

Annex 1

VIEWGRAPHS: L.H. BAETSLE'S PRESENTATION

ON

APPROACHES TO SYSTEMS STUDIES

Dr. Baetslé presented his consultancy report of which the Executive Summary is included in these papers. The full report (NEA/P&T REPORT No. 3) entitled *Role and Influence of Partitioning and Transmutation on the Management of Nuclear Waste Streams* is available free of charge upon request to the Nuclear Energy Agency.

INTERNATIONAL INFORMATION EXCHANGE

- CEC. STRATEGIC EVALUATION STUDY
- DOE. FUEL CYCLE IMPACT STUDIES
- JAPAN - (STA - PNC - JAERI)
STRATEGIC STUDY
- INPUT FROM RUSSIA (IAEA)

COMPREHENSIVE SYSTEMS ANALYSIS STUDY

- DATA BASE (EXTENSION)
- FLOWSHEET ANALYSIS OF IMPROVED REPROCESSING
- FUEL FABRICATION TECHNOL.
- TRANSMUTATION
 - ___ Reactor systems
 - Accelerator driven systems
- Pu-MA FUEL REPROCESSING
 - ___ AQUEOUS PROCESSES
 - ___ NON AQUEOUS PROCESSES
- ECONOMIC ANALYSIS (IF POSSIBLE)

1 DATA BASE

1.1 SPENT FUEL COMPOSITIONS

UO₂ - LWR **45-60** GWd/T

Pu - MA

F(B)R 80-150 GWd/T

1.2 HIGH LEVEL LIQUID WASTE

- NOMINAL (VERIFIED) COMPOSITIONS
- INSOLUBLE RESIDUES

1.3 CROSS SECTIONS

MA 0.8-1 MeV

1.4 THERMO-MECHANICAL DATA

- THERMAL CONDUCTIVITY
- M.P. (Oxides, alloys, nitrides...)

2. FLOWSHEET ANALYSIS

- Np REROUTING
- TRUOX-DIDPA - DIAMIDES . . .
- PYROPROCESSING
- Te 9y
- I 129

3. FUEL/TARGET FABRICATION

- HOMOGENEOUS RECYCLE
- HETEROGENEOUS RECYCLE
- ISOTOPIC TARGETS (Tc, I.)
- M.A. CORE ASSEMBLIES
- LIQUID SOURCES
 - MOLTEN SALTS
 - D_2^0

P & T SCENARIO ANALYSIS

1. CASE STUDIES

- SELECTION OF SCENARIO
- SCENARIO **ANALYSIS**

2. REQUIRED FACILITIES

- REPROCESSING
- FUEL/TARGET FABRICATION
- FUEL/TARGET RECYCLE
- WASTE FACILITIES

3. ENVIRONMENTAL & RADIOLOGIC IMPACT ANALYSIS

- SHORT-TERM BURDEN
- LONG-TERM BENEFIT

4. IMPACT ON DISPOSAL