Attachment B

Specification of Research Reactors to be evaluated with the common codes

Items	Bangladesh	China	Indonesia	Japan	Korea	Malaysia	Thailand	Vietnam
Name of reactor	TRIGA MARK II	CARR	RSG-GAS	JRR-4	HANARO	RTP	TRR-1/M1	DNRR
Purpose	Isotope Production, Neutron Activation Analysis, Neutron Radiography	Multi-purpose, such as Neutron Scattering Experiments, Radio-isotope products, Irradiation Tests,and so on.	Beam Experiments, Irradiation	Beam Experiments, Irradiation Tests, Medical Irradiation	Irradiation Test, Production of Radioisotope, Fuel Test Loop, Cold Neutron Source	NAA, Beam Experiment, Isotope Production, Training & Education	Isotope Production, Gemstone Coloration, NAA, Beam Experiments	NAA, Isotope Production, Research and Training
Type	Swimming Pool Type	Pool Type	Swimming Pool Type	Swimming Pool Type	Open Tank in Pool Type	Pool Type	Swimming Pool Type	Pool Type
Thermal Power (MW)	3	60	30	3.5	30	1	1.2	0.5
Average power density in active core (MW/m^3)	3	109.4	1537	44	250	22.8	7.9	208
Maximum Thermal Neutron Flux($\times 10^{13}$ $n/cm^2/s$)	8	8	20	7	50	1	3	2.1
Shape of Core	Hexagonal	Cylindlical	Rectangular	Square	Honeycomb	Cylindrical	Cylindrical	Cylindrical
Active core size	50.27 cm W x 38.12 cm H	46cmD×85cmH	64.4 cm W x 60.88 cm D x 60 cm H	65 cm W x 67 cm D × 60 cm H	23.42 cm D x 70 cm H	110 cm D x 38.1 cm H	53.3 cm D x 67.8 cm H	40 cm D x 60 cm H
Coolant	Light Water	Light water	Light Water	Light water	Light water	Light water	Light water	Light water
Moderator	Light Water	Light water	Light Water	Light water	Light water	Light water	H in fuel, Water	Light water
Reflector	Graphite	Heavy water	Berilyum	Graphite cladded with aluminium	Heavy water	Graphite	Graphite	Graphite
Control Rod	Boron Carbide	Hafnium	AgInCd	Boron-stainless steel	Hafnium	UZrH1.6	Boron Carbide	Boron Carbide + Stainless Steel
Shape of Fuel Element	Rod Type	PlatetType	Plate Type	Plate Type	Finned Rod Type	Rod	Rod	Plate Type
Fuel material	Uranium-Zirconium Hydride	Uranium-Silicon Dispersion Alloy (U_3Si_2-Al)	Uranium-Silicon Dispersion Alloy (U_3Si_2-Al)	Uranium-Silicon Dispersion Alloy (U_3Si_2-Al)	U3Si	UrZrH1.6	UZrH	HEU: U-Al alloy LEU: UO_2 + Al
Enrichment of U-235 (Weight%)	19.7	Approx. 20	Approx. 20	Approx. 20	Approx. 20	Approx. 20	Approx. 20	HEU: 36 LEU: 19.75
Burnable absorber	Er	no	none	none	none	none	Er	None
Number of fuel changed at end of a burnup cycle	None	About 7	5 FE and 1 CE per cycle	About 2 / year	2 (36 rods), 2(18 rods)	Reshuffle every 2.5 years	About 2 / year	From 1 - 4
Length of a burnup cycle (days)	First Cycle	25	80	4 (Daily operaion, 6hr/day)	28	4 (Daily operation 6hr/day)	1 year (operation 40 hrs / week)	1200 hrs / year
Max. fuel burnup (%U-235)	30	About 60	56	50	> 50	40	50	25