Panel 7: East Asia and Non-Proliferation The Neutrals and the Bomb

## Japan on the Fault line:

Confrontation between Nuclear suppliers and N+N States at the International Nuclear Fuel Cycle Evaluation, 1977-1980

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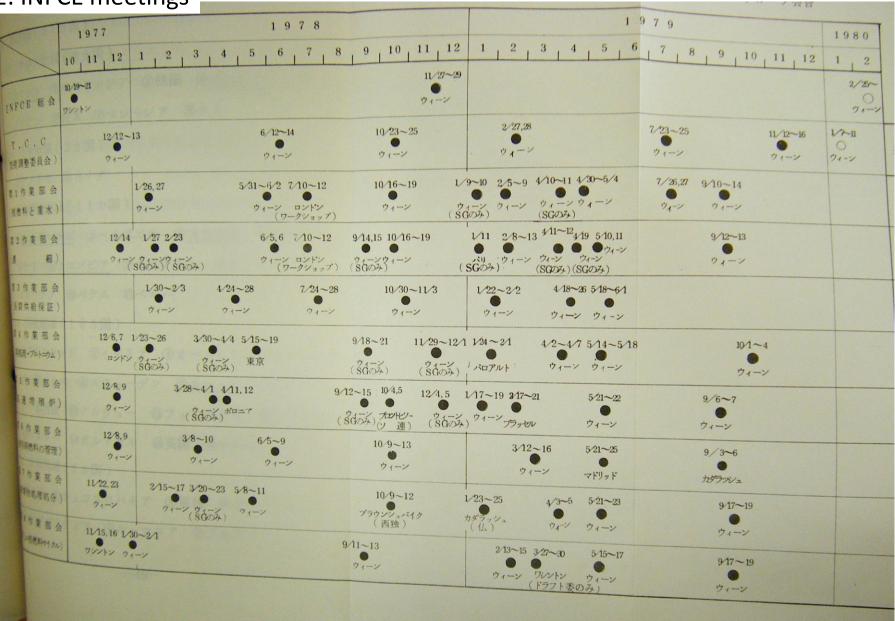
## Slide 1: INFCE organizations

WG1	-	Fuel and Heavy Water Availability (Co-Chairmen: Canada, Egypt, India) (UK rep: P M S Jones (AEA))
WG2	-	Enrichment Availability (Co-Chairmen: France, FRG, Iran) (UK rep: C Buck (BNFL))
WG3	-	Assurances of Supply of Technology, Fuel & Services (Co-Chairmen: Australia, <u>Phillippines</u> , Switzerland) (UK rep: W Fitzsimmons (DoE))
WG4	-	Reprocessing, Plutonium Handling, Recycle (Co-Chairmen: Japan, United Kingdom) (UK Co-Chairmen: Sir H Bondi, Dr W Marshall, C Buck)

WG5	-	Fast Reactors (Co-Chairmen: Belgium, Italy, USSR) (UK rep: J D Thorn (AEA))
WG6	-	Spent Fuel Management (Co-Chairmen: <u>Argentina</u> , Spain) (UK rep: C Buck (BNFL))
WG7	-	Waste Management and Disposal (Co-Chairmen: Finland, Netherlands, Sweden) (UK rep: F W Fenning (AEA))
WG8	-	Advanced Fuel Cycle and Reactor Concepts (Co-Chairmen: Korea, Roumania, USA) (UK rep: J D Thorn (AEA))
TCC	-	Technical Co-ordinating Committee (Chairman: Professor Abram Chayes)

Panel 7: East Asia and Non-Proliferation The Neutrals and the Bomb

Slide 2: INFCE meetings



The Neutrals and the Bomb Panel 7: East Asia and Non-Proliferation

Page1

Slide 3: INFCE documents Page2 Page26 The following elements, drawn from the detailed technical, quantitative and analytic material contained in the eight Working (c) Increased availability of specialized training programmes for Group reports and summarized in the Technical Coordinating Committee's developing the required manpower of nuclear installations; (TCC) Summary and Overview, have been compiled by the TCC in an effort (d) Increased availability of resources for nuclear power programmes to facilitate the transmission of information to the press. The from international financial organizations. muthoritative statement of the work of INFCE is the Working Group re-81 The setting up of such international arrangements would be of assistance ports and the Summary and Overview themselves, and they should be to developing countries, which would find the following features desirable: consulted for a full appreciation of the matters mentioned below. IN RELATION TO THE PRESS (a) Participation in such arrangements should be on a voluntary basis, RESOURCES, TECHNICAL, ECONOMIC, ENVIRONMENTAL depending upon the actual need of each country; AND HEALTH AND SAFETY CONSIDERATIONS (b) Participating countries would have equal rights in making the major Resource Considerations Nuclear energy is expected to significantly increase decisions as regards policy and operations; (c) Participation in such arrangements should not jeopardize the safeguarded its role in meeting the world's energy needs over the next half activities which are part of the peaceful nuclear power programme of a century. As nuclear capacities 50 years into the future cannot be forecast with a high degree of confidence, a wide range of such capa-(d) Participation in such arrangements should be guaranteed and maintained cities rather than a most probable level was developed to serve as without being interrupted by governmental interference, except in a basis for calculating the requirements for nuclear fuels, heavy water and fuel cycle services. From today's installed capacity of accordance with the terms of the arrangement; (e) Participation in such arrangements is of such importance that they should about 125 GWe the projections within WOCA\* ranged from 850 to 1,200 be in the form of legally binding international governmental engagements. GWe in 2000 and from 1,800 to 3,900 GWe in 2025. An International Technology Centre, perhaps with its scope limited Requirements will depend not only on the nuclear capacity to particular subjects, such as structural materials technology, welding, installed but also on the types and mixes of reactors deployed. maintenance of specialized equipment and quality assurance, could be of Within INFCE, several reactor strategies were defined to calculate great importance to developing countries in ensuring practical training these requirements and a wide range of possibilities was identified. and also access to expert advice. Such a centre could be set up under the A plausible range of demand for uranium was judged to be approxianspices of the IAEA, possibly on the basis of some existing facilities in mately 90 to 160 thousand t U/a in 2000 going to approximately 75 to 430 thousand t U/a in 2025. As in the case of demand, uranium availability far in the future cannot be forecast with a high degree of confidence. Based on current estimates of known resources of uranium in the MOCA, production capability might be increased to a peak level in the order of 110 to 120 thousand t U/a during the late 1990s. Thereafter \* World Outside Centrally Planned Engonomies Area

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## Slide 4:List of Nuclear Cooperation Agreements Appendix A. Key Dates for Bilateral Civilian **Nuclear Cooperation ("Section 123") Agreements**

Table A-I. Key Dates

Country	Most Recent Agreement Signed	Entered into Force	Duration	Expiration	Renewal Terms <sup>a</sup>	Original Agreemen
Argentina	February 29, 1996	October 16, 1997	30 years	October 16, 2027	Extension by agreement of the parties	
Australia	May 4, 2010	December 22, 2010	30 years	December 22, 2040	Automatic 5-yr renewals after 30 years	1956
Brazil	October 14, 1997	September 15, 1999	30 years	September 15, 2029	Extension by agreement of the parties	1972
Canada	June 23, 1999	December 13, 1999	30 years	January I, 2030	Automatic 5-yr renewals after 30 years	1955
Chinac	April 13, 2015	November 10, 2015	30 years	2045	None specified	1985
Egypt	June 29, 1981	December 29, 1981	40 years	December 29, 2021	None specified	
European Atomic Energy Community (Euratom) <sup>d</sup>	November 7, 1995	March 29, 1996	30 years	March 29, 2026	Automatic 5-yr renewals after 30 years	1958
Indiae	October 10, 2008	December 6, 2008	40 years	December 6, 2048	Automatic 10-yr renewals after 40 years	
Indonesia	June 30, 1980	December 30, 1981	50 years	December 30, 2031	None specified	1960
International Atomic Energy Agency (IAEA)	May 11, 1959	August 7, 1959	95 years (Amended in 1974, 1980, Renewed in 2014)	August 7, 2054	None specified	1959
Japan	November 4, 1987	July 17, 1988	30 years	July 16, 2018	Remains in force until terminated by a party	1968
Kazakhstan	November 18, 1997	November 5, 1999	30 years	November 5, 2029	None specified	

Country	Most Recent Agreement Signed	Entered into Force	Duration	Expiration	Renewal Terms <sup>a</sup>	Original Agreement
Republic of Korea	November 24, 1972 [proposed renewal agreement signed June 15, 2015]	November 25, 2015	20 years	November 24, 2035	Automatic 5-yr renewals after 20 years	1956
Mexico	May 7, 2018	Congressional review period completed	30 years		None specified	
Morocco	May 30, 1980	May 16, 1981	30 years	May 16, 2021	Automatic 5-yr renewals after 30 years	
Norway <sup>f</sup>	June 11, 2016		30 years	Thirty years after entry into force	None specified	1984
Russian Federation	May 6, 2008	January II, 2011	30 years	January II, 2041	None specified	
South Africa	August 25, 1995	December 4, 1997	25 years	December 4, 2022	None specified	1957
Switzerland	October 31, 1997	June 23, 1998	30 years	June 23, 2028	Automatic 5-yr renewals after 30 years	1965
Taiwan (TECRO)	December 20, 2013	June 22, 2014	amended in 1974, to 30 years; renewed in 2014 to indefinite duration	none	n/a	1955
Turkey	July 26, 2000	June 2, 2008	15 years	June 2, 2023	Automatic 5-yr renewals after 15 years	
Ukraine	May 6, 1998	May 28, 1999	30 years	May 28, 2029	None specified	
United Arab Emirates	May 21, 2009	December 17, 2009	30 years	December 17, 2039	None specified	
United Kingdom	May 4, 2018	Congressional review period completed; EIF upon end of transition period, should the UK withdraw from the European Union.	30 years		None specified	Formerly under EURATOM agreement
Vietnam	May 6, 2014	October 3, 2014	30 years	October 3, 2044	Automatic 5-yr renewals after 30 years	