	5.5	7.5	0.0	0.0	4.8	9.5	0.0	0.0	2.0	0.7		0.0	0.9	0.0	0.0	0.0	0.4	7.5	0.0
21	7.49E-4	0.0	15.0	69.7	0.0	0.0	2.0	50.0	0.0	0.0	6.0	6.1	0.0	0.0	5.9	6.9	0.0	0.0	5.5	7.5	0.0	0.0	4.8	9.5	0.0	0.0	2.0	0.7		0.0	0.8	0.0	0.0	0.0	0.4	7.5	0.0
22	4.54E-4	0.0	15.0	69.7	0.0	0.0	2.0	50.0	0.0	0.0	6.0	6.6	0.0	0.0	5.9	6.9	0.0	0.0	5.5	7.5	0.0	0.0	4.8	9.5	0.0	0.0	2.0	0.7		0.0	0.8	0.0	0.0	0.0	0.4	7.5	0.0
23	3.04E-4	0.0	15.0	69.7	0.0	0.0	2.0	50.0	0.0	0.0	6.0	7.9	0.0	0.0	5.9	6.9	0.0	0.0	5.5	7.5	0.0	0.0	4.8	9.5	0.0	0.0	2.0	0.7		0.0	0.8	0.0	0.0	0.0	0.4	7.5	0.0
24	1.49E-4	0.0	15.0	69.7	0.0	0.0	2.0	50.0	0.0	0.0	6.0	8.9	0.0	0.0	5.9	6.9	0.0	0.0	5.5	7.5	0.0	0.0	4.8	9.5	0.0	0.0	2.0	0.7		0.0	0.8	0.0	0.0	0.0	0.4	7.5	0.0
25	9.17E-5	0.0	15.0	69.7	0.0	0.0	2.0	50.0	0.0	0.0	6.0	9.4	0.0	0.0	5.9	6.9	0.0	0.0	5.5	7.5	0.0	0.0	4.8	9.5	0.0	0.0	2.0	0.7		0.0	0.8	0.0	0.0	0.0	0.4	7.5	0.0
26	6.79E-5	0.0	15.0	69.7	0.0	0.0	2.0	50.0	0.0	0.0	6.0	9.8	0.0	0.0	5.9	6.9	0.0	0.0	5.5	7.5	0.0	0.0	4.8	9.5	0.0	0.0	2.0	0.7		0.0	0.8	0.0	0.0	0.0	0.4	7.5	0.0
27	4.02E-5	0.0	15.0	69.7	0.0	0.0	2.0	50.0	0.0	0.0	6.0	10.1	0.0	0.0	5.9	6.9	0.0	0.0	5.5	7.5	0.0	0.0	4.8	9.5	0.0	0.0	2.0	0.7		0.0	0.8	0.0	0.0	0.0	0.4	7.5	0.0
28	2.26E-5	0.0	15.0	69.7	0.0	0.0	2.0	50.0	0.0	0.0	6.0	10.2	0.0	0.0	5.9	6.9	0.0	0.0	5.5	7.5	0.0	0.0	4.8	9.5	0.0	0.0	2.0	0.7		0.0	0.8	0.0	0.0	0.0	0.4	7.5	0.0
29	1.37E-5	0.0	15.0	69.7	0.0	0.0	2.0	50.0	0.0	0.0	6.0	10.3	0.0	0.0	5.9	6.9	0.0	0.0	5.5	7.5	0.0	0.0	4.8	9.5	0.0	0.0	2.0	0.7		0.0	0.8	0.0	0.0	0.0	0.4	7.5	0.0
30	8.32E-6	0.0	15.0	69.7	0.0	0.0	2.0	50.0	0.0	0.0	6.0	10.4	0.0	0.0	5.9	6.9	0.0	0.0	5.5	7.5	0.0	0.0	4.8	9.5	0.0	0.0	2.0	0.7		0.0	0.8	0.0	0.0	0.0	0.4	7.5	0.0
31	4.00E-6	0.0	15.0	69.7	0.0	0.0	2.0	50.0	0.0	0.0	6.0	10.4	0.0	0.0	5.9	6.9	0.0	0.0	5.5	7.5	0.0	0.0	4.8	9.5	0.0	0.0	2.0	0.7		0.0	0.8	0.0	0.0	0.0	0.4	7.5	0.0
32	5.40E-7	0.0	1.8	10.1	0.0	0.0	0.2	5.3	0.0	0.0	6.0	10.5	0.0	0.0	5.4	8.8	0.0	0.0	5.0	29.7	0.0	0.0	4.4	3.2	0.0	0.0	2.0	0.7		0.0	0.8	0.0	0.0	0.0	0.4	1.4	0.0
33	1.00E-7	0.0	1.3	8.7	0.0	0.0	0.1	3.0	0.0	0.0	6.5	10.5	0.0	0.0	5.9	9.6	0.0	0.0	5.5	32.7	0.0	0.0	4.8	3.4	0.0	0.0	2.0	0.7		0.0	0.8	0.0	0.0	0.0	0.4	1.3	0.0

AFCI1.3 Relative Standard Deviations (%)

		F19				Mg24				Mg25				Mg26				N15				H				H2				He4				Gd155			
Gr	E [MeV]	σ_{inel}	σ_{el}	σ_{capt}	$\sigma_{n,2n}$	σ_{inel}	σ_{el}	σ_{capt}	$\sigma_{n,2n}$	σ_{inel}	σ_{el}	σ_{capt}	$\sigma_{n,2n}$	σ_{inel}	σ_{el}	σ_{capt}	$\sigma_{n,2n}$	σ_{inel}	σ_{el}	σ_{capt}	$\sigma_{n,2n}$	σ_{inel}	σ_{el}	σ_{capt}	$\sigma_{n,2n}$	σ_{inel}	σ_{el}	σ_{capt}	$\sigma_{n,2n}$	σ_{inel}	σ_{el}	σ_{capt}	$\sigma_{n,2n}$	σ_{inel}	σ_{el}	σ_{capt}	$\sigma_{n,2n}$
1	1.96E+1	4.3	16.4	46.8	9.1	8.1	3.7	27.1	6.7	5.7	3.7	31.3	10.8	4.9	3.6	32.0	10.9	47.4	18.8	80.0	41.5		1.5	16.5			5.0	80.0	22.8		2.5			47.2	2.1	80.6	7.1
2	1.00E+1	9.5	16.1	47.5	0.0	3.8	6.8	21.9	0.0	3.6	7.4	26.3	11.2	2.9	7.8	23.0	0.0	50.0	25.4	80.0	0.0		2.5	28.5			5.0	80.0	61.5		2.0			14.1	1.1	67.4	10.5
3	6.07E+0	12.3	11.7	46.8	0.0	4.4	10.3	20.8	0.0	4.0	11.4	21.5	0.0	3.7	11.3	20.9	0.0	10.6	1.7	75.9	0.0		2.2	40.3			2.9	75.9	100.0		1.4			11.1	4.2	55.3	0.0
4	3.68E+0	11.7	9.3	47.6	0.0	6.5	8.6	20.4	0.0	5.0	9.2	20.9	0.0	8.3	8.1	20.4	0.0	0.0	1.8	80.0	0.0		1.8	48.8			2.0	80.0	100.0		1.0			12.9	3.4	34.7	0.0
5	2.23E+0	9.7	7.8	14.0	0.0	12.8	7.3	20.0	0.0	10.1	7.4	20.6	0.0	8.2	7.0	19.9	0.0	0.0	2.0	80.0	0.0		1.4	48.9			1.8	76.8	0.0		1.0			14.2	3.7	20.4	0.0
6	1.35E+0	12.7	7.1	4.6	0.0	0.0	8.7	19.1	0.0	20.6	7.9	20.3	0.0	0.0	7.8	19.7	0.0	0.0	2.3	63.2	0.0		1.2	44.7			1.8	53.5	0.0		1.0			15.6	5.8	12.6	0.0
7	8.21E-1	14.5	6.4	5.4	0.0	0.0	9.6	18.1	0.0	29.7	9.6	20.1	0.0	0.0	9.3	19.4	0.0	0.0	4.0	50.0	0.0		0.9	36.1			2.0	10.0	0.0		1.0			18.4	6.3	10.0	0.0
8	4.98E-1	15.6	10.6	5.4	0.0	0.0	8.5	17.9	0.0	0.0	9.1	19.9	0.0	0.0	9.4	18.8	0.0	0.0	4.0	50.0	0.0		0.5	7.3			2.0	10.0	0.0		0.5			22.8	5.3	8.7	0.0
9	3.02E-1	19.9	12.7	4.9	0.0	0.0	6.9	18.4	0.0	0.0	7.6	17.1	0.0	0.0	8.5	18.6	0.0	0.0	4.0	50.0	0.0		0.5	7.3			2.0	10.0	0.0		0.5			30.4	3.5	6.2	0.0
10	1.83E-1	18.7	3.8	3.8	0.0	0.0	4.1	19.3	0.0	0.0	16.0	32.8	0.0	0.0	6.0	19.3	0.0	0.0	4.0	50.0	0.0		0.5	7.3			2.0	10.0	0.0		0.5			36.5	2.7	4.6	0.0
11	1.11E-1	0.0	3.1	2.9	0.0	0.0	3.2	19.1	0.0	0.0	16.0	32.8	0.0	0.0	4.7	19.4	0.0	0.0	3.6	50.0	0.0		0.3	3.4			1.8	3.6	0.0		0.5			35.0	2.7	3.5	0.0
12	6.74E-2	0.0	4.1	3.7	0.0	0.0	3.7	19.0	0.0	0.0	16.0	32.8	0.0	0.0	3.2	19.3	0.0	0.0	4.0	50.0	0.0		0.3	2.6			2.0	3.0	0.0		0.5			0.0	3.0	3.7	0.0
13	4.09E-2	0.0	1.4	4.3	0.0	0.0	5.6	19.0	0.0	0.0	16.0	32.8	0.0	0.0	4.1	19.3	0.0	0.0	4.0	50.0	0.0		0.3	2.6			2.0	3.0	0.0		0.5			0.0	3.3	4.5	0.0
14	2.48E-2	0.0	1.4	4.0	0.0	0.0	6.6	19.0	0.0	0.0	16.0	32.8	0.0	0.0	4.9	19.3	0.0	0.0	4.0	50.0	0.0		0.3	2.6			2.0	3.0	0.0		0.5			0.0	3.8	5.6	0.0
15	1.50E-2	0.0	1.4	3.2	0.0	0.0	7.5	19.1	0.0	0.0	16.0	32.8	0.0	0.0	5.8	19.4	0.0	0.0	4.0	50.0	0.0		0.3	2.6			2.0	3.0	0.0		0.5			0.0	4.2	6.5	0.0
16	9.12E-3	0.0	1.4	2.8	0.0	0.0	8.3	18.8	0.0	0.0	16.0	32.8	0.0	0.0	6.6	19.4	0.0	0.0	4.0	50.0	0.0		0.3	2.6			2.0	3.0	0.0		0.5			0.0	4.5	7.0	0.0
17	5.53E-3	0.0	1.4	3.8	0.0	0.0	2.2	10.0	0.0	0.0	16.0	32.8	0.0	0.0	4.8	6.1	0.0	0.0	4.0	50.0	0.0		0.3	2.6			2.0	3.0	0.0		0.5			0.0	4.7	7.4	0.0
18	3.35E-3	0.0	1.4	4.3	0.0	0.0	1.1	11.7	0.0	0.0	16.0	32.8	0.0	0.0	6.0	5.1	0.0	0.0	4.0	50.0	0.0		0.3	2.6			2.0	3.0	0.0		0.5			0.0	5.0	7.8	0.0
19	2.03E-3	0.0	1.4	4.3	0.0	0.0	1.1	11.7	0.0	0.0	16.0	32.8	0.0	0.0	6.0	5.1	0.0	0.0	4.0	50.0	0.0		0.3	2.6			2.0	3.0	0.0		0.5			0.0	5.2	8.0	0.0
20	1.23E-3	0.0	1.5	4.6	0.0	0.0	1.1	11.7	0.0	0.0	16.0	32.8	0.0	0.0	6.0	5.1	0.0	0.0	4.0	50.0	0.0		0.3	2.6			2.0	3.0	0.0		0.5			0.0	5.4	8.3	0.0
21	7.49E-4	0.0	1.5	4.9	0.0	0.0	1.1	11.7	0.0	0.0	16.0	32.8	0.0	0.0	6.0	5.1	0.0	0.0	4.0	50.0	0.0		0.3	2.6			2.0	3.0	0.0		0.5			0.0	5.6	8.4	0.0
22	4.54E-4	0.0	1.5	4.9	0.0	0.0	1.1	11.7	0.0	0.0	16.0	32.8	0.0	0.0	6.0	5.1	0.0	0.0	4.0	50.0	0.0		0.3	2.6			2.0	3.0	0.0		0.5			0.0	5.6	8.4	0.0
23	3.04E-4	0.0	1.5	4.9	0.0	0.0	1.1	11.7	0.0	0.0	16.0	32.8	0.0	0.0	6.0	5.1	0.0	0.0	4.0	50.0	0.0		0.3	2.6			2.0	3.0	0.0		0.5			0.0	5.4	6.8	0.0
24	1.49E-4	0.0	1.5	4.9	0.0	0.0	1.1	11.7	0.0	0.0	16.0	32.8	0.0	0.0	6.0	5.1	0.0	0.0	4.0	43.3	0.0		0.3	2.6			2.0	3.0	0.0		0.5			0.0	8.8	4.7	0.0
25	9.17E-5	0.0	1.5	4.9	0.0	0.0	1.1	11.7	0.0	0.0	16.0	32.8	0.0	0.0	6.0	5.1	0.0	0.0	4.0	30.0	0.0		0.3	2.6			2.0	3.0	0.0		0.5			0.0	3.6	6.3	0.0
26	6.79E-5	0.0	1.5	4.9	0.0	0.0	1.1	11.7	0.0	0.0	16.0	32.8	0.0	0.0	6.0	5.1	0.0	0.0	4.0	30.0	0.0		0.3	2.6			2.0	3.0	0.0		0.5			0.0	10.3	5.2	0.0
27	4.02E-5	0.0	1.5	4.9	0.0	0.0	1.1	11.7	0.0	0.0	16.0	32.8	0.0	0.0	6.0	5.1	0.0	0.0	4.0	30.0	0.0		0.3	2.6			2.0	3.0	0.0		0.5			0.0	12.1	5.7	0.0
28	2.26E-5	0.0	1.5	4.9	0.0	0.0	1.1	11.7	0.0	0.0	16.0	32.8	0.0	0.0	6.0	5.1	0.0	0.0	4.0	30.0	0.0		0.3	2.6			2.0	3.0	0.0		0.5			0.0	24.7	6.6	0.0
29	1.37E-5	0.0	1.5	4.9	0.0	0.0	1.1	11.7	0.0	0.0	16.0	32.8	0.0	0.0	6.0	5.1	0.0	0.0	4.0	30.0	0.0		0.3	2.6			2.0	3.0	0.0		0.5			0.0	2.9	8.0	0.0
30	8.32E-6	0.0	1.5	4.9	0.0	0.0	1.1	11.7	0.0	0.0	16.0	32.8	0.0	0.0	6.0	5.1	0.0	0.0	4.0	30.0	0.0		0.3	2.6			2.0	3.0	0.0		0.5			0.0	10.2	8.1	0.0
31	4.00E-6	0.0	1.5	4.9	0.0	0.0	1.1	11.7	0.0	0.0	16.0	32.8	0.0	0.0	6.0	5.1	0.0	0.0	4.0	30.0	0.0		0.3	2.6			2.0	3.0	0.0		0.5			0.0	14.1	7.1	0.0
32	5.40E-7	0.0	1.5	4.9	0.0	0.0	1.0	3.2	0.0	0.0	7.4	3.6	0.0	0.0	5.5	1.5	0.0	0.0	4.0	30.0	0.0		0.3	2.6			2.0	3.0	0.0		0.5			0.0	2.3	5.1	0.0
33	1.00E-7	0.0	1.5	4.9	0.0	0.0	1.1	3.3	0.0	0.0	8.0	2.2	0.0	0.0	6.0	1.6	0.0	0.0	4.0	30.0	0.0		0.3	2.6			2.0	3.0	0.0		0.5			0.0	0.7	3.2	0.0

AFCI1.3 Relative Standard Deviations (%)

		Gd156				Gd157				Gd158				Gd160				Er166				Er167				Er168				Er170				Be9			
Gr	E [MeV]	σ_{inel}	σ_{el}	σ_{capt}	$\sigma_{n,2n}$	σ_{inel}	σ_{el}	σ_{capt}	$\sigma_{n,2n}$	σ_{inel}	σ_{el}	σ_{capt}	$\sigma_{n,2n}$	σ_{inel}	σ_{el}	σ_{capt}	$\sigma_{n,2n}$	σ_{inel}	σ_{el}	σ_{capt}	$\sigma_{n,2n}$	σ_{inel}	σ_{el}	σ_{capt}	$\sigma_{n,2n}$	σ_{inel}	σ_{el}	σ_{capt}	$\sigma_{n,2n}$	σ_{inel}	σ_{el}	σ_{capt}	$\sigma_{n,2n}$	σ_{inel}	σ_{el}	σ_{capt}	$\sigma_{n,2n}$
1	1.96E+1	33.4	1.3	73.3	8.9	23.0	2.5	75.1	10.1	86.1	1.5	67.6	8.5	73.8	1.6	81.6	23.8	49.4	3.8	74.1	4.5	62.7	3.8	82.2	4.3	60.8	3.8	84.5	8.8	67.0	3.9	87.4	5.4		7.6	20.0	2.0
2	1.00E+1	14.4	1.0	47.9	5.4	11.0	1.4	61.1	10.2	14.3	1.7	51.4	6.3	32.0	1.5	74.1	5.4	4.8	9.3	56.2	6.2	7.1	9.4	57.8	7.2	5.2	9.5	52.2	6.1	7.4	9.7	62.7	9.3		3.2	20.0	2.0
3	6.07E+0	7.9	2.3	28.7	0.0	9.6	4.3	22.3	0.0	6.7	1.2	26.5	0.0	25.2	2.3	46.9	0.0	4.3	12.4	38.5	0.0	4.3	12.3	40.5	0.0	4.4	12.3	42.2	0.0	4.6	12.2	57.9	0.0		1.9	20.0	2.0
4	3.68E+0	10.5	1.6	17.7	0.0	11.5	3.3	15.3	0.0	12.2	1.5	17.1	0.0	26.0	1.5	27.7	0.0	14.2	3.6	21.7	0.0	14.0	5.0	24.9	0.0	14.2	3.7	24.8	0.0	14.2	3.8	43.4	0.0		1.6	20.0	10.9
5	2.23E+0	8.6	1.9	10.5	0.0	16.3	3.7	9.1	0.0	19.1	1.5	13.9	0.0	18.9	1.1	22.7	0.0	22.1	10.5	13.5	0.0	21.6	10.7	17.6	0.0	23.2	11.2	15.9	0.0	24.2	11.9	35.4	0.0		2.0	20.0	11.0
6	1.35E+0	14.0	4.9	7.2	0.0	21.5	6.0	6.5	0.0	23.4	3.2	5.5	0.0	13.3	2.0	11.8	0.0	24.2	7.4	9.9	0.0	21.9	8.1	15.9	0.0	27.1	8.2	11.9	0.0	30.3	8.8	30.5	0.0		1.5	20.0	0.0
7	8.21E-1	13.5	6.6	6.1	0.0	25.8	6.5	5.9	0.0	22.2	4.4	4.9	0.0	34.2	3.0	10.8	0.0	10.0	17.2	8.8	0.0	11.0	17.4	12.6	0.0	13.5	16.0	10.9	0.0	17.5	15.0	28.6	0.0		0.9	20.0	0.0
8	4.98E-1	21.3	6.5	5.9	0.0	28.2	5.6	5.4	0.0	34.0	4.5	5.1	0.0	64.5	3.4	11.4	0.0	10.9	32.0	13.0	0.0	8.7	20.0	12.3	0.0	8.0	30.1	14.4	0.0	7.2	20.0	28.8	0.0		2.0	20.0	0.0
9	3.02E-1	28.9	5.6	4.9	0.0	29.9	4.6	4.9	0.0	45.8	3.8	4.7	0.0	86.1	3.2	10.7	0.0	16.7	33.5	17.8	0.0	13.5	20.0	12.4	0.0	12.6	31.1	19.6	0.0	9.4	20.0	31.1	0.0		2.0	20.0	0.0
10	1.83E-1	32.4	4.7	4.0	0.0	30.0	4.0	4.3	0.0	65.5	3.1	4.3	0.0	94.9	2.8	10.2	0.0	22.3	25.7	17.0	0.0	25.9	20.0	10.3	0.0	16.8	22.9	20.6	0.0	13.6	20.0	31.1	0.0		2.0	20.0	0.0
11	1.11E-1	7.7	3.7	3.4	0.0	30.5	3.4	3.8	0.0	33.2	2.7	3.5	0.0	45.8	2.7	8.5	0.0	22.4	21.2	15.6	0.0	24.0	20.0	10.1	0.0	23.0	18.3	17.3	0.0	24.2	15.7	23.9	0.0		1.9	20.0	0.0
12	6.74E-2	0.0	3.0	3.4	0.0	5.9	2.4	3.2	0.0	0.0	2.8	3.3	0.0	0.0	2.7	7.0	0.0	0.0	13.5	9.5	0.0	0.0	13.3	14.4	0.0	0.0	11.3	14.0	0.0	0.0	10.2	20.4	0.0		2.0	20.0	0.0
13	4.09E-2	0.0	2.9	4.2	0.0	0.0	2.7	3.0	0.0	0.0	3.3	4.5	0.0	0.0	3.0	7.3	0.0	0.0	11.4	7.5	0.0	0.0	12.1	18.6	0.0	0.0	12.5	9.2	0.0	0.0	15.0	17.8	0.0		2.0	20.0	0.0
14	2.48E-2	0.0	3.1	4.8	0.0	0.0	3.1	2.9	0.0	0.0	4.0	5.9	0.0	0.0	3.5	8.6	0.0	0.0	13.6	8.6	0.0	0.0	15.0	20.0	0.0	0.0	16.3	8.7	0.0	0.0	20.0	18.0	0.0		2.0	20.0	0.0
15	1.50E-2	0.0	3.4	5.2	0.0	0.0	3.6	3.6	0.0	0.0	4.8	6.5	0.0	0.0	3.5	9.6	0.0	0.0	17.2	10.2	0.0	0.0	19.1	21.4	0.0	0.0	19.9	11.9	0.0	0.0	20.0	18.8	0.0		2.0	20.0	0.0
16	9.12E-3	0.0	3.8	6.1	0.0	0.0	3.9	4.5	0.0	0.0	20.0	15.0	0.0	0.0	4.0	27.6	0.0	0.0	21.3	11.9	0.0	0.0	20.0	22.5	0.0	0.0	20.0	12.0	0.0	0.0	20.0	20.6	0.0		2.0	20.0	0.0
17	5.53E-3	0.0	4.2	7.4	0.0	0.0	4.2	5.5	0.0	0.0	20.0	15.0	0.0	0.0	5.0	28.0	0.0	0.0	6.3	6.3	0.0	0.0	13.0	5.9	0.0	0.0	20.0	12.0	0.0	0.0	17.2	12.7	0.0		2.0	20.0	0.0
18	3.35E-3	0.0	4.6	6.8	0.0	0.0	4.6	6.0	0.0	0.0	20.0	15.0	0.0	0.0	5.0	27.9	0.0	0.0	3.5	7.3	0.0	0.0	15.0	2.4	0.0	0.0	20.0	12.0	0.0	0.0	20.0	15.3	0.0		2.0	20.0	0.0
19	2.03E-3	0.0	20.0	15.0	0.0	0.0	5.1	6.2	0.0	0.0	20.0	15.0	0.0	0.0	5.0	27.7	0.0	0.0	3.5	7.3	0.0	0.0	15.0	2.4	0.0	0.0	20.0	12.0	0.0	0.0	20.0	15.3	0.0		2.0	20.0	0.0
20	1.23E-3	0.0	20.0	15.0	0.0	0.0	5.7	6.2	0.0	0.0	20.0	15.0	0.0	0.0	4.5	29.5	0.0	0.0	3.5	7.3	0.0	0.0	15.0	2.4	0.0	0.0	20.0	12.0	0.0	0.0	20.0	15.3	0.0		1.1	10.0	0.0
21	7.49E-4	0.0	20.0	15.0	0.0	0.0	6.6	6.2	0.0	0.0	20.0	15.0	0.0	0.0	11.0	28.2	0.0	0.0	3.5	7.3	0.0	0.0	15.0	2.4	0.0	0.0	20.0	12.0	0.0	0.0	20.0	15.3	0.0		0.5	5.0	0.0
22	4.54E-4	0.0	20.0	15.0	0.0	0.0	6.7	6.1	0.0	0.0	20.0	15.0	0.0	0.0	7.5	28.1	0.0	0.0	3.5	7.3	0.0	0.0	15.0	2.4	0.0	0.0	20.0	12.0	0.0	0.0	20.0	15.3	0.0		0.5	5.0	0.0
23	3.04E-4	0.0	20.0	15.0	0.0	0.0	0.6	8.7	0.0	0.0	20.0	15.0	0.0	0.0	12.3	26.5	0.0	0.0	3.5	7.3	0.0	0.0	15.0	2.4	0.0	0.0	20.0	12.0	0.0	0.0	20.0	15.3	0.0		0.5	5.0	0.0
24	1.49E-4	0.0	20.0	15.0	0.0	0.0	3.4	8.8	0.0	0.0	20.0	15.0	0.0	0.0	8.4	33.2	0.0	0.0	3.5	7.3	0.0	0.0	15.0	2.4	0.0	0.0	20.0	12.0	0.0	0.0	20.0	15.3	0.0		0.5	5.0	0.0
25	9.17E-5	0.0	20.0	15.0	0.0	0.0	4.1	9.0	0.0	0.0	20.0	15.0	0.0	0.0	9.0	33.0	0.0	0.0	3.5	7.3	0.0	0.0	15.0	2.4	0.0	0.0	20.0	12.0	0.0	0.0	20.0	15.3	0.0		0.5	5.0	0.0
26	6.79E-5	0.0	20.0	15.0	0.0	0.0	5.8	8.8	0.0	0.0	20.0	15.0	0.0	0.0	9.6	32.1	0.0	0.0	3.5	7.3	0.0	0.0	15.0	2.4	0.0	0.0	20.0	12.0	0.0	0.0	20.0	15.3	0.0		0.5	5.0	0.0
27	4.02E-5	0.0	20.0	15.0	0.0	0.0	1.0	9.3	0.0	0.0	20.0	15.0	0.0	0.0	10.3	31.2	0.0	0.0	3.5	7.3	0.0	0.0	15.0	2.4	0.0	0.0	20.0	12.0	0.0	0.0	20.0	15.3	0.0		0.5	5.0	0.0
28	2.26E-5	0.0	20.0	15.0	0.0	0.0	8.5	9.0	0.0	0.0	20.0	15.0	0.0	0.0	10.8	30.7	0.0	0.0	3.5	7.3	0.0	0.0	15.0	2.4	0.0	0.0	20.0	12.0	0.0	0.0	20.0	15.3	0.0		0.5	5.0	0.0
29	1.37E-5	0.0	20.0	15.0	0.0	0.0	1.3	9.1	0.0	0.0	20.0	15.0	0.0	0.0	11.2	30.5	0.0	0.0	3.5	7.3	0.0	0.0	15.0	2.4	0.0	0.0	20.0	12.0	0.0	0.0	20.0	15.3	0.0		0.5	5.0	0.0
30	8.32E-6	0.0	20.0	15.0	0.0	0.0	0.8	9.1	0.0	0.0	20.0	15.0	0.0	0.0	11.4	30.4	0.0	0.0	3.5	7.3	0.0	0.0	15.0	2.4	0.0	0.0	20.0	12.0	0.0	0.0	20.0	15.3	0.0		0.5	5.0	0.0
31	4.00E-6	0.0	20.0	15.0	0.0	0.0	1.2	9.2	0.0	0.0	20.0	15.0	0.0	0.0	11.7	30.3	0.0	0.0	3.5	7.3	0.0	0.0	15.0	2.4	0.0	0.0	20.0	12.0	0.0	0.0	20.0	15.3	0.0		0.5	5.0	0.0
32	5.40E-7	0.0	12.0	34.6	0.0	0.0	0.9	8.8	0.0	0.0	18.3	9.2	0.0	0.0	11.7	30.3	0.0	0.0	3.2	8.6	0.0	0.0	40.4	1.1	0.0	0.0	22.8	2.9	0.0	0.0	15.6	3.4	0.0		0.5	5.0	0.0
33	1.00E-7	0.0	13.0	38.0	0.0	0.0	1.1	8.7	0.0	0.0	20.0	10.0	0.0	0.0	7.6	30.3	0.0	0.0	3.5	9.5	0.0	0.0	44.4	1.2	0.0	0.0	25.0	3.0	0.0	0.0	17.0	3.4	0.0		0.5	5.0	0.0

AFCI1.3 Relative Standard Deviations (%)

		Li6				Li7																																							
Gr	E [MeV]	σ_{inel}	σ_{el}	σ_{capt}	$\sigma_{n,2n}$	σ_{inel}	σ_{el}	σ_{capt}	$\sigma_{n,2n}$	σ_{inel}	σ_{el}	σ_{capt}	$\sigma_{n,2n}$	σ_{inel}	σ_{el}	σ_{capt}	$\sigma_{n,2n}$	σ_{inel}	σ_{el}	σ_{capt}	$\sigma_{n,2n}$	σ_{inel}	σ_{el}	σ_{capt}	$\sigma_{n,2n}$	σ_{inel}	σ_{el}	σ_{capt}	$\sigma_{n,2n}$	σ_{inel}	σ_{el}	σ_{capt}	$\sigma_{n,2n}$	σ_{inel}	σ_{el}	σ_{capt}	$\sigma_{n,2n}$
1	1.96E+1	9.4	6.6	80.0		10.1	2.5	100.0																																					
2	1.00E+1	9.5	7.5	80.0		2.1	0.9	100.0																																					
3	6.07E+0	9.3	6.7	80.0		3.9	0.8	100.0																																					
4	3.68E+0	9.5	6.0	80.0		2.4	0.4	100.0																																					
5	2.23E+0	8.9	5.1	80.0		2.4	0.5	100.0																																					
6	1.35E+0	0.0	4.2	80.0		2.4	0.5	100.0																																					
7	8.21E-1	0.0	3.7	80.0		6.6	0.6	100.0																																					
8	4.98E-1	0.0	3.2	80.0		0.0	1.2	100.0																																					
9	3.02E-1	0.0	2.4	39.7		0.0	1.4	100.0																																					
10	1.83E-1	0.0	2.4	20.0		0.0	2.0	100.0																																					
11	1.11E-1	0.0	2.2	7.8		0.0	3.8	64.0																																					
12	6.74E-2	0.0	2.1	8.0		0.0	5.0	52.2																																					
13	4.09E-2	0.0	2.0	8.0		0.0	5.0	52.2																																					
14	2.48E-2	0.0	2.0	8.0		0.0	5.0	52.2																																					
15	1.50E-2	0.0	2.0	8.0		0.0	5.0	45.2																																					
16	9.12E-3	0.0	2.0	8.0		0.0	5.0	21.2																																					
17	5.53E-3	0.0	2.0	8.0		0.0	5.0	21.2																																					
18	3.35E-3	0.0	2.0	8.0		0.0	5.0	21.2																																					
19	2.03E-3	0.0	2.0	8.0		0.0	5.0	21.2																																					
20	1.23E-3	0.0	2.0	8.0		0.0	5.0	16.7																																					
21	7.49E-4	0.0	2.0	8.0		0.0	5.0	15.0																																					
22	4.54E-4	0.0	2.0	8.0		0.0	5.0	15.0																																					
23	3.04E-4	0.0	2.0	8.0		0.0	5.0	15.0																																					
24	1.49E-4	0.0	2.0	8.0		0.0	5.0	15.0																																					
25	9.17E-5	0.0	2.0	8.0		0.0	5.0	15.0																																					
26	6.79E-5	0.0	2.0	8.0		0.0	5.0	15.0																																					
27	4.02E-5	0.0	2.0	8.0		0.0	5.0	15.0																																					
28	2.26E-5	0.0	2.0	8.0		0.0	5.0	15.0																																					
29	1.37E-5	0.0	2.0	8.0		0.0	5.0	15.0																																					
30	8.32E-6	0.0	2.0	8.0		0.0	5.0	15.0																																					
31	4.00E-6	0.0	2.0	8.0		0.0	5.0	15.0																																					
32	5.40E-7	0.0	2.0	8.0		0.0	5.0	15.0																																					
33	1.00E-7	0.0	2.0	8.0		0.0	5.0	15.0																																					

AFCI1.2 Relative Standard Deviations (%)

		U233						U234						U235						U236						U238						Np237					
Gr	E [MeV]	ν	σ_f	σ_{inel}	σ_{el}	σ_{capt}	$\sigma_{n,2n}$	ν	σ_f	σ_{inel}	σ_{el}	σ_{capt}	$\sigma_{n,2n}$	ν	σ_f	σ_{inel}	σ_{el}	σ_{capt}	$\sigma_{n,2n}$	ν	σ_f	σ_{inel}	σ_{el}	σ_{capt}	$\sigma_{n,2n}$	ν	σ_f	σ_{inel}	σ_{el}	σ_{capt}	$\sigma_{n,2n}$	ν	σ_f	σ_{inel}	σ_{el}	σ_{capt}	$\sigma_{n,2n}$
1	1.96E+1	4.8	0.9	13.0	3.5	80.0	39.8	3.0	15.0	20.0	5.0	60.0	35.0	0.8	0.5	25.5	7.5	60.6	28.7	3.0	15.0	15.0	5.0	50.0	18.0	1.4	0.6	31.6	7.4	22.3	3.4	3.0	10.0	40.0	5.0	50.0	20.0
2	1.00E+1	0.7	1.0	16.1	5.2	22.4	56.0	3.0	11.5	16.5	5.0	52.9	35.0	0.2	0.6	15.9	6.5	62.7	4.1	3.0	15.0	15.0	5.0	42.9	18.0	1.4	0.7	30.3	12.3	21.2	12.6	3.0	10.0	32.9	5.0	42.9	20.0
3	6.07E+0	0.6	0.7	16.1	5.5	17.7	5.1	3.0	10.0	15.0	5.0	50.0	0.0	0.2	0.5	8.9	5.0	46.3	14.2	3.0	15.0	15.0	5.0	39.9	0.0	1.3	0.6	20.1	13.1	19.9	0.0	3.0	10.0	30.0	5.0	40.0	0.0
4	3.68E+0	0.3	1.0	15.2	5.8	19.4	0.0	3.0	13.1	21.3	5.0	43.8	0.0	0.2	0.5	6.4	4.0	26.5	0.0	3.0	24.4	21.3	5.0	27.5	0.0	1.3	0.6	19.4	15.1	5.9	0.0	2.0	10.0	30.0	5.0	33.8	0.0
5	2.23E+0	0.3	1.0	15.3	6.5	20.0	0.0	3.0	15.0	25.0	5.0	40.0	0.0	0.2	0.5	6.4	4.5	19.1	0.0	3.0	30.0	25.0	5.0	20.0	0.0	1.3	0.6	20.6	18.8	6.0	0.0	1.5	10.0	30.0	5.0	30.0	0.0
6	1.35E+0	0.3	1.0	17.3	5.9	15.1	0.0	1.8	35.0	25.0	5.0	35.0	0.0	0.1	0.5	7.0	4.0	16.2	0.0	1.8	30.0	25.0	5.0	8.0	0.0	1.1	1.8	16.9	9.5	3.1	0.0	0.7	6.0	30.0	5.0	30.0	0.0
7	8.21E-1	0.3	1.0	18.7	4.9	14.9	0.0	1.8	35.0	18.8	5.0	31.9	0.0	0.1	0.5	8.5	3.3	16.8	0.0	1.8	30.0	25.0	5.0	8.0	0.0	2.0	4.9	5.6	2.6	1.7	0.0	0.6	6.0	30.0	5.0	42.4	0.0
8	4.98E-1	0.3	1.0	22.8	5.4	15.2	0.0	1.8	35.0	15.1	5.0	30.0	0.0	0.1	0.6	10.5	3.1	19.6	0.0	1.8	30.0	25.0	5.0	8.0	0.0	2.0	5.1	4.3	2.2	1.5	0.0	0.6	6.0	30.1	5.0	49.9	0.0
9	3.02E-1	0.3	1.1	23.0	5.0	15.0	0.0	1.8	38.1	27.5	5.0	26.9	0.0	0.2	0.5	12.7	2.7	20.0	0.0	1.8	33.1	25.0	5.3	6.1	0.0	2.0	6.8	4.1	1.8	1.5	0.0	0.6	8.5	42.5	5.0	23.7	0.0
10	1.83E-1	0.3	1.1	24.5	4.3	14.4	0.0	1.8	40.0	35.0	5.0	25.0	0.0	0.3	0.6	15.0	2.3	20.0	0.0	1.8	35.0	25.0	5.5	5.0	0.0	2.0	5.2	6.0	1.9	1.7	0.0	0.6	10.0	50.0	5.0	8.0	0.0
11	1.11E-1	0.3	1.1	37.8	4.6	16.0	0.0	1.8	40.0	0.0	5.0	21.9	0.0	0.2	0.6	15.1	2.1	20.0	0.0	1.8	38.1	0.0	5.2	5.0	0.0	2.0	5.1	19.2	2.8	1.7	0.0	0.6	16.2	50.0	8.1	7.4	0.0
12	6.74E-2	0.3	1.1	50.0	4.9	16.2	0.0	1.8	40.0	0.0	5.0	20.0	0.0	0.3	0.5	15.1	2.1	20.0	0.0	1.8	40.0	0.0	5.0	5.0	0.0	2.0	5.1	17.9	3.4	1.7	0.0	0.6	20.0	0.0	10.0	7.0	0.0
13	4.09E-2	0.2	10.5	1.1	0.4	8.2	0.0	1.8	46.2	0.0	5.0	16.9	0.0	0.3	0.5	19.4	2.2	20.0	0.0	1.8	46.2	0.0	5.6	5.0	0.0	2.0	5.1	0.0	4.3	1.6	0.0	0.6	26.2	0.0	10.0	6.4	0.0
14	2.48E-2	0.6	8.4	0.0	0.2	8.1	0.0	1.8	50.1	0.0	5.0	15.0	0.0	0.2	0.7	50.0	2.4	20.0	0.0	1.8	50.1	0.0	6.0	5.0	0.0	2.0	100.0	0.0	2.3	3.2	0.0	0.6	30.1	0.0	10.0	6.0	0.0
15	1.50E-2	0.6	6.4	0.0	0.2	8.2	0.0	1.8	56.3	0.0	5.0	11.9	0.0	0.3	0.5	50.0	2.6	20.0	0.0	1.8	56.3	0.0	7.3	4.4	0.0	2.0	98.8	0.0	0.9	3.9	0.0	0.6	36.3	0.0	10.0	6.0	0.0
16	9.12E-3	0.6	5.0	0.0	0.2	7.9	0.0	1.8	60.0	0.0	5.0	10.0	0.0	0.3	0.5	50.0	2.9	20.0	0.0	1.8	60.0	0.0	8.0	4.0	0.0	2.0	100.0	0.0	0.8	3.3	0.0	0.6	40.0	0.0	10.0	6.0	0.0
17	5.53E-3	0.6	4.4	0.0	0.3	7.8	0.0	3.4	75.2	0.0	7.5	8.0	0.0	0.3	0.5	50.0	3.3	20.0	0.0	1.6	75.2	0.0	9.0	4.0	0.0	2.0	14.5	0.0	0.7	2.8	0.0	0.8	45.1	0.0	10.0	5.5	0.0
18	3.35E-3	0.6	4.1	0.0	0.3	7.8	0.0	4.4	84.4	0.0	9.1	6.7	0.0	0.3	5.7	41.8	4.7	18.3	0.0	1.5	84.4	0.0	9.6	4.0	0.0	2.0	66.8	0.0	0.8	2.9	0.0	0.9	48.2	0.0	10.0	5.2	0.0
19	2.03E-3	0.6	4.0	0.0	0.3	8.1	0.0	5.0	90.0	0.0	10.0	6.0	0.0	0.6	3.1	0.0	3.8	13.1	0.0	1.5	90.0	0.0	10.0	4.0	0.0	2.0	68.0	0.0	0.8	2.9	0.0	1.0	50.0	0.0	10.0	5.0	0.0
20	1.23E-3	0.6	3.9	0.0	0.3	8.1	0.0	5.0	90.0	0.0	10.0	5.0	0.0	0.4	0.4	0.0	2.3	5.2	0.0	1.5	90.0	0.0	10.0	4.0	0.0	2.0	6.9	0.0	1.0	2.8	0.0	1.0	50.0	0.0	8.0	5.0	0.0
21	7.49E-4	0.6	2.0	0.0	0.9	4.1	0.0	5.0	90.0	0.0	10.0	4.4	0.0	0.7	0.3	0.0	1.6	2.5	0.0	1.5	90.0	0.0	10.0	4.0	0.0	2.0	8.3	0.0	1.1	2.7	0.0	1.0	50.0	0.0	6.7	5.0	0.0
22	4.54E-4	0.6	1.1	0.0	1.3	2.6	0.0	5.0	90.0	0.0	10.0	4.0	0.0	1.1	0.3	0.0	1.5	1.6	0.0	1.5	90.0	0.0	10.0	4.0	0.0	2.0	6.7	0.0	1.4	3.4	0.0	1.0	50.0	0.0	6.0	5.0	0.0
23	3.04E-4	0.6	1.0	0.0	1.2	2.5	0.0	5.0	90.0	0.0	10.0	4.0	0.0	1.1	0.3	0.0	1.4	1.3	0.0	1.5	90.0	0.0	10.0	4.0	0.0	2.0	13.2	0.0	1.0	2.9	0.0	1.0	50.0	0.0	6.0	5.0	0.0
24	1.49E-4	0.5	1.0	0.0	1.4	2.5	0.0	5.0	90.0	0.0	10.0	4.0	0.0	0.1	0.4	0.0	1.4	1.1	0.0	1.5	90.0	0.0	10.0	4.0	0.0	2.0	29.6	0.0	0.7	4.1	0.0	1.0	50.0	0.0	6.0	5.0	0.0
25	9.17E-5	0.3	1.1	0.0	1.6	2.6	0.0	5.0	90.0	0.0	10.0	4.0	0.0	0.1	0.4	0.0	1.5	1.3	0.0	1.5	90.0	0.0	10.0	4.0	0.0	2.0	22.2	0.0	0.8	5.1	0.0	1.0	50.0	0.0	6.0	5.0	0.0
26	6.79E-5	0.3	1.1	0.0	1.8	2.6	0.0	5.0	90.0	0.0	10.0	4.0	0.0	0.1	0.4	0.0	1.4	1.1	0.0	1.5	90.0	0.0	10.0	4.0	0.0	2.0	53.5	0.0	0.7	3.6	0.0	1.0	50.0	0.0	6.0	5.0	0.0
27	4.02E-5	0.3	0.9	0.0	2.1	2.5	0.0	5.0	90.0	0.0	10.0	4.0	0.0	0.1	0.5	0.0	1.6	1.1	0.0	1.5	90.0	0.0	10.0	4.0	0.0	2.0	6.3	0.0	0.9	3.6	0.0	1.0	50.0	0.0	6.0	5.0	0.0
28	2.26E-5	0.3	1.1	0.0	2.6	2.8	0.0	5.0	90.0	0.0	10.0	4.0	0.0	0.1	0.6	0.0	1.6	1.0	0.0	1.5	90.0	0.0	10.0	4.0	0.0	2.0	31.3	0.0	1.5	3.6	0.0	1.0	50.0	0.0	6.0	5.0	0.0
29	1.37E-5	0.2	1.8	0.0	3.1	3.0	0.0	5.0	90.0	0.0	10.0	4.0	0.0	0.1	0.4	0.0	1.5	1.2	0.0	1.5	90.0	0.0	10.0	4.0	0.0	2.0	100.0	0.0	0.9	2.7	0.0	1.0	50.0	0.0	6.0	5.0	0.0
30	8.32E-6	0.5	2.1	0.0	3.6	2.7	0.0	5.0	90.0	0.0	10.0	4.0	0.0	0.1	1.2	0.0	1.6	1.8	0.0	1.5	90.0	0.0	10.0	4.0	0.0	2.0	48.8	0.0	0.8	1.0	0.0	1.0	50.0	0.0	6.0	5.0	0.0
31	4.00E-6	0.5	1.4	0.0	4.5	2.5	0.0	5.0	90.0	0.0	10.0	4.0	0.0	0.1	0.8	0.0	1.7	2.2	0.0	1.5	90.0	0.0	10.0	4.0	0.0	2.0	55.7	0.0	0.9	2.8	0.0	1.0	50.0	0.0	6.0	5.0	0.0
32	5.40E-7	0.5	0.5	0.0	5.5	2.4	0.0	5.0	21.0	0.0	6.0	2.0	0.0	0.1	0.4	0.0	3.1	1.6	0.0	1.5	30.0	0.0	5.0	2.0	0.0	2.0	62.0	0.0	1.0	2.0	0.0	1.0	10.0	0.0	3.0	8.0	0.0
33	1.00E-7	0.5	0.4	0.0	5.6	2.2	0.0	5.0	21.0	0.0	6.0	2.0	0.0	0.1	0.4	0.0	4.8	1.7	0.0	1.5	30.0	0.0	5.0	2.0	0.0	2.0	62.3	0.0	1.1	1.8	0.0	1.0	10.0	0.0	3.0	8.0	0.0

AFCI1.2 Relative Standard Deviations (%)

		Pu238						Pu239						Pu240						Pu241						Pu242						Am241					
Gr	E [MeV]	ν	σ_f	σ_{inel}	σ_{el}	σ_{capt}	$\sigma_{n,2n}$	ν	σ_f	σ_{inel}	σ_{el}	σ_{capt}	$\sigma_{n,2n}$	ν	σ_f	σ_{inel}	σ_{el}	σ_{capt}	$\sigma_{n,2n}$	ν	σ_f	σ_{inel}	σ_{el}	σ_{capt}	$\sigma_{n,2n}$	ν	σ_f	σ_{inel}	σ_{el}	σ_{capt}	$\sigma_{n,2n}$	ν	σ_f	σ_{inel}	σ_{el}	σ_{capt}	$\sigma_{n,2n}$
1	1.96E+1	5.0	20.0	100.0	5.0	100.0	20.0	0.4	0.7	24.1	5.6	36.3	7.2	1.1	9.5	20.0	5.0	55.0	20.0	0.5	10.0	25.0	6.0	55.0	40.0	10.0	35.0	15.0	5.0	100.0	50.0	3.0	20.0	25.0	5.0	80.0	20.0
2	1.00E+1	3.6	20.0	100.0	5.0	100.0	20.0	0.2	0.9	27.6	8.7	39.9	20.9	2.2	6.7	16.5	5.0	40.8	20.0	0.3	6.5	21.5	5.3	55.0	36.5	5.0	24.4	15.0	5.0	100.0	50.0	3.0	14.3	21.5	5.0	58.7	20.0
3	6.07E+0	3.0	20.0	99.8	5.0	100.0	0.0	0.2	0.8	25.6	10.8	42.0	7.0	2.6	5.5	15.0	5.0	35.0	0.0	0.3	5.0	20.0	5.0	55.1	0.0	3.0	20.0	15.0	5.0	100.0	0.0	3.0	12.0	20.0	5.0	49.9	0.0
4	3.68E+0	3.0	13.8	62.5	5.0	100.0	0.0	0.2	0.9	19.5	9.3	34.2	0.0	2.7	5.5	18.1	5.0	35.0	0.0	0.3	5.0	26.3	5.0	83.1	0.0	2.5	20.0	24.4	5.0	100.0	0.0	3.0	10.8	20.0	5.0	37.5	0.0
5	2.23E+0	3.0	10.0	40.0	5.0	100.0	0.0	0.2	0.9	19.0	10.7	26.6	0.0	2.7	5.5	20.0	5.0	35.0	0.0	0.3	5.0	30.0	5.0	100.0	0.0	2.2	20.0	30.0	5.0	100.0	0.0	3.0	10.0	20.0	5.0	30.0	0.0
6	1.35E+0	3.0	50.0	100.0	5.0	50.0	0.0	0.2	0.8	27.0	11.7	20.5	0.0	3.7	5.5	30.0	5.0	100.0	0.0	0.3	15.0	30.0	10.0	80.0	0.0	3.1	20.0	30.0	5.0	100.0	0.0	3.0	10.0	20.0	5.0	30.0	0.0
7	8.21E-1	3.0	50.0	100.0	5.0	43.8	0.0	0.2	0.8	32.6	9.2	15.5	0.0	4.4	4.6	30.0	5.0	56.5	0.0	0.3	16.2	67.3	10.0	48.9	0.0	3.7	20.0	30.0	5.0	68.9	0.0	3.0	10.0	26.2	8.1	23.8	0.0
8	4.98E-1	3.0	50.0	99.8	5.0	39.9	0.0	0.2	0.9	32.7	6.4	12.1	0.0	4.8	4.0	30.0	5.0	29.9	0.0	0.3	17.0	89.9	10.0	30.0	0.0	4.0	20.0	30.1	5.0	50.0	0.0	3.0	10.0	30.0	10.0	20.0	0.0
9	3.02E-1	3.0	50.0	68.7	5.0	21.2	0.0	0.3	0.8	36.2	5.2	11.3	0.0	4.8	5.1	36.3	5.0	17.5	0.0	0.3	18.9	65.0	10.0	30.0	0.0	4.0	26.3	51.9	5.0	43.7	0.0	3.0	10.0	30.0	10.0	13.7	0.0
10	1.83E-1	3.0	50.0	50.0	5.0	10.0	0.0	0.7	1.0	43.7	4.5	9.6	0.0	4.8	5.7	40.0	5.0	10.0	0.0	0.3	20.0	50.0	10.0	30.0	0.0	4.0	30.0	65.0	5.0	40.0	0.0	3.0	10.0	30.0	10.0	10.0	0.0
11	1.11E-1	3.0	50.0	0.0	14.3	10.0	0.0	0.5	0.9	50.0	3.6	10.8	0.0	4.8	6.8	58.7	5.0	10.0	0.0	0.3	16.9	50.0	10.0	23.8	0.0	4.0	30.0	0.0	5.0	36.9	0.0	3.0	11.2	30.0	10.0	8.8	0.0
12	6.74E-2	3.0	50.0	0.0	20.0	10.0	0.0	0.7	0.7	45.1	2.6	11.4	0.0	4.8	7.5	0.0	5.0	10.0	0.0	0.3	15.0	0.0	10.0	20.0	0.0	4.0	30.0	0.0	5.0	35.0	0.0	3.0	12.0	0.0	10.0	8.0	0.0
13	4.09E-2	3.0	50.0	0.0	20.0	13.1	0.0	0.6	0.9	31.9	2.1	8.9	0.0	4.8	7.5	0.0	5.0	10.0	0.0	0.3	11.9	0.0	10.0	13.8	0.0	4.0	30.0	0.0	5.0	35.0	0.0	3.0	13.9	0.0	10.0	8.0	0.0
14	2.48E-2	3.0	50.0	0.0	20.0	15.0	0.0	1.2	0.9	30.1	2.1	7.2	0.0	4.8	7.5	0.0	5.0	10.0	0.0	0.3	10.0	0.0	10.0	10.0	0.0	4.0	29.9	0.0	5.0	35.0	0.0	3.0	15.0	0.0	10.0	8.0	0.0
15	1.50E-2	3.0	50.0	0.0	20.0	18.1	0.0	2.0	1.2	26.7	2.3	7.8	0.0	4.8	7.8	0.0	5.0	6.9	0.0	0.3	10.0	0.0	10.0	10.0	0.0	4.0	23.8	0.0	6.3	38.1	0.0	3.0	15.0	0.0	10.0	8.0	0.0
16	9.12E-3	3.0	50.0	0.0	20.0	20.0	0.0	0.9	0.8	17.1	3.7	16.5	0.0	4.8	8.1	0.0	5.0	5.0	0.0	0.3	10.0	0.0	10.0	10.0	0.0	4.0	20.0	0.0	7.0	40.0	0.0	3.0	15.0	0.0	10.0	8.0	0.0
17	5.53E-3	2.5	50.0	0.0	20.0	17.5	0.0	1.0	0.8	0.0	4.2	16.5	0.0	4.4	29.3	0.0	7.5	5.0	0.0	0.3	10.0	0.0	10.0	10.0	0.0	4.0	35.2	0.0	8.5	29.9	0.0	2.2	13.5	0.0	10.0	8.0	0.0
18	3.35E-3	2.2	50.0	0.0	20.0	15.9	0.0	1.4	0.7	0.0	3.2	10.7	0.0	4.2	42.2	0.0	9.1	5.0	0.0	0.3	10.0	0.0	10.0	10.0	0.0	4.0	44.4	0.0	9.4	23.7	0.0	1.8	12.6	0.0	10.0	8.0	0.0
19	2.03E-3	2.0	49.9	0.0	20.0	15.0	0.0	1.0	1.2	0.0	0.5	1.5	0.0	4.0	50.3	0.0	10.0	5.0	0.0	0.3	10.0	0.0	10.0	10.0	0.0	4.0	50.3	0.0	10.0	20.0	0.0	1.5	12.0	0.0	10.1	8.0	0.0
20	1.23E-3	2.0	39.8	0.0	17.4	12.4	0.0	1.1	1.3	0.0	0.7	1.5	0.0	4.0	70.4	0.0	12.6	5.0	0.0	0.3	7.4	0.0	12.6	10.0	0.0	4.0	70.4	0.0	12.6	15.9	0.0	1.5	11.0	0.0	15.1	8.0	0.0
21	7.49E-4	2.0	33.7	0.0	15.9	10.9	0.0	1.2	1.3	0.0	1.2	1.6	0.0	4.0	82.6	0.0	14.1	5.0	0.0	0.3	5.9	0.0	14.1	10.0	0.0	4.0	82.6	0.0	14.1	13.5	0.0	1.5	10.4	0.0	18.1	8.0	0.0
22	4.54E-4	2.0	30.0	0.0	15.0	10.0	0.0	0.5	1.5	0.0	0.9	1.6	0.0	4.0	90.0	0.0	15.0	5.0	0.0	0.3	5.0	0.0	15.0	10.0	0.0	4.0	90.0	0.0	15.0	12.0	0.0	1.5	10.0	0.0	20.0	8.0	0.0
23	3.04E-4	2.0	24.8	0.0	15.0	10.0	0.0	0.3	1.3	0.0	1.6	1.6	0.0	4.0	90.0	0.0	15.0	4.7	0.0	0.3	5.0	0.0	15.0	10.0	0.0	4.0	90.0	0.0	15.0	12.0	0.0	1.5	10.0	0.0	20.0	8.0	0.0
24	1.49E-4	2.0	19.4	0.0	15.0	10.0	0.0	0.3	1.6	0.0	1.1	1.9	0.0	4.0	90.0	0.0	15.0	4.3	0.0	0.3	5.0	0.0	15.0	10.0	0.0	4.0	90.0	0.0	15.0	12.0	0.0	1.5	10.0	0.0	20.0	8.0	0.0
25	9.17E-5	2.0	17.4	0.0	15.0	10.0	0.0	0.2	1.8	0.0	2.3	5.5	0.0	4.0	90.0	0.0	15.0	4.2	0.0	0.3	5.0	0.0	15.0	10.0	0.0	4.0	90.0	0.0	15.0	12.0	0.0	1.5	10.0	0.0	20.0	8.0	0.0
26	6.79E-5	2.0	16.6	0.0	15.0	10.0	0.0	0.2	1.6	0.0	0.8	3.2	0.0	4.0	90.0	0.0	15.0	4.1	0.0	0.3	5.0	0.0	15.0	10.0	0.0	4.0	90.0	0.0	15.0	12.0	0.0	1.5	10.0	0.0	20.0	8.0	0.0
27	4.02E-5	2.0	15.6	0.0	15.0	10.0	0.0	0.2	2.6	0.0	0.3	2.1	0.0	4.0	90.0	0.0	15.0	4.0	0.0	0.3	5.0	0.0	15.0	10.0	0.0	4.0	90.0	0.0	15.0	12.0	0.0	1.5	10.0	0.0	20.0	8.0	0.0
28	2.26E-5	2.0	15.0	0.0	15.0	10.0	0.0	0.2	1.7	0.0	0.3	1.3	0.0	4.0	90.0	0.0	15.0	4.0	0.0	0.3	5.0	0.0	15.0	10.0	0.0	4.0	90.0	0.0	15.0	12.0	0.0	1.5	10.0	0.0	20.0	8.0	0.0
29	1.37E-5	2.0	15.0	0.0	15.0	10.0	0.0	0.2	1.0	0.0	0.3	0.7	0.0	4.0	90.0	0.0	15.0	4.0	0.0	0.3	5.0	0.0	15.0	10.0	0.0	4.0	90.0	0.0	15.0	12.0	0.0	1.5	10.0	0.0	20.0	8.0	0.0
30	8.32E-6	2.0	15.0	0.0	15.0	10.0	0.0	0.2	1.5	0.0	0.3	1.0	0.0	4.0	90.0	0.0	15.0	4.0	0.0	0.3	5.0	0.0	15.0	10.0	0.0	4.0	90.0	0.0	15.0	12.0	0.0	1.5	10.0	0.0	20.0	8.0	0.0
31	4.00E-6	2.0	15.0	0.0	15.0	10.0	0.0	0.2	1.8	0.0	0.3	1.5	0.0	4.0	90.0	0.0	15.0	4.0	0.0	0.3	5.0	0.0	15.0	10.0	0.0	4.0	90.0	0.0	15.0	12.0	0.0	1.5	10.0	0.0	20.0	8.0	0.0
32	5.40E-7	2.0	5.0	0.0	10.0	4.0	0.0	0.2	0.8	0.0	0.4	1.3	0.0	4.0	50.0	0.0	20.0	1.0	0.0	0.3	1.0	0.0	15.0	2.0	0.0	4.0	50.0	0.0	5.0	4.0	0.0	1.5	3.0	0.0	5.0	5.0	0.0
33	1.00E-7	2.0	5.0	0.0	10.0	4.0	0.0	0.1	1.1	0.0	0.7	1.5	0.0	4.0	50.0	0.0	20.0	1.0	0.0	0.3	1.0	0.0	15.0	2.0	0.0	4.0	50.0	0.0	5.0	4.0	0.0	1.5	3.0	0.0	5.0	5.0	0.0

AFCI1.2 Relative Standard Deviations (%)

		Am242m						Am243						Cm242						Cm243						Cm244						Cm245					
Gr	E [MeV]	ν	σ_f	σ_{inel}	σ_{el}	σ_{capt}	$\sigma_{n,2n}$	ν	σ_f	σ_{inel}	σ_{el}	σ_{capt}	$\sigma_{n,2n}$	ν	σ_f	σ_{inel}	σ_{el}	σ_{capt}	$\sigma_{n,2n}$	ν	σ_f	σ_{inel}	σ_{el}	σ_{capt}	$\sigma_{n,2n}$	ν	σ_f	σ_{inel}	σ_{el}	σ_{capt}	$\sigma_{n,2n}$	ν	σ_f	σ_{inel}	σ_{el}	σ_{capt}	$\sigma_{n,2n}$
1	1.96E+1	10.4	40.0	25.0	10.0	100.0	30.0	1.9	20.0	25.0	5.0	60.0	50.0	11.0	100.0	100.0	10.0	100.0	50.0	9.5	10.0	15.0	5.0	80.0	50.0	11.0	20.0	50.0	5.0	100.0	30.0	9.6	30.0	25.0	5.0	80.0	25.0
2	1.00E+1	3.7	29.4	28.5	10.0	100.0	33.5	2.0	16.5	21.5	5.0	45.8	50.0	11.4	100.0	100.0	6.5	100.0	50.0	5.6	10.0	18.5	5.0	58.7	39.4	11.7	20.0	35.8	5.0	100.0	30.0	4.9	30.0	21.5	5.0	51.6	74.7
3	6.07E+0	0.9	25.0	30.0	10.0	99.9	33.5	2.0	15.0	20.0	5.0	39.9	0.0	11.5	100.0	100.0	5.0	100.0	0.0	4.0	10.0	20.0	5.0	49.9	0.0	12.0	20.0	30.0	5.0	100.0	0.0	2.9	30.1	20.0	5.0	40.0	0.0
4	3.68E+0	0.8	21.9	30.0	10.0	68.8	0.0	1.9	11.9	20.0	5.0	27.5	0.0	11.2	100.0	100.0	5.0	100.0	0.0	3.4	10.0	16.9	5.0	37.5	0.0	10.8	20.0	23.8	5.0	100.0	0.0	2.9	42.5	20.0	5.0	33.8	0.0
5	2.23E+0	0.7	20.0	30.0	10.0	50.0	0.0	1.9	10.0	20.0	5.0	20.0	0.0	11.0	100.0	100.0	5.0	100.0	0.0	3.0	10.0	15.0	5.0	30.0	0.0	10.0	20.0	20.0	5.0	100.0	0.0	2.9	50.0	20.0	5.0	30.0	0.0
6	1.35E+0	0.7	15.0	30.0	10.0	50.0	0.0	1.1	10.0	20.0	5.0	15.0	0.0	10.0	100.0	100.0	5.0	100.0	0.0	3.0	15.0	30.0	5.0	30.0	0.0	10.0	15.0	30.0	10.0	100.0	0.0	2.9	50.0	30.0	5.0	25.0	0.0
7	8.21E-1	0.7	15.0	30.0	10.0	50.0	0.0	1.2	10.0	26.2	5.0	11.9	0.0	10.0	100.0	68.9	5.0	100.0	0.0	3.0	18.1	30.0	5.0	30.0	0.0	10.0	11.9	30.0	10.0	68.9	0.0	3.0	50.0	30.0	5.0	21.9	0.0
8	4.98E-1	0.7	15.0	30.0	10.0	50.0	0.0	1.2	10.0	30.0	5.0	10.0	0.0	10.0	100.0	50.0	5.0	100.0	0.0	3.0	20.0	30.1	5.0	30.0	0.0	10.0	10.0	30.1	10.0	50.0	0.0	3.0	50.0	30.1	5.0	20.0	0.0
9	3.02E-1	0.7	15.0	30.0	13.1	50.0	0.0	1.2	10.0	30.0	8.1	10.0	0.0	10.0	100.0	50.0	5.0	100.0	0.0	3.0	16.9	42.5	5.0	23.7	0.0	10.0	10.0	48.8	10.0	50.0	0.0	3.0	50.0	42.5	5.0	20.0	0.0
10	1.83E-1	0.7	15.0	30.0	15.0	50.0	0.0	1.2	10.0	30.0	10.0	10.0	0.0	10.0	100.0	50.0	5.0	100.0	0.0	3.0	15.0	50.0	5.0	20.0	0.0	10.0	10.0	60.0	10.0	50.0	0.0	3.0	50.0	50.0	5.0	20.0	0.0
11	1.11E-1	0.7	15.0	30.0	15.0	50.0	0.0	1.2	10.0	30.0	16.2	10.0	0.0	10.0	100.0	37.5	5.0	100.0	0.0	3.0	13.1	50.0	5.0	20.0	0.0	10.0	10.0	60.0	10.0	50.0	0.0	3.0	37.5	50.0	5.0	16.9	0.0
12	6.74E-2	0.7	15.0	30.0	15.0	50.0	0.0	1.2	10.0	0.0	20.0	10.0	0.0	10.0	100.0	0.0	5.0	100.0	0.0	3.0	12.0	0.0	5.0	20.0	0.0	10.0	10.0	0.0	10.0	50.1	0.0	3.0	30.0	0.0	5.0	15.0	0.0
13	4.09E-2	0.7	13.1	36.2	18.1	50.0	0.0	1.2	13.1	0.0	20.0	8.8	0.0	10.0	100.0	0.0	5.0	100.0	0.0	3.0	12.0	0.0	5.0	20.0	0.0	10.0	10.0	0.0	13.1	81.2	0.0	3.0	23.8	0.0	5.0	11.9	0.0
14	2.48E-2	0.7	12.0	0.0	20.0	50.0	0.0	1.2	15.0	0.0	20.0	8.0	0.0	10.0	100.0	0.0	5.0	100.0	0.0	3.0	12.0	0.0	5.0	20.0	0.0	10.0	10.0	0.0	15.0	100.0	0.0	3.0	20.0	0.0	5.0	10.0	0.0
15	1.50E-2	0.7	12.0	0.0	20.0	50.0	0.0	1.2	15.0	0.0	20.0	8.0	0.0	10.0	100.0	0.0	5.0	100.0	0.0	3.0	12.0	0.0	5.0	20.0	0.0	10.0	10.0	0.0	15.0	100.0	0.0	3.0	16.9	0.0	5.0	10.0	0.0
16	9.12E-3	0.7	12.0	0.0	20.0	50.0	0.0	1.2	15.0	0.0	20.0	8.0	0.0	10.0	100.0	0.0	5.0	99.9	0.0	3.0	12.0	0.0	5.0	20.0	0.0	10.0	10.0	0.0	15.0	99.9	0.0	3.0	15.0	0.0	5.0	10.0	0.0
17	5.53E-3	0.9	11.0	0.0	20.0	50.0	0.0	1.4	15.0	0.0	20.0	8.0	0.0	8.0	100.0	0.0	5.0	79.7	0.0	3.0	12.0	0.0	7.5	17.5	0.0	8.0	12.5	0.0	15.0	74.6	0.0	3.5	14.0	0.0	5.0	10.0	0.0
18	3.35E-3	0.9	10.4	0.0	20.0	50.0	0.0	1.4	15.0	0.0	20.0	8.0	0.0	6.7	100.0	0.0	5.0	67.4	0.0	3.0	12.0	0.0	9.1	15.9	0.0	6.7	14.1	0.0	15.0	59.3	0.0	3.8	13.4	0.0	5.0	10.0	0.0
19	2.03E-3	1.0	10.0	0.0	20.0	49.8	0.0	1.5	15.0	0.0	20.0	8.0	0.0	6.0	99.9	0.0	5.2	59.8	0.0	3.0	12.0	0.0	10.1	15.0	0.0	6.0	15.0	0.0	15.0	49.7	0.0	4.0	13.0	0.0	5.0	10.0	0.0
20	1.23E-3	1.0	8.0	0.0	20.0	37.2	0.0	1.5	12.4	0.0	20.0	6.0	0.0	6.0	94.9	0.0	17.8	44.7	0.0	3.0	10.0	0.0	15.1	12.4	0.0	6.0	17.6	0.0	17.6	29.6	0.0	4.0	11.5	0.0	7.6	10.0	0.0
21	7.49E-4	1.0	6.7	0.0	20.0	29.6	0.0	1.5	10.9	0.0	20.0	4.7	0.0	6.0	91.9	0.0	25.4	35.6	0.0	3.0	8.7	0.0	18.1	10.9	0.0	6.0	19.1	0.0	19.1	17.4	0.0	4.0	10.6	0.0	9.1	10.0	0.0
22	4.54E-4	1.0	6.0	0.0	20.0	25.0	0.0	1.5	10.0	0.0	20.0	4.0	0.0	6.0	90.0	0.0	30.0	30.0	0.0	3.0	8.0	0.0	20.0	10.0	0.0	6.0	20.0	0.0	20.0	10.0	0.0	4.0	10.0	0.0	10.0	10.0	0.0
23	3.04E-4	1.0	6.0	0.0	20.0	25.0	0.0	1.5	10.0	0.0	20.0	4.0	0.0	6.0	90.0	0.0	30.0	30.0	0.0	3.0	8.0	0.0	20.0	10.0	0.0	6.0	20.0	0.0	20.0	10.0	0.0	4.0	10.0	0.0	13.5	10.0	0.0
24	1.49E-4	1.0	6.0	0.0	20.0	25.0	0.0	1.5	10.0	0.0	20.0	4.0	0.0	6.0	90.0	0.0	30.0	30.0	0.0	3.0	8.0	0.0	20.0	10.0	0.0	6.0	20.0	0.0	20.0	10.0	0.0	4.0	10.0	0.0	17.1	10.0	0.0
25	9.17E-5	1.0	6.0	0.0	20.0	25.0	0.0	1.5	10.0	0.0	20.0	4.0	0.0	6.0	90.0	0.0	30.0	30.0	0.0	3.0	8.0	0.0	20.0	10.0	0.0	6.0	20.0	0.0	20.0	10.0	0.0	4.0	10.0	0.0	18.4	10.0	0.0
26	6.79E-5	1.0	6.0	0.0	20.0	25.0	0.0	1.5	10.0	0.0	20.0	4.0	0.0	6.0	90.0	0.0	30.0	30.0	0.0	3.0	8.0	0.0	20.0	10.0	0.0	6.0	20.0	0.0	20.0	10.0	0.0	4.0	10.0	0.0	19.0	10.0	0.0
27	4.02E-5	1.0	6.0	0.0	20.0	25.0	0.0	1.5	10.0	0.0	20.0	4.0	0.0	6.0	90.0	0.0	30.0	30.0	0.0	3.0	8.0	0.0	20.0	10.0	0.0	6.0	20.0	0.0	20.0	10.0	0.0	4.0	10.0	0.0	19.6	10.0	0.0
28	2.26E-5	1.0	6.0	0.0	20.0	25.0	0.0	1.5	10.0	0.0	20.0	4.0	0.0	6.0	90.0	0.0	30.0	30.0	0.0	3.0	8.0	0.0	20.0	10.0	0.0	6.0	20.0	0.0	20.0	10.0	0.0	4.0	10.0	0.0	20.0	10.0	0.0
29	1.37E-5	1.0	6.0	0.0	20.0	25.0	0.0	1.5	10.0	0.0	20.0	4.0	0.0	6.0	90.0	0.0	30.0	30.0	0.0	3.0	8.0	0.0	20.0	10.0	0.0	6.0	20.0	0.0	20.0	10.0	0.0	4.0	10.0	0.0	20.0	10.0	0.0
30	8.32E-6	1.0	6.0	0.0	20.0	25.0	0.0	1.5	10.0	0.0	20.0	4.0	0.0	6.0	90.0	0.0	30.0	30.0	0.0	3.0	8.0	0.0	20.0	10.0	0.0	6.0	20.0	0.0	20.0	10.0	0.0	4.0	10.0	0.0	20.0	10.0	0.0
31	4.00E-6	1.0	6.0	0.0	20.0	25.0	0.0	1.5	10.0	0.0	20.0	4.0	0.0	6.0	90.0	0.0	30.0	30.0	0.0	3.0	8.0	0.0	20.0	10.0	0.0	6.0	20.0	0.0	20.0	10.0	0.0	4.0	10.0	0.0	20.0	10.0	0.0
32	5.40E-7	1.0	5.0	0.0	5.0	25.0	0.0	1.5	90.0	0.0	5.0	3.0	0.0	6.0	50.0	0.0	90.0	30.0	0.0	1.5	4.0	0.0	5.0	8.0	0.0	6.0	20.0	0.0	10.0	10.0	0.0	4.0	3.0	0.0	3.0	5.0	0.0
33	1.00E-7	1.0	5.0	0.0	5.0	25.0	0.0	1.5	90.0	0.0	5.0	3.0	0.0	6.0	50.0	0.0	90.0	30.0	0.0	1.5	4.0	0.0	5.0	8.0	0.0	6.0	20.0	0.0	10.0	10.0	0.0	4.0	3.0	0.0	3.0	5.0	0.0

AFCI1.2 Relative Standard Deviations (%)

		Cm246						Fe56				Fe57				Cr50				Cr52				Ni58				Ni60				Zr90			
Gr	E [MeV]	ν	σ_f	σ_{inel}	σ_{el}	σ_{capt}	$\sigma_{n,2n}$	σ_{inel}	σ_{el}	σ_{capt}	$\sigma_{n,2n}$	σ_{inel}	σ_{el}	σ_{capt}	$\sigma_{n,2n}$	σ_{inel}	σ_{el}	σ_{capt}	$\sigma_{n,2n}$	σ_{inel}	σ_{el}	σ_{capt}	$\sigma_{n,2n}$	σ_{inel}	σ_{el}	σ_{capt}	$\sigma_{n,2n}$	σ_{inel}	σ_{el}	σ_{capt}	$\sigma_{n,2n}$	σ_{inel}	σ_{el}	σ_{capt}	$\sigma_{n,2n}$
1	1.96E+1	20.0	14.0	17.6	20.0	80.0	13.7	5.1	4.4	24.8	2.3	10.0	10.3	40.0	9.8	18.5	9.6	35.4	19.9	8.6	9.8	45.1	14.3	31.1	10.2	40.0	27.0	10.8	10.4	48.3	15.5	10.6	8.1	100.0	10.0
2	1.00E+1	20.0	14.2	13.7	19.3	45.4	21.0	4.5	3.4	31.4	0.0	4.2	6.1	38.9	6.8	7.8	7.8	28.6	0.0	4.1	7.8	38.0	0.0	18.1	4.8	33.1	0.0	6.0	5.0	37.6	0.0	6.9	7.2	100.0	0.0
3	6.07E+0	20.0	13.2	13.1	20.0	41.9	0.0	2.9	4.3	25.5	0.0	3.6	5.8	14.8	0.0	7.0	6.0	19.0	0.0	4.0	5.0	23.2	0.0	4.1	6.8	25.2	0.0	6.0	7.1	25.8	0.0	5.1	6.3	60.7	0.0
4	3.68E+0	20.0	14.2	13.3	20.0	38.6	0.0	2.4	3.1	20.0	0.0	5.8	9.6	9.0	0.0	7.0	6.0	15.1	0.0	4.0	5.5	18.3	0.0	8.2	9.1	18.7	0.0	7.2	9.7	18.0	0.0	13.3	6.0	44.3	0.0
5	2.23E+0	20.0	14.4	13.2	20.0	31.3	0.0	2.8	3.5	20.0	0.0	7.4	2.7	9.0	0.0	10.3	6.0	12.5	0.0	5.3	5.0	14.1	0.0	16.0	4.9	14.6	0.0	16.7	5.0	13.6	0.0	24.8	6.0	28.6	0.0
6	1.35E+0	20.0	11.2	12.8	20.0	19.2	0.0	2.8	3.6	20.0	0.0	4.8	11.2	9.0	0.0	15.1	10.5	11.0	0.0	0.0	7.0	8.7	0.0	0.0	3.3	11.6	0.0	0.0	5.0	10.7	0.0	10.4	6.0	20.3	0.0
7	8.21E-1	20.0	15.0	12.6	20.0	17.8	0.0	0.0	5.0	20.0	0.0	4.1	18.1	9.0	0.0	0.8	4.8	20.1	0.0	0.0	4.0	10.0	0.0	0.0	4.0	8.5	0.0	0.0	6.9	9.6	0.0	0.0	6.0	15.8	0.0
8	4.98E-1	20.0	15.0	13.4	20.1	17.3	0.0	0.0	8.0	20.0	0.0	8.4	15.4	9.0	0.0	0.0	5.0	22.1	0.0	0.0	4.0	10.0	0.0	0.0	4.0	8.5	0.0	0.0	5.0	11.0	0.0	0.0	6.0	14.0	0.0
9	3.02E-1	20.0	15.0	13.4	20.0	17.4	0.0	0.0	8.0	19.7	0.0	15.5	11.5	9.0	0.0	0.0	5.0	22.1	0.0	0.0	4.0	10.0	0.0	0.0	4.0	8.5	0.0	0.0	7.2	14.3	0.0	0.0	6.0	13.5	0.0
10	1.83E-1	20.0	15.0	13.4	20.0	19.1	0.0	0.0	8.0	20.0	0.0	26.8	20.0	10.1	0.0	0.0	5.0	22.1	0.0	0.0	4.0	10.0	0.0	0.0	4.0	8.5	0.0	0.0	7.2	14.3	0.0	0.0	6.0	13.9	0.0
11	1.11E-1	20.0	15.0	37.5	20.0	24.2	0.0	0.0	8.0	20.0	0.0	28.2	20.0	10.1	0.0	0.0	5.0	22.1	0.0	0.0	4.0	23.1	0.0	0.0	2.4	8.5	0.0	0.0	7.2	14.3	0.0	0.0	6.0	14.2	0.0
12	6.74E-2	20.0	15.0	45.9	20.0	33.7	0.0	0.0	8.0	20.0	0.0	30.1	20.0	10.1	0.0	0.0	5.0	22.1	0.0	0.0	3.1	6.0	0.0	0.0	3.4	8.5	0.0	0.0	7.2	14.3	0.0	0.0	6.0	7.4	0.0
13	4.09E-2	20.0	15.0	0.0	20.0	50.3	0.0	0.0	8.0	20.0	0.0	31.3	20.0	10.1	0.0	0.0	5.0	22.1	0.0	0.0	3.3	10.0	0.0	0.0	3.0	8.5	0.0	0.0	7.2	14.3	0.0	0.0	6.1	6.7	0.0
14	2.48E-2	20.0	15.0	0.0	20.0	50.3	0.0	0.0	8.0	20.0	0.0	29.7	20.0	10.1	0.0	0.0	5.0	22.1	0.0	0.0	3.6	10.0	0.0	0.0	3.0	8.2	0.0	0.0	7.2	14.3	0.0	0.0	6.3	4.9	0.0
15	1.50E-2	20.0	15.0	0.0	20.0	49.3	0.0	0.0	8.0	20.0	0.0	3.1	20.0	10.1	0.0	0.0	5.0	22.1	0.0	0.0	2.9	13.1	0.0	0.0	2.1	3.2	0.0	0.0	7.2	14.3	0.0	0.0	6.4	8.2	0.0
16	9.12E-3	20.0	15.0	0.0	20.0	44.4	0.0	0.0	5.0	6.0	0.0	0.0	20.0	10.1	0.0	0.0	5.0	22.1	0.0	0.0	2.8	9.3	0.0	0.0	1.8	3.2	0.0	0.0	7.2	14.3	0.0	0.0	6.2	9.8	0.0
17	5.53E-3	20.0	4.7	0.0	8.7	11.7	0.0	0.0	5.0	6.0	0.0	0.0	20.0	10.1	0.0	0.0	5.0	22.1	0.0	0.0	2.6	7.5	0.0	0.0	1.7	3.1	0.0	0.0	7.2	14.3	0.0	0.0	8.0	10.1	0.0
18	3.35E-3	20.0	3.9	0.0	9.3	5.9	0.0	0.0	5.0	6.0	0.0	0.0	20.0	10.1	0.0	0.0	5.0	22.1	0.0	0.0	2.4	6.3	0.0	0.0	1.6	2.8	0.0	0.0	7.2	14.3	0.0	0.0	6.1	11.4	0.0
19	2.03E-3	20.0	3.9	0.0	9.3	5.9	0.0	0.0	5.0	6.0	0.0	0.0	20.0	10.1	0.0	0.0	5.0	22.1	0.0	0.0	2.3	5.7	0.0	0.0	1.6	2.7	0.0	0.0	7.2	14.3	0.0	0.0	6.0	7.6	0.0
20	1.23E-3	20.0	3.9	0.0	9.3	5.9	0.0	0.0	4.0	6.0	0.0	0.0	20.0	10.1	0.0	0.0	5.0	22.1	0.0	0.0	2.3	6.2	0.0	0.0	1.6	2.6	0.0	0.0	7.2	14.3	0.0	0.0	6.0	6.4	0.0
21	7.49E-4	20.0	3.9	0.0	9.3	5.9	0.0	0.0	4.0	6.0	0.0	0.0	20.0	10.1	0.0	0.0	5.0	22.1	0.0	0.0	2.3	6.2	0.0	0.0	1.6	2.6	0.0	0.0	7.2	14.3	0.0	0.0	6.0	6.1	0.0
22	4.54E-4	20.0	3.9	0.0	9.3	5.9	0.0	0.0	4.0	6.0	0.0	0.0	20.0	10.1	0.0	0.0	5.0	22.1	0.0	0.0	2.2	6.2	0.0	0.0	1.6	2.6	0.0	0.0	7.2	14.3	0.0	0.0	6.0	6.6	0.0
23	3.04E-4	20.0	3.9	0.0	9.3	5.9	0.0	0.0	4.0	6.0	0.0	0.0	20.0	10.1	0.0	0.0	5.0	22.1	0.0	0.0	2.2	6.2	0.0	0.0	1.6	2.6	0.0	0.0	7.2	14.3	0.0	0.0	6.0	7.9	0.0
24	1.49E-4	20.0	3.9	0.0	9.3	5.9	0.0	0.0	4.0	6.0	0.0	0.0	20.0	10.1	0.0	0.0	5.0	22.1	0.0	0.0	2.2	6.2	0.0	0.0	1.6	2.6	0.0	0.0	7.2	14.3	0.0	0.0	6.0	8.9	0.0
25	9.17E-5	20.0	3.9	0.0	9.3	5.9	0.0	0.0	4.0	6.0	0.0	0.0	20.0	10.1	0.0	0.0	5.0	22.1	0.0	0.0	2.2	6.1	0.0	0.0	1.6	2.6	0.0	0.0	7.2	14.3	0.0	0.0	6.0	9.4	0.0
26	6.79E-5	20.0	3.9	0.0	9.3	5.9	0.0	0.0	4.0	6.0	0.0	0.0	20.0	10.1	0.0	0.0	5.0	22.1	0.0	0.0	2.2	6.1	0.0	0.0	1.6	2.6	0.0	0.0	7.2	14.3	0.0	0.0	6.0	9.8	0.0
27	4.02E-5	20.0	3.9	0.0	9.3	5.9	0.0	0.0	4.0	6.0	0.0	0.0	20.0	10.1	0.0	0.0	5.0	22.1	0.0	0.0	2.2	6.1	0.0	0.0	1.6	2.6	0.0	0.0	7.2	14.3	0.0	0.0	6.0	10.1	0.0
28	2.26E-5	20.0	3.9	0.0	9.3	5.9	0.0	0.0	4.0	6.0	0.0	0.0	20.0	10.1	0.0	0.0	5.0	22.1	0.0	0.0	2.2	6.1	0.0	0.0	1.6	2.6	0.0	0.0	7.2	14.3	0.0	0.0	6.0	10.2	0.0
29	1.37E-5	20.0	3.9	0.0	9.3	5.9	0.0	0.0	4.0	6.0	0.0	0.0	20.0	10.1	0.0	0.0	5.0	22.1	0.0	0.0	2.2	6.1	0.0	0.0	1.6	2.6	0.0	0.0	7.2	14.3	0.0	0.0	6.0	10.3	0.0
30	8.32E-6	20.0	3.9	0.0	9.3	5.9	0.0	0.0	4.0	6.0	0.0	0.0	20.0	10.1	0.0	0.0	5.0	22.1	0.0	0.0	2.2	6.1	0.0	0.0	1.6	2.6	0.0	0.0	7.2	14.3	0.0	0.0	6.0	10.4	0.0
31	4.00E-6	20.0	3.9	0.0	9.3	5.9	0.0	0.0	4.0	6.0	0.0	0.0	20.0	10.1	0.0	0.0	5.0	22.1	0.0	0.0	2.2	6.1	0.0	0.0	1.6	2.6	0.0	0.0	7.2	14.3	0.0	0.0	6.0	10.4	0.0
32	5.40E-7	20.0	32.0	0.0	8.5	11.5	0.0	0.0	4.0	6.0	0.0	0.0	9.3	11.2	0.0	0.0	4.6	2.5	0.0	0.0	2.2	2.0	0.0	0.0	1.6	2.6	0.0	0.0	6.5	4.8	0.0	0.0	6.0	10.5	0.0
33	1.00E-7	20.0	35.2	0.0	9.3	12.6	0.0	0.0	4.0	6.0	0.0	0.0	10.0	12.2	0.0	0.0	5.0	1.7	0.0	0.0	1.0	2.0	0.0	0.0	0.8	2.6	0.0	0.0	7.2	5.0	0.0	0.0	6.5	10.5	0.0

AFCI1.2 Relative Standard Deviations (%)

		Zr91				Zr92				Zr94				Na				O				C				He4				Si28				Si29			
Gr	E [MeV]	σ_{inel}	σ_{el}	σ_{capt}	$\sigma_{n,2n}$	σ_{inel}	σ_{el}	σ_{capt}	$\sigma_{n,2n}$	σ_{inel}	σ_{el}	σ_{capt}	$\sigma_{n,2n}$	σ_{inel}	σ_{el}	σ_{capt}	$\sigma_{n,2n}$	σ_{inel}	σ_{el}	σ_{capt}	$\sigma_{n,2n}$	σ_{inel}	σ_{el}	σ_{capt}	$\sigma_{n,2n}$	σ_{inel}	σ_{el}	σ_{capt}	$\sigma_{n,2n}$	σ_{inel}	σ_{el}	σ_{capt}	$\sigma_{n,2n}$	σ_{inel}	σ_{el}	σ_{capt}	$\sigma_{n,2n}$
1	1.96E+1	10.8	7.3	63.1	10.4	15.5	7.3	59.5	10.2	22.2	7.3	59.1	7.0	10.8	14.8	8.6	19.6	14.8	3.2	50.0	7.1	20.6	8.1	20.0			2.5			9.4	3.0	30.6	9.5	7.6	3.0	35.7	11.2
2	1.00E+1	4.0	6.1	56.9	13.4	4.1	6.2	44.7	11.4	3.9	6.3	43.9	10.5	4.9	16.6	1.7	0.0	8.8	1.5	50.0	0.0	18.3	5.0	20.0			2.0			4.2	9.1	23.5	0.0	3.9	9.9	26.8	5.9
3	6.07E+0	2.8	3.8	34.5	0.0	3.1	3.5	30.9	0.0	3.4	3.5	32.3	0.0	5.1	11.8	0.6	0.0	0.0	1.5	50.0	0.0	80.0	2.5	17.4			1.4			3.2	8.9	20.9	0.0	3.2	9.9	23.1	0.0
4	3.68E+0	5.7	11.8	27.8	0.0	2.6	15.2	23.1	0.0	3.0	15.4	25.5	0.0	5.3	8.2	0.0	0.0	0.0	1.6	50.0	0.0	0.0	1.0	20.0			1.0			3.0	5.1	20.3	0.0	3.5	5.4	21.7	0.0
5	2.23E+0	19.6	17.9	19.7	0.0	11.4	20.2	17.4	0.0	8.4	20.3	20.5	0.0	8.1	6.9	0.0	0.0	0.0	2.0	50.0	0.0	0.0	1.0	20.0			1.0			9.1	2.3	19.5	0.0	9.1	4.0	20.6	0.0
6	1.35E+0	12.7	18.9	19.3	0.0	21.5	17.8	14.4	0.0	19.6	16.9	17.1	0.0	11.1	5.0	0.0	0.0	0.0	2.0	50.0	0.0	0.0	0.8	16.0			1.0			0.0	3.7	19.4	0.0	3.3	4.5	17.0	0.0
7	8.21E-1	0.0	18.8	18.7	0.0	0.0	18.1	14.7	0.0	0.0	16.5	16.8	0.0	11.6	6.0	0.0	0.0	0.0	2.0	50.0	0.0	0.0	0.5	20.0			1.0			0.0	4.6	18.9	0.0	0.0	5.0	18.7	0.0
8	4.98E-1	0.0	20.2	18.2	0.0	0.0	19.6	14.1	0.0	0.0	18.0	16.3	0.0	38.3	6.0	0.0	0.0	0.0	2.0	18.5	0.0	0.0	0.5	20.0			0.5			0.0	4.2	18.6	0.0	0.0	5.0	18.7	0.0
9	3.02E-1	0.0	20.9	18.1	0.0	0.0	20.4	13.4	0.0	0.0	19.1	15.6	0.0	0.0	6.0	0.0	0.0	0.0	2.0	10.0	0.0	0.0	0.5	20.0			0.5			0.0	3.9	18.9	0.0	0.0	5.0	18.7	0.0
10	1.83E-1	0.0	19.4	18.7	0.0	0.0	19.3	13.4	0.0	0.0	18.8	15.6	0.0	0.0	6.0	0.0	0.0	0.0	2.0	10.0	0.0	0.0	0.5	20.0			0.5			0.0	3.4	19.3	0.0	0.0	5.0	18.7	0.0
11	1.11E-1	0.0	17.3	18.8	0.0	0.0	17.4	13.4	0.0	0.0	17.2	15.3	0.0	0.0	6.0	0.0	0.0	0.0	2.0	10.0	0.0	0.0	0.5	20.0			0.5			0.0	3.3	19.1	0.0	0.0	5.0	18.7	0.0
12	6.74E-2	0.0	12.0	19.3	0.0	0.0	12.4	14.0	0.0	0.0	12.9	16.0	0.0	0.0	6.0	0.0	0.0	0.0	2.0	10.0	0.0	0.0	0.5	20.0			0.5			0.0	3.1	19.3	0.0	0.0	5.0	18.7	0.0
13	4.09E-2	0.0	6.2	19.5	0.0	0.0	6.7	15.1	0.0	0.0	7.4	17.0	0.0	0.0	6.0	0.0	0.0	0.0	2.0	10.0	0.0	0.0	0.5	20.0			0.5			0.0	3.4	19.4	0.0	0.0	5.0	18.7	0.0
14	2.48E-2	0.0	3.7	19.7	0.0	0.0	4.1	16.8	0.0	0.0	4.8	17.3	0.0	0.0	6.0	0.0	0.0	0.0	2.0	10.0	0.0	0.0	0.5	20.0			0.5			0.0	3.8	19.3	0.0	0.0	5.0	18.7	0.0
15	1.50E-2	0.0	3.5	20.3	0.0	0.0	3.2	19.6	0.0	0.0	3.2	18.2	0.0	0.0	6.0	0.0	0.0	0.0	2.0	10.0	0.0	0.0	0.5	20.0			0.5			0.0	4.3	19.1	0.0	0.0	5.0	18.7	0.0
16	9.12E-3	0.0	5.6	21.1	0.0	0.0	5.0	22.6	0.0	0.0	4.1	19.9	0.0	0.0	6.0	0.0	0.0	0.0	2.0	10.0	0.0	0.0	0.5	20.0			0.5			0.0	4.9	18.6	0.0	0.0	5.0	18.7	0.0
17	5.53E-3	0.0	4.7	7.4	0.0	0.0	4.4	8.1	0.0	0.0	3.8	8.8	0.0	0.0	6.0	0.0	0.0	0.0	2.0	10.0	0.0	0.0	0.5	20.0			0.5			0.0	1.4	14.5	0.0	0.0	5.0	18.7	0.0
18	3.35E-3	0.0	5.9	6.9	0.0	0.0	5.5	7.5	0.0	0.0	4.8	9.5	0.0	0.0	6.0	0.0	0.0	0.0	2.0	10.0	0.0	0.0	0.5	20.0			0.5			0.0	0.9	18.2	0.0	0.0	5.0	18.7	0.0
19	2.03E-3	0.0	5.9	6.9	0.0	0.0	5.5	7.5	0.0	0.0	4.8	9.5	0.0	0.0	3.5	0.0	0.0	0.0	2.0	10.0	0.0	0.0	0.5	20.0			0.5			0.0	0.9	18.2	0.0	0.0	5.0	18.7	0.0
20	1.23E-3	0.0	5.9	6.9	0.0	0.0	5.5	7.5	0.0	0.0	4.8	9.5	0.0	0.0	2.1	0.0	0.0	0.0	2.0	10.0	0.0	0.0	0.5	9.8			0.5			0.0	0.9	18.2	0.0	0.0	5.0	18.7	0.0
21	7.49E-4	0.0	5.9	6.9	0.0	0.0	5.5	7.5	0.0	0.0	4.8	9.5	0.0	0.0	1.4	0.0	0.0	0.0	2.0	10.0	0.0	0.0	0.5	3.0			0.5			0.0	0.9	18.2	0.0	0.0	5.0	18.7	0.0
22	4.54E-4	0.0	5.9	6.9	0.0	0.0	5.5	7.5	0.0	0.0	4.8	9.5	0.0	0.0	1.0	0.0	0.0	0.0	2.0	10.0	0.0	0.0	0.5	3.0			0.5			0.0	0.9	18.2	0.0	0.0	5.0	18.7	0.0
23	3.04E-4	0.0	5.9	6.9	0.0	0.0	5.5	7.5	0.0	0.0	4.8	9.5	0.0	0.0	0.8	0.0	0.0	0.0	2.0	10.0	0.0	0.0	0.5	3.0			0.5			0.0	0.9	18.2	0.0	0.0	5.0	18.7	0.0
24	1.49E-4	0.0	5.9	6.9	0.0	0.0	5.5	7.5	0.0	0.0	4.8	9.5	0.0	0.0	0.7	0.0	0.0	0.0	2.0	10.0	0.0	0.0	0.5	3.0			0.5			0.0	0.9	18.2	0.0	0.0	5.0	18.7	0.0
25	9.17E-5	0.0	5.9	6.9	0.0	0.0	5.5	7.5	0.0	0.0	4.8	9.5	0.0	0.0	0.7	0.0	0.0	0.0	2.0	10.0	0.0	0.0	0.5	3.0			0.5			0.0	0.9	18.2	0.0	0.0	5.0	18.7	0.0
26	6.79E-5	0.0	5.9	6.9	0.0	0.0	5.5	7.5	0.0	0.0	4.8	9.5	0.0	0.0	0.6	0.0	0.0	0.0	2.0	10.0	0.0	0.0	0.5	3.0			0.5			0.0	0.9	18.2	0.0	0.0	5.0	18.7	0.0
27	4.02E-5	0.0	5.9	6.9	0.0	0.0	5.5	7.5	0.0	0.0	4.8	9.5	0.0	0.0	0.6	0.0	0.0	0.0	2.0	10.0	0.0	0.0	0.5	3.0			0.5			0.0	0.9	18.2	0.0	0.0	5.0	18.7	0.0
28	2.26E-5	0.0	5.9	6.9	0.0	0.0	5.5	7.5	0.0	0.0	4.8	9.5	0.0	0.0	0.6	0.0	0.0	0.0	2.0	10.0	0.0	0.0	0.5	3.0			0.5			0.0	0.9	18.2	0.0	0.0	5.0	18.7	0.0
29	1.37E-5	0.0	5.9	6.9	0.0	0.0	5.5	7.5	0.0	0.0	4.8	9.5	0.0	0.0	0.6	0.0	0.0	0.0	2.0	10.0	0.0	0.0	0.5	3.0			0.5			0.0	0.9	18.2	0.0	0.0	5.0	18.7	0.0
30	8.32E-6	0.0	5.9	6.9	0.0	0.0	5.5	7.5	0.0	0.0	4.8	9.5	0.0	0.0	0.6	0.0	0.0	0.0	2.0	10.0	0.0	0.0	0.5	3.0			0.5			0.0	0.9	18.2	0.0	0.0	5.0	18.7	0.0
31	4.00E-6	0.0	5.9	6.9	0.0	0.0	5.5	7.5	0.0	0.0	4.8	9.5	0.0	0.0	0.6	0.0	0.0	0.0	2.0	10.0	0.0	0.0	0.5	3.0			0.5			0.0	0.9	18.2	0.0	0.0	5.0	18.7	0.0
32	5.40E-7	0.0	5.4	8.8	0.0	0.0	5.0	29.7	0.0	0.0	4.4	3.2	0.0	0.0	0.6	0.0	0.0	0.0	2.0	10.0	0.0	0.0	0.5	3.0			0.5			0.0	0.8	5.3	0.0	0.0	4.6	2.8	0.0
33	1.00E-7	0.0	5.9	9.6	0.0	0.0	5.5	32.7	0.0	0.0	4.8	3.4	0.0	0.0	0.2	0.0	0.0	0.0	2.0	10.0	0.0	0.0	0.5	3.0			0.5			0.0	0.9	5.5	0.0	0.0	5.0	2.5	0.0

AFCI1.2 Relative Standard Deviations (%)

		Si30				N15				Pb204				Pb206				Pb207				Pb208				Bi209				B10				B11			
Gr	E [MeV]	σ_{inel}	σ_{el}	σ_{capt}	$\sigma_{n,2n}$	σ_{inel}	σ_{el}	σ_{capt}	$\sigma_{n,2n}$	σ_{inel}	σ_{el}	σ_{capt}	$\sigma_{n,2n}$	σ_{inel}	σ_{el}	σ_{capt}	$\sigma_{n,2n}$	σ_{inel}	σ_{el}	σ_{capt}	$\sigma_{n,2n}$	σ_{inel}	σ_{el}	σ_{capt}	$\sigma_{n,2n}$	σ_{inel}	σ_{el}	σ_{capt}	$\sigma_{n,2n}$	σ_{inel}	σ_{el}	σ_{capt}	$\sigma_{n,2n}$	σ_{inel}	σ_{el}	σ_{capt}	$\sigma_{n,2n}$
1	1.96E+1	5.9	3.0	36.4	9.6	47.4	18.8	80.0	41.5	35.5	3.2	90.7	6.3	42.0	3.2	86.1	5.3	50.4	3.2	87.7	4.7	53.3	3.2	82.9	4.7	59.6	3.2	82.9	5.6	17.4	6.1	0.9		6.1	13.5	25.6	29.9
2	1.00E+1	3.3	10.3	24.4	0.0	50.0	25.4	80.0	0.0	3.4	14.8	77.3	10.6	3.6	14.9	86.7	12.6	4.8	14.8	87.3	17.1	4.7	14.7	70.2	11.9	4.2	14.8	73.4	9.4	27.7	7.5	1.2		5.0	3.4	35.1	0.0
3	6.07E+0	3.0	9.7	20.9	0.0	10.6	1.7	75.9	0.0	5.0	9.9	54.0	0.0	4.6	9.7	56.9	0.0	4.8	9.4	51.2	0.0	6.9	11.0	36.9	0.0	4.0	9.0	38.7	0.0	48.3	4.7	0.8		4.0	1.4	0.0	0.0
4	3.68E+0	7.2	4.2	20.0	0.0	0.0	1.8	80.0	0.0	22.5	6.1	40.0	0.0	23.1	5.3	40.2	0.0	24.2	3.8	36.2	0.0	16.3	5.5	25.7	0.0	16.9	4.0	28.5	0.0	100.0	6.1	1.2		5.9	0.9	0.0	0.0
5	2.23E+0	0.0	4.0	16.5	0.0	0.0	2.0	80.0	0.0	28.0	13.0	30.8	0.0	29.9	11.3	30.8	0.0	32.6	10.4	27.9	0.0	0.0	4.9	20.2	0.0	24.3	5.0	23.8	0.0	100.0	3.3	0.9		0.0	1.0	0.0	0.0
6	1.35E+0	0.0	4.0	4.9	0.0	0.0	2.3	63.2	0.0	12.1	9.2	17.8	0.0	18.4	7.8	20.6	0.0	11.6	8.8	24.7	0.0	0.0	7.1	27.7	0.0	12.7	4.7	21.2	0.0	100.0	2.7	0.7		0.0	0.9	0.0	0.0
7	8.21E-1	0.0	4.0	4.9	0.0	0.0	4.0	50.0	0.0	0.0	3.1	13.5	0.0	2.1	5.0	11.8	0.0	31.4	2.4	20.6	0.0	0.0	15.0	69.7	0.0	0.0	4.1	20.4	0.0	100.0	1.4	0.9		0.0	1.0	0.0	0.0
8	4.98E-1	0.0	1.6	4.9	0.0	0.0	4.0	50.0	0.0	0.0	4.8	12.0	0.0	0.0	5.0	11.8	0.0	0.0	13.3	22.2	0.0	0.0	15.0	69.7	0.0	0.0	2.5	20.0	0.0	0.0	1.2	0.9		0.0	2.0	0.0	0.0
9	3.02E-1	0.0	1.6	4.9	0.0	0.0	4.0	50.0	0.0	0.0	8.6	12.0	0.0	0.0	5.0	11.8	0.0	0.0	15.7	25.0	0.0	0.0	15.0	69.7	0.0	0.0	6.0	20.6	0.0	0.0	1.2	1.0		0.0	2.0	0.0	0.0
10	1.83E-1	0.0	1.6	4.9	0.0	0.0	4.0	50.0	0.0	0.0	10.0	12.0	0.0	0.0	5.0	11.8	0.0	0.0	20.0	25.0	0.0	0.0	15.0	69.7	0.0	0.0	12.8	21.1	0.0	0.0	1.3	1.0		0.0	2.0	0.0	0.0
11	1.11E-1	0.0	1.6	4.9	0.0	0.0	3.6	50.0	0.0	0.0	10.0	12.0	0.0	0.0	5.0	11.8	0.0	0.0	12.8	25.0	0.0	0.0	15.0	69.7	0.0	0.0	14.7	37.7	0.0	0.0	1.5	0.8		0.0	1.2	0.0	0.0
12	6.74E-2	0.0	1.6	4.9	0.0	0.0	4.0	50.0	0.0	0.0	10.0	14.6	0.0	0.0	5.0	11.8	0.0	0.0	6.0	25.0	0.0	0.0	15.0	69.7	0.0	0.0	10.0	50.0	0.0	0.0	1.7	0.8		0.0	1.0	0.0	0.0
13	4.09E-2	0.0	1.6	4.9	0.0	0.0	4.0	50.0	0.0	0.0	10.0	8.0	0.0	0.0	5.0	11.8	0.0	0.0	29.7	25.0	0.0	0.0	15.0	69.7	0.0	0.0	10.0	50.0	0.0	0.0	2.0	0.7		0.0	1.0	0.0	0.0
14	2.48E-2	0.0	1.6	4.9	0.0	0.0	4.0	50.0	0.0	0.0	10.0	8.0	0.0	0.0	5.0	11.8	0.0	0.0	18.8	25.0	0.0	0.0	15.0	69.7	0.0	0.0	10.0	50.0	0.0	0.0	2.0	0.7		0.0	1.0	0.0	0.0
15	1.50E-2	0.0	1.6	4.9	0.0	0.0	4.0	50.0	0.0	0.0	10.0	8.0	0.0	0.0	5.0	11.8	0.0	0.0	7.0	25.0	0.0	0.0	15.0	69.7	0.0	0.0	9.4	50.0	0.0	0.0	2.0	0.7		0.0	1.0	0.0	0.0
16	9.12E-3	0.0	1.6	4.9	0.0	0.0	4.0	50.0	0.0	0.0	10.0	8.0	0.0	0.0	5.0	11.8	0.0	0.0	7.0	25.0	0.0	0.0	15.0	69.7	0.0	0.0	6.0	50.0	0.0	0.0	2.0	0.7		0.0	1.0	0.0	0.0
17	5.53E-3	0.0	1.6	4.9	0.0	0.0	4.0	50.0	0.0	0.0	10.0	8.0	0.0	0.0	5.0	11.8	0.0	0.0	7.0	25.0	0.0	0.0	15.0	69.7	0.0	0.0	6.0	50.0	0.0	0.0	2.0	0.7		0.0	1.0	0.0	0.0
18	3.35E-3	0.0	1.6	4.9	0.0	0.0	4.0	50.0	0.0	0.0	10.0	8.0	0.0	0.0	5.0	11.8	0.0	0.0	7.0	25.0	0.0	0.0	15.0	69.7	0.0	0.0	6.0	50.0	0.0	0.0	2.0	0.7		0.0	1.0	0.0	0.0
19	2.03E-3	0.0	1.6	4.9	0.0	0.0	4.0	50.0	0.0	0.0	10.0	8.0	0.0	0.0	5.0	11.8	0.0	0.0	7.0	25.0	0.0	0.0	15.0	69.7	0.0	0.0	6.0	50.0	0.0	0.0	2.0	0.7		0.0	1.0	0.0	0.0
20	1.23E-3	0.0	1.6	4.9	0.0	0.0	4.0	50.0	0.0	0.0	10.0	8.0	0.0	0.0	5.0	11.8	0.0	0.0	7.0	25.0	0.0	0.0	15.0	69.7	0.0	0.0	3.9	50.0	0.0	0.0	2.0	0.7		0.0	0.9	0.0	0.0
21	7.49E-4	0.0	1.6	4.9	0.0	0.0	4.0	50.0	0.0	0.0	2.0	8.0	0.0	0.0	5.0	11.8	0.0	0.0	7.0	25.0	0.0	0.0	15.0	69.7	0.0	0.0	2.0	50.0	0.0	0.0	2.0	0.7		0.0	0.8	0.0	0.0
22	4.54E-4	0.0	1.6	4.9	0.0	0.0	4.0	50.0	0.0	0.0	2.0	8.0	0.0	0.0	5.0	11.8	0.0	0.0	7.0	25.0	0.0	0.0	15.0	69.7	0.0	0.0	2.0	50.0	0.0	0.0	2.0	0.7		0.0	0.8	0.0	0.0
23	3.04E-4	0.0	1.6	4.9	0.0	0.0	4.0	50.0	0.0	0.0	2.0	8.0	0.0	0.0	5.0	11.8	0.0	0.0	7.0	25.0	0.0	0.0	15.0	69.7	0.0	0.0	2.0	50.0	0.0	0.0	2.0	0.7		0.0	0.8	0.0	0.0
24	1.49E-4	0.0	1.6	4.9	0.0	0.0	4.0	43.3	0.0	0.0	2.0	8.0	0.0	0.0	5.0	11.8	0.0	0.0	7.0	25.0	0.0	0.0	15.0	69.7	0.0	0.0	2.0	50.0	0.0	0.0	2.0	0.7		0.0	0.8	0.0	0.0
25	9.17E-5	0.0	1.6	4.9	0.0	0.0	4.0	30.0	0.0	0.0	2.0	8.0	0.0	0.0	5.0	11.8	0.0	0.0	7.0	25.0	0.0	0.0	15.0	69.7	0.0	0.0	2.0	50.0	0.0	0.0	2.0	0.7		0.0	0.8	0.0	0.0
26	6.79E-5	0.0	1.6	4.9	0.0	0.0	4.0	30.0	0.0	0.0	2.0	8.0	0.0	0.0	5.0	11.8	0.0	0.0	7.0	25.0	0.0	0.0	15.0	69.7	0.0	0.0	2.0	50.0	0.0	0.0	2.0	0.7		0.0	0.8	0.0	0.0
27	4.02E-5	0.0	1.6	4.9	0.0	0.0	4.0	30.0	0.0	0.0	2.0	8.0	0.0	0.0	5.0	11.8	0.0	0.0	7.0	25.0	0.0	0.0	15.0	69.7	0.0	0.0	2.0	50.0	0.0	0.0	2.0	0.7		0.0	0.8	0.0	0.0
28	2.26E-5	0.0	1.6	4.9	0.0	0.0	4.0	30.0	0.0	0.0	2.0	8.0	0.0	0.0	5.0	11.8	0.0	0.0	7.0	25.0	0.0	0.0	15.0	69.7	0.0	0.0	2.0	50.0	0.0	0.0	2.0	0.7		0.0	0.8	0.0	0.0
29	1.37E-5	0.0	1.6	4.9	0.0	0.0	4.0	30.0	0.0	0.0	2.0	8.0	0.0	0.0	5.0	11.8	0.0	0.0	7.0	25.0	0.0	0.0	15.0	69.7	0.0	0.0	2.0	50.0	0.0	0.0	2.0	0.7		0.0	0.8	0.0	0.0
30	8.32E-6	0.0	1.6	4.9	0.0	0.0	4.0	30.0	0.0	0.0	2.0	8.0	0.0	0.0	5.0	11.8	0.0	0.0	7.0	25.0	0.0	0.0	15.0	69.7	0.0	0.0	2.0	50.0	0.0	0.0	2.0	0.7		0.0	0.8	0.0	0.0
31	4.00E-6	0.0	1.6	4.9	0.0	0.0	4.0	30.0	0.0	0.0	2.0	8.0	0.0	0.0	5.0	11.8	0.0	0.0	7.0	25.0	0.0	0.0	15.0	69.7	0.0	0.0	2.0	50.0	0.0	0.0	2.0	0.7		0.0	0.8	0.0	0.0
32	5.40E-7	0.0	1.5	1.8	0.0	0.0	4.0	30.0	0.0	0.0	2.0	4.6	0.0	0.0	1.7	5.3	0.0	0.0	1.9	9.4	0.0	0.0	1.8	10.1	0.0	0.0	0.2	5.3	0.0	0.0	2.0	0.7		0.0	0.8	0.0	0.0
33	1.00E-7	0.0	1.6	1.9	0.0	0.0	4.0	30.0	0.0	0.0	2.0	5.0	0.0	0.0	1.8	5.7	0.0	0.0	2.0	10.0	0.0	0.0	1.3	8.7	0.0	0.0	0.1	3.0	0.0	0.0	2.0	0.7		0.0	0.8	0.0	0.0

AFCI1.2 Relative Standard Deviations (%)

		Mo92				Mo94				Mo95				Mo96				Mo97				Mo98				Mo100				Mn55				H			
Gr	E [MeV]	σ_{inel}	σ_{el}	σ_{capt}	$\sigma_{n,2n}$	σ_{inel}	σ_{el}	σ_{capt}	$\sigma_{n,2n}$	σ_{inel}	σ_{el}	σ_{capt}	$\sigma_{n,2n}$	σ_{inel}	σ_{el}	σ_{capt}	$\sigma_{n,2n}$	σ_{inel}	σ_{el}	σ_{capt}	$\sigma_{n,2n}$	σ_{inel}	σ_{el}	σ_{capt}	$\sigma_{n,2n}$	σ_{inel}	σ_{el}	σ_{capt}	$\sigma_{n,2n}$	σ_{inel}	σ_{el}	σ_{capt}	$\sigma_{n,2n}$	σ_{inel}	σ_{el}	σ_{capt}	$\sigma_{n,2n}$
1	1.96E+1	21.0	6.6	67.7	18.8	9.8	6.6	68.3	13.9	15.5	6.6	62.5	9.2	17.0	6.6	59.3	10.2	21.8	6.6	56.9	7.0	24.3	6.6	52.2	7.2	31.9	6.6	53.0	5.3	37.5	22.8	14.2	8.5		1.5	16.5	
2	1.00E+1	4.7	6.6	52.6	0.0	4.2	6.7	49.8	2.8	4.2	6.7	52.8	10.8	4.1	6.7	41.7	9.5	4.4	6.7	47.4	15.4	4.1	6.7	31.6	6.9	4.1	6.7	28.8	8.8	18.3	14.0	10.5	0.0		2.5	28.5	
3	6.07E+0	3.0	3.2	35.2	0.0	3.4	2.7	33.0	0.0	3.6	2.5	30.3	0.0	3.6	2.6	26.9	0.0	3.7	2.5	25.7	0.0	3.7	2.5	17.7	0.0	3.8	2.5	18.4	0.0	15.4	10.4	9.3	0.0		2.2	40.3	
4	3.68E+0	3.4	11.7	28.2	0.0	5.3	15.3	28.1	0.0	5.9	17.8	26.9	0.0	6.8	16.4	21.5	0.0	7.3	18.3	20.3	0.0	7.9	16.5	11.6	0.0	9.2	16.8	11.9	0.0	19.4	11.0	8.4	0.0		1.8	48.8	
5	2.23E+0	13.7	15.2	22.0	0.0	3.6	17.5	24.6	0.0	3.2	20.8	22.8	0.0	4.1	18.6	18.9	0.0	4.7	21.4	16.6	0.0	6.2	18.1	10.8	0.0	8.0	18.7	10.8	0.0	28.4	11.4	7.5	0.0		1.4	48.9	
6	1.35E+0	0.0	13.8	20.6	0.0	14.2	12.8	21.2	0.0	3.8	14.2	20.0	0.0	11.1	12.1	17.2	0.0	3.7	13.8	14.1	0.0	5.7	11.6	10.5	0.0	7.5	11.8	11.0	0.0	27.0	8.0	5.9	0.0		1.2	44.7	
7	8.21E-1	0.0	11.9	19.9	0.0	0.0	10.2	18.7	0.0	7.4	9.6	18.2	0.0	2.6	8.3	15.3	0.0	18.2	7.4	13.2	0.0	9.0	6.6	10.5	0.0	11.6	5.2	9.5	0.0	23.3	6.5	9.0	0.0		0.9	36.1	
8	4.98E-1	0.0	12.6	19.2	0.0	0.0	10.6	18.2	0.0	26.0	9.4	18.3	0.0	0.0	8.5	15.0	0.0	3.1	7.6	13.3	0.0	0.0	6.7	10.5	0.0	0.0	5.8	10.1	0.0	28.1	5.7	9.0	0.0		0.5	7.3	
9	3.02E-1	0.0	13.4	19.4	0.0	0.0	11.4	18.4	0.0	40.3	10.4	18.9	0.0	0.0	9.3	14.9	0.0	0.0	8.3	13.5	0.0	0.0	7.3	10.1	0.0	0.0	6.2	9.7	0.0	50.0	5.4	10.0	0.0		0.5	7.3	
10	1.83E-1	0.0	13.6	21.3	0.0	0.0	12.0	20.5	0.0	0.0	11.2	19.5	0.0	0.0	10.1	15.9	0.0	0.0	9.1	13.9	0.0	0.0	8.1	9.8	0.0	0.0	6.5	9.5	0.0	38.1	4.3	8.1	0.0		0.5	7.3	
11	1.11E-1	0.0	12.7	22.1	0.0	0.0	11.4	21.2	0.0	0.0	10.7	19.3	0.0	0.0	9.7	16.3	0.0	0.0	8.9	14.0	0.0	0.0	7.9	9.7	0.0	0.0	6.4	9.2	0.0	0.0	5.0	5.0	0.0		0.3	3.4	
12	6.74E-2	0.0	9.7	23.8	0.0	0.0	9.1	22.4	0.0	0.0	8.6	18.8	0.0	0.0	8.0	17.2	0.0	0.0	7.4	14.5	0.0	0.0	6.8	10.1	0.0	0.0	5.6	9.5	0.0	0.0	5.0	5.0	0.0		0.3	2.6	
13	4.09E-2	0.0	5.8	23.7	0.0	0.0	5.6	21.9	0.0	0.0	5.4	18.5	0.0	0.0	5.3	17.9	0.0	0.0	4.9	15.1	0.0	0.0	4.7	11.2	0.0	0.0	4.3	10.6	0.0	0.0	5.0	6.3	0.0		0.3	2.6	
14	2.48E-2	0.0	4.0	23.2	0.0	0.0	4.0	21.8	0.0	0.0	3.9	18.6	0.0	0.0	4.0	18.3	0.0	0.0	3.9	15.8	0.0	0.0	3.9	12.5	0.0	0.0	3.9	11.6	0.0	0.0	5.0	5.0	0.0		0.3	2.6	
15	1.50E-2	0.0	3.3	23.4	0.0	0.0	3.4	22.3	0.0	0.0	3.7	19.0	0.0	0.0	3.4	19.1	0.0	0.0	3.9	16.7	0.0	0.0	3.6	14.2	0.0	0.0	3.8	12.8	0.0	0.0	5.0	5.0	0.0		0.3	2.6	
16	9.12E-3	0.0	4.3	24.2	0.0	0.0	4.2	22.7	0.0	0.0	5.0	19.3	0.0	0.0	4.1	19.5	0.0	0.0	5.1	17.3	0.0	0.0	4.0	15.1	0.0	0.0	4.2	13.3	0.0	0.0	1.4	5.1	0.0		0.3	2.6	
17	5.53E-3	0.0	3.2	12.8	0.0	0.0	1.9	11.4	0.0	0.0	4.6	6.6	0.0	0.0	1.8	14.0	0.0	0.0	2.1	14.8	0.0	0.0	2.0	5.1	0.0	0.0	8.4	4.4	0.0	0.0	5.2	4.1	0.0		0.3	2.6	
18	3.35E-3	0.0	3.9	15.0	0.0	0.0	2.1	13.2	0.0	0.0	5.8	6.1	0.0	0.0	1.9	17.4	0.0	0.0	2.1	18.8	0.0	0.0	2.2	4.5	0.0	0.0	11.1	3.9	0.0	0.0	2.4	23.6	0.0		0.3	2.6	
19	2.03E-3	0.0	3.9	15.0	0.0	0.0	2.1	13.2	0.0	0.0	5.8	6.1	0.0	0.0	1.9	17.4	0.0	0.0	2.1	18.8	0.0	0.0	2.2	4.5	0.0	0.0	11.1	3.9	0.0	0.0	8.4	15.3	0.0		0.3	2.6	
20	1.23E-3	0.0	3.9	15.0	0.0	0.0	2.1	13.2	0.0	0.0	5.8	6.1	0.0	0.0	1.9	17.4	0.0	0.0	2.1	18.8	0.0	0.0	2.2	4.5	0.0	0.0	11.1	3.9	0.0	0.0	3.9	21.3	0.0		0.3	2.6	
21	7.49E-4	0.0	3.9	15.0	0.0	0.0	2.1	13.2	0.0	0.0	5.8	6.1	0.0	0.0	1.9	17.4	0.0	0.0	2.1	18.8	0.0	0.0	2.2	4.5	0.0	0.0	11.1	3.9	0.0	0.0	2.2	2.3	0.0		0.3	2.6	
22	4.54E-4	0.0	3.9	15.0	0.0	0.0	2.1	13.2	0.0	0.0	5.8	6.1	0.0	0.0	1.9	17.4	0.0	0.0	2.1	18.8	0.0	0.0	2.2	4.5	0.0	0.0	11.1	3.9	0.0	0.0	5.0	5.2	0.0		0.3	2.6	
23	3.04E-4	0.0	3.9	15.0	0.0	0.0	2.1	13.2	0.0	0.0	5.8	6.1	0.0	0.0	1.9	17.4	0.0	0.0	2.1	18.8	0.0	0.0	2.2	4.5	0.0	0.0	11.1	3.9	0.0	0.0	4.7	5.2	0.0		0.3	2.6	
24	1.49E-4	0.0	3.9	15.0	0.0	0.0	2.1	13.2	0.0	0.0	5.8	6.1	0.0	0.0	1.9	17.4	0.0	0.0	2.1	18.8	0.0	0.0	2.2	4.5	0.0	0.0	11.1	3.9	0.0	0.0	3.2	2.2	0.0		0.3	2.6	
25	9.17E-5	0.0	3.9	15.0	0.0	0.0	2.1	13.2	0.0	0.0	5.8	6.1	0.0	0.0	1.9	17.4	0.0	0.0	2.1	18.8	0.0	0.0	2.2	4.5	0.0	0.0	11.1	3.9	0.0	0.0	3.2	1.6	0.0		0.3	2.6	
26	6.79E-5	0.0	3.9	15.0	0.0	0.0	2.1	13.2	0.0	0.0	5.8	6.1	0.0	0.0	1.9	17.4	0.0	0.0	2.1	18.8	0.0	0.0	2.2	4.5	0.0	0.0	11.1	3.9	0.0	0.0	3.4	1.3	0.0		0.3	2.6	
27	4.02E-5	0.0	3.9	15.0	0.0	0.0	2.1	13.2	0.0	0.0	5.8	6.1	0.0	0.0	1.9	17.4	0.0	0.0	2.1	18.8	0.0	0.0	2.2	4.5	0.0	0.0	11.1	3.9	0.0	0.0	3.6	1.0	0.0		0.3	2.6	
28	2.26E-5	0.0	3.9	15.0	0.0	0.0	2.1	13.2	0.0	0.0	5.8	6.1	0.0	0.0	1.9	17.4	0.0	0.0	2.1	18.8	0.0	0.0	2.2	4.5	0.0	0.0	11.1	3.9	0.0	0.0	3.8	0.9	0.0		0.3	2.6	
29	1.37E-5	0.0	3.9	15.0	0.0	0.0	2.1	13.2	0.0	0.0	5.8	6.1	0.0	0.0	1.9	17.4	0.0	0.0	2.1	18.8	0.0	0.0	2.2	4.5	0.0	0.0	11.1	3.9	0.0	0.0	4.0	0.8	0.0		0.3	2.6	
30	8.32E-6	0.0	3.9	15.0	0.0	0.0	2.1	13.2	0.0	0.0	5.8	6.1	0.0	0.0	1.9	17.4	0.0	0.0	2.1	18.8	0.0	0.0	2.2	4.5	0.0	0.0	11.1	3.9	0.0	0.0	4.1	0.8	0.0		0.3	2.6	
31	4.00E-6	0.0	3.9	15.0	0.0	0.0	2.1	13.2	0.0	0.0	5.8	6.1	0.0	0.0	1.9	17.4	0.0	0.0	2.1	18.8	0.0	0.0	2.2	4.5	0.0	0.0	11.1	3.9	0.0	0.0	4.2	0.8	0.0		0.3	2.6	
32	5.40E-7	0.0	3.6	22.8	0.0	0.0	1.9	16.1	0.0	0.0	5.3	2.1	0.0	0.0	1.7	33.2	0.0	0.0	1.9	8.4	0.0	0.0	2.0	4.2	0.0	0.0	10.1	1.4	0.0	0.0	4.2	0.8	0.0		0.3	2.6	
33	1.00E-7	0.0	3.9	25.0	0.0	0.0	2.1	17.6	0.0	0.0	5.8	2.2	0.0	0.0	1.9	36.5	0.0	0.0	2.1	9.1	0.0	0.0	2.2	4.6	0.0	0.0	11.1	1.5	0.0	0.0	2.0	0.8	0.0		0.3	2.6	

AFCI1.2 Relative Standard Deviations (%)

		Al27			
Gr	E [MeV]	σ_{inel}	σ_{el}	σ_{capt}	$\sigma_{n,2n}$
1	1.96E+1	7.7	3.1	30.5	13.7
2	1.00E+1	3.7	8.5	24.0	0.0
3	6.07E+0	2.9	10.3	21.9	0.0
4	3.68E+0	2.7	6.7	20.9	0.0
5	2.23E+0	4.3	4.5	20.5	0.0
6	1.35E+0	15.2	4.1	20.2	0.0
7	8.21E-1	0.0	5.3	20.0	0.0
8	4.98E-1	0.0	6.1	19.9	0.0
9	3.02E-1	0.0	6.2	19.8	0.0
10	1.83E-1	0.0	5.3	19.9	0.0
11	1.11E-1	0.0	4.6	19.8	0.0
12	6.74E-2	0.0	3.5	19.6	0.0
13	4.09E-2	0.0	3.5	19.6	0.0
14	2.48E-2	0.0	3.8	19.6	0.0
15	1.50E-2	0.0	4.2	19.6	0.0
16	9.12E-3	0.0	4.6	19.3	0.0
17	5.53E-3	0.0	1.2	7.4	0.0
18	3.35E-3	0.0	0.4	7.5	0.0
19	2.03E-3	0.0	0.4	7.5	0.0
20	1.23E-3	0.0	0.4	7.5	0.0
21	7.49E-4	0.0	0.4	7.5	0.0
22	4.54E-4	0.0	0.4	7.5	0.0
23	3.04E-4	0.0	0.4	7.5	0.0
24	1.49E-4	0.0	0.4	7.5	0.0
25	9.17E-5	0.0	0.4	7.5	0.0
26	6.79E-5	0.0	0.4	7.5	0.0
27	4.02E-5	0.0	0.4	7.5	0.0
28	2.26E-5	0.0	0.4	7.5	0.0
29	1.37E-5	0.0	0.4	7.5	0.0
30	8.32E-6	0.0	0.4	7.5	0.0
31	4.00E-6	0.0	0.4	7.5	0.0
32	5.40E-7	0.0	0.4	1.4	0.0
33	1.00E-7	0.0	0.4	1.3	0.0

AFCI1.1 Relative Standard Deviations (%)

		U233						U234						U235						U236						U238						Np237					
Gr	E [MeV]	ν	σ_f	σ_{inel}	σ_{el}	σ_{capt}	$\sigma_{n,2n}$	ν	σ_f	σ_{inel}	σ_{el}	σ_{capt}	$\sigma_{n,2n}$	ν	σ_f	σ_{inel}	σ_{el}	σ_{capt}	$\sigma_{n,2n}$	ν	σ_f	σ_{inel}	σ_{el}	σ_{capt}	$\sigma_{n,2n}$	ν	σ_f	σ_{inel}	σ_{el}	σ_{capt}	$\sigma_{n,2n}$	ν	σ_f	σ_{inel}	σ_{el}	σ_{capt}	$\sigma_{n,2n}$
1	1.96E+1							3.0	15.0	10.0	4.0	56.7	34.8	1.0	0.5	25.5	6.9	60.6	28.7	3.0	15.0	10.0	3.0	32.7	18.5	1.4	0.6	31.6	7.1	22.3	3.5	3.0	10.0	15.0	3.0	41.5	20.0
2	1.00E+1							3.0	11.5	13.5	4.0	52.0	34.8	1.0	0.6	15.9	6.3	62.7	4.1	3.0	11.5	13.5	3.0	34.8	18.5	1.4	0.7	30.3	11.9	21.2	12.6	3.0	10.0	25.6	3.0	37.9	20.0
3	6.07E+0							3.0	10.0	15.0	4.0	50.0	0.0	0.8	0.5	8.9	5.1	46.4	14.2	3.0	10.0	15.0	3.0	35.7	0.0	1.3	0.6	20.1	13.1	19.9	0.0	3.0	10.0	30.0	3.0	36.5	0.0
4	3.68E+0							1.3	12.4	21.3	4.0	43.8	0.0	0.6	0.5	6.4	4.0	26.5	0.0	3.0	21.8	21.3	3.0	25.6	0.0	1.3	0.6	19.4	15.0	5.9	0.0	2.0	10.0	20.6	3.0	32.4	0.0
5	2.23E+0							0.3	13.8	25.0	4.0	40.0	0.0	0.6	0.5	6.4	4.6	19.1	0.0	3.0	28.9	25.0	3.0	19.6	0.0	1.3	0.6	20.6	18.8	6.1	0.0	1.5	10.0	15.0	3.0	30.0	0.0
6	1.35E+0							1.8	38.0	25.0	4.0	12.0	0.0	0.6	0.5	7.0	4.1	16.2	0.0	1.8	32.0	25.0	3.0	7.0	0.0	1.1	1.8	16.9	9.9	3.1	0.0	0.7	5.8	30.0	3.0	30.0	0.0
7	8.21E-1							1.8	38.0	12.6	4.0	13.2	0.0	0.6	0.5	8.5	3.3	16.8	0.0	1.8	32.0	25.0	3.0	7.0	0.0	2.0	4.9	5.6	2.7	1.7	0.0	0.6	5.8	30.0	3.0	42.4	0.0
8	4.98E-1							1.8	38.0	5.0	4.0	14.0	0.0	0.6	0.6	10.5	3.2	20.4	0.0	1.8	31.9	25.0	3.0	7.0	0.0	2.0	5.1	4.3	2.2	1.5	0.0	0.6	5.8	30.1	3.0	49.9	0.0
9	3.02E-1							1.8	34.0	5.0	4.0	13.3	0.0	0.6	0.6	12.7	2.7	25.2	0.0	1.8	22.3	15.6	3.0	5.1	0.0	2.0	6.8	4.1	1.8	1.5	0.0	0.6	5.8	42.5	3.0	21.9	0.0
10	1.83E-1							1.8	31.6	5.0	4.0	12.9	0.0	0.7	0.6	15.0	2.4	30.1	0.0	1.8	16.5	10.0	3.0	3.9	0.0	2.0	5.2	6.0	1.9	1.7	0.0	0.6	5.8	50.0	3.0	5.0	0.0
11	1.11E-1							1.8	26.1	0.0	4.0	23.6	0.0	0.7	0.6	15.1	2.4	31.5	0.0	1.8	11.0	0.0	3.0	3.6	0.0	2.0	5.1	19.2	2.8	1.7	0.0	0.6	5.8	50.0	7.4	6.0	0.0
12	6.74E-2							1.8	22.8	0.0	4.0	30.0	0.0	0.7	0.5	15.1	2.5	32.2	0.0	1.8	7.6	0.0	3.0	3.5	0.0	2.0	5.1	17.9	3.5	1.7	0.0	0.6	5.8	0.0	10.0	6.7	0.0
13	4.09E-2							1.8	20.7	0.0	4.0	23.2	0.0	0.7	0.6	19.4	2.8	34.0	0.0	1.8	7.0	0.0	3.0	4.6	0.0	2.0	5.2	0.0	4.3	1.6	0.0	0.6	5.8	0.0	10.0	5.8	0.0
14	2.48E-2							1.8	19.4	0.0	4.0	19.2	0.0	0.7	0.7	50.0	3.0	34.0	0.0	1.8	6.7	0.0	3.0	5.2	0.0	2.0	172.1	0.0	2.3	3.2	0.0	0.6	5.8	0.0	10.0	5.3	0.0
15	1.50E-2							1.8	15.8	0.0	4.0	19.7	0.0	0.7	0.5	50.0	3.4	34.0	0.0	1.8	4.7	0.0	3.0	2.2	0.0	2.0	98.8	0.0	0.9	3.9	0.0	0.6	5.8	0.0	10.0	5.3	0.0
16	9.12E-3							1.8	13.7	0.0	4.0	20.0	0.0	0.7	0.5	50.0	4.0	34.0	0.0	1.8	3.5	0.0	3.0	0.3	0.0	2.0	408.0	0.0	0.8	3.3	0.0	0.6	5.8	0.0	10.0	5.3	0.0
17	5.53E-3							1.8	14.3	0.0	5.5	10.8	0.0	0.7	0.5	50.0	4.6	34.0	0.0	1.8	3.4	0.0	2.6	0.5	0.0	2.0	14.5	0.0	0.7	2.8	0.0	0.6	5.8	0.0	10.0	5.4	0.0
18	3.35E-3							1.8	14.7	0.0	6.4	5.2	0.0	0.7	5.7	41.8	6.3	29.4	0.0	1.8	3.3	0.0	2.4	0.6	0.0	2.0	66.8	0.0	0.8	2.9	0.0	0.6	5.8	0.0	10.0	5.5	0.0
19	2.03E-3							1.8	14.9	0.0	7.0	1.9	0.0	0.7	3.1	0.0	3.8	13.1	0.0	1.8	3.3	0.0	2.3	0.6	0.0	2.0	68.0	0.0	0.8	2.9	0.0	0.6	5.8	0.0	10.0	5.5	0.0
20	1.23E-3							1.8	9.9	0.0	15.2	2.1	0.0	0.7	0.4	0.0	2.3	5.2	0.0	1.8	2.3	0.0	4.2	0.7	0.0	2.0	6.9	0.0	1.0	2.8	0.0	0.6	6.7	0.0	6.1	3.6	0.0
21	7.49E-4							1.8	6.9	0.0	20.2	2.3	0.0	0.7	0.3	0.0	1.6	2.5	0.0	1.8	1.7	0.0	5.3	0.8	0.0	2.0	8.3	0.0	1.1	2.7	0.0	0.6	7.2	0.0	3.8	2.4	0.0
22	4.54E-4							1.8	5.1	0.0	23.2	2.4	0.0	0.7	0.4	0.0	1.5	1.6	0.0	1.8	1.4	0.0	6.0	0.8	0.0	2.0	6.7	0.0	1.4	3.4	0.0	0.6	7.5	0.0	2.4	1.7	0.0
23	3.04E-4							1.8	9.4	0.0	21.1	2.1	0.0	0.7	0.3	0.0	1.4	1.3	0.0	1.8	1.8	0.0	4.7	2.0	0.0	2.0	13.2	0.0	1.0	2.9	0.0	0.6	6.5	0.0	2.4	1.3	0.0
24	1.49E-4							1.8	13.9	0.0	18.9	1.7	0.0	0.7	0.4	0.0	1.4	1.1	0.0	1.8	2.2	0.0	3.4	3.1	0.0	2.0	29.6	0.0	0.7	4.1	0.0	0.6	5.5	0.0	2.3	0.9	0.0
25	9.17E-5							1.8	15.5	0.0	18.1	1.5	0.0	0.7	0.4	0.0	1.5	1.3	0.0	1.8	2.4	0.0	2.9	3.5	0.0	2.0	22.2	0.0	0.8	5.1	0.0	0.6	5.1	0.0	2.3	0.7	0.0
26	6.79E-5							1.8	16.2	0.0	17.8	1.5	0.0	0.7	0.4	0.0	1.4	1.1	0.0	1.8	2.4	0.0	2.7	3.7	0.0	2.0	53.5	0.0	0.7	3.6	0.0	0.6	5.0	0.0	2.3	0.7	0.0
27	4.02E-5							1.8	17.0	0.0	17.4	1.4	0.0	0.7	0.6	0.0	1.6	1.1	0.0	1.8	2.5	0.0	2.5	3.9	0.0	2.0	6.3	0.0	0.9	3.6	0.0	0.6	4.8	0.0	2.3	0.6	0.0
28	2.26E-5							1.8	17.5	0.0	17.1	1.4	0.0	0.7	0.6	0.0	1.6	1.0	0.0	1.8	2.6	0.0	2.3	4.1	0.0	2.0	31.3	0.0	1.5	3.6	0.0	0.6	4.6	0.0	2.3	0.6	0.0
29	1.37E-5							1.8	19.6	0.0	10.0	5.2	0.0	0.7	0.5	0.0	1.5	1.2	0.0	1.8	8.9	0.0	3.5	3.4	0.0	2.0	104.0	0.0	0.9	2.7	0.0	0.6	5.1	0.0	2.3	0.6	0.0
30	8.32E-6							1.8	20.8	0.0	5.8	7.5	0.0	0.7	1.2	0.0	1.7	1.8	0.0	1.8	12.7	0.0	4.2	3.0	0.0	2.0	48.8	0.0	0.8	1.0	0.0	0.6	5.4	0.0	2.3	0.7	0.0
31	4.00E-6							1.8	21.8	0.0	2.3	9.3	0.0	0.7	0.8	0.0	1.7	2.2	0.0	1.8	15.8	0.0	4.8	2.7	0.0	2.0	55.7	0.0	0.9	2.8	0.0	0.6	5.6	0.0	2.2	0.7	0.0
32	5.40E-7							1.8	24.7	0.0	2.0	3.1	0.0	0.7	0.4	0.0	3.1	1.6	0.0	1.8	19.6	0.0	4.9	2.0	0.0	2.0	62.0	0.0	1.0	2.0	0.0	0.6	14.7	0.0	2.2	2.4	0.0
33	1.00E-7							1.8	24.8	0.0	2.0	2.9	0.0	0.7	0.4	0.0	4.8	1.7	0.0	1.8	19.9	0.0	4.9	1.9	0.0	2.0	62.4	0.0	1.1	1.8	0.0	0.6	4.6	0.0	2.0	1.6	0.0

AFCI1.1 Relative Standard Deviations (%)

		Pu238						Pu239						Pu240						Pu241						Pu242						Am241					
Gr	E [MeV]	ν	σ_f	σ_{inel}	σ_{el}	σ_{capt}	$\sigma_{n,2n}$	ν	σ_f	σ_{inel}	σ_{el}	σ_{capt}	$\sigma_{n,2n}$	ν	σ_f	σ_{inel}	σ_{el}	σ_{capt}	$\sigma_{n,2n}$	ν	σ_f	σ_{inel}	σ_{el}	σ_{capt}	$\sigma_{n,2n}$	ν	σ_f	σ_{inel}	σ_{el}	σ_{capt}	$\sigma_{n,2n}$	ν	σ_f	σ_{inel}	σ_{el}	σ_{capt}	$\sigma_{n,2n}$
1	1.96E+1	5.0	20.0	100.0	4.0	100.0	100.0	0.4	0.8	24.1	5.4	36.3	7.2	1.1	9.6	10.0	4.0	55.0	10.0	0.5	10.0	10.0	3.0	55.4	39.7	10.0	37.2	10.0	3.0	78.5	51.7	3.0	20.0	15.0	3.0	28.8	10.0
2	1.00E+1	3.6	20.0	100.0	3.3	100.0	100.0	0.2	0.9	27.6	8.5	39.9	20.9	2.2	6.2	13.0	4.0	40.8	10.0	0.3	6.5	16.7	2.3	54.5	35.2	5.0	21.5	13.0	3.0	164.7	51.7	3.0	14.1	18.6	2.3	19.3	10.0
3	6.07E+0	3.0	20.0	99.8	3.0	100.0	0.0	0.2	0.8	25.6	10.9	42.0	7.0	2.7	4.8	14.3	4.0	35.0	0.0	0.3	5.0	19.5	2.0	54.2	0.0	3.0	15.1	14.3	3.0	199.9	0.0	3.0	11.7	20.0	2.0	15.4	0.0
4	3.68E+0	3.0	13.8	43.8	2.4	100.0	0.0	0.2	0.9	19.5	9.2	34.2	0.0	2.7	5.3	9.0	4.0	28.8	0.0	0.3	5.0	26.1	2.6	82.8	0.0	2.5	19.1	24.1	3.0	168.8	0.0	3.0	10.5	20.0	2.0	24.5	0.0
5	2.23E+0	3.0	10.0	10.0	2.0	100.0	0.0	0.2	0.9	19.0	10.7	26.6	0.0	2.7	5.7	5.8	4.0	25.0	0.0	0.3	5.0	30.0	3.0	100.0	0.0	2.2	21.4	30.0	3.0	150.0	0.0	3.0	9.8	20.0	2.0	30.0	0.0
6	1.35E+0	3.0	50.0	100.0	2.0	50.0	0.0	0.2	0.8	27.0	11.9	20.5	0.0	3.7	5.8	30.0	4.0	100.0	0.0	0.3	16.6	30.0	10.0	80.0	0.0	3.1	19.0	30.0	3.0	80.0	0.0	0.3	8.3	20.0	2.0	30.0	0.0
7	8.21E-1	3.0	50.0	100.0	2.0	43.8	0.0	0.2	0.8	32.6	9.3	15.5	0.0	4.4	4.6	30.0	4.0	56.5	0.0	0.3	14.7	17.6	10.0	48.9	0.0	3.7	18.8	30.0	3.0	48.9	0.0	2.0	8.3	26.2	7.0	23.8	0.0
8	4.98E-1	3.0	50.0	99.8	2.0	39.9	0.0	0.2	0.9	32.7	6.5	12.1	0.0	4.8	3.9	30.0	4.0	29.9	0.0	0.3	13.6	10.1	10.0	30.0	0.0	4.0	18.7	30.1	3.0	30.0	0.0	3.0	8.3	30.0	10.0	20.0	0.0
9	3.02E-1	3.0	50.0	68.7	2.0	18.1	0.0	0.3	0.8	36.2	5.2	11.3	0.0	4.8	5.0	36.3	4.0	17.5	0.0	0.3	17.5	35.0	10.0	30.0	0.0	4.0	27.0	53.9	3.0	31.4	0.0	3.0	8.3	30.0	10.0	11.7	0.0
10	1.83E-1	3.0	50.0	50.0	2.0	5.0	0.0	0.7	1.0	43.7	4.5	9.6	0.0	4.8	5.7	40.0	4.0	10.0	0.0	0.3	19.9	50.0	10.0	30.0	0.0	4.0	32.1	68.2	3.0	32.3	0.0	3.0	8.3	30.0	10.0	6.8	0.0
11	1.11E-1	3.0	50.0	0.0	13.2	5.0	0.0	0.5	0.9	50.0	3.7	10.8	0.0	4.8	6.8	57.6	4.0	10.0	0.0	0.3	12.9	50.0	10.0	14.1	0.0	4.0	32.7	0.0	3.0	35.4	0.0	3.0	7.7	30.0	10.0	7.5	0.0
12	6.74E-2	3.0	50.0	0.0	20.0	5.1	0.0	0.7	0.8	45.1	2.6	11.4	0.0	4.8	7.5	0.0	4.0	10.0	0.0	0.3	8.8	0.0	10.0	4.4	0.0	4.0	33.1	0.0	3.0	37.3	0.0	3.0	7.4	0.0	10.0	8.0	0.0
13	4.09E-2	3.0	50.0	0.0	20.0	33.1	0.0	0.6	0.9	31.9	2.1	8.9	0.0	4.8	7.5	0.0	4.0	10.1	0.0	0.3	10.3	0.0	10.0	3.5	0.0	4.0	33.1	0.0	3.0	38.1	0.0	3.0	11.3	0.0	10.0	7.3	0.0
14	2.48E-2	3.0	50.0	0.0	20.0	49.8	0.0	1.2	0.9	30.1	2.1	7.2	0.0	4.8	7.5	0.0	4.0	10.2	0.0	0.3	11.3	0.0	10.0	3.0	0.0	4.0	33.1	0.0	3.0	38.6	0.0	3.0	13.7	0.0	10.0	6.9	0.0
15	1.50E-2	3.0	50.0	0.0	20.0	30.4	0.0	2.0	1.2	26.7	2.3	7.8	0.0	4.8	7.8	0.0	4.0	7.0	0.0	0.3	10.8	0.0	10.0	3.0	0.0	4.0	20.7	0.0	3.0	38.5	0.0	3.0	13.6	0.0	10.0	6.7	0.0
16	9.12E-3	3.0	50.0	0.0	20.0	18.7	0.0	0.9	0.8	17.1	3.7	16.5	0.0	4.8	8.0	0.0	4.0	5.0	0.0	0.3	10.4	0.0	10.0	3.0	0.0	4.0	13.2	0.0	3.0	38.4	0.0	3.0	13.5	0.0	10.0	6.7	0.0
17	5.53E-3	3.0	50.0	0.0	20.0	43.4	0.0	1.0	0.8	0.0	4.2	16.5	0.0	4.8	14.9	0.0	2.6	5.0	0.0	0.3	11.6	0.0	10.5	3.0	0.0	4.0	9.5	0.0	3.4	19.8	0.0	3.0	13.5	0.0	10.0	6.6	0.0
18	3.35E-3	3.0	50.0	0.0	20.0	58.5	0.0	1.4	0.7	0.0	3.2	10.7	0.0	4.8	19.1	0.0	1.8	5.0	0.0	0.3	12.3	0.0	10.8	3.0	0.0	4.0	7.3	0.0	3.6	8.5	0.0	3.0	13.4	0.0	10.0	6.6	0.0
19	2.03E-3	3.0	50.2	0.0	20.0	67.1	0.0	1.0	1.2	0.0	0.5	1.5	0.0	4.8	21.5	0.0	1.3	5.0	0.0	0.3	12.7	0.0	11.0	3.0	0.0	4.0	5.9	0.0	3.8	1.7	0.0	3.0	13.4	0.0	10.0	6.6	0.0
20	1.23E-3	3.0	65.3	0.0	20.0	35.4	0.0	1.1	1.3	0.0	0.7	1.5	0.0	4.8	13.0	0.0	1.5	5.0	0.0	0.3	16.1	0.0	10.9	5.3	0.0	4.0	3.9	0.0	3.0	2.0	0.0	3.0	10.7	0.0	12.3	5.1	0.0
21	7.49E-4	3.0	74.4	0.0	20.0	16.2	0.0	1.2	1.3	0.0	1.2	1.6	0.0	4.8	7.9	0.0	1.6	5.0	0.0	0.3	18.1	0.0	10.9	6.6	0.0	4.0	2.7	0.0	2.6	2.1	0.0	3.0	9.1	0.0	13.7	4.2	0.0
22	4.54E-4	3.0	80.0	0.0	20.0	4.6	0.0	0.5	1.5	0.0	0.9	1.6	0.0	4.8	4.7	0.0	1.6	5.0	0.0	0.3	19.4	0.0	10.9	7.4	0.0	4.0	2.0	0.0	2.3	2.2	0.0	3.0	8.1	0.0	14.5	3.7	0.0
23	3.04E-4	3.0	58.8	0.0	16.6	4.3	0.0	0.3	1.3	0.0	1.6	1.6	0.0	4.8	6.2	0.0	2.2	5.2	0.0	0.3	14.1	0.0	10.8	7.8	0.0	4.0	3.5	0.0	3.6	4.0	0.0	3.0	7.1	0.0	14.4	3.0	0.0
24	1.49E-4	3.0	36.7	0.0	13.0	4.0	0.0	0.3	1.6	0.0	1.2	1.9	0.0	4.8	7.7	0.0	2.8	5.4	0.0	0.3	8.6	0.0	10.7	8.1	0.0	4.0	5.2	0.0	4.9	5.9	0.0	3.0	6.0	0.0	14.2	2.4	0.0
25	9.17E-5	3.0	28.7	0.0	11.7	3.8	0.0	0.3	1.8	0.0	2.3	5.5	0.0	4.8	8.2	0.0	3.0	5.4	0.0	0.3	6.6	0.0	10.7	8.2	0.0	4.0	5.7	0.0	5.4	6.6	0.0	3.0	5.6	0.0	14.1	2.1	0.0
26	6.79E-5	3.0	25.4	0.0	11.2	3.8	0.0	0.2	1.6	0.0	0.8	3.2	0.0	4.8	8.5	0.0	3.1	5.4	0.0	0.3	5.8	0.0	10.7	8.3	0.0	4.0	6.0	0.0	5.6	6.9	0.0	3.0	5.5	0.0	14.1	2.0	0.0
27	4.02E-5	3.0	21.5	0.0	10.5	3.7	0.0	0.2	2.6	0.0	0.3	2.1	0.0	4.8	8.7	0.0	3.2	5.5	0.0	0.3	4.8	0.0	10.7	8.3	0.0	4.0	6.3	0.0	5.8	7.2	0.0	3.0	5.3	0.0	14.1	1.9	0.0
28	2.26E-5	3.0	19.0	0.0	10.1	3.7	0.0	0.2	1.7	0.0	0.3	1.3	0.0	4.8	8.9	0.0	3.3	5.5	0.0	0.3	4.2	0.0	10.7	8.4	0.0	4.0	6.5	0.0	5.9	7.4	0.0	3.0	5.2	0.0	14.0	1.8	0.0
29	1.37E-5	3.0	12.1	0.0	8.0	17.5	0.0	0.2	1.0	0.0	0.3	0.7	0.0	4.8	5.2	0.0	1.9	3.1	0.0	0.3	15.0	0.0	11.1	7.4	0.0	4.0	7.0	0.0	5.3	5.7	0.0	3.0	5.9	0.0	14.1	3.6	0.0
30	8.32E-6	3.0	7.9	0.0	6.8	25.8	0.0	0.2	1.5	0.0	0.3	1.1	0.0	4.8	3.0	0.0	1.1	1.6	0.0	0.3	21.6	0.0	11.3	6.8	0.0	4.0	7.3	0.0	5.0	4.6	0.0	3.0	6.4	0.0	14.2	4.7	0.0
31	4.00E-6	3.0	4.6	0.0	5.8	32.5	0.0	0.2	1.8	0.0	0.3	1.5	0.0	4.8	1.2	0.0	0.5	0.4	0.0	0.3	26.8	0.0	11.5	6.4	0.0	4.0	7.6	0.0	4.7	3.8	0.0	3.0	6.7	0.0	14.2	5.5	0.0
32	5.40E-7	3.0	4.6	0.0	5.1	39.2	0.0	0.2	0.8	0.0	0.4	1.3	0.0	4.8	29.8	0.0	4.6	3.2	0.0	0.3	2.9	0.0	9.9	6.8	0.0	4.0	5.2	0.0	7.2	7.1	0.0	3.0	8.9	0.0	13.8	1.3	0.0
33	1.00E-7	3.0	4.9	0.0	4.7	40.8	0.0	0.2	1.1	0.0	0.7	1.5	0.0	4.8	48.5	0.0	5.6	4.8	0.0	0.3	3.3	0.0	11.3	3.6	0.0	4.0	5.1	0.0	7.0	6.9	0.0	3.0	3.0	0.0	13.0	1.8	0.0

AFCI1.1 Relative Standard Deviations (%)

		Am242m						Am243						Cm242						Cm243						Cm244						Cm245					
Gr	E [MeV]	ν	σ_f	σ_{inel}	σ_{el}	σ_{capt}	$\sigma_{n,2n}$	ν	σ_f	σ_{inel}	σ_{el}	σ_{capt}	$\sigma_{n,2n}$	ν	σ_f	σ_{inel}	σ_{el}	σ_{capt}	$\sigma_{n,2n}$	ν	σ_f	σ_{inel}	σ_{el}	σ_{capt}	$\sigma_{n,2n}$	ν	σ_f	σ_{inel}	σ_{el}	σ_{capt}	$\sigma_{n,2n}$	ν	σ_f	σ_{inel}	σ_{el}	σ_{capt}	$\sigma_{n,2n}$
1	1.96E+1	10.4	40.0	15.0	10.0	100.0	31.8	1.9	20.0	15.0	3.0	60.4	50.0	11.0	50.0	100.0	10.0	52.8	50.0	9.6	10.0	15.0	3.0	77.6	52.8	11.0	20.0	50.0	3.0	89.2	30.0	9.6	18.1	15.0	3.0	71.2	22.4
2	1.00E+1	3.7	28.2	25.6	10.0	100.0	35.6	2.0	13.6	18.6	3.0	47.0	50.0	11.4	85.5	100.0	6.5	157.2	50.0	3.8	10.0	18.6	3.0	53.8	41.2	11.7	20.0	35.8	3.0	132.3	30.0	4.9	27.2	18.6	3.0	46.4	72.9
3	6.07E+0	0.9	23.4	30.0	10.0	99.9	0.0	2.0	11.0	20.0	3.0	41.5	0.0	11.5	100.0	100.0	5.0	200.0	0.0	1.4	10.0	20.0	3.0	44.1	0.0	12.0	20.0	30.0	3.0	150.4	0.0	2.9	31.0	20.0	3.0	36.2	0.0
4	3.68E+0	0.8	21.1	30.0	10.0	68.8	0.0	1.9	7.9	20.0	3.0	29.1	0.0	11.2	100.0	100.0	3.8	200.0	0.0	1.3	10.0	16.9	3.0	27.6	0.0	10.8	20.0	23.8	4.3	243.8	0.0	2.9	39.2	16.9	3.0	31.8	0.0
5	2.23E+0	0.7	19.7	30.0	10.0	50.0	0.0	1.9	6.0	20.0	3.0	21.7	0.0	11.0	100.0	100.0	3.0	200.0	0.0	1.2	10.0	15.0	3.0	17.7	0.0	10.0	20.0	20.0	5.0	300.0	0.0	2.9	44.2	15.0	3.0	29.1	0.0
6	1.35E+0	0.7	16.5	30.0	5.0	50.0	0.0	1.1	9.2	20.0	3.0	14.2	0.0	10.0	100.0	100.0	3.0	200.0	0.0	1.3	10.0	30.0	3.0	31.2	0.0	10.0	10.0	30.0	10.0	200.0	0.0	3.0	49.4	30.0	3.0	24.8	0.0
7	8.21E-1	0.7	16.6	30.0	2.5	50.0	0.0	1.2	9.5	26.2	3.0	11.6	0.0	10.0	100.0	44.0	2.4	200.0	0.0	1.3	16.2	30.0	3.0	30.3	0.0	10.0	10.0	29.4	10.0	91.1	0.0	3.0	41.8	30.0	3.0	21.4	0.0
8	4.98E-1	0.7	16.6	30.0	1.0	50.0	0.0	1.2	9.6	30.0	3.0	10.0	0.0	10.0	100.0	10.1	2.0	200.0	0.0	1.3	20.0	30.1	3.0	29.7	0.0	10.0	10.0	29.2	10.0	25.0	0.0	3.0	37.3	30.1	3.0	19.3	0.0
9	3.02E-1	0.7	16.6	30.0	9.1	50.0	0.0	1.2	9.6	30.0	7.4	10.0	0.0	10.0	100.0	37.0	3.3	200.0	0.0	1.3	13.8	42.5	3.0	25.7	0.0	10.0	10.0	50.5	10.0	25.0	0.0	3.0	43.6	42.5	3.0	18.2	0.0
10	1.83E-1	0.7	16.6	30.0	13.9	50.0	0.0	1.2	9.6	30.0	10.0	10.0	0.0	10.0	100.0	53.2	4.0	200.0	0.0	1.3	10.0	50.0	3.0	23.4	0.0	10.0	10.0	63.3	10.0	25.0	0.0	3.0	47.5	50.0	3.0	17.6	0.0
11	1.11E-1	0.7	15.2	30.0	13.2	50.0	0.0	1.2	8.1	30.0	16.2	10.0	0.0	10.0	100.0	39.8	4.0	200.0	0.0	1.3	10.0	50.0	3.0	20.1	0.0	10.0	10.0	61.1	9.5	25.0	0.0	3.0	34.4	50.0	3.0	13.2	0.0
12	6.74E-2	0.7	14.4	30.0	12.8	50.0	0.0	1.2	7.1	0.0	20.0	10.0	0.0	10.0	100.0	0.0	4.0	200.0	0.0	1.3	10.0	0.0	3.0	18.2	0.0	10.0	10.0	0.0	9.2	25.2	0.0	3.0	26.5	0.0	3.0	10.5	0.0
13	4.09E-2	0.7	12.8	30.0	16.6	50.0	0.0	1.2	11.3	0.0	20.0	8.0	0.0	10.0	100.0	0.0	2.8	200.0	0.0	1.3	11.5	0.0	3.0	18.1	0.0	10.0	10.0	0.0	12.8	71.8	0.0	3.0	18.4	0.0	3.0	12.0	0.0
14	2.48E-2	0.7	11.8	0.0	18.9	50.0	0.0	1.2	13.8	0.0	20.0	6.8	0.0	10.0	100.0	0.0	2.1	200.0	0.0	1.3	12.4	0.0	3.0	18.0	0.0	10.0	10.0	0.0	14.9	100.0	0.0	3.0	13.5	0.0	3.0	12.9	0.0
15	1.50E-2	0.7	12.2	0.0	19.2	50.0	0.0	1.2	13.6	0.0	20.0	6.7	0.0	10.0	100.0	0.0	3.9	200.0	0.0	1.3	12.3	0.0	3.0	18.2	0.0	10.0	10.0	0.0	14.4	100.0	0.0	3.0	13.3	0.0	3.0	12.6	0.0
16	9.12E-3	0.7	12.4	0.0	19.4	50.0	0.0	1.2	13.5	0.0	20.0	6.6	0.0	10.0	100.0	0.0	5.0	200.0	0.0	1.3	12.2	0.0	3.0	18.4	0.0	10.0	10.0	0.0	14.0	100.0	0.0	3.0	13.2	0.0	3.0	12.5	0.0
17	5.53E-3	0.7	12.3	0.0	19.4	50.0	0.0	1.2	13.5	0.0	20.0	6.6	0.0	10.0	100.0	0.0	5.0	200.0	0.0	1.3	12.2	0.0	3.0	18.5	0.0	10.0	10.0	0.0	10.8	100.0	0.0	3.0	13.1	0.0	3.0	12.4	0.0
18	3.35E-3	0.7	12.2	0.0	19.4	50.0	0.0	1.2	13.4	0.0	20.0	6.6	0.0	10.0	100.0	0.0	5.0	200.0	0.0	1.3	12.2	0.0	3.0	18.6	0.0	10.0	10.0	0.0	8.9	100.0	0.0	3.0	13.1	0.0	3.0	12.4	0.0
19	2.03E-3	0.7	12.2	0.0	19.4	50.0	0.0	1.2	13.4	0.0	19.9	6.6	0.0	10.0	100.0	0.0	5.0	200.0	0.0	1.3	12.2	0.0	3.1	18.7	0.0	10.0	10.0	0.0	7.7	99.4	0.0	3.0	13.0	0.0	3.0	12.3	0.0
20	1.23E-3	0.7	11.3	0.0	18.0	50.0	0.0	1.2	11.5	0.0	14.4	4.4	0.0	10.0	100.0	0.0	5.0	200.0	0.0	1.3	10.1	0.0	9.4	16.6	0.0	10.0	7.8	0.0	5.6	51.3	0.0	3.0	10.8	0.0	4.0	10.9	0.0
21	7.49E-4	0.7	10.7	0.0	17.2	50.0	0.0	1.2	10.3	0.0	11.0	3.1	0.0	10.0	100.0	0.0	5.0	200.0	0.0	1.3	8.8	0.0	13.2	15.3	0.0	10.0	6.5	0.0	4.4	22.3	0.0	3.0	9.5	0.0	4.6	10.1	0.0
22	4.54E-4	0.7	10.4	0.0	16.7	50.0	0.0	1.2	9.6	0.0	9.0	2.3	0.0	10.0	100.0	0.0	5.0	200.0	0.0	1.3	8.0	0.0	15.5	14.5	0.0	10.0	5.7	0.0	3.6	4.6	0.0	3.0	8.7	0.0	5.0	9.6	0.0
23	3.04E-4	0.7	10.4	0.0	17.8	37.2	0.0	1.2	8.4	0.0	8.7	2.1	0.0	10.0	100.0	0.0	9.6	200.0	0.0	1.3	6.4	0.0	16.7	11.3	0.0	10.0	9.7	0.0	5.1	5.3	0.0	3.0	7.0	0.0	10.3	9.0	0.0
24	1.49E-4	0.7	10.4	0.0	19.0	23.9	0.0	1.2	7.0	0.0	8.4	1.9	0.0	10.0	100.0	0.0	14.4	200.0	0.0	1.3	4.7	0.0	17.9	7.9	0.0	10.0	13.8	0.0	6.6	6.1	0.0	3.0	5.3	0.0	15.8	8.4	0.0
25	9.17E-5	0.7	10.4	0.0	19.4	19.1	0.0	1.2	6.5	0.0	8.3	1.8	0.0	10.0	100.0	0.0	16.1	200.0	0.0	1.3	4.1	0.0	18.3	6.6	0.0	10.0	15.3	0.0	7.1	6.3	0.0	3.0	4.7	0.0	17.8	8.2	0.0
26	6.79E-5	0.7	10.4	0.0	19.6	17.1	0.0	1.2	6.3	0.0	8.3	1.8	0.0	10.0	100.0	0.0	16.8	200.0	0.0	1.3	3.8	0.0	18.5	6.1	0.0	10.0	15.9	0.0	7.3	6.4	0.0	3.0	4.4	0.0	18.7	8.1	0.0
27	4.02E-5	0.7	10.4	0.0	19.8	14.7	0.0	1.2	6.1	0.0	8.3	1.8	0.0	10.0	100.0	0.0	17.7	200.0	0.0	1.3	3.5	0.0	18.7	5.5	0.0	10.0	16.6	0.0	7.6	6.6	0.0	3.0	4.1	0.0	19.6	8.0	0.0
28	2.26E-5	0.7	10.4	0.0	20.0	13.3	0.0	1.2	6.0	0.0	8.2	1.7	0.0	10.0	100.0	0.0	18.2	200.0	0.0	1.3	3.3	0.0	18.8	5.1	0.0	10.0	17.1	0.0	7.8	6.6	0.0	3.0	3.9	0.0	20.3	7.9	0.0
29	1.37E-5	0.7	8.8	0.0	20.3	13.4	0.0	1.2	5.4	0.0	7.6	2.6	0.0	10.0	100.0	0.0	19.0	200.0	0.0	1.3	4.8	0.0	19.2	6.5	0.0	10.0	19.4	0.0	7.2	9.1	0.0	3.0	5.0	0.0	21.0	9.8	0.0
30	8.32E-6	0.7	7.8	0.0	20.5	13.5	0.0	1.2	5.1	0.0	7.3	3.0	0.0	10.0	100.0	0.0	19.5	200.0	0.0	1.3	5.7	0.0	19.4	7.3	0.0	10.0	20.9	0.0	6.9	10.6	0.0	3.0	5.7	0.0	21.4	10.9	0.0
31	4.00E-6	0.7	7.0	0.0	20.6	13.6	0.0	1.2	4.8	0.0	7.0	3.4	0.0	10.0	100.0	0.0	19.9	200.0	0.0	1.3	6.4	0.0	19.5	8.0	0.0	10.0	22.0	0.0	6.6	11.8	0.0	3.0	6.2	0.0	21.8	11.8	0.0
32	5.40E-7	0.7	8.8	0.0	17.6	19.9	0.0	1.2	2.3	0.0	12.4	3.8	0.0	10.0	100.0	0.0	19.7	200.0	0.0	1.3	19.5	0.0	24.9	15.5	0.0	10.0	26.4	0.0	6.2	12.2	0.0	3.0	5.1	0.0	20.8	7.5	0.0
33	1.00E-7	0.7	8.1	0.0	21.8	19.6	0.0	1.2	2.1	0.0	11.4	3.6	0.0	10.0	50.0	0.0	19.7	200.0	0.0	1.3	10.5	0.0	23.4	16.4	0.0	10.0	27.2	0.0	6.1	12.5	0.0	3.0	3.8	0.0	19.4	8.4	0.0

AFCI1.1 Relative Standard Deviations (%)

		Cm246						Fe56				Fe57				Cr50				Cr52				Ni58				Ni60				Zr90			
Gr	E [MeV]	ν	σ_f	σ_{inel}	σ_{el}	σ_{capt}	$\sigma_{n,2n}$	σ_{inel}	σ_{el}	σ_{capt}	$\sigma_{n,2n}$	σ_{inel}	σ_{el}	σ_{capt}	$\sigma_{n,2n}$	σ_{inel}	σ_{el}	σ_{capt}	$\sigma_{n,2n}$	σ_{inel}	σ_{el}	σ_{capt}	$\sigma_{n,2n}$	σ_{inel}	σ_{el}	σ_{capt}	$\sigma_{n,2n}$	σ_{inel}	σ_{el}	σ_{capt}	$\sigma_{n,2n}$	σ_{inel}	σ_{el}	σ_{capt}	$\sigma_{n,2n}$
1	1.96E+1		14.0	17.6	29.0	80.0	13.7	2.5	2.2	24.8	2.3	10.0	10.3	40.0	9.8	18.5	9.6	35.4	19.9	8.6	9.8	45.1	14.3	31.1	10.2	40.0	27.0	10.8	10.4	48.3	15.5	10.6	8.1	100.0	10.0
2	1.00E+1		14.2	13.7	19.5	45.4	21.0	2.3	1.7	31.4	0.0	4.2	6.1	38.9	6.8	7.8	7.8	28.6	0.0	4.1	7.8	38.0	0.0	18.1	4.8	33.1	0.0	4.0	4.7	37.6	0.0	6.9	7.2	100.0	0.0
3	6.07E+0		13.2	13.1	34.9	41.9	0.0	1.4	2.1	25.5	0.0	3.6	5.8	14.8	0.0	3.0	2.6	19.0	0.0	2.9	5.0	23.2	0.0	4.1	6.8	25.2	0.0	4.3	7.1	25.8	0.0	5.1	6.3	100.0	0.0
4	3.68E+0		14.2	13.3	43.2	38.6	0.0	1.2	1.5	20.0	0.0	5.8	9.6	6.9	0.0	3.3	4.7	15.1	0.0	3.1	5.5	18.3	0.0	8.2	9.1	18.7	0.0	7.2	9.7	18.0	0.0	13.3	6.0	44.3	0.0
5	2.23E+0		14.4	13.2	68.6	31.3	0.0	1.4	1.8	20.0	0.0	7.4	2.7	2.7	0.0	10.3	2.2	12.5	0.0	5.3	5.0	14.1	0.0	16.0	4.9	14.6	0.0	16.7	5.4	13.6	0.0	24.8	6.0	28.6	0.0
6	1.35E+0		10.0	12.8	84.1	19.2	0.0	1.4	1.8	20.0	0.0	4.8	11.2	3.6	0.0	15.1	10.5	11.0	0.0	0.0	7.0	8.7	0.0	0.0	3.3	11.6	0.0	0.0	2.3	10.7	0.0	10.4	6.0	20.3	0.0
7	8.21E-1		0.0	12.6	81.4	17.8	0.0	0.0	5.0	20.0	0.0	4.1	18.1	6.4	0.0	0.8	19.5	9.8	0.0	0.0	3.0	10.0	0.0	0.0	4.0	8.5	0.0	0.0	6.9	9.6	0.0	0.0	6.0	15.8	0.0
8	4.98E-1		0.0	13.4	82.4	17.3	0.0	0.0	5.0	20.0	0.0	8.4	15.4	7.7	0.0	0.0	23.9	11.3	0.0	0.0	3.0	10.0	0.0	0.0	4.0	8.5	0.0	0.0	4.5	9.3	0.0	0.0	6.0	14.0	0.0
9	3.02E-1		0.0	13.4	77.3	17.4	0.0	0.0	4.9	19.7	0.0	15.5	12.2	7.8	0.0	0.0	25.6	13.2	0.0	0.0	3.0	10.0	0.0	0.0	4.0	8.5	0.0	0.0	3.4	9.2	0.0	0.0	6.0	13.5	0.0
10	1.83E-1		0.0	13.4	68.6	19.1	0.0	0.0	5.0	20.0	0.0	26.9	7.7	7.0	0.0	0.0	25.8	14.8	0.0	0.0	3.0	10.0	0.0	0.0	4.0	8.5	0.0	0.0	8.7	8.8	0.0	0.0	6.0	13.9	0.0
11	1.11E-1		0.0	37.5	52.0	24.2	0.0	0.0	4.0	12.3	0.0	28.2	6.2	6.4	0.0	0.0	25.3	14.2	0.0	0.0	4.0	23.1	0.0	0.0	2.4	8.5	0.0	0.0	12.1	9.0	0.0	0.0	6.0	20.0	0.0
12	6.74E-2		0.0	45.9	36.5	33.7	0.0	0.0	5.0	15.0	0.0	30.1	9.8	6.4	0.0	0.0	24.2	11.1	0.0	0.0	3.1	6.0	0.0	0.0	3.4	8.5	0.0	0.0	19.3	9.0	0.0	0.0	6.0	20.0	0.0
13	4.09E-2		0.0	0.0	21.8	50.3	0.0	0.0	5.0	15.0	0.0	31.3	16.4	7.3	0.0	0.0	22.7	9.5	0.0	0.0	3.3	10.0	0.0	0.0	3.0	8.5	0.0	0.0	26.4	10.2	0.0	0.0	6.1	20.0	0.0
14	2.48E-2		0.0	0.0	22.1	50.3	0.0	0.0	5.0	15.0	0.0	29.8	20.0	7.9	0.0	0.0	21.9	9.6	0.0	0.0	3.6	10.0	0.0	0.0	3.0	8.2	0.0	0.0	30.2	9.7	0.0	0.0	6.3	20.0	0.0
15	1.50E-2		0.0	0.0	22.0	49.3	0.0	0.0	5.0	15.0	0.0	3.1	23.6	8.5	0.0	0.0	21.1	9.7	0.0	0.0	2.9	13.1	0.0	0.0	2.1	3.2	0.0	0.0	34.0	9.3	0.0	0.0	6.4	20.0	0.0
16	9.12E-3		0.0	0.0	20.8	44.4	0.0	0.0	5.0	15.0	0.0	0.0	26.9	9.2	0.0	0.0	20.4	9.5	0.0	0.0	2.8	9.3	0.0	0.0	1.8	3.2	0.0	0.0	37.8	9.1	0.0	0.0	6.2	20.0	0.0
17	5.53E-3		3.0	0.0	8.7	11.7	0.0	0.0	5.0	15.0	0.0	0.0	44.8	8.0	0.0	0.0	4.9	16.8	0.0	0.0	2.6	7.5	0.0	0.0	1.7	3.1	0.0	0.0	11.0	11.0	0.0	0.0	8.0	20.0	0.0
18	3.35E-3		3.9	0.0	9.3	5.9	0.0	0.0	5.0	15.0	0.0	0.0	58.5	10.2	0.0	0.0	0.0	22.1	0.0	0.0	2.4	6.3	0.0	0.0	1.6	2.8	0.0	0.0	7.2	14.3	0.0	0.0	6.1	20.0	0.0
19	2.03E-3		3.9	0.0	9.3	5.9	0.0	0.0	5.0	15.0	0.0	0.0	58.5	10.2	0.0	0.0	0.0	22.1	0.0	0.0	2.3	5.7	0.0	0.0	1.6	2.7	0.0	0.0	7.2	14.3	0.0	0.0	6.0	20.0	0.0
20	1.23E-3		3.9	0.0	9.3	5.9	0.0	0.0	3.1	7.9	0.0	0.0	58.5	10.2	0.0	0.0	0.0	22.1	0.0	0.0	2.3	6.2	0.0	0.0	1.6	2.6	0.0	0.0	7.2	14.3	0.0	0.0	6.0	20.0	0.0
21	7.49E-4		3.9	0.0	9.3	5.9	0.0	0.0	3.4	6.0	0.0	0.0	58.5	10.2	0.0	0.0	0.0	22.1	0.0	0.0	2.3	6.2	0.0	0.0	1.6	2.6	0.0	0.0	7.2	14.3	0.0	0.0	6.0	20.0	0.0
22	4.54E-4		3.9	0.0	9.3	5.9	0.0	0.0	3.4	6.0	0.0	0.0	58.5	10.2	0.0	0.0	0.0	22.1	0.0	0.0	2.2	6.2	0.0	0.0	1.6	2.6	0.0	0.0	7.2	14.3	0.0	0.0	6.0	20.0	0.0
23	3.04E-4		3.9	0.0	9.3	5.9	0.0	0.0	3.4	6.0	0.0	0.0	58.5	10.2	0.0	0.0	0.0	22.1	0.0	0.0	2.2	6.2	0.0	0.0	1.6	2.6	0.0	0.0	7.2	14.3	0.0	0.0	6.0	20.0	0.0
24	1.49E-4		3.9	0.0	9.3	5.9	0.0	0.0	3.4	6.0	0.0	0.0	58.5	10.2	0.0	0.0	0.0	22.1	0.0	0.0	2.2	6.2	0.0	0.0	1.6	2.6	0.0	0.0	7.2	14.3	0.0	0.0	6.0	20.0	0.0
25	9.17E-5		3.9	0.0	9.3	5.9	0.0	0.0	3.4	6.0	0.0	0.0	58.5	10.2	0.0	0.0	0.0	22.1	0.0	0.0	2.2	6.1	0.0	0.0	1.6	2.6	0.0	0.0	7.2	14.3	0.0	0.0	6.0	20.0	0.0
26	6.79E-5		3.9	0.0	9.3	5.9	0.0	0.0	3.4	6.0	0.0	0.0	58.5	10.2	0.0	0.0	0.0	22.1	0.0	0.0	2.2	6.1	0.0	0.0	1.6	2.6	0.0	0.0	7.2	14.3	0.0	0.0	6.0	20.0	0.0
27	4.02E-5		3.9	0.0	9.3	5.9	0.0	0.0	3.4	6.0	0.0	0.0	58.5	10.2	0.0	0.0	0.0	22.1	0.0	0.0	2.2	6.1	0.0	0.0	1.6	2.6	0.0	0.0	7.2	14.3	0.0	0.0	6.0	20.0	0.0
28	2.26E-5		3.9	0.0	9.3	5.9	0.0	0.0	3.4	6.0	0.0	0.0	58.5	10.2	0.0	0.0	0.0	22.1	0.0	0.0	2.2	6.1	0.0	0.0	1.6	2.6	0.0	0.0	7.2	14.3	0.0	0.0	6.0	20.0	0.0
29	1.37E-5		3.9	0.0	9.3	5.9	0.0	0.0	3.4	6.0	0.0	0.0	58.5	10.2	0.0	0.0	0.0	22.1	0.0	0.0	2.2	6.1	0.0	0.0	1.6	2.6	0.0	0.0	7.2	14.3	0.0	0.0	6.0	20.0	0.0
30	8.32E-6		3.9	0.0	9.3	5.9	0.0	0.0	3.4	6.0	0.0	0.0	58.5	10.2	0.0	0.0	0.0	22.1	0.0	0.0	2.2	6.1	0.0	0.0	1.6	2.6	0.0	0.0	7.2	14.3	0.0	0.0	6.0	20.0	0.0
31	4.00E-6		3.9	0.0	9.3	5.9	0.0	0.0	3.5	6.0	0.0	0.0	58.5	10.2	0.0	0.0	0.0	22.1	0.0	0.0	2.2	6.1	0.0	0.0	1.6	2.6	0.0	0.0	7.2	14.3	0.0	0.0	6.0	20.0	0.0
32	5.40E-7		32.0	0.0	8.5	11.5	0.0	0.0	3.7	6.0	0.0	0.0	53.4	11.2	0.0	0.0	0.0	2.5	0.0	0.0	2.2	6.1	0.0	0.0	1.6	2.6	0.0	0.0	6.5	4.8	0.0	0.0	6.0	20.0	0.0
33	1.00E-7		35.2	0.0	9.3	12.6	0.0	0.0	4.0	6.0	0.0	0.0	58.5	12.2	0.0	0.0	0.0	1.7	0.0	0.0	1.0	6.1	0.0	0.0	0.8	2.6	0.0	0.0	7.2	5.0	0.0	0.0	6.5	20.0	0.0

AFCI1.1 Relative Standard Deviations (%)

		Zr91				Zr92				Zr94				Na				O				C				He4				Si28				Si29			
Gr	E [MeV]	σ_{inel}	σ_{el}	σ_{capt}	$\sigma_{n,2n}$	σ_{inel}	σ_{el}	σ_{capt}	$\sigma_{n,2n}$	σ_{inel}	σ_{el}	σ_{capt}	$\sigma_{n,2n}$	σ_{inel}	σ_{el}	σ_{capt}	$\sigma_{n,2n}$	σ_{inel}	σ_{el}	σ_{capt}	$\sigma_{n,2n}$	σ_{inel}	σ_{el}	σ_{capt}	$\sigma_{n,2n}$	σ_{inel}	σ_{el}	σ_{capt}	$\sigma_{n,2n}$	σ_{inel}	σ_{el}	σ_{capt}	$\sigma_{n,2n}$	σ_{inel}	σ_{el}	σ_{capt}	$\sigma_{n,2n}$
1	1.96E+1	10.8	7.3	63.1	10.4	15.5	7.3	59.5	10.2	22.2	7.3	59.1	7.0	10.8	14.8	8.6	19.6	14.8	3.2	50.0	7.1	20.6	8.1	20.0			2.5			9.4	3.0	30.6	9.6				
2	1.00E+1	4.0	6.1	56.9	13.4	4.1	6.2	44.7	11.4	3.9	6.3	43.9	10.5	4.9	16.6	1.7	0.0	8.8	1.5	50.0	0.0	18.3	5.0	20.0			2.0			4.2	9.1	23.5	0.0				
3	6.07E+0	2.8	3.8	34.5	0.0	3.1	3.5	30.9	0.0	3.4	3.5	32.3	0.0	5.1	11.8	0.6	0.0	0.0	1.5	50.0	0.0	80.0	2.5	17.4			1.4			3.2	8.9	20.9	0.0				
4	3.68E+0	5.7	11.8	27.8	0.0	2.6	15.2	23.1	0.0	3.0	15.4	25.5	0.0	5.3	8.2	0.0	0.0	0.0	1.6	50.0	0.0	0.0	1.0	20.0			1.0			3.0	5.1	20.3	0.0				
5	2.23E+0	19.6	17.9	19.7	0.0	11.4	20.2	17.4	0.0	8.4	20.3	20.5	0.0	8.1	6.9	0.0	0.0	0.0	2.0	50.0	0.0	0.0	1.0	20.0			1.0			9.1	2.3	19.6	0.0				
6	1.35E+0	12.7	18.9	19.3	0.0	21.5	17.8	14.4	0.0	19.6	16.9	17.1	0.0	11.1	5.0	0.0	0.0	0.0	2.0	50.0	0.0	0.0	0.8	16.0			1.0			0.0	3.8	19.4	0.0				
7	8.21E-1	0.0	18.8	18.7	0.0	0.0	18.1	14.7	0.0	0.0	16.5	16.8	0.0	11.6	6.0	0.0	0.0	0.0	2.0	50.0	0.0	0.0	0.5	20.0			1.0			0.0	4.6	18.9	0.0				
8	4.98E-1	0.0	20.2	18.2	0.0	0.0	19.6	14.1	0.0	0.0	18.0	16.3	0.0	38.3	6.0	0.0	0.0	0.0	2.0	18.5	0.0	0.0	0.5	20.0			0.5			0.0	4.2	18.6	0.0				
9	3.02E-1	0.0	20.9	18.1	0.0	0.0	20.4	13.4	0.0	0.0	19.1	15.6	0.0	0.0	6.0	0.0	0.0	0.0	2.0	10.0	0.0	0.0	0.5	20.0			0.5			0.0	3.9	18.9	0.0				
10	1.83E-1	0.0	19.4	18.7	0.0	0.0	19.3	13.4	0.0	0.0	18.8	15.6	0.0	0.0	6.0	0.0	0.0	0.0	2.0	10.0	0.0	0.0	0.5	20.0			0.5			0.0	3.5	19.3	0.0				
11	1.11E-1	0.0	17.3	18.8	0.0	0.0	17.4	13.4	0.0	0.0	17.2	15.3	0.0	0.0	6.0	0.0	0.0	0.0	2.0	10.0	0.0	0.0	0.5	20.0			0.5			0.0	3.3	19.1	0.0				
12	6.74E-2	0.0	12.0	19.3	0.0	0.0	12.4	14.0	0.0	0.0	12.9	16.0	0.0	0.0	6.0	0.0	0.0	0.0	2.0	10.0	0.0	0.0	0.5	20.0			0.5			0.0	3.1	19.3	0.0				
13	4.09E-2	0.0	6.2	19.5	0.0	0.0	6.7	15.1	0.0	0.0	7.4	17.0	0.0	0.0	6.0	0.0	0.0	0.0	2.0	10.0	0.0	0.0	0.5	20.0			0.5			0.0	3.4	19.4	0.0				
14	2.48E-2	0.0	3.7	19.7	0.0	0.0	4.1	16.8	0.0	0.0	4.8	17.3	0.0	0.0	6.0	0.0	0.0	0.0	2.0	10.0	0.0	0.0	0.5	20.0			0.5			0.0	3.8	19.3	0.0				
15	1.50E-2	0.0	3.5	20.3	0.0	0.0	3.2	19.6	0.0	0.0	3.2	18.2	0.0	0.0	6.0	0.0	0.0	0.0	2.0	10.0	0.0	0.0	0.5	20.0			0.5			0.0	4.3	19.1	0.0				
16	9.12E-3	0.0	5.6	21.1	0.0	0.0	5.0	22.6	0.0	0.0	4.1	19.9	0.0	0.0	6.0	0.0	0.0	0.0	2.0	10.0	0.0	0.0	0.5	20.0			0.5			0.0	4.9	18.6	0.0				
17	5.53E-3	0.0	4.7	7.4	0.0	0.0	4.4	8.1	0.0	0.0	3.8	8.8	0.0	0.0	6.0	0.0	0.0	0.0	2.0	10.0	0.0	0.0	0.5	20.0			0.5			0.0	1.4	14.5	0.0				
18	3.35E-3	0.0	5.9	6.9	0.0	0.0	5.5	7.5	0.0	0.0	4.8	9.5	0.0	0.0	6.0	0.0	0.0	0.0	2.0	10.0	0.0	0.0	0.5	20.0			0.5			0.0	0.9	18.3	0.0				
19	2.03E-3	0.0	5.9	6.9	0.0	0.0	5.5	7.5	0.0	0.0	4.8	9.5	0.0	0.0	3.5	0.0	0.0	0.0	2.0	10.0	0.0	0.0	0.5	20.0			0.5			0.0	0.9	18.3	0.0				
20	1.23E-3	0.0	5.9	6.9	0.0	0.0	5.5	7.5	0.0	0.0	4.8	9.5	0.0	0.0	2.1	0.0	0.0	0.0	2.0	10.0	0.0	0.0	0.5	9.8			0.5			0.0	0.9	18.3	0.0				
21	7.49E-4	0.0	5.9	6.9	0.0	0.0	5.5	7.5	0.0	0.0	4.8	9.5	0.0	0.0	1.4	0.0	0.0	0.0	2.0	10.0	0.0	0.0	0.5	3.0			0.5			0.0	0.9	18.3	0.0				
22	4.54E-4	0.0	5.9	6.9	0.0	0.0	5.5	7.5	0.0	0.0	4.8	9.5	0.0	0.0	1.0	0.0	0.0	0.0	2.0	10.0	0.0	0.0	0.5	3.0			0.5			0.0	0.9	18.3	0.0				
23	3.04E-4	0.0	5.9	6.9	0.0	0.0	5.5	7.5	0.0	0.0	4.8	9.5	0.0	0.0	0.8	0.0	0.0	0.0	2.0	10.0	0.0	0.0	0.5	3.0			0.5			0.0	0.9	18.3	0.0				
24	1.49E-4	0.0	5.9	6.9	0.0	0.0	5.5	7.5	0.0	0.0	4.8	9.5	0.0	0.0	0.7	0.0	0.0	0.0	2.0	10.0	0.0	0.0	0.5	3.0			0.5			0.0	0.9	18.3	0.0				
25	9.17E-5	0.0	5.9	6.9	0.0	0.0	5.5	7.5	0.0	0.0	4.8	9.5	0.0	0.0	0.7	0.0	0.0	0.0	2.0	10.0	0.0	0.0	0.5	3.0			0.5			0.0	0.9	18.3	0.0				
26	6.79E-5	0.0	5.9	6.9	0.0	0.0	5.5	7.5	0.0	0.0	4.8	9.5	0.0	0.0	0.6	0.0	0.0	0.0	2.0	10.0	0.0	0.0	0.5	3.0			0.5			0.0	0.9	18.3	0.0				
27	4.02E-5	0.0	5.9	6.9	0.0	0.0	5.5	7.5	0.0	0.0	4.8	9.5	0.0	0.0	0.6	0.0	0.0	0.0	2.0	10.0	0.0	0.0	0.5	3.0			0.5			0.0	0.9	18.3	0.0				
28	2.26E-5	0.0	5.9	6.9	0.0	0.0	5.5	7.5	0.0	0.0	4.8	9.5	0.0	0.0	0.6	0.0	0.0	0.0	2.0	10.0	0.0	0.0	0.5	3.0			0.5			0.0	0.9	18.3	0.0				
29	1.37E-5	0.0	5.9	6.9	0.0	0.0	5.5	7.5	0.0	0.0	4.8	9.5	0.0	0.0	0.6	0.0	0.0	0.0	2.0	10.0	0.0	0.0	0.5	3.0			0.5			0.0	0.9	18.3	0.0				
30	8.32E-6	0.0	5.9	6.9	0.0	0.0	5.5	7.5	0.0	0.0	4.8	9.5	0.0	0.0	0.6	0.0	0.0	0.0	2.0	10.0	0.0	0.0	0.5	3.0			0.5			0.0	0.9	18.3	0.0				
31	4.00E-6	0.0	5.9	6.9	0.0	0.0	5.5	7.5	0.0	0.0	4.8	9.5	0.0	0.0	0.6	0.0	0.0	0.0	2.0	10.0	0.0	0.0	0.5	3.0			0.5			0.0	0.9	18.3	0.0				
32	5.40E-7	0.0	5.4	8.8	0.0	0.0	5.0	29.7	0.0	0.0	4.4	3.2	0.0	0.0	0.6	0.0	0.0	0.0	2.0	10.0	0.0	0.0	0.5	3.0			0.5			0.0	0.8	5.3	0.0				
33	1.00E-7	0.0	5.9	9.6	0.0	0.0	5.5	32.7	0.0	0.0	4.8	3.4	0.0	0.0	0.2	0.0	0.0	0.0	2.0	10.0	0.0	0.0	0.5	3.0			0.5			0.0	0.9	5.5	0.0				

AFCI1.1 Relative Standard Deviations (%)

		Si30				N15				Pb204				Pb206				Pb207				Pb208				Bi209				B10				B11			
Gr	E [MeV]	σ_{inel}	σ_{el}	σ_{capt}	$\sigma_{n,2n}$	σ_{inel}	σ_{el}	σ_{capt}	$\sigma_{n,2n}$	σ_{inel}	σ_{el}	σ_{capt}	$\sigma_{n,2n}$	σ_{inel}	σ_{el}	σ_{capt}	$\sigma_{n,2n}$	σ_{inel}	σ_{el}	σ_{capt}	$\sigma_{n,2n}$	σ_{inel}	σ_{el}	σ_{capt}	$\sigma_{n,2n}$	σ_{inel}	σ_{el}	σ_{capt}	$\sigma_{n,2n}$	σ_{inel}	σ_{el}	σ_{capt}	$\sigma_{n,2n}$	σ_{inel}	σ_{el}	σ_{capt}	$\sigma_{n,2n}$
1	1.96E+1					47.4	18.8	80.0	41.6	35.5	3.2	90.7	6.3	42.0	3.2	86.1	5.3	50.4	3.2	87.7	4.7	53.3	3.2	82.9	4.7	59.6	3.2	82.9	5.6	17.4	6.1	0.9		6.1	13.5	64.5	29.9
2	1.00E+1					50.0	25.4	80.0	0.0	3.4	14.8	77.3	10.6	3.6	14.9	86.7	12.6	4.8	14.8	87.3	17.1	4.7	14.7	70.2	11.9	4.2	14.8	73.4	9.4	27.7	7.5	1.2		5.0	3.4	50.0	0.0
3	6.07E+0					10.6	1.7	75.9	0.0	5.0	9.9	54.0	0.0	4.6	9.7	56.9	0.0	4.8	9.4	51.2	0.0	6.9	11.1	36.9	0.0	4.0	9.0	38.7	0.0	48.3	4.7	0.8		4.0	1.4	40.4	0.0
4	3.68E+0					0.0	1.8	80.0	0.0	22.5	6.1	40.0	0.0	23.1	5.3	40.2	0.0	24.3	3.8	36.2	0.0	11.7	5.5	25.7	0.0	17.0	4.0	28.5	0.0	100.0	6.1	1.2		5.9	0.9	50.0	0.0
5	2.23E+0					0.0	2.0	80.0	0.0	28.0	13.0	30.8	0.0	29.9	11.3	30.8	0.0	32.6	10.4	27.9	0.0	0.0	4.9	20.2	0.0	24.3	5.0	23.8	0.0	100.0	3.3	0.9		0.0	1.0	50.0	0.0
6	1.35E+0					0.0	2.3	63.2	0.0	12.1	9.2	17.8	0.0	18.4	8.6	22.9	0.0	11.6	8.8	24.8	0.0	0.0	6.6	24.2	0.0	12.7	4.7	21.2	0.0	100.0	2.7	0.7		0.0	0.9	37.5	0.0
7	8.21E-1					0.0	4.0	50.0	0.0	0.0	3.1	13.5	0.0	2.2	2.6	19.0	0.0	31.4	2.4	20.6	0.0	0.0	2.5	25.2	0.0	0.0	4.1	20.4	0.0	100.0	1.4	0.9		0.0	1.0	30.0	0.0
8	4.98E-1					0.0	4.0	50.0	0.0	0.0	4.8	18.2	0.0	0.0	4.3	18.5	0.0	0.0	4.0	18.5	0.0	0.0	3.7	17.1	0.0	0.0	2.5	20.0	0.0	0.0	1.2	0.9		0.0	2.0	30.0	0.0
9	3.02E-1					0.0	4.0	50.0	0.0	0.0	8.6	25.2	0.0	0.0	8.2	18.5	0.0	0.0	8.0	19.0	0.0	0.0	7.7	18.7	0.0	0.0	6.0	20.6	0.0	0.0	1.2	1.0		0.0	2.0	30.0	0.0
10	1.83E-1					0.0	4.0	50.0	0.0	0.0	15.3	32.7	0.0	0.0	15.0	23.6	0.0	0.0	14.7	20.3	0.0	0.0	14.5	53.4	0.0	0.0	12.8	21.1	0.0	0.0	1.3	1.0		0.0	2.0	30.0	0.0
11	1.11E-1					0.0	3.6	50.0	0.0	0.0	18.7	32.4	0.0	0.0	18.2	28.9	0.0	0.0	18.0	19.5	0.0	0.0	17.7	25.6	0.0	0.0	16.0	20.7	0.0	0.0	1.5	0.8		0.0	1.2	52.1	0.0
12	6.74E-2					0.0	4.0	50.0	0.0	0.0	25.4	21.9	0.0	0.0	24.7	35.9	0.0	0.0	24.3	19.5	0.0	0.0	23.9	18.7	0.0	0.0	22.1	21.2	0.0	0.0	1.7	0.8		0.0	1.0	41.7	0.0
13	4.09E-2					0.0	4.0	50.0	0.0	0.0	32.4	9.9	0.0	0.0	31.1	32.6	0.0	0.0	30.6	19.3	0.0	0.0	30.1	19.3	0.0	0.0	28.0	20.9	0.0	0.0	2.0	0.7		0.0	1.0	30.0	0.0
14	2.48E-2					0.0	4.0	50.0	0.0	0.0	36.5	9.5	0.0	0.0	34.9	24.9	0.0	0.0	34.4	19.1	0.0	0.0	33.8	22.5	0.0	0.0	31.4	19.7	0.0	0.0	2.0	0.7		0.0	1.0	30.0	0.0
15	1.50E-2					0.0	4.0	50.0	0.0	0.0	40.8	10.6	0.0	0.0	38.8	18.9	0.0	0.0	38.2	18.8	0.0	0.0	37.5	28.8	0.0	0.0	34.8	18.7	0.0	0.0	2.0	0.7		0.0	1.0	34.1	0.0
16	9.12E-3					0.0	4.0	50.0	0.0	0.0	45.7	9.9	0.0	0.0	43.4	17.5	0.0	0.0	42.6	18.5	0.0	0.0	41.8	29.9	0.0	0.0	38.8	19.4	0.0	0.0	2.0	0.7		0.0	1.0	60.0	0.0
17	5.53E-3					0.0	4.0	50.0	0.0	0.0	11.7	25.1	0.0	0.0	11.2	10.0	0.0	0.0	10.9	19.4	0.0	0.0	10.7	53.1	0.0	0.0	9.9	38.1	0.0	0.0	2.0	0.7		0.0	1.0	60.0	0.0
18	3.35E-3					0.0	4.0	50.0	0.0	0.0	0.0	33.0	0.0	0.0	1.8	11.8	0.0	0.0	0.0	25.0	0.0	0.0	1.3	69.7	0.0	0.0	0.1	50.0	0.0	0.0	2.0	0.7		0.0	1.0	60.0	0.0
19	2.03E-3					0.0	4.0	50.0	0.0	0.0	0.0	33.0	0.0	0.0	1.8	11.8	0.0	0.0	0.0	25.0	0.0	0.0	1.3	69.7	0.0	0.0	0.1	50.0	0.0	0.0	2.0	0.7		0.0	1.0	60.0	0.0
20	1.23E-3					0.0	4.0	50.0	0.0	0.0	0.0	33.0	0.0	0.0	1.8	11.8	0.0	0.0	0.0	25.0	0.0	0.0	1.3	69.7	0.0	0.0	0.1	50.0	0.0	0.0	2.0	0.7		0.0	0.9	60.0	0.0
21	7.49E-4					0.0	4.0	50.0	0.0	0.0	0.0	33.0	0.0	0.0	1.8	11.8	0.0	0.0	0.0	25.0	0.0	0.0	1.3	69.7	0.0	0.0	0.1	50.0	0.0	0.0	2.0	0.7		0.0	0.8	60.0	0.0
22	4.54E-4					0.0	4.0	50.0	0.0	0.0	0.0	33.0	0.0	0.0	1.8	11.8	0.0	0.0	0.0	25.0	0.0	0.0	1.3	69.7	0.0	0.0	0.1	50.0	0.0	0.0	2.0	0.7		0.0	0.8	60.0	0.0
23	3.04E-4					0.0	4.0	50.0	0.0	0.0	0.0	33.0	0.0	0.0	1.8	11.8	0.0	0.0	0.0	25.0	0.0	0.0	1.3	69.7	0.0	0.0	0.1	50.0	0.0	0.0	2.0	0.7		0.0	0.8	60.0	0.0
24	1.49E-4					0.0	4.0	43.3	0.0	0.0	0.0	33.0	0.0	0.0	1.8	11.8	0.0	0.0	0.0	25.0	0.0	0.0	1.3	69.7	0.0	0.0	0.1	50.0	0.0	0.0	2.0	0.7		0.0	0.8	60.0	0.0
25	9.17E-5					0.0	4.0	30.0	0.0	0.0	0.0	33.0	0.0	0.0	1.8	11.8	0.0	0.0	0.0	25.0	0.0	0.0	1.3	69.7	0.0	0.0	0.1	50.0	0.0	0.0	2.0	0.7		0.0	0.8	60.0	0.0
26	6.79E-5					0.0	4.0	30.0	0.0	0.0	0.0	33.0	0.0	0.0	1.8	11.8	0.0	0.0	0.0	25.0	0.0	0.0	1.3	69.7	0.0	0.0	0.1	50.0	0.0	0.0	2.0	0.7		0.0	0.8	60.0	0.0
27	4.02E-5					0.0	4.0	30.0	0.0	0.0	0.0	33.0	0.0	0.0	1.8	11.8	0.0	0.0	0.0	25.0	0.0	0.0	1.3	69.7	0.0	0.0	0.1	50.0	0.0	0.0	2.0	0.7		0.0	0.8	60.0	0.0
28	2.26E-5					0.0	4.0	30.0	0.0	0.0	0.0	33.0	0.0	0.0	1.8	11.8	0.0	0.0	0.0	25.0	0.0	0.0	1.3	69.7	0.0	0.0	0.1	50.0	0.0	0.0	2.0	0.7		0.0	0.8	60.0	0.0
29	1.37E-5					0.0	4.0	30.0	0.0	0.0	0.0	33.0	0.0	0.0	1.8	11.8	0.0	0.0	0.0	25.0	0.0	0.0	1.3	69.7	0.0	0.0	0.1	50.0	0.0	0.0	2.0	0.7		0.0	0.8	60.0	0.0
30	8.32E-6					0.0	4.0	30.0	0.0	0.0	0.0	33.0	0.0	0.0	1.8	11.8	0.0	0.0	0.0	25.0	0.0	0.0	1.3	69.7	0.0	0.0	0.1	50.0	0.0	0.0	2.0	0.7		0.0	0.8	60.0	0.0
31	4.00E-6					0.0	4.0	30.0	0.0	0.0	0.0	33.0	0.0	0.0	1.8	11.8	0.0	0.0	0.0	25.0	0.0	0.0	1.3	69.7	0.0	0.0	0.1	50.0	0.0	0.0	2.0	0.7		0.0	0.8	60.0	0.0
32	5.40E-7					0.0	4.0	30.0	0.0	0.0	0.0	30.2	0.0	0.0	1.6	5.3	0.0	0.0	0.0	9.4	0.0	0.0	1.2	10.1	0.0	0.0	0.1	5.3	0.0	0.0	2.0	0.7		0.0	0.8	60.0	0.0
33	1.00E-7					0.0	4.0	30.0	0.0	0.0	0.0	33.0	0.0	0.0	1.8	5.7	0.0	0.0	0.0	10.0	0.0	0.0	1.3	8.7	0.0	0.0	0.1	3.0	0.0	0.0	2.0	0.7		0.0	0.8	60.0	0.0

AFCI1.1 Relative Standard Deviations (%)

		Mo92				Mo94				Mo95				Mo96				Mo97				Mo98				Mo100				Mn55				H			
Gr	E [MeV]	σ_{inel}	σ_{el}	σ_{capt}	$\sigma_{n,2n}$	σ_{inel}	σ_{el}	σ_{capt}	$\sigma_{n,2n}$	σ_{inel}	σ_{el}	σ_{capt}	$\sigma_{n,2n}$	σ_{inel}	σ_{el}	σ_{capt}	$\sigma_{n,2n}$	σ_{inel}	σ_{el}	σ_{capt}	$\sigma_{n,2n}$	σ_{inel}	σ_{el}	σ_{capt}	$\sigma_{n,2n}$	σ_{inel}	σ_{el}	σ_{capt}	$\sigma_{n,2n}$	σ_{inel}	σ_{el}	σ_{capt}	$\sigma_{n,2n}$	σ_{inel}	σ_{el}	σ_{capt}	$\sigma_{n,2n}$
1	1.96E+1	21.0	6.6	67.7	18.8	9.8	6.6	68.3	13.9	15.5	6.6	62.5	9.2	17.0	6.6	59.3	10.2	21.8	6.6	56.9	7.0	24.3	6.6	52.2	7.2	31.9	6.6	53.0	5.3	8.0	10.1	42.2	11.0		1.6	16.5	
2	1.00E+1	4.7	6.6	52.6	0.0	4.2	6.7	49.8	2.8	4.2	6.7	52.8	10.8	4.1	6.7	41.7	9.5	4.4	6.7	47.4	15.4	4.1	6.7	31.6	6.9	4.1	6.7	28.8	8.8	4.0	6.9	39.2	0.0		2.6	28.5	
3	6.07E+0	3.0	3.2	35.2	0.0	3.4	2.7	33.0	0.0	3.6	2.5	30.3	0.0	3.6	2.6	26.9	0.0	3.7	2.5	25.7	0.0	3.7	2.5	17.7	0.0	3.8	2.5	18.4	0.0	3.1	8.8	18.1	0.0		2.2	40.3	
4	3.68E+0	3.4	11.7	28.2	0.0	5.3	15.3	28.1	0.0	5.9	17.8	26.9	0.0	6.8	16.4	21.5	0.0	7.3	18.3	20.3	0.0	7.9	16.5	11.6	0.0	9.2	16.8	11.9	0.0	4.1	8.0	14.7	0.0		1.8	48.8	
5	2.23E+0	13.7	15.2	22.0	0.0	3.6	17.5	24.6	0.0	3.2	20.8	22.8	0.0	4.1	18.6	18.9	0.0	4.7	21.4	16.6	0.0	6.2	18.1	10.8	0.0	8.0	18.7	10.8	0.0	3.7	5.5	12.9	0.0		1.4	49.0	
6	1.35E+0	0.0	13.8	20.6	0.0	14.2	12.8	21.2	0.0	3.8	14.2	20.0	0.0	11.1	12.1	17.2	0.0	3.7	13.8	14.1	0.0	5.7	11.6	10.5	0.0	7.5	11.8	11.0	0.0	5.9	10.1	11.9	0.0		1.2	44.7	
7	8.21E-1	0.0	11.9	19.9	0.0	0.0	10.2	18.7	0.0	7.4	9.6	18.2	0.0	2.6	8.3	15.3	0.0	18.2	7.4	13.2	0.0	9.0	6.6	10.5	0.0	11.6	5.2	9.5	0.0	5.8	19.0	11.7	0.0		1.0	36.1	
8	4.98E-1	0.0	12.6	19.2	0.0	0.0	10.6	18.2	0.0	26.0	9.4	18.3	0.0	0.0	8.5	15.0	0.0	3.1	7.6	13.3	0.0	0.0	6.7	10.5	0.0	0.0	5.8	10.1	0.0	6.4	19.5	11.8	0.0		0.5	7.3	
9	3.02E-1	0.0	13.4	19.4	0.0	0.0	11.4	18.4	0.0	40.3	10.4	18.9	0.0	0.0	9.3	14.9	0.0	0.0	8.3	13.5	0.0	0.0	7.3	10.1	0.0	0.0	6.2	9.7	0.0	12.3	17.3	11.9	0.0		0.5	7.3	
10	1.83E-1	0.0	13.6	21.3	0.0	0.0	12.0	20.5	0.0	0.0	11.2	19.5	0.0	0.0	10.1	15.9	0.0	0.0	9.1	13.9	0.0	0.0	8.1	9.8	0.0	0.0	6.5	9.5	0.0	38.1	9.6	9.6	0.0		0.5	7.3	
11	1.11E-1	0.0	12.7	22.1	0.0	0.0	11.4	21.2	0.0	0.0	10.7	19.3	0.0	0.0	9.7	16.3	0.0	0.0	8.9	14.0	0.0	0.0	7.9	9.7	0.0	0.0	6.4	9.2	0.0	0.0	6.3	8.0	0.0		0.3	3.4	
12	6.74E-2	0.0	9.7	23.8	0.0	0.0	9.1	22.4	0.0	0.0	8.6	18.8	0.0	0.0	8.0	17.2	0.0	0.0	7.4	14.5	0.0	0.0	6.8	10.1	0.0	0.0	5.6	9.5	0.0	0.0	5.1	8.0	0.0		0.3	2.6	
13	4.09E-2	0.0	5.8	23.7	0.0	0.0	5.6	21.9	0.0	0.0	5.4	18.5	0.0	0.0	5.3	17.9	0.0	0.0	4.9	15.1	0.0	0.0	4.7	11.2	0.0	0.0	4.3	10.6	0.0	0.0	5.9	6.3	0.0		0.3	2.6	
14	2.48E-2	0.0	4.0	23.2	0.0	0.0	4.0	21.8	0.0	0.0	3.9	18.6	0.0	0.0	4.0	18.3	0.0	0.0	3.9	15.8	0.0	0.0	3.9	12.5	0.0	0.0	3.9	11.6	0.0	0.0	6.0	8.0	0.0		0.3	2.6	
15	1.50E-2	0.0	3.3	23.4	0.0	0.0	3.4	22.3	0.0	0.0	3.7	19.0	0.0	0.0	3.4	19.1	0.0	0.0	3.9	16.7	0.0	0.0	3.6	14.2	0.0	0.0	3.8	12.8	0.0	0.0	6.2	8.0	0.0		0.3	2.6	
16	9.12E-3	0.0	4.3	24.2	0.0	0.0	4.2	22.7	0.0	0.0	5.0	19.3	0.0	0.0	4.1	19.5	0.0	0.0	5.1	17.3	0.0	0.0	4.0	15.1	0.0	0.0	4.2	13.3	0.0	0.0	5.7	5.1	0.0		0.3	2.6	
17	5.53E-3	0.0	3.2	8.3	0.0	0.0	1.9	11.4	0.0	0.0	4.6	6.6	0.0	0.0	1.8	14.0	0.0	0.0	2.1	14.8	0.0	0.0	2.0	5.1	0.0	0.0	8.4	4.4	0.0	0.0	5.2	4.1	0.0		0.3	2.6	
18	3.35E-3	0.0	3.9	7.6	0.0	0.0	2.1	13.2	0.0	0.0	5.8	6.1	0.0	0.0	1.9	17.4	0.0	0.0	2.1	18.8	0.0	0.0	2.2	4.5	0.0	0.0	11.1	3.9	0.0	0.0	3.0	23.6	0.0		0.3	2.6	
19	2.03E-3	0.0	3.9	7.6	0.0	0.0	2.1	13.2	0.0	0.0	5.8	6.1	0.0	0.0	1.9	17.4	0.0	0.0	2.1	18.8	0.0	0.0	2.2	4.5	0.0	0.0	11.1	3.9	0.0	0.0	8.4	15.3	0.0		0.3	2.6	
20	1.23E-3	0.0	3.9	7.6	0.0	0.0	2.1	13.2	0.0	0.0	5.8	6.1	0.0	0.0	1.9	17.4	0.0	0.0	2.1	18.8	0.0	0.0	2.2	4.5	0.0	0.0	11.1	3.9	0.0	0.0	3.9	21.3	0.0		0.3	2.6	
21	7.49E-4	0.0	3.9	7.6	0.0	0.0	2.1	13.2	0.0	0.0	5.8	6.1	0.0	0.0	1.9	17.4	0.0	0.0	2.1	18.8	0.0	0.0	2.2	4.5	0.0	0.0	11.1	3.9	0.0	0.0	3.0	2.3	0.0		0.3	2.6	
22	4.54E-4	0.0	3.9	7.6	0.0	0.0	2.1	13.2	0.0	0.0	5.8	6.1	0.0	0.0	1.9	17.4	0.0	0.0	2.1	18.8	0.0	0.0	2.2	4.5	0.0	0.0	11.1	3.9	0.0	0.0	3.9	5.2	0.0		0.3	2.6	
23	3.04E-4	0.0	3.9	7.6	0.0	0.0	2.1	13.2	0.0	0.0	5.8	6.1	0.0	0.0	1.9	17.4	0.0	0.0	2.1	18.8	0.0	0.0	2.2	4.5	0.0	0.0	11.1	3.9	0.0	0.0	4.7	5.2	0.0		0.3	2.6	
24	1.49E-4	0.0	3.9	7.6	0.0	0.0	2.1	13.2	0.0	0.0	5.8	6.1	0.0	0.0	1.9	17.4	0.0	0.0	2.1	18.8	0.0	0.0	2.2	4.5	0.0	0.0	11.1	3.9	0.0	0.0	3.2	2.2	0.0		0.3	2.6	
25	9.17E-5	0.0	3.9	7.6	0.0	0.0	2.1	13.2	0.0	0.0	5.8	6.1	0.0	0.0	1.9	17.4	0.0	0.0	2.1	18.8	0.0	0.0	2.2	4.5	0.0	0.0	11.1	3.9	0.0	0.0	3.2	1.6	0.0		0.3	2.6	
26	6.79E-5	0.0	3.9	7.6	0.0	0.0	2.1	13.2	0.0	0.0	5.8	6.1	0.0	0.0	1.9	17.4	0.0	0.0	2.1	18.8	0.0	0.0	2.2	4.5	0.0	0.0	11.1	3.9	0.0	0.0	3.4	1.3	0.0		0.3	2.6	
27	4.02E-5	0.0	3.9	7.6	0.0	0.0	2.1	13.2	0.0	0.0	5.8	6.1	0.0	0.0	1.9	17.4	0.0	0.0	2.1	18.8	0.0	0.0	2.2	4.5	0.0	0.0	11.1	3.9	0.0	0.0	3.6	1.0	0.0		0.3	2.6	
28	2.26E-5	0.0	3.9	7.6	0.0	0.0	2.1	13.2	0.0	0.0	5.8	6.1	0.0	0.0	1.9	17.4	0.0	0.0	2.1	18.8	0.0	0.0	2.2	4.5	0.0	0.0	11.1	3.9	0.0	0.0	3.8	0.9	0.0		0.3	2.6	
29	1.37E-5	0.0	3.9	7.6	0.0	0.0	2.1	13.2	0.0	0.0	5.8	6.1	0.0	0.0	1.9	17.4	0.0	0.0	2.1	18.8	0.0	0.0	2.2	4.5	0.0	0.0	11.1	3.9	0.0	0.0	4.0	0.8	0.0		0.3	2.6	
30	8.32E-6	0.0	3.9	7.6	0.0	0.0	2.1	13.2	0.0	0.0	5.8	6.1	0.0	0.0	1.9	17.4	0.0	0.0	2.1	18.8	0.0	0.0	2.2	4.5	0.0	0.0	11.1	3.9	0.0	0.0	4.1	0.8	0.0		0.3	2.6	
31	4.00E-6	0.0	3.9	7.6	0.0	0.0	2.1	13.2	0.0	0.0	5.8	6.1	0.0	0.0	1.9	17.4	0.0	0.0	2.1	18.8	0.0	0.0	2.2	4.5	0.0	0.0	11.1	3.9	0.0	0.0	4.2	0.8	0.0		0.3	2.6	
32	5.40E-7	0.0	3.6	53.4	0.0	0.0	1.9	16.1	0.0	0.0	5.3	2.1	0.0	0.0	1.7	33.2	0.0	0.0	1.9	8.4	0.0	0.0	2.0	4.2	0.0	0.0	10.1	1.4	0.0	0.0	4.2	0.8	0.0		0.3	2.6	
33	1.00E-7	0.0	3.9	58.8	0.0	0.0	2.1	17.6	0.0	0.0	5.8	2.2	0.0	0.0	1.9	36.5	0.0	0.0	2.1	9.1	0.0	0.0	2.2	4.6	0.0	0.0	11.1	1.5	0.0	0.0	2.0	0.8	0.0		0.3	2.6	

BOLNA Variance Matrix (Fissile Isotopes): U235, U238 and Pu239 (with nu-bar corrected) from ORNL; Cm246 from ANL; BNL Most Recent Evaluations

		Th232						U233						U234						U235						U236						U238						Cm245		Cm246	
Gr	E [MeV]	ν	σ_f	σ_{inel}	σ_{el}	σ_{capt}	$\sigma_{n,2n}$	ν	σ_f	σ_{inel}	σ_{el}	σ_{capt}	$\sigma_{n,2n}$	ν	σ_f	σ_{inel}	σ_{el}	σ_{capt}	$\sigma_{n,2n}$	ν	σ_f	σ_{inel}	σ_{el}	σ_{capt}	$\sigma_{n,2n}$	ν	σ_f	σ_{inel}	σ_{el}	σ_{capt}	$\sigma_{n,2n}$	ν	σ_f	σ_{inel}	σ_{el}	σ_{capt}	$\sigma_{n,2n}$	ν	σ_f	ν	σ_f
1	19.6		2.11	4.85	1.39	17.4	10	0.84	3.98	10.79	2.51	57.01	18.44		12.9	32.41	1.6	56.74	34.85	0.89	0.5	21.73	9.6	61.13	20.35		14.64	32.82	1.01	48.32	18.49	1.26	0.57	29.28	13.3	21.41	5.32	9.64	18.11	5	40
2	6.07		2.1	3.77	1.22	25.67	0	0.25	6.44	4.48	4.02	61.4	0		23.52	29.45	2.06	26.11	0	0.69	0.47	6.79	4.15	36.99	8.86		26.9	7.07	0.89	47.92	0	1.17	0.55	19.75	14.5	13.5	0	2.91	30.96	5	40
3	2.23		2.1	3.94	4	3.41	0	0.22	7.26	31.58	3	38.88	0		13.83	21.15	4.88	15.91	0	0.56	0.48	6.41	4.54	19.14	0		28.88	15.45	3.84	36	0	1.34	0.6	20.58	18.7	6.05	0	2.85	44.17	5	40
4	1.35		2.15	4.41	1.8	1.89	0	0.18	7.26	40.46	1.88	30.35	0		37.97	14.61	2	11.99	0	0.55	0.46	7.55	3.56	16.1	0		31.97	37.2	0.65	15.1	0	1.3	2.91	11.56	5.35	2.27	0	2.95	49.43	5	40
5	4.98e-1		95.17	12.58	1.65	1.24	0	0.18	7.26	14.29	2.49	10.62	0		37.97	25.97	2.75	13.98	0	0.61	0.5	11.32	2.87	22.13	0		31.97	38.02	3.34	14.25	0	2	5.26	4.19	1.92	1.41	0	3.01	37.22	5	40
6	1.83e-1		46.92	23.6	1.18	1.14	0	0.19	7.26	0	3.16	8.94	0		31.61	31.49	1.6	12.92	0	0.66	0.53	15.01	2.38	30.64	0		16.47	34.14	1.43	10.53	0	2	5.14	10.96	2.12	1.67	0	3.01	47.45	5	40
7	6.74e-2		0	0	0.48	1.4	0	0.18	7.26	0	4.06	13.29	0		22.84	0	5.3	22.72	0	0.66	0.5	14.72	2.63	32.89	0		7.62	0	0.76	7.84	0	2	5.14	11.12	3.76	1.64	0	3.01	26.53	5	40
8	2.48e-2		0	0	0.31	1.46	0	0.21	7.26	0	4.19	13.52	0		19.41	0	4.86	19.16	0	0.66	0.58	50	3.24	34.03	0		6.68	0	0.46	7.04	0	2	50.31	0	1.52	9.43	0	3.01	13.47	5	40
9	9.12e-3		0	0	0.48	2.8	0	0.18	7.26	0	9.04	14.19	0		13.69	0	3.58	11.53	0	0.66	3.18	48.48	5.16	33.92	0		3.5	0	0.46	3.89	0	2	214.6	0	0.67	3.11	0	3.01	13.18	5	40
10	2.04e-3		0	0	1.53	3.35	0	0.3	10.35	0	6.17	7.92	0		14.97	0	6.94	1.86	0	0.66	0.77	0	2.07	4.56	0		3.3	0	2.26	1.24	0	2	9.69	0	0.72	2.1	0	3.01	13.03	5	40
11	4.54e-4		0	0	3.82	2.21	0	0.25	4.49	0	6	4.28	0		5.11	0	23.1	2.42	0	0.66	0.44	0	1.33	0.63	0		1.37	0	5.96	1.2	0	2	2.38	0	2.39	1.71	0	3.01	8.66	5	40
12	2.26e-5		0	0	1.53	3.28	0	0.14	2.23	0	5.61	3.02	0		17.49	0	17.1	1.38	0	0.69	0.62	0	1.52	0.65	0		2.57	0	2.35	0.44	0	2	5.82	0	5.97	1.03	0	3.01	3.89	5	40
13	4.00e-6		0	0	0.86	1.9	0	0.13	5.03	0	4.16	9.06	0		21.85	0	2.32	9.34	0	0.69	0.4	0	1.78	1.36	0		15.79	0	4.77	3.47	0	2	51.89	0	0.82	2.45	0	3.01	6.21	5	40
14	5.40e-7		0	0	0.81	1.31	0	0.13	1.46	0	2.14	2.59	0		24.67	0	2.02	3.08	0	0.71	0.3	0	3.42	1.55	0		19.58	0	4.91	3.44	0	2	55.19	0	0.92	1.66	0	3.01	5.12	5	40
15	1.00e-7		0	0	0.79	1.25	0	0.13	1.03	0	5.34	4.23	0		24.81	0	1.98	2.93	0	0.71	0.25	0	4.9	1.73	0		19.86	0	4.89	3.58	0	2	55.42	0	0.94	1.64	0	3.01	3.82	5	40

		Np237						Pu238						Pu239						Pu240						Pu241						Pu242						Cm245		Cm246	
Gr	E [MeV]	ν	σ_f	σ_{inel}	σ_{el}	σ_{capt}	$\sigma_{n,2n}$	ν	σ_f	σ_{inel}	σ_{el}	σ_{capt}	$\sigma_{n,2n}$	ν	σ_f	σ_{inel}	σ_{el}	σ_{capt}	$\sigma_{n,2n}$	ν	σ_f	σ_{inel}	σ_{el}	σ_{capt}	$\sigma_{n,2n}$	ν	σ_f	σ_{inel}	σ_{el}	σ_{capt}	$\sigma_{n,2n}$	ν	σ_f	σ_{inel}	σ_{el}	σ_{capt}	$\sigma_{n,2n}$	σ_{inel}	σ_{el}	σ_{inel}	σ_{el}
1	19.6	1.94	5.58	42.85	2.39	41.47	9.51	2.17	25.2	24.56	0.92	50.91	58.36	0.5	0.63	23.06	6.94	37.08	8.53	1.09	9.56	37.11	2.34	52.16	54.09	0.45	24.09	25.15	4.45	55.39	39.68	0.9	37.24	26.25	0.8	78.47	51.7	85.1	4.81	50	10
2	6.07	2.19	7.9	6.54	3.7	36.48	0	5.3	20.53	5.69	0.82	28.81	0	0.17	0.69	22.18	9.36	37.8	4.34	2.65	4.8	9.65	5.19	32.47	0	0.27	14.16	19.47	3.74	54.1	33.43	2.21	15.1	3.27	0.51	22.72	0	13.01	7.25	50	10
3	2.23	1.47	7.63	22.35	4.12	17.62	0	5.39	33.82	28.65	6.24	21.55	0	0.17	0.89	19	10.3	26.56	0	2.69	5.65	10.09	5.42	19.74	0	0.27	21.26	18.38	4.39	38.41	0	2.24	21.42	29.28	3.34	16.12	0	40.92	7.45	50	10
4	1.35	0.66	5.82	28.6	3.62	10.34	0	7	17.11	44.92	6	9.74	0	0.12	0.64	29.01	10.2	18.18	0	3.74	5.82	7.79	4.76	16.28	0	0.28	16.62	19.78	5.38	31.66	0	3.11	18.98	59.78	3.68	12.48	0	54.47	4.75	50	10
5	4.98e-1	0.6	5.79	44.99	3.47	5.79	0	7	17.11	43.09	9.52	12.31	0	0.19	0.68	34.01	5.66	11.55	0	4.81	3.91	9.78	5.53	14.29	0	0.29	13.54	20.92	5.16	20.51	0	4.01	18.63	37.99	1.73	24.05	0	81.84	9.94	50	10
6	1.83e-1	0.6	5.79	54.97	4.07	2.08	0	6.5	8.78	20.81	4.1	16.62	0	0.54	0.85	46.06	3.98	9.04	0	4.81	5.7	42.55	5.76	13.79	0	0.29	19.87	30.09	4.69	11.29	0	4.01	32.07	19	1.78	32.28	0	94.96	15	50	10
7	6.74e-2	0.6	5.79	36.27	4.37	6.66	0	6	11.91	0	5.26	22.14	0	0.58	0.72	40.04	2.37	10.12	0	4.81	7.45	48.58	5.8	11.31	0	0.29	8.74	37.51	3.92	4.43	0	4.01	33.06	0	1.59	37.26	0	94.77	13.67	55	10
8	2.48e-2	0.6	5.79	0	4.48	5.25	0	5.5	11.2	0	4.85	18.03	0	0.58	0.96	28.52	2.16	7.39	0	4.81	7.45	0	5.05	10.21	0	0.29	11.29	0	9.14	7.79	0	4.01	33.19	0	1.42	38.63	0	0	18.14	0	10
9	9.12e-3	0.6	5.79	0	3.93	5.25	0	5	7.47	0	4.43	9.6	0	0.65	0.62	8.64	4.04	15.46	0	4.81	8.01	0	2.08	4.35	0	0.29	10.44	0	9.29	7.73	0	4.01	13.23	0	1.59	38.45	0	0	18.23	0	10
10	2.04e-3	0.6	5.77	0	2.44	5.54	0	4.5	4.26	0	4.35	3.69	0	0.2	1.2	0	0.74	1.39	0	4.81	21.62	0	1.26	1.47	0	0.29	12.68	0	10.9	7.74	0	4.01	5.89	0	3.76	1.7	0	0	18.11	0	10
11	4.54e-4	0.6	7.54	0	2.41	1.7	0	4	8.09	0	20.0	4.66	0	0.2	1.24	0	1.2	1.25	0	4.81	4.72	0	1.64	1.63	0	0.29	19.38	0	10.8	7.43	0	4.01	1.96	0	2.29	2.23	0	0	15.1	0	10
12	2.26e-5	0.6	4.64	0	2.31	0.55	0	3.5	18.98	0	10.1	9.12	0	0.2	0.47	0	0.24	0.61	0	4.81	8.91	0	3.25	5.5	0	0.29	4.21	0	10.6	8.38	0	4.01	6.46	0	5.94	7.4	0	0	20.25	0	10
13	4.00e-6	0.6	5.58	0	2.23	0.7	0	3	4.57	0	5.79	3.71	0	0.2	1.43	0	0.3	1.22	0	4.81	1.22	0	0.48	0.44	0	0.29	26.83	0	11.4	6.37	0	4.01	7.6	0	4.68	3.78	0	0	21.78	0	10
14	5.40e-7	0.6	14.74	0	2.18	2.41	0	2.4	4.63	0	5.1	1.39	0	0.2	0.88	0	0.44	1.36	0	4.81	29.76	0	4.58	3.23	0	0.29	2.94	0	9.91	6.84	0	4.01	5.24	0	7.19	7.1	0	0	20.78	0	10
15	1.00e-7	0.6	4.55	0	2.03	1.55	0	2.4	4.87	0	4.69	1.41	0	0.2	1.11	0	0.68	1.6	0	4.81	48.46	0	5.64	4.79	0	0.29	3.27	0	11.3	3.59	0	4.01	5.09	0	6.99	6.89	0	0	19.44	0	10

		Am241						Am242m						Am243						Cm242						Cm243						Cm244						Cm245		Cm246	
Gr	E [MeV]	ν	σ_f	σ_{inel}	σ_{el}	σ_{capt}	$\sigma_{n,2n}$	ν	σ_f	σ_{inel}	σ_{el}	σ_{capt}	$\sigma_{n,2n}$	ν	σ_f	σ_{inel}	σ_{el}	σ_{capt}	$\sigma_{n,2n}$	ν	σ_f	σ_{inel}	σ_{el}	σ_{capt}	$\sigma_{n,2n}$	ν	σ_f	σ_{inel}	σ_{el}	σ_{capt}	$\sigma_{n,2n}$	ν	σ_f	σ_{inel}	σ_{el}	σ_{capt}	$\sigma_{n,2n}$	σ_{capt}	$\sigma_{n,2n}$	σ_{capt}	$\sigma_{n,2n}$
1	19.6	1.88	12.74	55.29	3.51	28.83	10.03	10.43	21.37	55.82	8.36	84.91	31.77	1.88	14.44	61.97	7.51	60.42	26.63	10.55	31.49	34.35	3.01	52.78	53.54	9.64	18.4	50.75	5.65	77.57	52.75	10.55	17.86	38.26	10.5	89.19	40.91	71.21	22.43	40	100
2	6.07	1.98	11.67	15.2	3.77	15.38	0	0.91	23.36	17.32	12.0	63.01	37.23	1.98	11.03	17.87	4.64	41.5	0	11.08	52.59	11.03	5.27	37.41	0	1.41	31.38	2.52	9.12	44.12	36.53	11.08	31.25	22.67	10.2	53.78	0	36.17	93.53	40	100
3	2.23	1.91	9.81	29.63	5.12	9.16	0	0.66	19.7	23.84	11.1	43.35	0	1.91	5.97	35.3	7.49	21.66	0	10.68	19.02	11.42	2.85	23.61	0	1.24	44.06	7.42	6.47	17.74	0	10.68	43.8	15.1	5.56	36.49	0	29.12	0	40	0
4	1.35	0.98	8.25	24.45	4.52	6.9	0	0.68	16.51	26.47	12.0	39.41	0	1.09	9.18	42.15	4.11	14.18	0	5.5	23.39	18	1.66	19.02	0	1.28	49.6	9.45	4.85	31.19	0	5.5	50.01	18.18	10.7	20.8	0	24.82	0	40	0
5	4.98e-1	1	8.29	23.03	5.5	5.29	0	0.7	16.57	27.1	13.6	29	0	1.2	9.62	40.98	5.9	8.92	0	5.6	66	27.19	1.71	18.18	0	1.31	37.25	11.78	10.7	29.72	0	5.6	36.53	29.09	9.33	22.54	0	19.32	0	40	0
6	1.83e-1	1	8.29	48.53	5.2	6.79	0	0.7	16.57	33.65	13.9	19.39	0	1.2	9.62	79.53	7.84	6.6	0	5.6	62.67	53.15	2.04	20.32	0	1.31	47.35	20.24	12.7	23.36	0	5.6	47.56	63.31	8.38	17.71	0	17.56	0	40	0
7	6.74e-2	1	7.39	51.78	4.81	7.96	0	0.7	14.43	31.15	12.7	18.01	0	1.2	7.12	80.77	4.41	4.57	0	5.6	28.15	31.73	2.34	22.36	0	1.31	26.48	27.75	11.6	18.18	0	5.6	26.26	59.72	9.21	17.43	0	10.5	0	40	0
8	2.48e-2	1	13.71	0	11.5	6.85	0	0.7	11.8	50	18.8	19.17	0	1.2	13.79	0	9.13	6.77	0	5.6	16.2	0	2.11	21.25	0	1.31	12.39	0	17.7	17.97	0	5.6	19.03	0	14.9	19.32	0	12.89	0	40	0
9	9.12e-3	1	13.51	0	12.3	6.66	0	0.7	12.36	0	19.3	20.23	0	1.2	13.54	0	9.6	6.64	0	5.6	20.95	0	28.2	18.67	0	1.31	12.21	0	18.0	18.38	0	5.6	11.92	0	14.0	12.14	0	12.49	0	40	0
10	2.04e-3	1	13.41	0	9.7	6.59	0	0.7	12.2	0	19.4	20.08	0	1.2	13.41	0	7.68	6.58	0	5.6	11.68	0	23.5	6.75	0	1.31	12.19	0	18.0	18.7	0	5.6	5.27	0	7.72	4.47	0	12.32	0	40	0
11	4.54e-4	1	8.08	0	14.5	3.67	0	0.7	10.39	0	16.6	11.39	0	1.2	9.64	0	8.96	2.31	0	5.6	9.32	0	12.6	4.55	0	1.31	8.04	0	15.5	14.52	0	5.6	5.7	0	3.61	4.6	0	9.6	0	40	0
12	2.26e-5	1	5.15	0	14.0	1.82	0	0.7	10.38	0	19.9	13.25	0	1.2	5.95	0	8.22	1.74	0	5.6	24.01	0	18.1	3.7	0	1.31	3.34	0	18.8	5.12	0	5.6	17.09	0	7.75	6.64	0	7.87	0	40	0
13	4.00e-6	1	6.72	0	14.2	5.54	0	0.7	7	0	20.6	13.57	0	1.2	4.81	0	7	3.43	0	5.6	35.58	0	19.8	32.51	0	1.31	6.44	0	19.5	7.99	0	5.6	21.99	0	6.62	11.79	0	11.79	0	40	0
14	5.40e-7	1	8.93	0	13.8	1.26	0	0.7	8.83	0	17.6	19.87	0	1.2	2.25	0	12.4	3.75	0	5.6	41.17	0	19.6	39.23	0	1.31	19.52	0	24.9	15.5	0	5.6	26.4	0	6.16	12.16	0	7.46	0	40	0
15	1.00e-7	1	3.02	0	13.0	1.8	0	0.7	8.06	0	21.7	19.6	0	1.2	2.12	0	11.4	3.58	0	5.6	42.55	0	19.6	40.77	0	1.31	10.53	0	23.4	16.38	0	5.6	27.18	0	6.12	12.51	0	8.39	0	40	0

BOLNA Variance Matrix (Structural Isotopes): Only Pb204, Pb206, Pb207, Pb208 from NRG; C, B10 and He4 from ANL; BNL Most Recent Evaluations

		Pb204				Pb206				Pb207				Pb208				Bi				Fe56				Fe57				Ni58				Cr52				Zr90				He4	
Gr	E [MeV]	σ_{inel}	σ_{el}	σ_{capt}	$\sigma_{n,2n}$	σ_{inel}	σ_{el}	σ_{capt}	$\sigma_{n,2n}$	σ_{inel}	σ_{el}	σ_{capt}	$\sigma_{n,2n}$	σ_{inel}	σ_{el}	σ_{capt}	$\sigma_{n,2n}$	σ_{inel}	σ_{el}	σ_{capt}	$\sigma_{n,2n}$	σ_{inel}	σ_{el}	σ_{capt}	$\sigma_{n,2n}$	σ_{inel}	σ_{el}	σ_{capt}	$\sigma_{n,2n}$	σ_{inel}	σ_{el}	σ_{capt}	$\sigma_{n,2n}$	σ_{inel}	σ_{el}	σ_{capt}	$\sigma_{n,2n}$	σ_{inel}	σ_{el}	σ_{capt}	$\sigma_{n,2n}$	σ_{inel}	σ_{el}
1	19.6	19.78	3.81	56.24	4.58	19.82	3.74	63.4	4.38	17.01	4	61.28	5.69	17.84	3.55	63.34	5.22	5.25	0.83	47.58	9.39	12.97	4.61	46.24	7.05	15.15	2.59	85.38	19.2	12.28	3.52	47.76	8.3	8.56	3.55	49.2	10.53	11.32	0.44	46.36	6.74	0	5
2	6.07	5.56	6.08	31.43	0	5.45	5.88	30.43	0	4.98	5.81	24.25	0	5.38	4.99	28.98	0	2.44	1.02	27.74	0	7.23	8.14	31.69	0	11.08	3.24	53.46	0	10.08	4.64	14.54	0	2.24	2.4	23.27	0	17.96	0.92	18.59	0	0	5
3	2.23	14.2	5.12	27.61	0	14.17	4.7	24.54	0	13.77	4.43	21.56	0	0	6.3	22.56	0	34.07	2.06	17.56	0	25.4	5.89	23.48	0	34.21	2.71	18.33	0	31.07	0.93	9.68	0	3.12	2.92	19.31	0	18.52	3.96	9.14	0	0	5
4	1.35	7.74	5.26	17.89	0	9.15	5.14	19.37	0	11.31	4.78	19.46	0	0	7.15	22.4	0	41.77	4.59	11.35	0	16.12	0.64	7.43	0	10.29	1.28	11.99	0	0	1.54	7.71	0	0	4.19	4.36	0	50	3.39	6.26	0	0	5
5	4.98e-1	0	2.81	14.07	0	0	2.74	15.94	0	0	2.44	16.41	0	0	4.88	21.28	0	0	2.22	8.32	0	0	1.71	4.02	0	8.54	2.39	11.14	0	0	2.68	2.65	0	0	5.21	5.51	0	0	2.77	5.16	0	0	5
6	1.83e-1	0	3.95	13.37	0	0	3.84	15.05	0	0	3.73	15.94	0	0	3.2	21.79	0	0	1.8	8.79	0	0	2.08	10.77	0	12.1	1.65	6.51	0	0	3.21	1.21	0	0	11.4	10.56	0	0	2.02	3.13	0	0	3
7	6.74e-2	0	6.63	13.38	0	0	6.51	14.65	0	0	6.35	15.96	0	0	5.57	21.98	0	0	1.88	6.05	0	0	2.05	13.19	0	0	2.81	6.6	0	0	3.05	3.44	0	0	12.6	5.45	0	0	3.09	5.2	0	0	3
8	2.48e-2	0	9.29	12.03	0	0	9.1	13.94	0	0	8.85	15.05	0	0	8.11	60.4	0	0	2.41	3.85	0	0	4.6	8.81	0	0	5.1	8.27	0	0	8.05	0.83	0	0	13.2	13.42	0	0	4.43	7.89	0	0	3
9	9.12e-3	0	12.7	12.47	0	0	12.4	12.8	0	0	12	14.27	0	0	11.0	182.3	0	0	1.82	0.71	0	0	3.98	8.56	0	0	2.5	4.64	0	0	3.61	2.82	0	0	10.2	12.97	0	0	5.93	6.96	0	0	3
10	2.04e-3	0	17.7	13.57	0	0	17.2	276.5	0	0	16.6	20.01	0	0	15.0	317.0	0	0	1.93	0.43	0	0	4.16	11.23	0	0	16.1	29.24	0	0	2.96	2.41	0	0	7.79	2.75	0	0	6.83	10.55	0	0	3
11	4.54e-4	0	11.4	8.31	0	0	11.0	8.66	0	0	10.69	8.6	0	0	9.61	13.94	0	0	1.85	1.47	0	0	4.28	11.25	0	0	8.48	10.69	0	0	2.77	2.4	0	0	7.37	2.7	0	0	6.73	5.95	0	0	3
12	2.26e-5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1.82	1.82	0	0	4.31	11.25	0	0	7.69	11.67	0	0	2.74	2.4	0	0	7.21	2.69	0	0	6.7	2.75	0	0	2
13	4.00e-6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1.8	1.86	0	0	4.31	11.25	0	0	7.65	11.73	0	0	2.73	2.4	0	0	7.22	2.68	0	0	6.7	2.56	0	0	2
14	5.40e-7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1.8	1.87	0	0	4.31	11.25	0	0	7.65	11.74	0	0	2.73	2.4	0	0	7.21	2.68	0	0	6.7	2.53	0	0	1
15	1.00e-7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1.78	1.87	0	0	4.21	9.4	0	0	7.48	10.79	0	0	2.67	2.21	0	0	7.05	2.24	0	0	6.7	2.52	0	0	1

		Zr91				Zr92				Zr94				Si				O				Na				H				Al				Gd155				Gd156				He4
Gr	E [MeV]	σ_{inel}	σ_{el}	σ_{capt}	$\sigma_{n,2n}$	σ_{inel}	σ_{el}	σ_{capt}	$\sigma_{n,2n}$	σ_{inel}	σ_{el}	σ_{capt}	$\sigma_{n,2n}$	σ_{inel}	σ_{el}	σ_{capt}	$\sigma_{n,2n}$	σ_{inel}	σ_{el}	σ_{capt}	$\sigma_{n,2n}$	σ_{inel}	σ_{el}	σ_{capt}	$\sigma_{n,2n}$	σ_{inel}	σ_{el}	σ_{capt}	$\sigma_{n,2n}$	σ_{inel}	σ_{el}	σ_{capt}	$\sigma_{n,2n}$	σ_{inel}	σ_{el}	σ_{capt}	$\sigma_{n,2n}$	σ_{inel}	σ_{el}	σ_{capt}	$\sigma_{n,2n}$	σ_{capt}
1	19.6	7.16	1.93	66.62	14.94	9.83	0.84	52.99	25.39	6.85	0.79	63.78	26.24	21.38	0.69	52.87	50	100	84.6	100	100	18.79	1.8	46.44	11.07		0.76	1.96		11.46	1.04	50.11	20	21.4	1.89	69.29	6.99	19.27	1.15	59.28	8.45	20
2	6.07	19.75	1.7	45.69	0	14.87	1.07	40.32	0	20.75	0.37	43.1	0	13.54	2.77	11.12	0	0	54.9	100	0	8.87	4.62	24.33	0		0.87	1.7		17.05	2.19	23.93	0	11.68	3.58	38.94	0	7.37	1.97	18.81	0	20
3	2.23	5.18	4.15	22.89	0	15.07	4.1	21.53	0	10.43	2.63	25.76	0	50	1.66	10.07	0	0	12.1	100	0	12.56	3.72	1.7	0		0.87	1.6		26.23	1.78	10.42	0	14.2	3.71	19.61	0	8.51	2	9.17	0	20
4	1.35	50	4.11	16.83	0	40.85	2.41	11.31	0	41.27	1.1	14.22	0	0	1.43	6.77	0	0	1.43	100	0	28	3.01	7.44	0		0.62	1.39		17.71	1.55	5.68	0	16.37	5.93	11.04	0	12.64	5.6	6.48	0	20
5	4.98e-1	0	4.54	13.03	0	0	2.16	7.55	0	0	1.08	10.11	0	0	1.08	3.86	0	0	1.68	81.81	0	50	3.31	6.81	0		0.7	1.25		0	1.98	10.24	0	24.81	4.49	7.4	0	22.89	6.12	5.44	0	20
6	1.83e-1	0	4.03	8.96	0	0	2.01	5.15	0	0	1.05	6.71	0	0	2.97	5.65	0	0	1.68	69.63	0	0	3.25	23.59	0		0.55	1.15		0	1.76	5.33	0	35.74	2.66	4.03	0	31.24	4.26	3.48	0	20
7	6.74e-2	0	5.47	12.21	0	0	3.02	3.42	0	0	2.63	4.62	0	0	4.3	11.19	0	0	2.36	47.27	0	0	2.38	6.79	0		0.5	1		0	2.49	5.48	0	0	3.1	3.99	0	0	2.92	3.7	0	20
8	2.48e-2	0	3.11	3.42	0	0	3.65	3.11	0	0	3.02	3.31	0	0	4.18	8.93	0	0	2.35	28.21	0	0	2.87	6.63	0		0.5	0.85		0	2.51	5.97	0	0	3.95	6.02	0	0	3.21	4.92	0	20
9	9.12e-3	0	2.92	2.66	0	0	1.94	4.13	0	0	2.9	5.54	0	0	3.62	8.71	0	0	2.24	12.1	0	0	3.23	1.18	0		0.5	0.71		0	0.98	5.25	0	0	4.65	7.35	0	0	3.94	6.97	0	20
10	2.04e-3	0	5.75	5.62	0	0	5.44	4.96	0	0	4.99	14.24	0	0	3.23	5.12	0	0	2.23	9.36	0	0	4.93	2.28	0		0.34	0.56		0	0.74	1.32	0	0	5.35	8.21	0	0	13.8	62.96	0	20
11	4.54e-4	0	5.89	5.58	0	0	5.38	27.61	0	0	4.78	3.5	0	0	3.03	3.57	0	0	2.22	10.42	0	0	4.76	2.3	0		0.1	0.5		0	0.63	1.3	0	0	3.97	4.51	0	0	14.6	22.6	0	20
12	2.26e-5	0	5.91	10.2	0	0	5.37	30.75	0	0	4.73	3.51	0	0	2.97	3.25	0	0	2.22	11.29	0	0	4.73	2.29	0		0.1	0.5		0	0.61	1.3	0	0	20.1	4.83	0	0	4.89	48.84	0	20
13	4.00e-6	0	5.92	10.42	0	0	5.37	30.93	0	0	4.73	3.51	0	0	2.97	3.23	0	0	2.23	10.62	0	0	4.71	2.29	0		0.1	0.5		0	0.61	1.3	0	0	14.0	6.4	0	0	3.71	41.96	0	20
14	5.40e-7	0	5.93	10.46	0	0	5.37	30.96	0	0	4.73	3.51	0	0	2.97	3.22	0	0	2.23	11.03	0	0	4.7	2.29	0		0.1	0.5		0	0.61	1.3	0	0	2.29	4.07	0	0	3.6	41.46	0	2
15	1.00e-7	0	5.91	10.47	0	0	5.29	30.96	0	0	4.73	3.51	0	0	2.9	2.96	0	0	2	8	0	0	4.59	2.07	0		0.1	0.5		0	0.6	1.2	0	0	0.72	0.59	0	0	3.58	41.39	0	2

		Gd157				Gd158				Gd160				Er166				Er167				Er168				Er170				F19				C				B10				He4
Gr	E [MeV]	σ_{inel}	σ_{el}	σ_{capt}	$\sigma_{n,2n}$	σ_{inel}	σ_{el}	σ_{capt}	$\sigma_{n,2n}$	σ_{inel}	σ_{el}	σ_{capt}	$\sigma_{n,2n}$	σ_{inel}	σ_{el}	σ_{capt}	$\sigma_{n,2n}$	σ_{inel}	σ_{el}	σ_{capt}	$\sigma_{n,2n}$	σ_{inel}	σ_{el}	σ_{capt}	$\sigma_{n,2n}$	σ_{inel}	σ_{el}	σ_{capt}	$\sigma_{n,2n}$	σ_{inel}	σ_{el}	σ_{capt}	$\sigma_{n,2n}$	σ_{inel}	σ_{el}	σ_{capt}	$\sigma_{n,2n}$	σ_{inel}	σ_{el}	σ_{capt}	$\sigma_{n,2n}$	$\sigma_{n,2n}$
1	19.6	12.52	2.2	69.27	8.92	35.34	1.51	57.37	8.07	42.58	1.15	78.62	18.01	15.73	0.91	41	7.16	9.17	0.9	67.61	30.27	19.36	0.93	31.96	9.13	26.88	0.92	25.17	15.84	4.54	8.71	15.86	7.2	30	5	20	0	30	10	15	0	0
2	6.07	10.26	3.55	16.18	0	7.39	1.32	18.37	0	25.24	1.77	30.38	0	16.82	1.55	32	0	12.29	1.54	49.14	0	13.43	1.36	49.67	0	14.56	1.3	26	0	9.12	8.12	15.42	0	35	5	20	0	30	10	15	0	0
3	2.23	16.28	3.73	8.67	0	18.98	1.57	13.6	0	18.96	1.08	22.68	0	49.08	2.35	15.82	0	10.2	2.45	30.21	0	44.37	2.43	21.89	0	53.41	2.58	11.08	0	7.3	2.12	8.5	0	0	5	20	0	30	10	15	0	0
4	1.35	22.82	6.12	6.13	0	22.9	3.71	5.31	0	18.88	2.44	10.96	0	35.11	0.57	9.53	0	5.97	0.78	12.93	0	37.67	0.54	12.98	0	51.08	0.68	8.9	0	22.03	1.65	5.14	0	0	5	20	0	35	10	15	0	0
5	4.98e-1	28.53	5.23	5.2	0	36.88	4.19	4.94	0	69.41	3.26	10.99	0	3.54	6.33	11.59	0	4.22	6.65	9.33	0	7.28	5.96	14.97	0	19.18	5.62	7.47	0	15.88	1.02	6.13	0	0	5	20	0	0	10	15	0	0
6	1.83e-1	30.01	3.7	3.97	0	60.91	2.93	3.82	0	91.34	2.74	9.18	0	50	5.47	13.43	0	6.61	5.57	8.23	0	50	4.82	19.44	0	41.37	4.07	4.99	0	0	1.08	2	0	0	3	20	0	0	10	10	0	0
7	6.74e-2	21.25	2.47	3.12	0	0	2.98	3.71	0	0	2.77	6.91	0	0	3.9	3.24	0	0	3.82	3.92	0	0	3.09	9.74	0	0	7.65	6.22	0	0	0.97	2.89	0	0	3	20	0	0	10	10	0	0
8	2.48e-2	0	3.29	3.11	0	0	3.88	6.24	0	0	3.51	9.15	0	0	2.6	6.26	0	0	2.92	4.01	0	0	2.32	3.1	0	0	5.7	4.7	0	0	1.68	2.55	0	0	3	20	0	0	5	8	0	0
9	9.12e-3	0	4.1	5.27	0	0	0.1	0.73	0	0	1.83	9.09	0	0	3.32	3.15	0	0	2.92	4.47	0	0	3.8	3.21	0	0	4.17	2.26	0	0	2.05	4.39	0	0	3	20	0	0	5	8	0	0
10	2.04e-3	0	5.58	6.18	0	0	0.33	0.77	0	0	3.26	9.17	0	0	4.74	3.13	0	0	5.12	2.81	0	0	5.34	6.15	0	0	4.82	3.38	0	0	2.05	6.05	0	0	3	20	0	0	5	5	0	0
11	4.54e-4	0	2.27	1.49	0	0	1.18	0.85	0	0	8.6	7.76	0	0	7.71	3.97	0	0	6.69	1.88	0	0	8.6	5.05	0	0	7.7	7.21	0	0	2.05	6.09	0	0	3	20	0	0	5	5	0	0
12	2.26e-5	0	7.66	2.29	0	0	4.76	3.36	0	0	11.06	17.51	0	0	4.39	6.59	0	0	5.88	1.13	0	0	8.67	3.22	0	0	17.9	4.91	0	0	2.05	6.1	0	0	2	20	0	0	3	5	0	0
13	4.00e-6	0	1.15	2.96	0	0	1.86	7.46	0	0	11.64	17.1	0	0	3.85	9.14	0	0	29.7	1.04	0	0	8.8	3.07	0	0	17.8	3.92	0	0	2.05	6.11	0	0	2	20	0	0	3	3	0	0
14	5.40e-7	0	0.87	1.49	0	0	1.91	8.49	0	0	11.75	17.05	0	0	3.78	9.36	0	0	9.57	1.02	0	0	8.83	3.05	0	0	17.8	3.7	0	0	2.05	6.11	0	0	1	2	0	0	2	1	0	0
15	1.00e-7	0	1.15	0.2	0	0	1.91	8.64	0	0	11.72	17.05	0	0	3.69	8.63	0	0	57.6	1.2	0	0	8.65	2.8	0	0	17.5	3.41	0	0	2	5.55	0	0	1	2	0	0	2	1	0	0

Adjustment Techniques

If we define B_p the "a priori" nuclear data covariance matrix, S_B the sensitivity matrix of the performance parameters B ($B=1.....B_{TOT}$) to the J nuclear data, the "a priori" covariance matrix of the performance parameters is given by:

$$B_B = S_B B_p S_B^T$$

It can be shown that, using a set of I integral experiments A, characterized by a sensitivity matrix S_A, besides a set of statistically adjusted cross-section data, a new ("a posteriori") covariance matrix can be obtained:

$$\tilde{B}_p = B_p - B_p S_A^T \left(S_A B_p S_A^T + B_A\right)^{-1} S_A B_p$$

where B_A is the integral experiment uncertainty matrix.

$\tilde{B}_p$ **can then be used to define a new ("a posteriori") covariance matrix for the performance parameters B:**

$$\tilde{B}_B = S_B \tilde{B}_p S_B^T = \left\{B_B - S_B B_p S_A^T \left(S_A B_p S_A^T + B_A\right)^{-1} S_A B_p S_B^T\right\} = B_B \left\{1 - (S_B B_p S_B^T)^{-1} (S_A B_p S_A^T + B_A)^{-1} \times (S_A B_p S_B^T)^2\right\}$$

From this expression, it results that in order to reduce the performance parameter "a posteriori" uncertainties, the most effective integral experiments are those:

- **with "representative" sensitivity profiles ($S_A \sim S_B$) and**
- **small experimental uncertainties ($B_A \sim 0$).**

If we consider only one performance parameter B and only one experiment "i", and if we put $B_A=0$, we obtain the expression of the "representativity" of one integral experiment:

$$r_{iB} = \left(S_B B_p S_i^T\right) \Big/ \left[\left(S_i B_p S_i^T\right)\left(S_B B_p S_B^T\right)\right]^{1/2}$$

Then, we can consider the previous equation as a generalized expression for the reference parameter uncertainty reduction. This generalized expression accounts for more than one experiment and allows estimating the impact of any new experiment in the reduction of the "a priori" uncertainty of the design performance parameters.

AFCI1.3 Covariance Matrix at a Glance

- Processed/used isotopes:
  U234, U235, U236, U238, Np237, Pu238, Pu239, Pu240, Pu241, Pu242, Am241, Am242m, Am243, Cm242, Cm243, Cm244, Cm245, Cm246, Fe54, Fe56, Fe57, Cr50, Cr52, Ni58, Ni60, Zr90, Zr91, Zr92, Zr94, Na23, O, He4, Si28, Si29, Si30, C, N15, B10, B11, P204, Pb206, Pb207, Pb208, Bi209, Mn55, Mo92, Mo94, Mo95, Mo96, Mo97, Mo98, Mo100, Li7.

- Processed/used reactions:
  ν, fission, capture, elastic, inelastic and n2n for fissile isotopes and **capture, elastic, inelastic and n2n** for structural isotopes.

- For most of the isotopes AFCI1.3 contains covariance data for the reaction itself, only for **U235, U238, Pu239, Pu240, Cm246, Fe56, Cr52, Ni58, Na23, C, O, Mn55, Zr90, B10, B11, N15** some cross-correlations have been also provided.

- In the AFCI1.3 matrix there are no “cross-material” correlations.

Sodium Cooled Fast Neutron Systems: Nominal Values and Total Uncertainties (%)

Reactor		Multiplication Factor	Power Peaking Factor	Doppler Coefficient	Coolant Void Worth	Burnup Reactivity Swing [a]
ABR Metal [b]	Nominal Value	0.972326			1402 pcm [1]	
	BOLNA	1.47			13.10	
	AFCI1.2	1.54			10.32	
	AFCI1.3	1.34			13.07	
ABR Oxide [b]	Nominal Value	0.988232			2443 pcm [2]	
	BOLNA	1.44			7.82	
	AFCI1.2	1.49			5.60	
	AFCI1.3	1.19			6.17	
SFR	Nominal Value	1.05280	1.53 [3]	231 pcm [4]	1831 pcm [5]	-4436.9 pcm [6]
	BOLNA	1.86	0.45	5.57	17.11	4.59
	AFCI1.2	2.16	0.22	6.88	14.02	5.11
	AFCI1.3	1.81	0.30	6.62	14.29	4.38
EFR	Nominal Value	1.10848	1.63 [7]	1289 pcm [8]	1934.5 pcm [9]	-9260.9 pcm [10]
	BOLNA	1.27	1.18	3.80	7.83	7.29
	AFCI1.2	1.29	1.01	4.03	5.40	6.36
	AFCI1.3	1.14	1.09	3.84	5.97	5.52

[a] Sensitivity coefficients calculated with the Depletion Perturbation Theory implemented in the ANL code REBUS3-DPT;
[b] Sensitivity coefficients determined with DIF3D/VARI3D code;
Sensitivity coefficients of all other parameters were determined in the Sg26 activities with the ERANOS/BISTRO code.

ABR Metal

[1] Na loss at the core center

ABR Oxide

[2] Na loss at the core center

SFR

[3] $(R, Z) = (66.59, 143.03)_{cm}$
[4] T_{fuel}=300K - T_{fuel}=850K
[5] Na loss in core
[6] 155 days

EFR

[7] $(R, Z) = (153.24, 125)_{cm}$
[8] T_{fuel}=300K - T_{fuel}=1520K
[9] Na loss in core and blanket
[10] 1700 days

Fast Neutron Systems: Nominal Values and Total Uncertainties (%)

Reactor		Multiplication Factor	Power Peaking Factor	Doppler Coefficient	Coolant Void Worth	Burnup Reactivity Swing [a]
GFR	Nominal Value	1.01049	1.45 [1]	1549 pcm [2]	350.1 pcm [3]	1048.8 pcm [4]
	BOLNA	1.89	1.68	5.51	7.67	35.99
	AFCI1.2	1.95	1.71	5.44	6.75	35.33
	AFCI1.3	1.74	1.69	5.02	6.53	25.63
LFR	Nominal Value	1.00023	1.29 [5]	228.1 pcm [6]	6575.5 pcm [7]	-1523.6 pcm [8]
	BOLNA	1.40	0.64	4.35	7.18	8.61
	AFCI1.2	1.67	0.58	6.20	9.81	9.52
	AFCI1.3	1.43	0.59	6.24	9.71	6.89
ABMAB	Nominal Value	0.94816	2.67 [9]	28.3 pcm [10]	3138.4 pcm [11]	
	BOLNA	2.90	21.42	-	15.49	
	AFCI1.2	2.46	17.99	-	13.89	
	AFCI1.3	2.23	16.37		13.86	

[a] Sensitivity coefficients calculated with the Depletion Perturbation Theory implemented in the ANL code REBUS3-DPT; Sensitivity coefficients of all other parameters were determined in the Sg26 activities with the ERANOS/BISTRO code.

GFR

[1] Center core radially and axially
[2] T_{fuel}=300K - T_{fuel}=1263K
[3] He loss in core and reflector
[4] 415 days

LFR

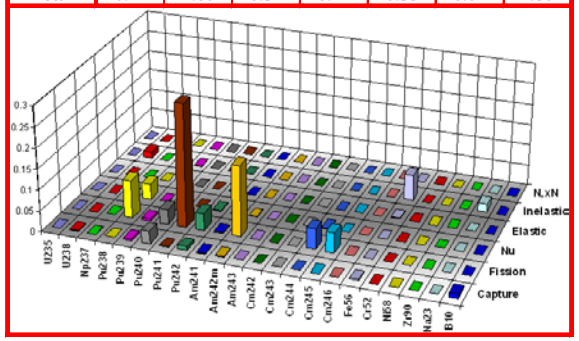
[5] (R , Z) =(100.96 , 117.90)$_{cm}$
[6] T_{fuel}=300K - T_{fuel}=900K
[7] Pb loss in core
[8] 310 days

ADMAB

[9] (R , Z) =(20 , 102.5)$_{cm}$
[10] T_{fuel}=1773K - T_{fuel}=980K
[11] Pb-Bi loss in core

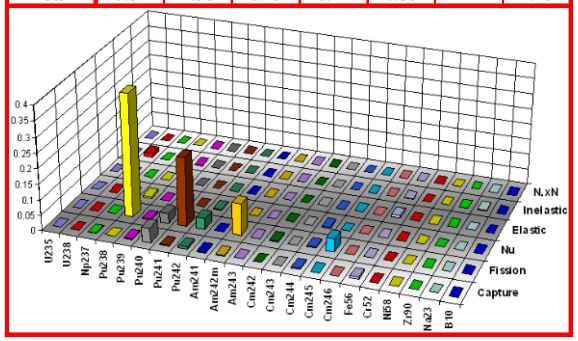
SFR k_{eff}: BOLNA Full Uncertainties (%) by Isotope

Isotope	σ_{capt}	σ_{fiss}	ν	σ_{el}	σ_{inel}	$\sigma_{n.2n}$	Total
U235	-	-	-	-	-	-	0.01
U238	0.08	0.01	0.03	0.05	0.24	-	0.26
Np237	0.02	0.05	0.01	-	0.01	-	0.05
Pu238	0.06	0.56	0.36	-	0.01	-	0.67
Pu239	0.13	0.13	0.07	0.03	0.05	-	0.20
Pu240	0.33	0.35	0.41	0.01	0.01	-	0.63
Pu241	0.06	1.01	0.04	-	-	-	1.01
Pu242	0.18	0.38	0.08	-	0.04	-	0.43
Am241	0.07	0.09	0.02	-	0.01	-	0.11
Am242m	0.05	0.77	0.06	-	0.02	-	0.77
Am243	0.05	0.04	0.01	-	0.02	-	0.07
Cm242	-	0.04	0.01	-	-	-	0.04
Cm243	-	0.02	-	-	-	-	0.02
Cm244	0.04	0.41	0.08	-	0.01	-	0.42
Cm245	0.01	0.41	0.05	-	-	-	0.41
Cm246	0.01	0.04	0.01	-	-	-	0.04
Fe56	0.10	-	-	0.09	0.46	-	0.48
Cr52	0.01	-	-	0.05	0.01	0.01	0.06
Ni58	-	-	-	-	-	-	-
Zr90	0.01	-	-	0.01	0.03	-	0.03
Na23	0.02	-	-	0.02	0.26	-	0.26
B10	0.18	-	-	0.01	-	-	0.18
Total	0.47	1.60	0.57	0.12	0.58	0.01	1.86



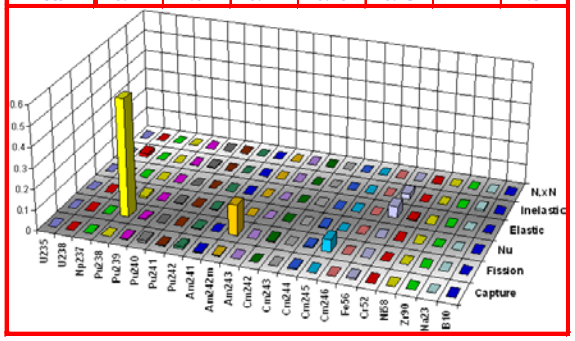
SFR k_{eff}: AFCI1.2 Full Uncertainties (%) by Isotope

Isotope	σ_{capt}	σ_{fiss}	ν	σ_{el}	σ_{inel}	$\sigma_{n.2n}$	Total
U235	-	-	-	-	-	-	-
U238	0.05	0.01	0.04	0.05	0.25	-	0.26
Np237	0.05	0.06	0.01	-	0.02	-	0.08
Pu238	0.06	1.36	0.16	-	0.02	-	1.37
Pu239	0.13	0.13	0.08	0.03	0.05	-	0.21
Pu240	0.46	0.38	0.42	0.01	0.03	-	0.73
Pu241	0.12	1.02	0.03	-	0.01	-	1.02
Pu242	0.20	0.40	0.09	-	0.03	-	0.46
Am241	0.11	0.10	0.04	-	0.01	-	0.16
Am242m	0.10	0.69	0.05	-	0.02	-	0.70
Am243	0.06	0.06	0.01	-	0.01	-	0.09
Cm242	0.01	0.12	0.02	-	-	-	0.12
Cm243	-	0.01	-	-	-	-	0.01
Cm244	0.13	0.15	0.12	-	0.01	-	0.23
Cm245	0.01	0.43	0.05	-	-	-	0.44
Cm246	0.01	0.01	0.03	-	-	-	0.03
Fe56	0.17	-	-	0.19	0.08	-	0.27
Cr52	0.01	-	-	0.02	0.01	-	0.03
Ni58	0.01	-	-	-	-	-	0.01
Zr90	0.01	-	-	0.02	0.02	-	0.03
Na23	-	-	-	0.05	0.11	-	0.12
B10	0.02	-	-	-	-	-	0.02
Total	0.61	1.98	0.49	0.21	0.30	-	2.16



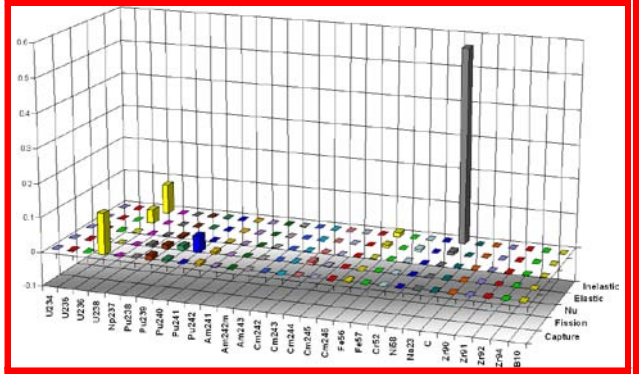
SFR k_{eff}: AFCI1.3 Full Uncertainties (%) by Isotope

Isotope	σ_{capt}	σ_{fiss}	ν	σ_{el}	σ_{inel}	$\sigma_{n.2n}$	Total
U235	-	-	-	-	-	-	-
U238	0.05	0.01	0.04	0.05	0.25	-	0.26
Np237	0.04	0.02	0.01	-	0.01	-	0.05
Pu238	0.06	1.36	0.16	-	0.02	-	1.37
Pu239	0.13	0.13	0.08	0.03	0.05	-	0.21
Pu240	0.19	0.09	0.11	0.05	0.13	-	0.28
Pu241	0.12	0.06	0.03	-	0.01	-	0.14
Pu242	0.19	0.08	0.09	0.01	0.02	-	0.22
Am241	0.11	0.10	0.04	-	0.01	-	0.16
Am242m	0.10	0.69	0.05	-	0.02	-	0.70
Am243	0.06	0.06	0.01	-	0.01	-	0.09
Cm242	0.01	0.12	0.02	-	-	-	0.12
Cm243	-	0.01	-	-	-	-	0.01
Cm244	0.13	0.15	0.12	-	0.01	-	0.23
Cm245	0.01	0.43	0.05	-	-	-	0.44
Cm246	0.01	0.01	0.03	-	-	-	0.03
Fe56	0.15	-	-	0.43	0.30	-	0.55
Cr52	0.02	-	-	0.12	0.03	-	0.12
Ni58	-	-	-	-	-	-	0.01
Zr90	0.01	-	-	0.02	0.02	-	0.03
Na23	-	-	-	0.04	0.16	-	0.16
B10	0.02	-	-	-	-	-	0.02
Total	0.42	1.61	0.27	0.46	0.45	-	1.81



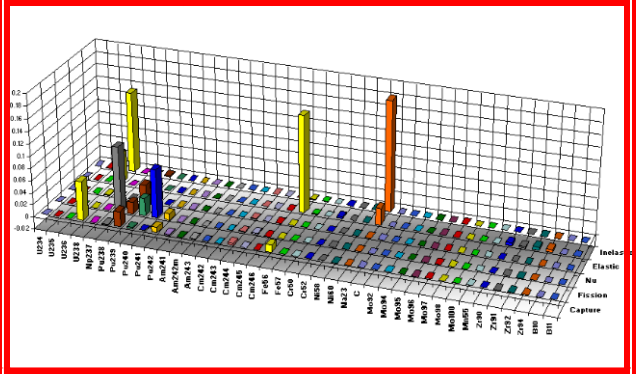
ABR Metal Core Void: BOLNA Full Uncertainties (%) by Isotope

Isotope	σ_{capt}	σ_{fiss}	ν	σ_{el}	σ_{inel}	Total
U234	-	0.01	-	-	-	**0.01**
U235	0.08	0.02	0.03	0.01i	-	**0.09**
U236	-	-	-	-	-	**-**
U238	4.57	0.09	0.34	2.62	3.84	**6.53**
Np237	0.14	0.09	0.02	-	0.02	**0.16**
Pu238	0.32	1.17	0.39	0.02	0.02	**1.27**
Pu239	1.55	1.41	0.89	0.43	0.49	**2.37**
Pu240	1.03	1.58	1.39	0.18	0.07	**2.35**
Pu241	0.19	2.82	0.12	0.01	0.02	**2.83**
Pu242	0.95	1.04	0.24	0.02	0.03	**1.43**
Am241	0.36	0.17	0.03	0.01	0.06	**0.40**
Am242m	0.02	0.24	0.02	-	-	**0.24**
Am243	0.26	0.08	0.02	0.01	0.08	**0.29**
Cm242	0.01	0.02	-	-	-	**0.02**
Cm243	-	0.01	-	-	-	**0.01**
Cm244	0.13	1.22	0.18	0.02	0.01	**1.24**
Cm245	0.10	0.25	0.03	-	0.01	**0.27**
Cm246	0.04	0.09	0.02	-	-	**0.10**
Fe56	0.79	-	-	1.14	1.46	**2.01**
Fe57	0.08	-	-	0.03	0.03	**0.09**
Cr52	0.04	-	-	0.98	0.04	**0.98**
Ni58	-	-	-	0.02	0.01	**0.03**
Na23	0.19	-	-	1.13	9.88	**9.94**
C	-	-	-	0.04	-	**0.04**
Zr90	0.05	-	-	0.36	0.18	**0.41**
Zr91	0.06	-	-	0.11	0.06	**0.14**
Zr92	0.04	-	-	0.09	0.09	**0.13**
Zr94	0.04	-	-	0.04	0.11	**0.13**
B10	-	-	-	0.19	-	**0.19**
Total	**5.13**	**4.07**	**1.76**	**3.29**	**10.71**	**13.10**



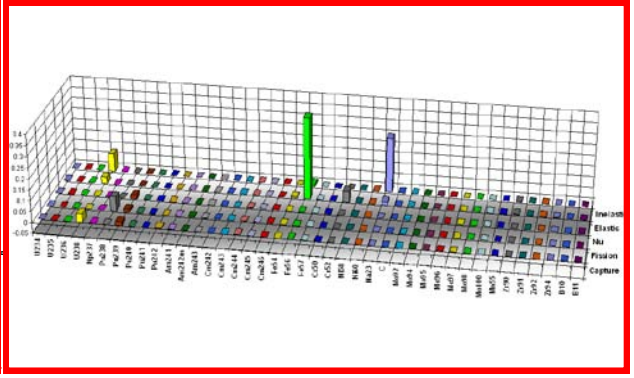
ABR Metal Core Void: AFCI1.2 Full Uncertainties (%) by Isotope

Isotope	σ_{capt}	σ_{fiss}	ν	σ_{el}	σ_{inel}	Total
U234	-	0.01	-	-	-	**0.01**
U235	0.05	0.02	0.01	0.01i	-	**0.05**
U236	-	-	-	-	-	**-**
U238	2.62	0.09	0.36	2.26	3.76	**5.12**
Np237	0.19	0.09	0.02	0.01	0.02	**0.21**
Pu238	0.32	3.37	0.15	0.01	0.04	**3.38**
Pu239	1.63	1.42	1.70	0.44	0.52	**2.84**
Pu240	0.50	1.74	1.69	0.18	0.14	**2.49**
Pu241	0.23	2.90	0.08	0.03	0.10	**2.91**
Pu242	0.99	1.06	0.27	0.04	0.06	**1.48**
Am241	0.35	0.20	0.08	0.03	0.05	**0.41**
Am242m	0.04	0.18	0.01	-	-	**0.19**
Am243	0.25	0.10	0.02	0.02	0.05	**0.28**
Cm242	0.03	0.05	0.01	-	0.01	**0.06**
Cm243	-	-	-	-	-	**-**
Cm244	0.66	0.35	0.31	0.02	0.01	**0.81**
Cm245	0.06	0.37	0.03	-	0.01	**0.38**
Cm246	0.04	0.02	0.06	-	-	**0.07**
Fe56	1.09	-	-	4.12	0.37	**4.28**
Fe57	0.10	-	-	0.21	0.13	**0.27**
Cr50	0.05	-	-	0.04	0.02	**0.06**
Cr52	0.07	-	-	0.53	0.06	**0.53**
Ni58	-	-	-	0.02	-	**0.02**
Ni60	-	-	-	0.01	-	**0.01**
Na23	-	-	-	1.71	4.40	**4.72**
C	-	-	-	0.01	-	**0.01**
Mo92	-	-	-	0.06	-	**0.06**
Mo94	-	-	-	0.03	-	**0.03**
Mo95	0.03	-	-	0.05	0.01	**0.06**
Mo96	0.01	-	-	0.05	-	**0.05**
Mo97	0.03	-	-	0.02	0.01	**0.04**
Mo98	0.01	-	-	0.06	-	**0.06**
Mo100	-	-	-	0.02	-	**0.02**
Mn55	0.05	-	-	0.07	0.03	**0.09**
Zr90	0.07	-	-	0.71	0.16	**0.73**
Zr91	0.16	-	-	0.50	0.02	**0.52**
Zr92	0.11	-	-	0.72	0.05	**0.73**
Zr94	0.06	-	-	0.69	0.05	**0.69**
B10	-	-	-	0.03	-	**0.03**
B11	-	-	-	0.04	-	**0.04**
Total	**3.58**	**5.12**	**2.47**	**5.23**	**5.83**	**10.32**



ABR Metal Core Void: AFCI1.3 Full Uncertainties (%) by Isotope

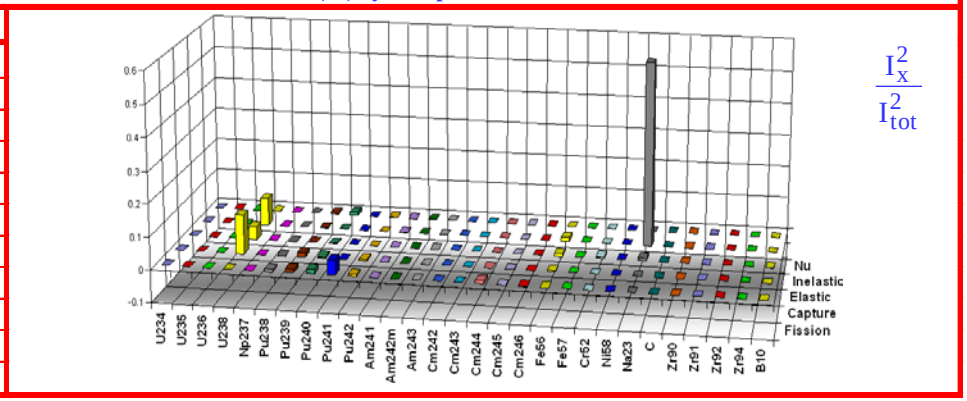
Isotope	σ_{capt}	σ_{fiss}	ν	σ_{el}	σ_{inel}	Total
U234		0.01				**0.01**
U235	0.05	0.02	0.01	0.01i		**0.05**
U236						
U238	2.61	0.09	0.36	2.25	3.75	**5.11**
Np237	0.15	0.06	0.02	0.01	0.01	**0.16**
Pu238	0.32	3.37	0.15	0.01	0.04	**3.38**
Pu239	1.63	1.42	1.70	0.44	0.52	**2.83**
Pu240	0.47	0.43	0.28	0.13	0.21	**0.74**
Pu241	0.23	0.34	0.08	0.03	0.10	**0.44**
Pu242	0.46	0.19	0.27	0.07	0.02	**0.57**
Am241	0.35	0.20	0.08	0.03	0.05	**0.41**
Am242m	0.04	0.18	0.01			**0.19**
Am243	0.25	0.10	0.02	0.02	0.05	**0.28**
Cm242	0.03	0.05	0.01		0.01	**0.06**
Cm243						
Cm244	0.66	0.35	0.31	0.02	0.01	**0.81**
Cm245	0.06	0.37	0.03		0.01	**0.38**
Cm246	0.04	0.02	0.06			**0.07**
Fe54	0.04			0.98	0.03	**0.98**
Fe56	0.65			8.02	1.31	**8.16**
Fe57	0.10			0.21	0.13	**0.27**
Cr50	0.05			0.04	0.02	**0.06**
Cr52	0.06			2.90	0.11	**2.91**
Ni58				0.07		**0.07**
Ni60				0.01		**0.01**
Na23				1.53	6.54	**6.72**
C				0.01		**0.01**
Mo92				0.06		**0.06**
Mo94				0.03		**0.03**
Mo95	0.03			0.05	0.01	**0.06**
Mo96	0.01			0.05		**0.05**
Mo97	0.03			0.02	0.01	**0.04**
Mo98	0.01			0.06		**0.06**
Mo100				0.02		**0.02**
Mn55	0.08			0.07	0.03	**0.11**
Zr90	0.07			0.71	0.16	**0.73**
Zr91	0.16			0.50	0.02	**0.52**
Zr92	0.11			0.72	0.05	**0.73**
Zr94	0.06			0.69	0.05	**0.69**
B10				0.03		**0.03**
B11				0.04		**0.04**
Total	**3.35**	**3.75**	**1.82**	**9.12**	**7.68**	**13.07**



Uncertainty Breakdown

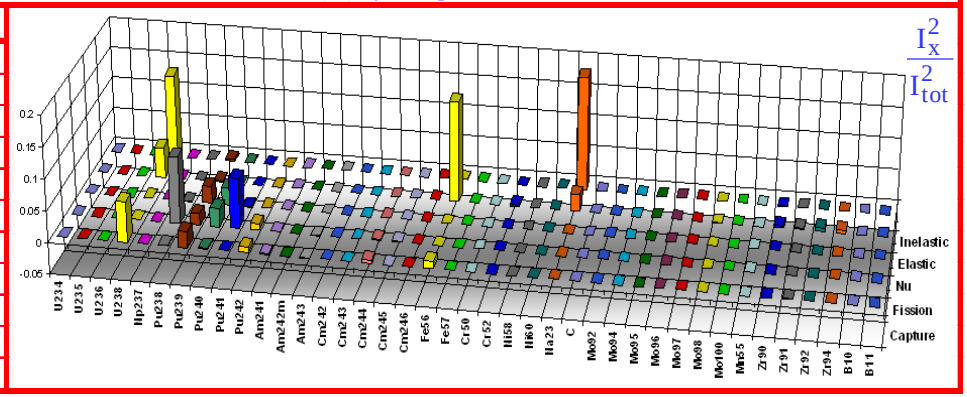
ABR Metal Core Void: BOLNA Uncertainties (%) by Isotope

Isotope	σ_{capt}	σ_{fiss}	ν	σ_{el}	σ_{inel}	Total
U238	4.57	[a]		2.62	3.84	6.53
Pu238		1.17				1.27
Pu239	1.55	1.41	0.89			2.37
Pu240	1.03	1.58	1.39			2.35
Pu241		2.82				2.83
Pu242	0.95	1.04				1.43
Cm244		1.22				1.24
Fe56	0.79			1.14	1.46	2.01
Cr52				0.98		0.98
Na23				1.13	9.88	9.94
Total	5.13	4.07	1.76	3.29	10.71	13.10



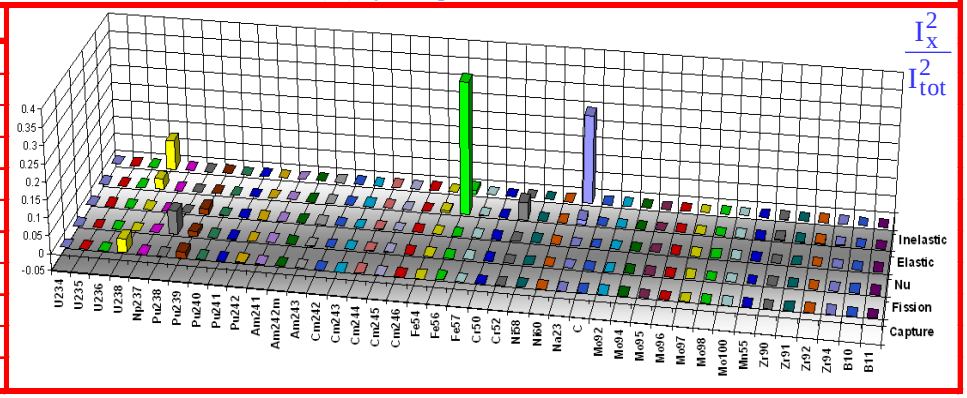
ABR Metal Core Void: AFCI1.2 Uncertainties (%) by Isotope

Isotope	σ_{capt}	σ_{fiss}	ν	σ_{el}	σ_{inel}	Total
U238	2.62			2.26	3.76	5.12
Pu238		3.37				3.38
Pu239	1.63	1.42	1.70			2.84
Pu240	0.50	1.74	1.69			2.49
Pu241		2.90				2.91
Pu242	0.99	1.06				1.48
Cm244		0.35				0.81
Fe56	1.09			4.12	0.37	4.28
Cr52				0.53		0.53
Na23				1.71	4.40	4.72
Total	3.58	5.12	2.47	5.23	5.83	10.32



ABR Metal Core Void: AFCI1.3 Uncertainties (%) by Isotope

Isotope	σ_{capt}	σ_{fiss}	ν	σ_{el}	σ_{inel}	Total
U238	2.61			2.25	3.75	5.11
Pu238		3.37				3.38
Pu239	1.63	1.42	1.70			2.83
Pu240	0.47	0.43	0.28			0.74
Pu241		0.34				0.44
Pu242	0.46	0.19				0.57
Cm244		0.35				0.81
Fe56	0.65			8.02	1.31	8.16
Cr52				2.90		2.91
Na23				1.53	6.54	6.72
Total	3.35	3.75	1.82	9.12	7.68	13.07



[a] Contribution nul or less than 1%

Isotope/Reaction Contributing to 90% of Multiplication Factor Uncertainty with BOLNA, AFCI1.2 and AFCI1.3

	ABR Metal			ABR Oxide			SFR			EFR		
	BOLNA	AFCI1.2	AFCI1.3	BOLNA	AFCI1.2	AFCI1.3	BOLNA	AFCI1.2	AFCI1.3	BOLNA	AFCI1.2	AFCI1.3
U238 σ_{capt}	0.28			0.33		0.21				0.37	0.25	0.25
U238 σ_{inel}	0.97	1.00	1.00	0.76	0.78	0.78				0.87	0.90	0.90
Pu238 σ_{fiss}	0.22	0.56	0.56		0.57	0.57	0.56	1.36	1.36		0.34	0.34
Pu238 ν							0.36					
Pu239 σ_{capt}						0.19				0.25	0.25	0.25
Pu239 σ_{fiss}			0.20									0.20
Pu240 σ_{capt}				0.25	0.30			0.46		0.26	0.34	
Pu240 σ_{fiss}	0.27	0.28		0.26	0.30							
Pu240 ν	0.30	0.31		0.31	0.31		0.41	0.42		0.27	0.27	
Pu241 σ_{fiss}	0.65	0.67		0.77	0.77		1.01	1.02		0.39	0.39	
Pu242 σ_{fiss}							0.38					
Am242m σ_{fiss}							0.77	0.69	0.69			
Cm244 σ_{fiss}							0.41					
Cm245 σ_{fiss}				0.26		0.28	0.41	0.43	0.43			
Fe56 σ_{el}			0.28						0.43			
Fe56 σ_{inel}	0.35		0.24	0.35		0.24	0.46					
O16 σ_{capt}										0.29		
Total [(a)]	**1.33**	**1.39**	**1.22**	**1.30**	**1.35**	**1.07**	**1.71**	**1.98**	**1.64**	**1.16**	**1.18**	**1.04**
Overall [(b)]	**1.47**	**1.54**	**1.34**	**1.44**	**1.49**	**1.19**	**1.86**	**2.16**	**1.81**	**1.27**	**1.29**	**1.14**

[(a)] Total uncertainties yield by the cross sections listed in the Table;
[(b)] Overall uncertainties yield by all cross sections

Isotope/Reaction Contributing to 90% of Multiplication Factor Uncertainty with BOLNA, AFCI1.2 and AFCI1.3

	GFR			LFR			ADMAB		
	BOLNA	AFCI1.2	AFCI1.3	BOLNA	AFCI1.2	AFCI1.3	BOLNA	AFCI1.2	AFCI1.3
U238 σ_{capt}	0.41			0.25					
U238 σ_{inel}	1.42	1.49	1.49	0.73	0.74	0.74			
Pu238 σ_{fiss}		0.53	0.53	0.34	0.94	0.94		0.53	0.53
Pu238 ν				0.23					
Pu240 σ_{capt}				0.27	0.39				
Pu240 σ_{fiss}				0.29					
Pu240 ν				0.33	0.34				
Pu241 σ_{fiss}	0.82	0.79		0.61	0.64		1.04	1.05	
Am241 σ_{capt}								0.79	0.79
Am241 σ_{fiss}							0.82	0.94	0.94
Am243 σ_{fiss}								0.44	0.44
Cm244 σ_{fiss}							1.90	0.65	0.65
Cm244 ν								0.50	0.50
Cm245 σ_{fiss}				0.22			1.04	1.09	1.09
Fe56 σ_{inel}							0.83		0.50
C σ_{el}	0.31								
Pb206 σ_{inel}					0.41	0.41			
Pb208 σ_{el}						0.24			
B10 σ_{capt}				0.44					
Total [(a)]	**1.72**	**1.77**	**1.58**	**1.28**	**1.51**	**1.29**	**2.67**	**2.22**	**2.02**
Overall [(b)]	**1.89**	**1.95**	**1.74**	**1.40**	**1.67**	**1.43**	**2.90**	**2.46**	**2.23**

[(a)] Total uncertainties yield by the cross sections listed in the Table;
[(b)] Overall uncertainties yield by all cross sections

Isotope/Reaction Contributing to 90% of Power Peaking Factor Uncertainty with BOLNA, AFCI1.2 and AFCI1.3

	SFR			EFR			GFR			LFR			ADMAB		
	BOL NA	AFCI 1.2	AFCI 1.3	BOL NA	AFCI 1.2	AFCI 1.3	BOL NA	AFCI 1.2	AFCI 1.3	BOL NA	AFCI 1.2	AFCI 1.3	BOL NA	AFCI 1.2	AFCI 1.3
U238 σ_{inel}		0.07	0.07	0.89	0.90	0.90	1.54	1.60	1.60						
Pu238 σ_{fiss}		0.05												3.83	3.83
Pu241 σ_{fiss}													7.61	7.67	
Am241 σ_{capt}														6.12	6.12
Am241 σ_{fiss}													5.81	6.61	6.61
Am243 σ_{fiss}														3.08	3.08
Cm244 σ_{capt}														2.85	2.85
Cm244 σ_{fiss}													13.43	4.59	4.59
Cm244 ν														3.64	3.64
Cm245 σ_{fiss}													7.56	7.91	7.91
Fe56 σ_{capt}		0.06													
Fe56 σ_{el}		0.10	0.19			0.42						0.14			
Fe56 σ_{inel}	0.18		0.07										7.22		3.84
Na23 σ_{el}	0.10	0.13	0.15		0.29										
O16 σ_{el}				0.64											
Pb207 σ_{el}											0.14				
Pb208 σ_{el}										0.22	0.52	0.52			
Zr90 σ_{el}		0.05													
B10 σ_{capt}	0.36									0.57					
Total [(a)]	**0.42**	**0.20**	**0.27**	**1.10**	**0.94**	**0.99**	**1.54**	**1.60**	**1.60**	**0.61**	**0.53**	**0.54**	**19.53**	**16.40**	**15.00**
Overall [(b)]	**0.45**	**0.22**	**0.30**	**1.18**	**1.01**	**1.09**	**1.68**	**1.71**	**1.69**	**0.64**	**0.58**	**0.59**	**21.42**	**17.99**	**16.37**

[(a)] Total uncertainties yield by the cross sections listed in the Table;

[(b)] Overall uncertainties yield by all cross sections.

Isotope/Reaction Contributing to 90% of Doppler Uncertainty with BOLNA, AFCI1.2 and AFCI1.3

	SFR			EFR			GFR			LFR		
	BOLNA	AFCI1.2	AFCI1.3	BOLNA	AFCI1.2	AFCI1.3	BOLNA	AFCI1.2	AFCI1.3	BOLNA	AFCI1.2	AFCI1.3
U238 σ_{inel}				2.71	2.80	2.80	4.05	4.24	4.24	2.56	2.65	2.65
Pu238 σ_{fiss}	1.40	3.44	3.44		0.89	0.89			1.27	0.80	2.19	2.19
Pu239 σ_{capt}				0.79	0.79					1.07		
Pu239 σ_{inel}										0.62		
Pu240 σ_{fiss}	1.24	1.46		0.81						0.86		
Pu241 σ_{fiss}	2.75	2.59		1.12	1.03		2.20	1.91		1.44	1.50	
Pu242 σ_{fiss}	0.96											
Am241 σ_{capt}								1.56	1.56			
Am242m σ_{fiss}	1.83	1.71	1.71									
Cm244 σ_{fiss}	0.98											
Cm245 σ_{fiss}	0.94											
Fe56 σ_{capt}		2.08	1.48									
Fe56 σ_{el}		2.17	3.65			0.95						2.32
Fe56 σ_{inel}	2.18			0.80						0.83		
Na23 σ_{el}	1.52	2.77	2.48	0.71	1.31	1.12						
Na23 σ_{inel}	1.05											
C σ_{el}							1.90					
O16 σ_{el}				0.99	1.12	1.12						
Pb206 σ_{inel}										0.59	1.29	
Pb207 σ_{el}										0.60	1.64	1.64
Pb207 σ_{inel}										0.61		
Pb208 σ_{el}										1.15	3.62	3.62
B10 σ_{capt}										1.01		
Total [(a)]	**5.04**	**6.35**	**6.04**	**3.47**	**3.65**	**3.47**	**4.98**	**4.90**	**4.69**	**3.96**	**5.62**	**5.75**
Overall [(b)]	**5.57**	**6.88**	**6.62**	**3.80**	**4.03**	**3.84**	**5.51**	**5.44**	**5.02**	**4.35**	**6.20**	**6.24**

[(a)] Total uncertainties yield by the cross sections listed in the Table;

[(b)] Overall uncertainties yield by all cross sections.

Isotope/Reaction Contributing to 90% of Coolant Void Reactivity Worth Uncertainty with BOLNA, AFCI1.2 and AFCI1.3

	ABR Metal			ABR Oxide			SFR			EFR			GFR			LFR			ADMAB		
	BOLNA	AFCI 1.2	AFCI 1.3	BOLNA	AFCI 1.2	AFCI 1.3	BOLNA	AFCI 1.2	AFCI 1.3	BOLNA	AFCI 1.2	AFCI 1.3	BOLNA	AFCI 1.2	AFCI 1.3	BOLNA	AFCI 1.2	AFCI 1.3	BOLNA	AFCI 1.2	AFCI 1.3
U238 σ_{capt}	4.57	2.62			1.56	1.56				1.49	1.36	1.36									
U238 σ_{el}		2.26																			
U238 σ_{inel}	3.84	3.76	3.75	2.24	2.16	2.16				2.47	2.45	2.45	5.40	6.03	6.02	4.46	4.76	4.75			
Pu238 σ_{fiss}		3.37	3.37		1.33	1.33	2.90	8.87	8.87												
Pu239 σ_{fiss}					1.19						1.16										
Pu239 ν					1.08						1.17										
Pu240 σ_{fiss}		1.74			1.40			2.60			1.00										
Pu240 ν								2.56													
Pu241 σ_{fiss}	2.82	2.90		2.84	1.92		4.09	3.99						1.56		1.37			3.15	3.34	
Am241 σ_{capt}																			2.13	2.89	2.89
Am241 σ_{fiss}																			2.33		
Am242m σ_{fiss}							3.70	2.60													
Cm244 σ_{fiss}							2.95														
Cm245 σ_{fiss}																			2.65	2.58	2.58
Fe56 σ_{el}		4.12	8.02			2.00		3.01	3.52												2.56
Fe56 σ_{inel}							4.14		3.01							1.49			2.92		
Cr52 σ_{el}			2.90																		
Na23 σ_{el}		1.71			1.40	1.38		2.52			2.16	1.77									
Na23 σ_{inel}	9.88	4.40	6.54	6.07	2.72	4.10	13.43	5.66	8.18	6.57	2.89	4.29									
Pb206 σ_{inel}																2.77	6.30	6.30			
Pb207 σ_{inel}																2.47	2.37	2.37			
Pb208 σ_{el}																2.01	3.72	3.72			
Pb σ_{capt}																				4.55	4.55
Pb σ_{inel}																					2.39
Bi209 σ_{capt}																				3.82	3.82
Bi209 σ_{inel}																			8.86	9.83	9.83
He4 σ_{el}													4.38								
Total [a]	**11.88**	**9.38**	**11.88**	**7.07**	**5.14**	**5.62**	**15.65**	**12.73**	**12.92**	**7.18**	**4.96**	**5.42**	**6.96**	**6.23**	**6.02**	**6.47**	**9.05**	**9.04**	**10.68**	**12.58**	**12.62**
Overall [b]	**13.10**	**10.32**	**13.07**	**7.82**	**5.60**	**6.17**	**17.11**	**14.02**	**14.29**	**7.83**	**5.40**	**5.97**	**7.67**	**6.75**	**6.53**	**7.18**	**9.81**	**9.71**	**15.49**	**13.89**	**13.86**

[a] Total uncertainties yield by the cross sections listed in the Table;

[b] Overall uncertainties yield by all cross sections.

Isotope/Reaction Contributing to 90% of ERANOS Burnup Reactivity Uncertainty with BOLNA, AFCI1.2 and AFCI1.3

	SFR			EFR			GFR			LFR			ADMAB		
	BOLNA	AFCI 1.2	AFCI 1.3	BOLNA	AFCI 1.2	AFCI 1.3	BOLNA	AFCI 1.2	AFCI 1.3	BOLNA	AFCI 1.2	AFCI 1.3	BOLNA	AFCI 1.2	AFCI 1.3
U238 σ_{inel}						0.58	5.97								
Pu238 σ_{fiss}	1.23	3.15	3.15		0.73	0.73	4.53	11.97	11.97	0.74	2.10	2.10	30.16	76.13	76.13
Pu238 ν													18.35		
Pu240 σ_{fiss}	0.95									0.48					
Pu241 σ_{fiss}	1.85	1.87		3.02	3.03		10.48	10.08		1.72	1.80				
Pu242 σ_{fiss}	0.78	0.82													
Am241 σ_{capt}						0.25									
Am242m σ_{fiss}	0.73						4.88						12.80		
Cm242 σ_{fiss}		0.86	0.86			0.66	6.87	20.12	20.12	0.58	1.53	1.53	23.00	65.50	65.50
Cm244 σ_{fiss}	1.40									0.72			28.52		
Cm245 σ_{fiss}			0.70												
Fe56 σ_{el}						0.38									
Fe56 σ_{inel}	1.17					0.30									
Na23 σ_{el}						0.34									
Na23 σ_{inel}						0.25									
O16 σ_{el}				0.97		0.46									
B10 σ_{capt}										0.45					
Total [(a)]	**3.21**	**3.86**	**3.34**	**3.17**	**3.12**	**1.42**	**15.40**	**25.49**	**23.41**	**2.19**	**3.16**	**2.59**	**52.46**	**100.43**	**100.43**
Overall [(b)]	**3.55**	**4.25**	**3.66**	**3.49**	**3.43**	**1.57**	**16.94**	**27.47**	**25.53**	**2.42**	**3.39**	**2.84**	**56.63**	**105.11**	**104.49**

[(a)] Total uncertainties yield by the cross sections listed in the Table;
[(b)] Overall uncertainties yield by all cross sections.

Isotope/Reaction Contributing to 90% of DPT Direct Term Burnup Uncertainty with BOLNA, AFCI1.2 and AFCI1.3

	SFR			EFR			GFR			LFR		
	BOLNA	AFCI1.2	AFCI1.3	BOLNA	AFCI1.2	AFCI1.3	BOLNA	AFCI1.2	AFCI1.3	BOLNA	AFCI1.2	AFCI1.3
U238 σ_{el}						0.28i						
U238 σ_{inel}					0.69	0.69	5.89	6.10	6.09			0.34
Pu238 σ_{fiss}	1.17	2.92	2.92			0.49	4.31	10.10	10.10	0.52	1.42	1.42
Pu239 σ_{fiss}						0.24						
Pu240 σ_{fiss}	0.79	0.85								0.44	0.44	
Pu241 σ_{fiss}	1.88	1.91		2.88	2.90	0.22	10.73	10.34		1.46	1.53	
Pu242 σ_{fiss}	0.79											
Am241 σ_{capt}						0.24						
Am242m σ_{fiss}							6.90	5.79	5.79	0.39		0.35
Cm242 σ_{fiss}								6.99	6.99			
Cm244 σ_{fiss}	1.24									0.51		
Cm245 σ_{fiss}	0.89	0.97	0.97			0.33						
Fe56 σ_{el}						0.41						
Fe56 σ_{inel}	1.03					0.35				0.42		
Na23 σ_{el}						0.36						
Na23 σ_{inel}						0.29						
O16 σ_{el}				1.00		0.49						
Pb206 σ_{inel}											0.50	0.50
Pb208 σ_{el}												0.27
Total [(a)]	**3.09**	**3.72**	**3.08**	**3.05**	**2.98**	**1.35**	**14.70**	**18.12**	**14.88**	**1.79**	**2.19**	**1.60**
Overall [(b)]	**3.41**	**4.06**	**3.41**	**3.34**	**3.23**	**1.42**	**16.31**	**19.31**	**16.31**	**1.96**	**2.39**	**1.77**

[(a)] Total uncertainties yield by the cross sections listed in the Table;

[(b)] Overall uncertainties yield by all cross sections.

Isotope/Reaction Contributing to 90% of DPT Density Term Burnup Uncertainty with BOLNA, AFCI1.2 and AFCI1.3

	SFR			EFR			GFR			LFR		
	BOLNA	AFCI1.2	AFCI1.3	BOLNA	AFCI1.2	AFCI1.3	BOLNA	AFCI1.2	AFCI1.3	BOLNA	AFCI1.2	AFCI1.3
U238 σ_{capt}				6.56	4.39	4.38	14.55	10.01	9.99	5.84	3.57	3.57
Pu238 σ_{fiss}		1.86	1.86								3.80	3.80
Pu239 σ_{capt}						2.71		6.45	6.44			2.72
Pu240 σ_{capt}	2.00	2.51	1.00	3.35	3.76	1.73	6.98	7.55		5.27	6.58	2.19
Pu241 σ_{fiss}	2.97	2.99		4.06	4.07		11.80	11.31		4.98	5.19	
Am241 σ_{capt}									6.17			
Am242m σ_{capt}			0.93									
Am242m σ_{fiss}	2.84	2.55	2.55									
Total [(a)]	**4.57**	**5.02**	**3.44**	**8.41**	**7.07**	**5.43**	**19.99**	**18.07**	**13.39**	**9.31**	**9.87**	**6.28**
Overall [(b)]	**4.84**	**5.33**	**3.75**	**9.01**	**7.83**	**5.74**	**22.20**	**19.68**	**14.81**	**10.09**	**10.62**	**6.86**

[(a)] Total uncertainties yield by the cross sections listed in the Table;

[(b)] Overall uncertainties yield by all cross sections.

Isotope/Reaction Contributing to 90% of DPT Flux Term Burnup Uncertainty with BOLNA, AFCI1.2 and AFCI1.3

	SFR			EFR			GFR			LFR		
	BOLNA	AFCI1.2	AFCI1.3	BOLNA	AFCI1.2	AFCI1.3	BOLNA	AFCI1.2	AFCI1.3	BOLNA	AFCI1.2	AFCI1.3
U238 σ_{capt}				1.04	0.61	0.61				1.03		
U238 σ_{inel}	0.09	0.10	0.10	2.11	2.15	2.14	9.20	9.62	9.61	2.22	2.22	2.22
Pu239 σ_{inel}										0.85	0.87	0.87
Pu240 σ_{capt}										0.59		
Pu240 σ_{inel}		0.05										
Pu241 σ_{inel}		0.04										
Fe56 σ_{capt}		0.06										
Fe56 σ_{el}		0.11	0.12			0.56					0.68	1.55
Fe56 σ_{inel}	0.21		0.11							0.61		
Na23 σ_{el}	0.10	0.18	0.13									
Na23 σ_{inel}	0.10		0.06	0.60								
C σ_{el}							3.78					
O16 σ_{el}					0.56	0.56						
Pb207 σ_{el}											0.96	0.96
Pb207 σ_{inel}											0.62	
Pb208 σ_{el}											2.26	2.26
Total [(a)]	**0.27**	**0.24**	**0.24**	**2.43**	**2.30**	**2.36**	**9.94**	**9.62**	**9.61**	**2.73**	**3.55**	**3.75**
Overall [(b)]	**0.30**	**0.27**	**0.26**	**2.67**	**2.53**	**2.56**	**10.52**	**10.02**	**9.96**	**2.96**	**3.89**	**4.09**

[(a)] Total uncertainties yield by the cross sections listed in the Table;
[(b)] Overall uncertainties yield by all cross sections.

Isotope/Reaction Contributing to 90% of DPT Power Term Burnup Uncertainty with BOLNA, AFCI1.2 and AFCI1.3

	SFR			EFR			GFR			LFR		
	BOLNA	AFCI1.2	AFCI1.3	BOLNA	AFCI1.2	AFCI1.3	BOLNA	AFCI1.2	AFCI1.3	BOLNA	AFCI1.2	AFCI1.3
Pu238 σ_{fiss}	0.75	1.78	1.78		0.41	0.41	0.31	0.73	0.73	0.40	1.04	1.04
Pu239 σ_{fiss}				0.28		0.27						
Pu240 σ_{fiss}	0.55			0.33	0.38			0.33		0.41		
Pu241 σ_{fiss}	1.37	1.38		0.65	0.65		1.14	1.09		0.70	0.73	
Pu242 σ_{fiss}							0.30					
Am241 σ_{fiss}									0.32			
Am242m σ_{fiss}	0.85	0.76	0.76									
Total [(a)]	**1.86**	**2.37**	**1.93**	**0.78**	**0.86**	**0.49**	**1.22**	**1.35**	**0.79**	**0.90**	**1.27**	**1.04**
Overall [(b)]	**2.04**	**2.56**	**2.01**	**0.82**	**0.92**	**0.52**	**1.33**	**1.46**	**0.86**	**0.99**	**1.39**	**1.10**

[(a)] Total uncertainties yield by the cross sections listed in the Table;

[(b)] Overall uncertainties yield by all cross sections.

Isotope/Reaction Contributing to 90% of DPT Burnup Uncertainty with BOLNA, AFCI1.2 and AFCI1.3

	SFR			EFR			GFR			LFR		
	BOLNA	AFCI1.2	AFCI1.3	BOLNA	AFCI1.2	AFCI1.3	BOLNA	AFCI1.2	AFCI1.3	BOLNA	AFCI1.2	AFCI1.3
U238 σ_{capt}				5.52	3.78	3.78	13.59	9.74	9.72	4.76	3.05	3.04
U238 σ_{inel}							15.06	15.70	15.68			1.91
Pu238 σ_{fiss}	1.15	2.85	2.85						6.42			1.57
Pu239 σ_{capt}				2.91	2.91	2.91	8.24	7.96	7.95	3.16	3.16	3.15
Pu240 σ_{capt}	1.83	2.32	0.90	2.93	3.39	1.60				4.70	6.15	2.04
Pu240 σ_{fiss}	1.09	1.16										
Pu241 σ_{fiss}							24.51	23.61		3.10	3.24	
Pu242 σ_{fiss}	1.13	1.19										
Am241 σ_{capt}								8.90	8.90			
Am242m σ_{capt}			0.75									
Am242m σ_{fiss}	2.70	2.44	2.44									
Cm242 σ_{fiss}									6.84			
Cm244 σ_{fiss}	1.42											
Cm245 σ_{fiss}												1.22
Fe56 σ_{el}												1.39
Fe56 σ_{inel}	1.24		0.77									
Pb208 σ_{el}											2.53	2.53
Total [(a)]	**4.24**	**4.71**	**4.00**	**6.89**	**5.85**	**5.03**	**32.87**	**32.27**	**23.89**	**8.02**	**8.60**	**6.27**
Overall [(b)]	**4.59**	**5.11**	**4.38**	**7.29**	**6.36**	**5.52**	**35.99**	**35.33**	**25.63**	**8.61**	**9.52**	**6.89**

[(a)] Total uncertainties yield by the cross sections listed in the Table;
[(b)] Overall uncertainties yield by all cross sections.

Relative Standard Deviations (%)

		Pu238 σ_{fiss}			Pu240 σ_{capt}			Pu240 σ_{fiss}			Pu241 σ_{fiss}		
Gr.	[MeV]	BOLNA	AFCI1.2	AFCI1.3	BOLNA	AFCI1.2	AFCI1.3	BOLNA	AFCI1.2	AFCI1.3	BOLNA	AFCI1.2	AFCI1.3
1	1.964E+1	25.2	20.0	20.0	52.2	55.0	94.8	9.6	9.5	0.6	24.1	10.0	0.8
2	1.000E+1		20.0	20.0		40.8	94.9		6.7	0.5		6.5	0.7
3	6.065E+0	20.5	20.0	20.0	32.5	35.0	94.7	4.8	5.5	0.5	14.2	5.0	0.7
4	3.679E+0		13.8	13.8		35.0	94.7		5.5	0.5		5.0	0.7
5	2.231E+0	33.8	10.0	10.0	19.7	35.0	89.1	5.6	5.5	0.5	21.3	5.0	0.6
6	1.353E+0	17.1	50.0	50.0	16.3	100.0	39.4	5.8	5.5	0.6	16.6	15.0	0.7
7	8.209E-1		50.0	50.0		56.5	11.9		4.6	1.6		16.2	0.7
8	4.979E-1	17.1	50.0	50.0	14.3	29.9	6.0	3.9	4.0	3.0	13.5	17.0	0.7
9	3.020E-1		50.0	50.0		17.5	3.9		5.1	3.6		18.9	0.8
10	1.832E-1	8.8	50.0	50.0	13.8	10.0	2.3	5.7	5.7	2.8	19.9	20.0	0.8
11	1.111E-1		50.0	50.0		10.0	2.2		6.8	3.9		16.9	0.8
12	6.738E-2	11.9	50.0	50.0	11.3	10.0	2.9	7.4	7.5	6.1	8.7	15.0	0.8
13	4.087E-2		50.0	50.0		10.0	3.6		7.5	6.0		11.9	1.0
14	2.479E-2	11.2	50.0	50.0	10.2	10.0	3.7	7.4	7.5	5.0	11.3	10.0	1.2
15	1.503E-2		50.0	50.0		6.9	3.8		7.8	4.0		10.0	1.8
16	9.119E-3	7.5	50.0	50.0	4.4	5.0	3.3	8.0	8.1	3.5	10.4	10.0	1.8
17	5.531E-3		50.0	50.0		5.0	3.5		29.3	3.3		10.0	2.1
18	3.355E-3		50.0	50.0		5.0	4.0		42.2	3.1		10.0	2.2
19	2.035E-3	4.3	49.9	49.9	1.5	5.0	4.6	21.6	50.3	2.9	12.7	10.0	2.1
20	1.234E-3		39.8	39.8		5.0	4.6		70.4	2.9		7.5	1.0
21	7.485E-4		33.7	33.7		5.0	4.6		82.6	2.9		5.9	5.9
22	4.540E-4	8.1	30.0	30.0	1.6	5.0	4.6	4.7	90.0	2.9	19.4	5.0	5.0
23	3.043E-4		24.8	24.8		4.7	4.6		90.0	2.9		5.0	5.0
24	1.486E-4		19.4	19.4		4.3	4.6		90.0	2.9		5.0	5.0
25	9.166E-5		17.4	17.4		4.2	4.6		90.0	2.9		5.0	5.0
26	6.790E-5		16.6	16.6		4.1	4.6		90.0	2.9		5.0	5.0
27	4.017E-5		15.6	15.6		4.0	4.6		90.0	2.9		5.0	5.0
28	2.260E-5	19.0	15.0	15.0	5.5	4.0	4.6	8.9	90.0	2.9	4.2	5.0	5.0
29	1.371E-5		15.0	15.0		4.0	4.6		90.0	2.9		5.0	5.0
30	8.315E-6		15.0	15.0		4.0	4.6		90.0	2.9		5.0	5.0
31	4.000E-6	4.6	15.0	15.0	0.4	4.0	4.6	1.2	90.0	2.9	26.8	5.0	5.0
32	5.400E-7	4.6	5.0	5.0	3.2	1.0	2.0	29.8	50.0	50.0	2.9	1.0	1.0
33	1.000E-7	4.9	5.0	5.0	4.8	1.0	2.0	48.5	50.0	50.0	3.3	1.0	1.0

Improvements of AFCI1.2 based on the Results of AFCI1.1 Applications

Relative Standard Deviations (%)

		Pu242 σ_{fiss}			Cm242 σ_{capt}			Cm242 σ_{fiss}			Cm244 σ_{fiss}		
Gr.	[MeV]	BOLNA	AFCI1.2	AFCI1.3	BOLNA	AFCI1.2	AFCI1.3	BOLNA	AFCI1.2	AFCI1.3	BOLNA	AFCI1.2	AFCI1.3
1	1.964E+1	37.2	35.0	3.5	52.8	100.0	100.0	31.5	100.0	100.0	17.9	20.0	20.0
2	1.000E+1		24.4	3.3		100.0	100.0		100.0	100.0		20.0	20.0
3	6.065E+0	15.1	20.0	3.3	37.4	100.0	100.0	52.6	100.0	100.0	31.3	20.0	20.0
4	3.679E+0		20.0	3.1		100.0	100.0		100.0	100.0		20.0	20.0
5	2.231E+0	21.4	20.0	3.3	23.6	100.0	100.0	19.0	100.0	100.0	43.8	20.0	20.0
6	1.353E+0	19.0	20.0	3.3	19.0	100.0	100.0	23.4	100.0	100.0	50.0	15.0	15.0
7	8.209E-1		20.0	3.6		100.0	100.0		100.0	100.0		11.9	11.9
8	4.979E-1	18.6	20.0	4.7	18.2	100.0	100.0	66.0	100.0	100.0	36.5	10.0	10.0
9	3.020E-1		26.3	7.7		100.0	100.0		100.0	100.0		10.0	10.0
10	1.832E-1	32.1	30.0	13.5	20.3	100.0	100.0	62.7	100.0	100.0	47.6	10.0	10.0
11	1.111E-1		30.0	10.5		100.0	100.0		100.0	100.0		10.0	10.0
12	6.738E-2	33.1	30.0	16.5	22.4	100.0	100.0	28.1	100.0	100.0	26.3	10.0	10.0
13	4.087E-2		30.0	13.2		100.0	100.0		100.0	100.0		10.0	10.0
14	2.479E-2	33.2	29.9	12.8	21.2	100.0	100.0	16.2	100.0	100.0	19.0	10.0	10.0
15	1.503E-2		23.8	12.9		100.0	100.0		100.0	100.0		10.0	10.0
16	9.119E-3	13.2	20.0	12.9	18.7	99.9	99.9	20.9	100.0	100.0	11.9	10.0	10.0
17	5.531E-3		35.2	9.9		79.7	79.7		100.0	100.0		12.5	12.5
18	3.355E-3		44.4	15.0		67.4	67.4		100.0	100.0		14.1	14.1
19	2.035E-3	5.9	50.3	15.0	6.7	59.8	59.8	11.7	99.9	99.9	5.3	15.0	15.0
20	1.234E-3		70.4	15.0		44.7	44.7		94.9	94.9		17.6	17.6
21	7.485E-4		82.6	15.0		35.6	35.6		91.9	91.9		19.1	19.1
22	4.540E-4	2.0	90.0	15.0	4.5	30.0	30.0	9.3	90.0	90.0	5.7	20.0	20.0
23	3.043E-4		90.0	15.0		30.0	30.0		90.0	90.0		20.0	20.0
24	1.486E-4		90.0	15.0		30.0	30.0		90.0	90.0		20.0	20.0
25	9.166E-5		90.0	15.0		30.0	30.0		90.0	90.0		20.0	20.0
26	6.790E-5		90.0	15.0		30.0	30.0		90.0	90.0		20.0	20.0
27	4.017E-5		90.0	15.0		30.0	30.0		90.0	90.0		20.0	20.0
28	2.260E-5	6.5	90.0	15.0	3.7	30.0	30.0	24.0	90.0	90.0	17.1	20.0	20.0
29	1.371E-5		90.0	15.0		30.0	30.0		90.0	90.0		20.0	20.0
30	8.315E-6		90.0	15.0		30.0	30.0		90.0	90.0		20.0	20.0
31	4.000E-6	7.6	90.0	15.0	32.5	30.0	30.0	35.6	90.0	90.0	22.0	20.0	20.0
32	5.400E-7	5.2	50.0	45.5	39.2	30.0	30.0	41.2	50.0	65.0	26.4	20.0	20.0
33	1.000E-7	5.1	50.0	50.0	40.8	30.0	30.0	42.5	50.0	65.0	27.2	20.0	20.0

Relative Standard Deviations (%)

		Na σ_{inel}			Fe56 σ_{inel}			Pb206 σ_{inel}			B10 σ_{capt}		
Gr.	[MeV]	BOLNA	AFCI1.2	AFCI1.3	BOLNA	AFCI1.2	AFCI1.3	BOLNA	AFCI1.2	AFCI1.3	BOLNA	AFCI1.2	AFCI1.3
1	1.964E+1	18.8	10.8	5.5	13.0	5.1	7.6	19.8	42.0	42.0	15.0	0.9	0.9
2	1.000E+1		4.9	5.6		4.5	4.3		3.6	3.6		1.2	1.2
3	6.065E+0	8.9	5.1	6.3	7.2	2.9	4.3	5.5	4.6	4.6	15.0	0.8	0.8
4	3.679E+0		5.3	6.9		2.4	4.5		23.1	23.1		1.2	1.2
5	2.231E+0	12.6	8.1	8.3	25.4	2.8	12.0	14.2	29.9	29.9	15.0	0.9	0.9
6	1.353E+0	28.0	11.1	14.9	16.1	2.8	10.9	9.2	18.4	18.4	15.0	0.7	0.7
7	8.209E-1		11.6	17.5		-	-		2.2	2.1		0.9	0.9
8	4.979E-1	50.0	38.3	9.8	-	-	-	-	-	-	15.0	1.0	0.9
9	3.020E-1		-	-		-	-		-	-		1.0	1.0
10	1.832E-1	-	-	-	-	-	-	-	-	-	10.0	1.0	1.0
11	1.111E-1		-	-		-	-		-	-		0.8	0.8
12	6.738E-2	-	-	-	-	-	-	-	-	-	10.0	0.8	0.8
13	4.087E-2		-	-		-	-		-	-		0.7	0.7
14	2.479E-2	-	-	-	-	-	-	-	-	-	8.0	0.7	0.7
15	1.503E-2		-	-		-	-		-	-		0.7	0.7
16	9.119E-3	-	-	-	-	-	-	-	-	-	8.0	0.7	0.7
17	5.531E-3		-	-		-	-		-	-		0.7	0.7
18	3.355E-3		-	-		-	-		-	-		0.7	0.7
19	2.035E-3	-	-	-	-	-	-	-	-	-	5.0	0.7	0.7
20	1.234E-3		-	-		-	-		-	-		0.7	0.7
21	7.485E-4		-	-		-	-		-	-		0.7	0.7
22	4.540E-4	-	-	-	-	-	-	-	-	-	5.0	0.7	0.7
23	3.043E-4		-	-		-	-		-	-		0.7	0.7
24	1.486E-4		-	-		-	-		-	-		0.7	0.7
25	9.166E-5		-	-		-	-		-	-		0.7	0.7
26	6.790E-5		-	-		-	-		-	-		0.7	0.7
27	4.017E-5		-	-		-	-		-	-		0.7	0.7
28	2.260E-5	-	-	-	-	-	-	-	-	-	5.0	0.7	0.7
29	1.371E-5		-	-		-	-		-	-		0.7	0.7
30	8.315E-6		-	-		-	-		-	-		0.7	0.7
31	4.000E-6	-	-	-	-	-	-	-	-	-	3.0	0.7	0.7
32	5.400E-7	-	-	-	-	-	-	-	-	-	1.0	0.7	0.7
33	1.000E-7	-	-	-	-	-	-	-	-	-	1.0	0.7	0.7

U235 Capture Relative Standard Deviations (%)

		BOLNA 15Gr	AFCI1.2 33Gr	AFCI1.3 33Gr
Gr.	[MeV]	σ_{capt}	σ_{capt}	σ_{capt}
1	1.964E+1	61.1	60.6	60.6
2	1.000E+1		62.7	62.7
3	6.065E+0	37.0	46.4	46.3
4	3.679E+0		26.5	26.5
5	2.231E+0	19.1	19.1	19.1
6	1.353E+0	16.1	16.2	16.2
7	8.209E-1		16.8	16.8
8	4.979E-1	22.1	19.6	19.6
9	3.020E-1		20.0	20.0
10	1.832E-1	30.6	20.0	20.0
11	1.111E-1		20.0	20.0
12	6.738E-2	32.9	20.0	20.0
13	4.087E-2		20.0	20.0
14	2.479E-2	34.0	20.0	20.0
15	1.503E-2		20.0	20.0
16	9.119E-3	33.9	20.0	20.0
17	5.531E-3		20.0	20.0
18	3.355E-3		18.3	18.3
19	2.035E-3	4.6	13.1	13.1
20	1.234E-3		5.2	5.2
21	7.485E-4		2.5	2.5
22	4.540E-4	0.6	1.6	1.6
23	3.043E-4		1.3	1.3
24	1.486E-4		1.1	1.1
25	9.166E-5		1.3	1.3
26	6.790E-5		1.1	1.1
27	4.017E-5		1.1	1.1
28	2.260E-5	0.7	1.0	1.0
29	1.371E-5		1.2	1.2
30	8.315E-6		1.8	1.8
31	4.000E-6	1.4	2.2	2.2
32	5.400E-7	1.6	1.6	1.6
33	1.000E-7	1.7	1.7	1.7

GODIVA k_{eff} Uncertainties (%)

	BOLNA diagonal	AFCI1.3 diagonal	BOLNA full	AFCI1.3 full
Isotope	**U235**	**U235**	**U235**	**U235**
ν	0.27	0.06	0.55	0.08
σ_{fiss}	0.14	0.11	0.26	0.26
σ_{inel}	0.34	0.26	0.46	0.47
σ_{el}	0.16	0.12	0.09	0.18i
σ_{capt}	0.44	0.26	0.90	0.71
Total	**0.65**	**0.41**	**1.18**	**0.88**
Overall [(a)]	**0.66**	**0.41**	**1.19**	**0.89**

[(a)] Total of all isotopes