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E.O. 11652: XGDS-3

TAGS: MNUC, PARM, TW

SUBJECT:THE TAIWAN RESEARCH REACTOR

1. THE FOLLOWING IS THE TEXT OF THE AIDE MEMOIRE TO BE DELIVERED IN CONJUNCTION WITH THE DEMARCHE CONCERNING THE TRR (SEPTEL):

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PAGE 02 STATE 305274

BEGIN TEXT
IN ACCORDANCE WITH THE TERMS OF AN EXCHANGE OF NOTES BETWEEN THE GOVERNMENT OF THE REPUBLIC OF CHINA AND THE GOVERNMENT OF THE UNITED STATES OF AMERICA DONE IN TAIPEI IN MARCH/ APRIL/MAY 1977, THE OPERATION OF THE TAIWAN RESEARCH REACTOR (TRR) HAS BEEN SUSPENDED PENDING MUTUAL AGREEMENT CONCERNING THE DISPOSITION OF SPENT FUEL, ADEQUATE SAFE-GUARDS MEASURES, AND AN ACCEPTABLE RESEARCH PROGRAM. THE GOVERNMENT OF THE UNITED STATES OF AMERICA IS PREPARED TO AGREE TO THE RESUMED OPERATION OF THE REACTOR PROVIDED THE GOVERNMENT OF THE REPUBLIC OF CHINA SHARES THE FOLLOWING UNDERSTANDINGS CONCERNING THE OPERATION OF T;E REACTOR UNDER THE TERMS OF THE EXCHANGE OF NOTES.

A. DISPOSITION OF SPENT FUEL

THE U.S. CONSIDERS THAT THE FOLLOWING SPENT FUEL MANAGEMENT SCHEME WOULD MEET THE TERMS OF ITEM 6 OF THE EXCHANGE OF NOTES WITH RESPECT TO THE DISPOSITION OF SPENT FUEL FROM THE TRR:

1. THE ROC WOULD PREPARE FOR SHIPMENT, AND SHIP TO A SITE SELECTED BY THE UNITED STATES ALL SPENT FUEL FROM THE TRR, FOLLOWING AN APPROPRIATE PERIOD OF COOLING. THE COST

OF PREPARATION AND TRANSPORTATION WOULD BE BORNE BY THE ROC; ALL SUBSEQUENT ARRANGEMENTS FOR STORAGE OR ULTIMATE DISPOSITION WOULD BE THE RESPONSIBILITY OF THE U.S.

2. UNTIL THE TWO COUNTRIES HAVE IMPLEMENTED THE ABOVE MEASURES, THE FOLLOWING MEASURES CONCERNING THE STORAGE OF SPENT FUEL AT THE INSTITUTE OF NUCLEAR ENERGY RESEARCH WOULD CONSTITUTE AN ACCEPTABLE INTERIM ARRANGEMENT FOR THE DISPOSITION OF SPENT FUEL :

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PAGE 03 STATE 305274

A. THE IAEA WILL MEASURE THE SPENT FUEL STORED IN THE COOLING POND, WITNESS THE TRANSFER OF THE SPENT FUEL FROM THE COOLING POND TO DRY STORAGE, AND SEAL EACH DRY STORAGE LOCATION.

B. SUCH TRANSFERS WILL BE SCHEDULED AT TIMES CONVENIENT TO THE IAEA, BUT AT INTERVALS FREQUENT ENOUGH TO HOLD THE COOLING POND INVENTORY TO NOT MORE THAN ONE QUARTER OF THE CORE (APPROXIMATELY 50 IRRADIATED FUEL ELEMENTS).

THE ROC WILL MAKE APPROPRIATE ARRANGEMENTS WITH THE IAEA TO IMPLEMENT THESE MEASURES PRIOR TO RESUMING OPERATION OF THE TRR.

3. IN THE EVENT THAT THE TRR IS CONVERTED TO OPERATE ON LOW ENRICHED URANIUM FUEL (LEU) IN ORDER TO REDUCE THE PROLIFERATION CONCERNS ASSOCIATED WITH THE OPERATION OF THIS KIND OF REACTOR, OUR GOVERNMENTS WOULD CONSULT REGARDING EQUITABLE ARRANGEMENTS FOR RETURN OF SUCH FUEL AFTER IRRADIATION TO THE U.S. FOR RECOVERY OF RESIDUAL VALUE IN ACCORDANCE WITH THEN CURRENT U.S. POLICY REGARDING THE RETURN OF RESEARCH REACTOR SPENT FUEL.

B. SAFEGUARDS AT THE TRR

THE U.S. CONSIDERS THE FOLLOWING SAFEGUARDS ARRANGEMENTS WOULD MEET THE TERMS OF ITEM 6 OF THE EXCHANGE OF NOTES WITH RESPECT TO THE MAINTENANCE OF EFFECTIVE SAFEGUARDS AT THE TRR:

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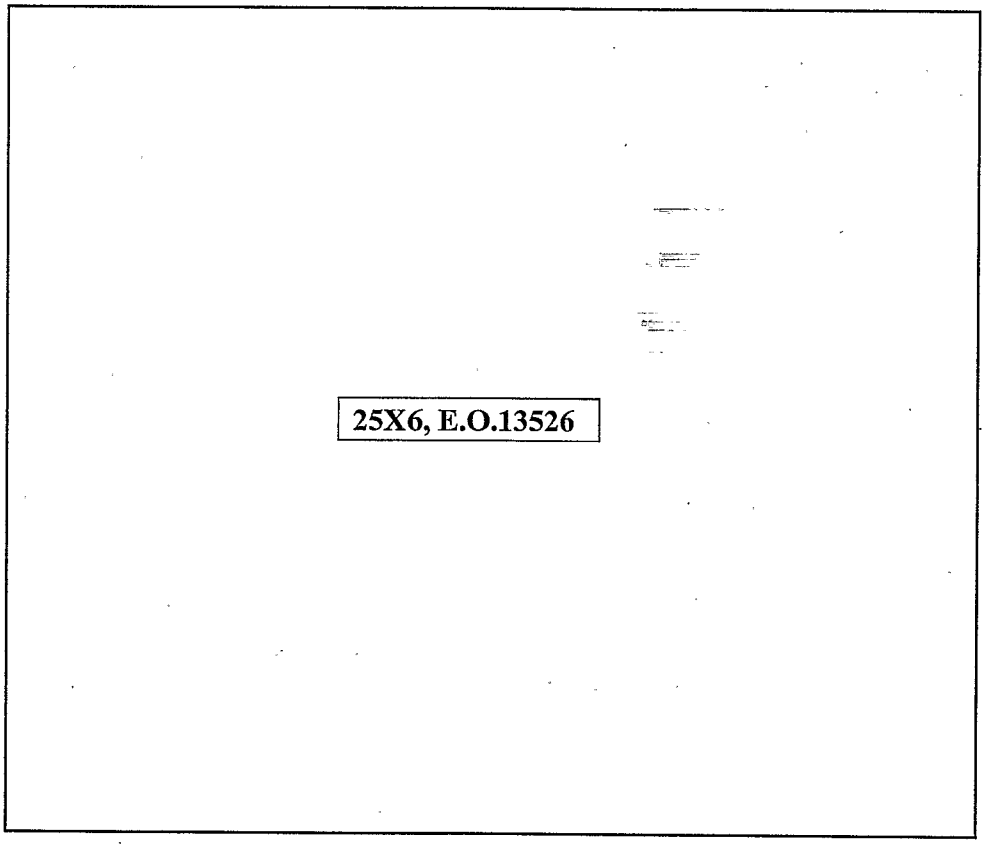
PAGE 04 STATE 305274



THE ROC WILL MAKE APPROPRIATE ARRANGEMENTS WITH THE IAEA TO IMPLEMENT THESE MEASURES PRIOR TO RESUMING OPERATION OF THE TRR.

THE U.S. AND THE ROC WILL UNDERTAKE AN ACTIVE PROGRAM OF

IMPROVED SURVEILLANCE SYSTEMS AND INSTRUMENTATION WITH THE GOAL OF IMPROVING FURTHER THE EFFECTIVENESS OF THESE SAFEGUARDS MEASURES. AS SUCH IMPROVEMENTS IN INSTRUMENTATION AND SURVEILLANCE BECOME AVAILABLE, OR SHOULD THE TRR BE CONVERTED TO OPERATE ON A FUEL CYCLE HAVING LOWER PROLIFERATION RISKS, THE GOVERNMENTS WOULD CONSULT ON MODIFICATIONS IN THE ABOVE UNDERSTANDINGS WHICH WOULD PERMIT MORE FLEXIBLE OPERATION OF THE TRR.

IN ADDITION, AS MENTIONED IN THE US/ROC EXCHANGE OF NOTES OF MARCH/APRIL/MAY 1977, THE U.S. WILL CONTINUE TO BE AFFORDED UNLIMITED ACCESS TO ALL ROC NUCLEAR FACILITIES ON A CONTINUING BASIS.

C. RESEARCH PROGRAM

IN THE CONTEXT OF ITEMS 3, 5, AND 6 OF THE EXCHANGE OF NOTES, THE U.S. HAS REVIEWED THE RESEARCH PROGRAM PRESENTED TO THE U.S. BY INER DIRECTOR CHIEN IN JUNE 1977. WITH

THE EXCEPTION OF TWO TYPES OF ACTIVITY WHICH WILL REQUIRE FURTHER DISCUSSION BETWEEN OUR GOVERNMENTS, THE U.S. HAS NO OBJECTION TO THIS RESEARCH PROGRAM. THE TWO ACTIVITIES REQUIRING FURTHER DISCUSSION ARE:

1. PROJECTS INVOLVING THE CHEMICAL ANALYSIS OF IRRADIATED FUEL SAMPLES: NO CHEMICAL ANALYSES SHOULD BE PERFORMED UNLESS THE U.S. AND ROC HAVE AGREED TO DEFINITIONS WHICH CLEARLY DISTINGUISH SUCH CHEMICAL ANALYSIS FROM REPROCESSING.

2. HEAVY WATER REACTOR DESIGN: THE ROC MAY CONTINUE ANALYTICAL STUDIES AND CONCEPTUAL DESIGN WORK ON A HEAVY WATER REACTOR, BUT WILL NOT GO BEYOND SUCH STUDIES UNTIL THE U.S. AND ROC HAVE AGREED ON A CONCEPTUAL FRAMEWORK FOR A HEAVY WATER REACTOR DESIGN WHICH MINIMIZES PROLIFERATION CONCERNS AND MAXIMIZES THE EFFECTIVENESS OF SAFEGUARDS WITH REGARD TO THIS TYPE OF REACTOR.

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IN ADDITION, IT IS OUR UNDERSTANDING THAT IN ACCORDANCE WITH THE LETTER OF JUNE 1977 FROM MR. HELFRICH TO DR. CHENG CONCERNING THE DRAFT INER RESEARCH PROGRAM, THE SEPARATION OF AMERICIUM FROM PLUTONIUM HAS BEEN TERMINATED.

AS PART OF ITS RESEARCH PROGRAM, THE INSTITUTE OF NUCLEAR ENERGY RESEARCH WILL UNDERTAKE RESEARCH CONTRIBUTING TO ONGOING INTERNATIONAL EFFORTS TO DEVELOP A LOW ENRICHED URANIUM (LEU) FUEL OF APPROXIMATELY 20 PERCENT ENRICHMENT SUITABLE FOR USE IN REACTORS SUCH AS THE TRR. IF THESE EFFORTS DEMONSTRATE THAT SUCH A LEU FUEL CYCLE IS REASONABLY PRACTICABLE, THE TRR WOULD BE CONVERTED TO OPERATE ON LEU FUEL AS SOON AS POSSIBLE. SUCH CONVERSION MAY REQUIRE SOME MODIFICATION OF THE REACTOR. IF, HOWEVER, THE RESEARCH DEMONSTRATES TO OUR MUTUAL SATISFACTION THAT SUCH CONVERSION IS NOT REASONABLY PRACTICABLE, IT WOULD NOT BE REQUIRED.

THE U.S. GOVERNMENT IS NOW UNDERTAKING A DETAILED STUDY OF THIS CONCEPT WHICH WE ANTICIPATE WILL BE COMPLETED NO LATER THAN MARCH. WHEN THE STUDY IS COMPLETED, THE U.S. PROPOSES AN EARLY MEETING BETWEEN OUR EXPERTS TO REVIEW THE CONCEPT AND TO PLAN THE PRACTICAL STEPS REQUIRED TO CONVERT T;E TRR FOR OPERATION ON LEU FUEL. SUBJECT TO THE ISSUANCE OF EXPORT LICENSES, THE USG IS PREPARED TO SUPPLY THE REQUIRED QUANTITIES OF LEU PURSUANT TO THE THEN EXISTING URANIUM SUPPLY POLICIES AND TO THE US/ROC AGREEMENT FOR COOPERATION.

IN THE INTERIM PENDING SUCH CONVERSION, THE USG IS PREPARED TO AGREE TO THE PROMPT RESUMPTION OF TRR OPERATION IN ITS PRESENT CONFIGURATION USING NATURAL

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URANIUM FUEL FOR A PERIOD OF UP TO TWO YEARS. SUCH OPERATION OF THE REACTOR SHALL BE CONSISTENT WITH THE ROC'S NEEDS FOR RADIOISOTOPE PRODUCTION AND THE PURPOSES OF THE AGREED RESEARCH PROGRAM. IF CONVERSION IS NOT REASONABLY PRACTICABLE OR IF CIRCUMSTANCES BEYOND THE CONTROL OF THE ROC DELAY CONVERSION BEYOND TWO YEARS, THE REACTOR MAY CONTINUE TO OPERATE FOR A FURTHER INTERIM PERIOD TO BE MUTUALLY AGREED UPON.

FINALLY, THE USG'S WILLINGNESS TO AGREE TO THE RESUMED OPERATION OF THE TRR IS BASED ON THE PREMISE THAT THE ROC WILL ADHERE TO ITS NON-PROLIFERATION POLICIES AND TO THE VARIOUS NUCLEAR AGREEMENTS AND UNDERTAKINGS TO WHICH IT IS A PARTY.

THE U.S. GOVERNMENT IS PREPARED TO AGREE TO THE RESUMED OPERATION OF THE TRR AS SOON AS IT HAS BEEN INFORMED THAT THE REPUBLIC OF CHINA SHARES THE ABOVE UNDERSTANDINGS.
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