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SAFEGUARDS COUNTRY ANALYSIS

REPUBLIC OF KOREA
(South Korea)

Office of Nuclear Material Safety and Safeguards
U.S. Nuclear Regulatory Commission

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Safeguards Country Analysis
Republic of Korea

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SAFEGUARDS COUNTRY ANALYSIS

REPUBLIC OF KOREA

1.0 INTRODUCTION

1.1 General

U This analysis has been prepared to document the status of existing safeguards implemented for nuclear material and facilities in the Republic of Korea (Korea) and to identify any problem areas. In the international context the term "safeguards" refers to measures designed to verify systematically that a national government has not used nuclear material and equipment for purposes prohibited by governing agreements. In practice, international safeguards are the safeguards applied by the International Atomic Energy Agency (IAEA). Thus, the subject of "safeguards" in this paper does not extend, as in domestic U.S. useage, to physical protection (or physical security), which entails measures to prevent theft and acts of sabotage by either individuals or groups and which is viewed as the responsibility of individual national governments. Further, the paper is not concerned with "safeguards" in the context of health and safety.

1.2 Purpose

U This analysis has been prepared primarily for use in the review process supporting the U.S. Nuclear Regulatory Commission's consideration of license applications

for export to Korea of source and special nuclear material, of production and utilization facilities, and of sensitive technology.* Such exports are governed by the 1954 Atomic Energy Act, as amended, including the 1978 Nuclear Nonproliferation Act (NNPA). Three export criteria of the Act are of principal concern in this paper:**

- Section 126(a) (NNPA Section 304(a)): It stipulates that an NRC export license (or license exemption) may not be granted without a finding that the proposed export (or exemption) will not be inimical to the common defense and security.

- Section 127(1) (NNPA Section 305): It conditions U.S. nuclear exports upon the Commission's finding that IAEA safeguards, as required by the 1970 Treaty on the Nonproliferation of Nuclear Weapons (NPT), will be applied to the exported material or facilities, including special nuclear material used or produced through use of the export.

- Section 128a (1) (NNPA Section 306): It requires as a condition of continued U.S. export to non-nuclear weapon states that "IAEA safeguards are maintained with respect to all peaceful nuclear activities in the receiving state at the time of export." (This requirement is referred to as the "full-scope safeguards" requirement.)

*The specific materials are depleted and natural uranium and thorium (source material) and uranium enriched in U-235 or U-233 and plutonium (special nuclear material). Production or utilization facilities include critical assemblies and reactors. Sensitive nuclear technology is diverse; major concern relates to enrichment, reprocessing, and plutonium fabrication technology.

**See also Section 123 as amended.

U The analysis also is available for use in the NRC review process for providing consultation on applicable "subsequent arrangements" stipulated in Section 131 of the Act (NNPA Section 303(a)), e.g., retransfers to third countries of already exported U.S. material, such as spent fuel transferred for reprocessing in Europe.

1.3 Scope

U The elements of the framework and implementing steps for applying international safeguards in South Korea comprise the scope of this analysis. These are: legal structure, implementing arrangements, South Korean measures concerning materials accounting and control, and conduct of IAEA verification activities in South Korea. The Korean nuclear program, including international supply, is addressed to the extent it provides appropriate perspective relative to international safeguards.

U The Commissioners have taken the position that staff should "analyze all available information relative to the effective implementation of safeguards in the countries involved" in U.S. exports.* Staff have employed available information in preparing this draft paper, but it should be recognized that sources of information have been limited in certain respects. Based on guidance, some foreign

*November 30, 1978, Chilk memorandum re SECY 78-35A (see also Testimony before Senate Committee on Foreign Relations, December 2, 1981 and NUREG-0885, "U.S. Nuclear Regulatory Commission Policy and Planning Guidance, 1982.")

intelligence information has been used (derived from State Department cables) but no sensitive foreign intelligence information was made available to NMSS staff. Further, information on the details of implementation of IAEA safeguards for specific countries is not generally available.

U To the degree that information is available, this draft provides an accounting which illuminates the current status of international safeguards in South Korea. This accounting is expected to be improved in due course. In response to an Executive Branch suggestion, NRC staff agreed to forward, routinely, draft Safeguards Country Analyses to the Executive Branch for review, in order to assure that the drafts reflect the most complete and current information available to the U.S. Government. We will use such opportunity to seek clarification of several points, which are noted in this analysis.

2.0 CONCLUSIONS

2.1 Levels of Safeguards Considerations

U There are three categories, or augmenting levels, of importance of safeguards considerations relative to meeting the NNPA export licensing criteria. The first, the core consideration, is the existence of the proper legal framework and related international safeguards commitments. The next category of consideration is implementation of specific arrangements for application of IAEA safeguards. The third category is the effectiveness of the international safeguards of the IAEA.

U With respect to South Korea, an NPT party, the appropriate legal framework is in place for permitting U.S. export of nuclear material and equipment to South Korea and for establishing requirements for IAEA safeguards and related commitments by Korea. Relevant IAEA/NPT safeguards arrangements are in force covering current U.S. supply arrangements, supply by others, and indigenous peaceful nuclear activities in Korea.

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2.2 Implications of Korean Program for IAEA Safeguards

U At present, the Korean nuclear program is relatively modest in scale and complexity. This situation is expected to change substantially over the next ten years. As a country with few indigenous energy resources, South Korea has planned a significant nuclear power program. This includes introduction of fast breeder reactors. Further, Korea is developing power reactor fuel conversion and fabrication capabilities, and it is expected to address significant spent-fuel disposition requirements. Long-term goals extend to development of technological bases for the back end of the thermal fuel cycle.[1]

U The implication of the Korean program, in terms of international safeguards, is one of increased IAEA inspection workload, coupled with the need for application of more sophisticated verification and materials accounting techniques as facilities handling nuclear material in bulk quantities come into operation, as plutonium-fueled reactors may be pursued, and as multiple sources of supply are actively utilized.

2.3 Problems

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U Further, an on-load power reactor is scheduled to come into operation in 1983. This represents introduction into Korea of a type of facility which poses special safeguards-verification problems to the IAEA because of daily fuel loading/unloading activities.

3.0 NUCLEAR PROGRAM IN THE REPUBLIC OF KOREA

3.1 Korean Facilities

U South Korea's nuclear program can be viewed as being in the "take off" stage. While three research reactors and only one power reactor are in operation (as of early 1982), eight more power reactors are in various stages of construction and four more units are in the planning stage. A pilot fuel fabrication plant is in operation, and a commercial-scale fabrication facility is soon to be under construction. A pilot-scale U_3O_8/UO_2 fuel conversion facility and pilot-scale U_3O_8 recovery facility (mill) were completed in late 1981. The principal nuclear research establishments are the Korean Advanced Energy Research Institute (KAERI) outside Seoul and its Daeduk Nuclear Engineering Center, Daeduk Daejeon-Ji, near Seoul.

U Tables I A & B list the facilities in the current Korean program. Additional information on these facilities, as well as the Daeduk Center, is provided in Appendix A. (It is intended that these annexes be updated periodically). Table II chronicles the establishment of major nuclear organizations in Korea. Reorganizations since the late 1970's have affected promulgation of SSAC regulations, discussed in Section 5.

(Unclassified)

TABLE I-A

NUCLEAR POWER REACTORS IN THE REPUBLIC OF KOREA

POWER (All projects of Korea Electric Power Corporation)

	Korea Nuclear Unit No.	Type and Nominal MWe	Scheduled Operation	Supplier NSSS	Supplier Fuel Contracts
In Operation					
Kori-I (near Pusan)	1	PWR, 600	4/78	Westing-house[1]	U.S.
Under Construction					
Kori-II	2	PWR, 650	12/83	West.[1]	U.S.
III	5	PWR, 950	9/84	West.	U.S.
IV	6	PWR, 950	9/85	West.	U.S.
Wolsung - I (Napori, Ulsan)	3	PHWR, 680	4/83	AECL[1]	Canada
(Cancelled) II	(4)	PHWR, 680	-	-	-
Yeonggwang - I (Formerly,	7	PWR, 950	3/86	West.	U.S.
II Gyaema,Ri)	8	PWR, 950	3/87	West.	U.S.
Uljin - I (Uljin-Gun,	9	PWR, 950	3/88	Framatome	COGEMA & U.S.[2]
II Kyongsang-Pakto, Kang Neung)	10	PWR, 950	3/89	Framatome	COGEMA & U.S.[2]
Planned					
(Site TBD)	11	-- 900	1989		
	12	-- 900	1990		
(Site TBD)	13	-- 900	1991 est.		
	14	-- 900	1991 est.		

[1]Turnkey

[2]U.S. Toll Enrichment contracts expected to be reassigned to units 11 and 12.

(Unclassified)

TABLE I-B
RESEARCH FACILITIES IN THE REPUBLIC OF KOREA

RESEARCH

In Operation

- KRR-1, TRIGA Mark II, 250 KWth
  (KAERI, Seoul; training)
- KRR-2, TRIGA Mark III, 2 MWth
  (KAERI, Seoul; isotope production
  and research)
- Tank-type, zero-power AGN
  (Kyung-Hee University, Seoul; training)

Planned

Materials Testing Reactor

OTHER

Daeduk Nuclear Engineering Center (KAERI) (Also "Tae Tok" and "Tae Duk")

In Operation or Commissioning Testing

- Pilot fuel fabrication plant; 10 metric tons/year nominal capacity; completed 1978
- Pilot U_3O_8/UO_2 fuel conversion plant; 100 metric tons/year nominal capacity, 200 mt/yr maximum; completed late 1981, officially commissioned April 1982
- Pilot ore milling plant; 150 kg/hour nominal capacity; 5000 m^3 liquid waste/yr treatment capacity; completed 1981, officially commissioned April 1982

Under Construction

- Post-irradiation-examination facility; to be completed in 1983.

Planned

- Commercial-scale PWR fuel fabrication plant; 200 metric tons/year; project to begin 1984; operation planned for 1988.

TABLE II

CHRONOLOGY OF MAJOR KOREAN NUCLEAR ORGANIZATIONS

1956 - Atomic energy section established in Ministry of Education.

1959 - Office of Atomic Energy and Korean Atomic Energy Research Institute (KAERI) established under direct control of the President of the Republic of Korea.

1961 - Korea Electric Company (KECO) established.

1967 - Office of Atomic Energy became part of Ministry of Science and Technology (MOST).

1973 - Office of Atomic Energy replaced by Atomic Energy Bureau (AEB) within MOST (performing both developmental and regulatory functions).

1976 - Korean Fuel Development Institute (KNFDI) established at Daeduk.

- Korean Nuclear Engineering Services (KNE) formed to develop domestic fuel and reactor system capability; KECO holds 94% share.

1979 - Nuclear Regulatory Bureau (NRB) established to perform regulatory functions; AEB retained developmental functions.

1980 - KNFDI and KAERI merged into the Korea Advanced Energy Research Institute (also KAERI).

1981 - NRB merged back with AEB.

1982 - KECO became Korea Electric Power Corporation (KEPCO), a public corporation with the Government acquiring all privately held stock.

3.2 Course of Korean Program/Safeguards Significance

[redacted]

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U With respect to reprocessing, activities have been publically discussed. Korea's nuclear program ostensibly has been driven by requirements to establish capability in the power cycle for reasons of both economics and assurance of supply, although, as reported widely in newspapers and Congressional channels in the mid-1970's, Korea contemplated pursuing the technical capability to obtain a nuclear-weapons option. During this period, Korea also was pursuing purchase of a reprocessing facility from France, which purchase was apparently abandoned.

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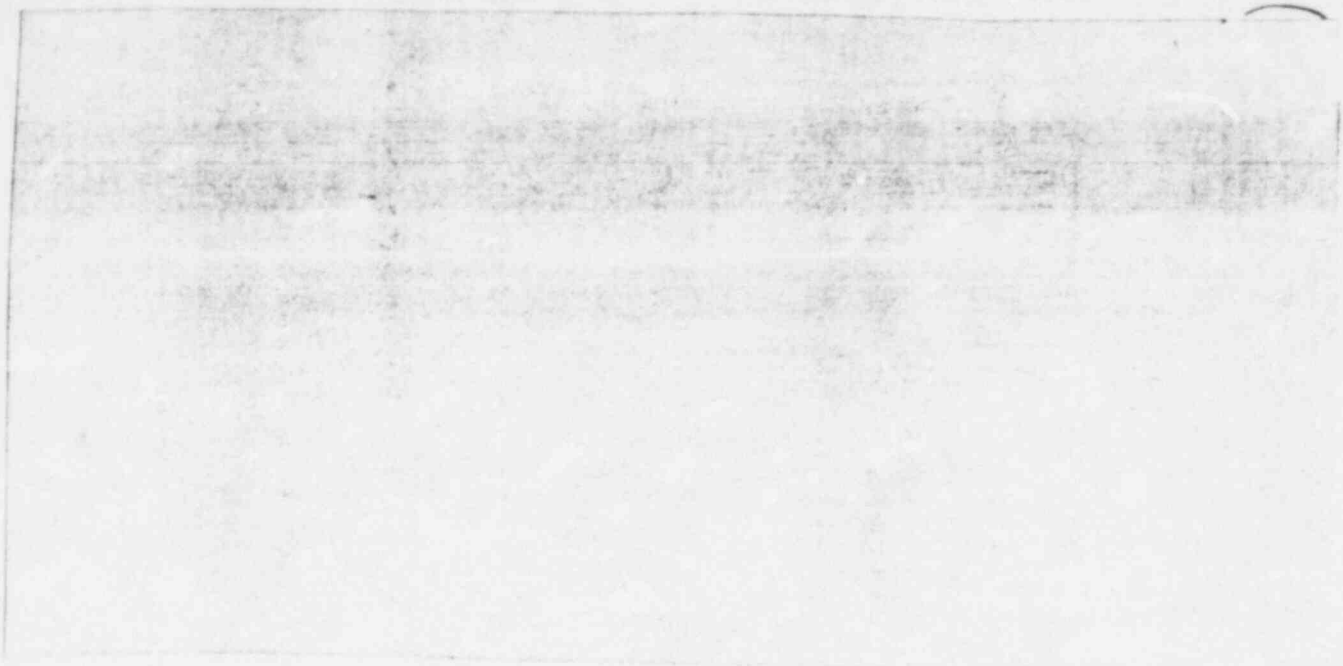

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U 3.3 International Nuclear Cooperation

United States

U Korea and the United States first entered into cooperative nuclear arrangements in 1956, concluding an Agreement for Cooperation Concerning Civil Uses of Atomic Energy (pursuant to Section 123 of the U.S. Atomic Energy Act of 1954, as amended; see Section 4). This agreement, as subsequently revised and extended, provides the framework for U.S. export of nuclear material and equipment to South Korea. In 1977 the U.S. and South Korea established a Joint Standing Committee on Nuclear and Other Energy Technology (JSCNOET), which has provided a forum for pursuing cooperative interests, including specific activities in implementation of the Civil Uses Agreement for Cooperation.*

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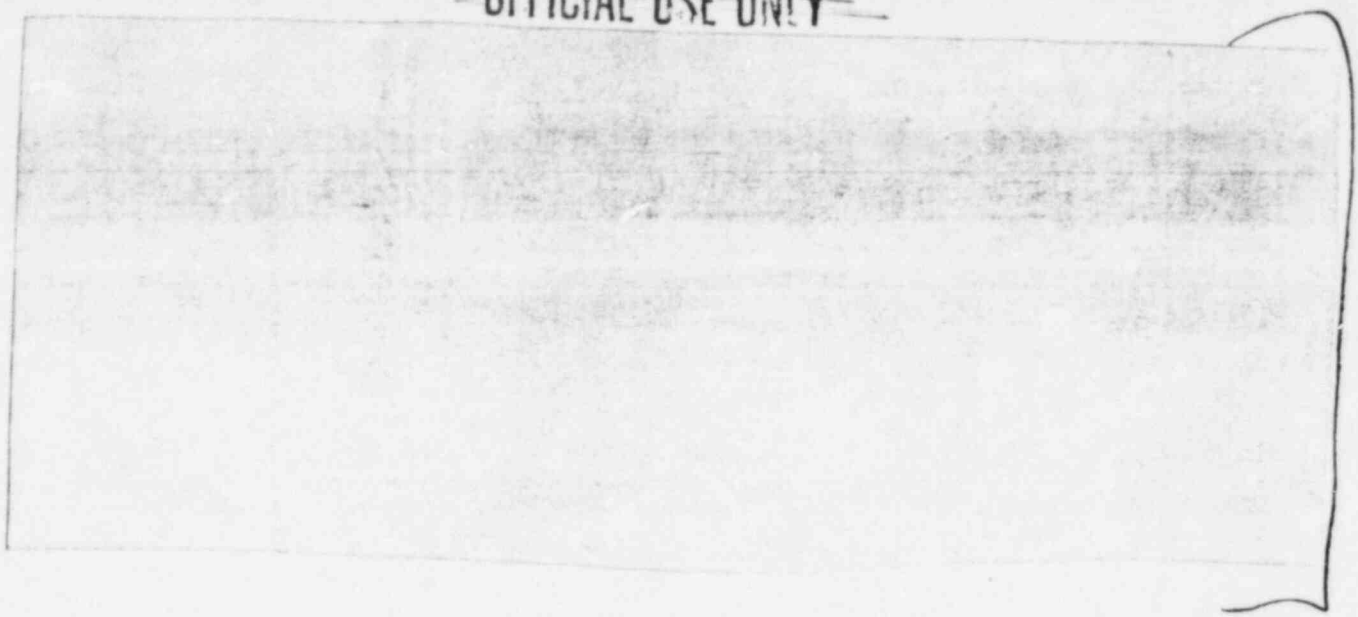

U Besides the U.S., South Korea has concluded nuclear arrangements with Australia, Canada, France, Spain, and Belgium. Background information is provided in Appendix B which is relevant to supply by others and, thus, to full-scope safeguards considerations.

4.0 STATUS OF INTERNATIONAL SAFEGUARDS AGREEMENTS

U The requirement for international safeguards on U.S.-origin nuclear material in South Korea derives from U.S. legal requirements and from South Korea's status as a party to the NPT. As noted at the outset, application of IAEA safeguards on the "full scope" of Korea's peaceful nuclear program is required in U.S. law as a condition for continued U.S. supply.

U 4.1 U.S. Safeguards Requirements - Agreement for Cooperation

Pursuant to the U.S. Atomic Energy Act of 1954, as amended (including the NNPA), export of source and special nuclear material and facilities such as reactors is undertaken pursuant to an agreement for cooperation with the recipient nation (or group of nations).* The bilateral agreement establishes the scope of cooperation and stipulates terms and conditions therefore. Among them is the requirement for safeguards. Historically, the U.S. has maintained safeguards rights regarding its nuclear exports; but, as the international safeguards system under the IAEA was developed in the early 1960's, provision was made in the U.S. bilaterals for suspension of the exercise of U.S. safeguards rights. Instead, the United States, the bilateral partner, and the IAEA agree on the application of Agency safeguards (with U.S. rights remaining, although suspended).

*The Act permits certain limited quantities and types of material to be distributed abroad by means other than NRC license. Only in limited circumstances may nuclear material be exported without being subject to an Agreement Cooperation--as a matter of policy as well as law.

U The initial U.S.-South Korean Agreement for Cooperation was concluded in 1956 (amended in 1958 and 1965), and U.S. bilateral safeguards rights have been suspended. This bilateral agreement was superseded in 1972, and the superseding agreement itself was amended in 1974. (The basic safeguards approach and rights of the Agreement for Cooperation, however, remained unchanged.) The term for U.S. export under the Agreement for Cooperation ends in the year 2014.

4.2 IAEA "Trilateral" Safeguards Agreement

U Pursuant to the IAEA Statute, the Agency can agree to requests to apply its safeguards on nuclear material covered by bilateral supply arrangements. For such purpose, the Agency can conclude "trilateral" safeguards agreements (among itself, the supplying country, and the receiving country). Pursuant to the NPT (see below), the Agency also can agree to apply safeguards to the receiving country's entire peaceful program. This is the basis for obviating the need for multiple "trilaterals" covering multiple suppliers for a single receiving country. The supplier, however, has the right to agree to this alternative for IAEA safeguards. If a supplier (such as the U.S.) has already concluded a "trilateral" safeguards agreement, that agreement would be suspended (or terminated) in favor of "NPT" safeguards.

U The first trilateral agreement among the U.S., South Korea, and the IAEA for application of Agency safeguards on U.S.-supplied nuclear material and facilities was concluded in 1968. This trilateral was amended in 1972 as a collateral matter with the above-noted, superseding bilateral. The occasion for the amendment of the trilateral also provided opportunity to incorporate updated safeguards provisions of the IAEA. The current trilateral itself has

not yet been suspended, in favor of application of IAEA safeguards pursuant to the IAEA-South Korean Safeguards Agreement concluded under the NPT. In 1980, the reported reason was procedural.[5] When suspending "trilaterals" the U.S typically requests a side exchange of notes linking all action to the no-nuclear-explosives pledge required by the U.S. from bilateral partners. In the case of Korea, the bilateral Agreement for Cooperation with the U.S. did not yet contain an explicit clarification included in more recent agreements that the "no-weapons-use pledge" extended to any nuclear explosive device. As an NPT party, Korea effectively has given such assurance for U.S. material. Korea did not disagree with the U.S. interpretation but preferred to address a substantive bilateral matter in a separate negotiation on the Agreement for Cooperation, not as a side matter of suspending the trilateral.

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U 4.3 NPT Safeguards

South Korea became a party to the NPT in 1975 and in that year concluded the required safeguards agreement with the IAEA. Article III of the Treaty requires that "Each non-nuclear-weapon State Party to the Treaty [e.g., South Korea] undertakes to accept safeguards ...for the exclusive purpose of verification of the fulfillment of its obligations assumed under this Treaty.... The safeguards required by this article shall be applied on all source or special fissionable

material in all peaceful nuclear activities within the territory of such State, under its jurisdiction, or carried out under its control anywhere."*

4.4 IAEA Implementing Arrangements

U The IAEA has adopted two types of fundamental "Safeguards Documents" which set forth the parameters and basic terms and conditions for implementation of safeguards under individual safeguards agreements. Historically, the first type of safeguards document developed (1961) addressed nuclear supply between two parties. The current Safeguards Document governing bilateral supply is referred to by its IAEA information circular and latest revision number, INFCIRC/66/Rev. 2. With the advent of the NPT, another safeguards document has been developed, INFCIRC/153 (corrected), which accommodates the different approach entailed in the Treaty, i.e., safeguards on both indigenous efforts and supply from multiple sources, in contrast to specific bilateral transactions.

U An IAEA safeguards agreement with the receiving country, in effect, enables translation of general Agency requirements into specific arrangements. As is standard, once a "trilateral" or "NPT" safeguards agreement is concluded, the

*Pursuant to Article II of the NPT, the obligations specifically of non-nuclear-weapon states (NNWS) are: not to receive any nuclear weapon or other nuclear explosive device (or control over such devices), not to manufacture such devices, and not to seek or receive assistance in their manufacture. Further, again pursuant to Article III, all Treaty parties undertake not to provide to any NNWS (irrespective of NPT status) source or special fissionable material or equipment expressly designed for the production, processing, or use of such materials, unless the source or special fissionable material is subject to the above-noted safeguard requirements.

IAEA then negotiates "Subsidiary Arrangements" with the party subject to safeguards (e.g., South Korea). They reflect the actual national nuclear program involved. The Subsidiary Arrangements, for example, would establish a specific reporting system as well as frequencies of routine inspections. The Agency also uses "Facility Attachments" to delineate more detailed arrangements governing safeguards for individual facilities. This approach permits development of arrangements as individual facilities may be built, e.g., a nuclear power station. With NPT requirements for safeguards on a country-wide basis, typically, there is a Subsidiary Arrangement with general provisions; subsequent Facility Attachments articulate the specific, detailed requirements for individual facilities.

4.5 Safeguard Facilities and Material in Korea

U A brief summary of the action elements and key thresholds of the IAEA "NPT" safeguards system is provided in Appendix C to give the reader perspective relative to IAEA activities in Korea.

U Among the facilities listed in Tables I-A and B, those shown below have been declared to the IAEA and are listed in the 1981 Annual Report as having Subsidiary Arrangments and Facility Attachments in force or under negotiation:

In Force	Under Negotiation
KRR - 1 (TRIGA II)	"Kori" II (under construction)
KRR - 2 (TRIGA III)	"Wolsung" I (under construction)
AGN (Zero power)	
"Kori" I	

U The uranium ore processing facility is located in the fuel cycle "before" the starting point of safeguards and thus is not subjected to IAEA safeguards. The pilot fuel conversion and fabrication facilities at Daeduk are not listed in the Annual Report (nor have they been in earlier Agency Annual Reports).

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U *An "effective" kilogram is determined by formula based on material type and enrichment.

U **Under "NPT" Safeguards, the Agency defines a "facility" as "(a) a reactor, a critical facility, a conversion plant, a fabrication plant, a reprocessing plant, an isotope separation plant, or a separate storage installation; or (b) any location where nuclear material in amounts greater than one effective kilogram is customarily used." "Other locations" are installation where nuclear material is held but not customarily used, e.g., a transit store or any location, with a maximum inventory of one effective kilogram or less, but above one gram.

U To date, the available information indicates that Korea's nuclear material transactions have been mostly with the United States. The U.S. inventory of nuclear material in Korea as of December 31, 1981 (the end date of the IAEA's Annual Report), is provided in the following Table III, with subsequent changes noted.

(Unclassified)

Table III

INVENTORY OF U.S.-ORIGIN MATERIAL
IN THE REPUBLIC OF KOREA

As of December 31, 1981*

Material Type	Quantity
Depleted Uranium	9,432.000 kgs
Isotope (U-235)	20.000 kgs
Normal Uranium	877.234 kgs
Enriched Uranium	113,815.427 kgs
Isotope (U-235)	3,299.544 kgs
Plutonium	8 grams
Isotope (Pu-239)	7 grams
Plutonium-238	10 grams
Thorium	12 kgs

*No changes at end of March 1982, except for "Enriched Uranium." New totals were:
Element: 148,513.306 kgs
Isotope: 4,133.534 kgs

SOURCE: Nuclear Material Management Safeguards System. Quantities in this table do not reflect waste discards, process losses, burn-up, or plutonium production or decay.

U Of the various U.S. shipments to Korea, staff is aware of only one for which Korea has exercised (standard) safeguards-exemption provisions under the NPT safeguards agreement. This shipment (in 1979) was for about 9,500 kilograms of depleted uranium. Of this total, 7,987 kilograms were in the form of UO_2 for research on sintering and pelletizing techniques at the Daeduk pilot fabrication facility and 1,432 kilograms were as UF_6 for laboratory-scale study of conversion processes.

U According to U.S. records, there have been two retransfers of U.S.-origin material from a third country to Korea (both shipments in 1980); both went to the pilot fuel fabrication facility at Daeduk:

Shipper	Material
Reaktorbrennelemente Union (RBU), Hanau, West Germany	78.3 kgs. uranium powder enriched to 3.2% (2.505 kgs. U-235; < 1 "effective" kg.)
RBU	877.234 kgs. normal uranium powder (< 1 "effective" kg.)

U Cumulatively, U.S.-origin nuclear material at the Daeduk fabrication facility was 0.566 "effective" kilograms at the end of 1982. No definitive information is available to staff as to the presence of other-origin material at the fabrication facility.

U The Canadian reactor under construction was scheduled to begin fuel loading in April 1982, indicating that fuel shipments began in 1981.

U With respect to French supply, available information indicates that France has provided technical assistance and equipment (see Appendix A, page A-4, and Appendix B).

5.0 STATE SYSTEM FOR ACCOUNTING AND CONTROL OF NUCLEAR MATERIAL

5.1 NPT Requirements

U Pursuant to the "NPT" safeguards agreement with the IAEA, South Korea has the obligation to establish a State System for Accounting and Control of Nuclear Material (SSAC).* The Agency Safeguards Document INFCIRC/153 stipulates that an individual safeguards agreement between the IAEA and a State (e.g., South Korea) should provide for establishment and maintenance of an accounting and control system for "all nuclear material subject to safeguards under the agreement, and ...such safeguards shall be applied in a manner as to enable the agency to verify... findings of the State's system."** The Agency also is to "take due account of the technical effectiveness of the State's system."

U Article 7 of the specific IAEA-Korean safeguards agreement under the NPT reflects the generic requirement noted above. Article 32 of the Korean agreement addresses the types of measures which are acceptable. The national SSAC is to be based on a structure of material balance areas (MBA's), i.e., a division of nuclear material operations at individual facilities, on which records and measurements are based. The Korean SSAC is to provide for such measures as the following:

*There are no SSAC requirements under the bilateral-transaction approach of the INFCIRC/66/Rev. 2 document.

**All U.S.-origin nuclear material is subject to this requirement, presuming that "NPT" safeguards are being implemented.

(a) a measurement system for the determination of the quantities of nuclear material received, produced, shipped, lost or otherwise removed from inventory, and the quantities on inventory;

(b) the evaluation of precision and accuracy of measurements and the estimation of measurement uncertainty;

(c) procedures for identifying, reviewing and evaluating differences in shipper/receiver measurements;

(d) procedures for taking a physical inventory;

(e) procedures for the evaluation of accumulations of unmeasured inventory and unmeasured losses;

(f) a system of records and reports showing, for each material balance area, the inventory of nuclear material and the changes in that inventory including receipts into and transfers out of the material balance area;

(g) provisions to ensure that the accounting procedures and arrangements are being operated correctly; and

(h) procedures for the provision of reports to the Agency in accordance with the safeguards agreement.

5.2 Korean National Law Governing SSAC

Korea's nuclear legal structure is based on the Atomic Energy Law of the Republic of Korea and Presidential Decrees of the Republic of Korea. The initial law was promulgated in 1958; as of March 1982, an extensive revision was awaiting approval by the National Assembly. The scope of each is summarized below:

a. Current Legal System

(1) The Atomic Energy Law (Art 35, 1958)

- Atomic Energy Commission
- R&D Promotion
- Control of Nuclear Material and Facility
- Radiation Hazards Protection

(2) The Presidential Decrees of the Republic of Korea

- Licensing and Inspection of Nuclear Reactors
- Establishment of Exclusion Areas
- Technical Standards for Nuclear Reactors
- Licensing and Inspection of Fissionable Material and Production Facilities
- Regulation of Radioisotope and Radiation Hazards
- Reactor Operator and Radioisotope Handling Personnel Licensing

b. Revision of the Atomic Energy Law (Art. 122, 1982)

(1) Contents of the new law:

Chap 1. General provisions

Chap 2. Atomic Energy Commission

Chap 3. R&D promotion

Chap 4. Licensing and Inspection of Nuclear Reactors

- power reactor construction
- power reactor operation
- other reactors

Chap 5. Control of nuclear component manufacturing firms, construction firms, testing, etc.

Chap 6. Licensing and inspection of nuclear fuel cycle

- facilities
- nuclear materials

Chap 7. Regulation on radio-isotopes

Chap 8. Control of nuclear material transportation and waste disposal

Chap 9. Nuclear personnel licensing

Chap 10. Radiation hazards protection

Chap 11. Miscellaneous

Chap 12. Penal provisions

(2) Major features of the amendment

(a) Expansion of licensing areas to include:

- component manufacturing firms

(b) Expansion of inspection areas to include:

- construction firms
- transportation firms

5.3 Status of Korean SSAC

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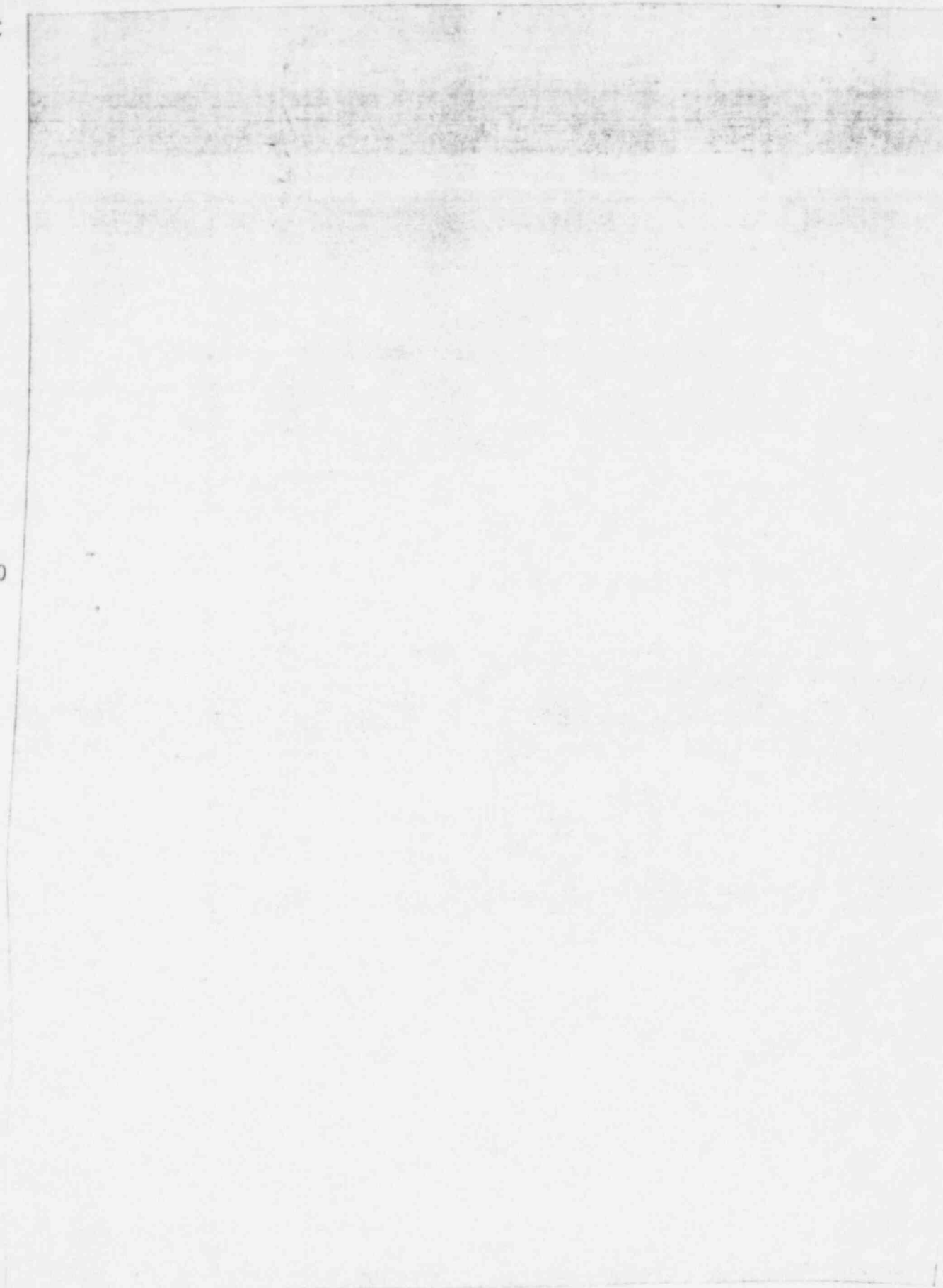

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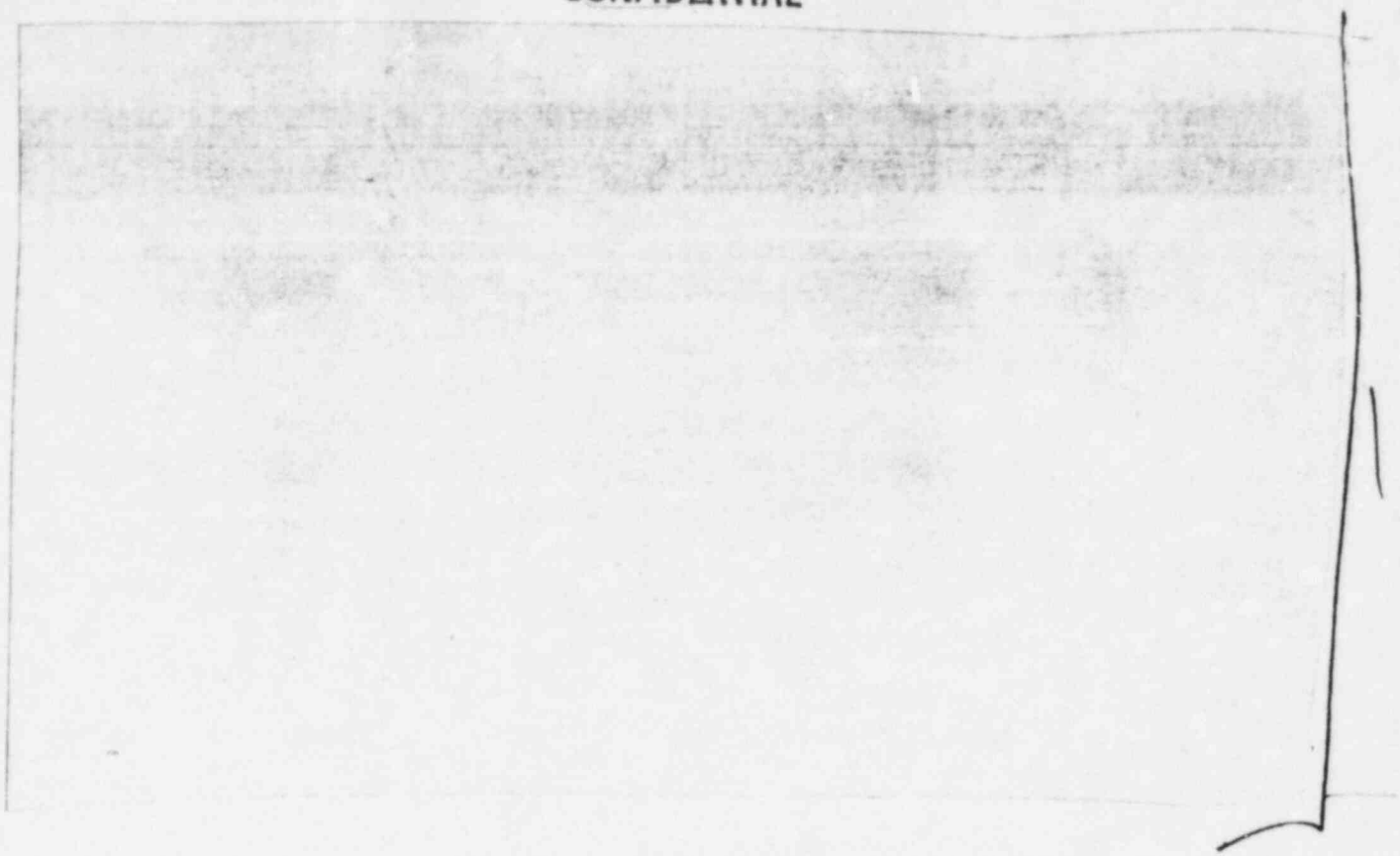

6.0 IMPLEMENTATION OF INTERNATIONAL SAFEGUARDS

U This section addresses the specific arrangments implemented by the IAEA in Korea, including IAEA safeguards derived from requirements by suppliers other than the United States. It also addresses Korea's adherence to its NPT obligation to place its entire peaceful nuclear program under Agency safeguards, thus compliance with the U.S. (NNPA) "full-scope safeguards" criterion for export approvals.

6.1 Effectiveness of IAEA Safeguards -- Overall Safeguards Conclusions by IAEA

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U *A "significant quantity" is defined as the "approximate quantity of nuclear material in respect of which, taking into account any conversion process involved, the possibility of manufacturing a nuclear explosive device cannot be excluded." Values for significant quantities (SGs) have been established which differentiate among types and form of material. Importantly, the SQ values are used to select accountancy, verification, and other goals.

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APPENDIX A: FACILITY PROFILES

This part comprises a series of descriptions of individual facilities. Information is unclassified except where expressly noted otherwise.

Guide to Korean geographic place names:

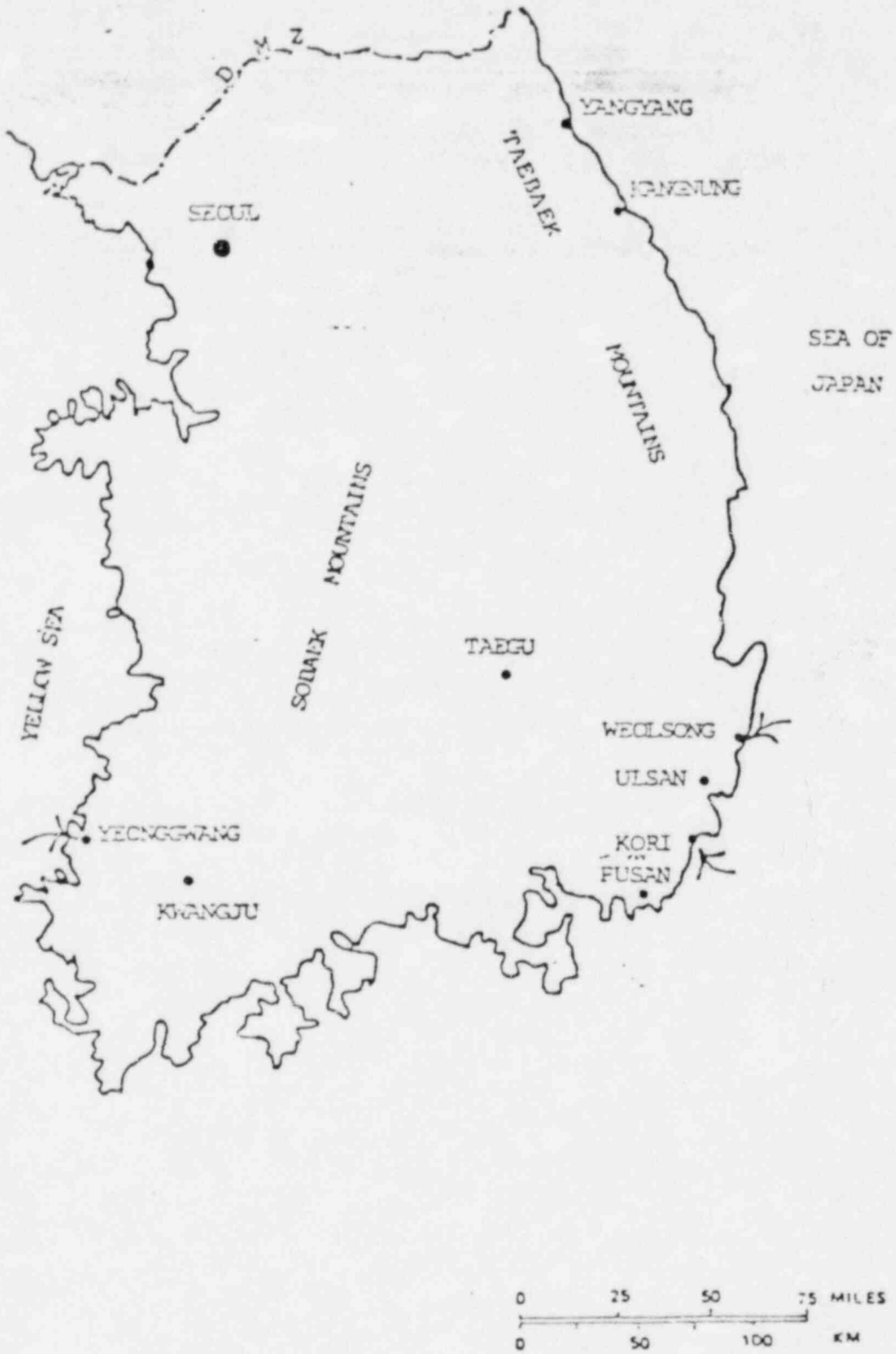
A. General

Province	-	Do (sometimes To or Ju)
City	-	Shi (Ji, Ju)
Ward	-	Gu (or Ku)
Section	-	Dong (only in city context)
Avenue	-	Ro
Street	-	Ga

B. Rural Areas:

County	-	Gun (Kun)
Village	-	Ri, Li, also Dong
Township	-	Myun

REPUBLIC OF KOREA



(6/82)

FACILITY PROFILE (A-1)

FACILITY NAME: Daeduk Nuclear Engineering Center (also seen as "Tae Tok" and "Tae Duk")

LOCATION/OWNER: Daeduk Daejeon-Ji (near Seoul); Korea Advanced Energy Research Institute*

TYPE: Research

USE: Fuel Cycle

DESCRIPTION:

- o Established in 1976
- o Principal facilities:
  - Pilot fuel fabrication plant:

    In operation in 1978; nominal design capacity of 10 metric tons/year; processes PWR and PHWR fuel.
  - U_3O_8/UO_2 conversion plant:

    Completed in 1981, officially commissioned April 1982; design capacity of 100 metric tons/year.
  - Pilot ore milling facility:

    Completed in 1981, officially commissioned April 1982; design capacity of 150 kg ore/hour, 5000 m^3 liquid waste/year treatment capacity.

*Facility of former Korea Nuclear Fuel Development Institute integrated into KAERI in December 1980.

- Under construction:

  Post-irradiation-examination (PIE) facility; scheduled for operation in 1983; has associated radwaste management building.

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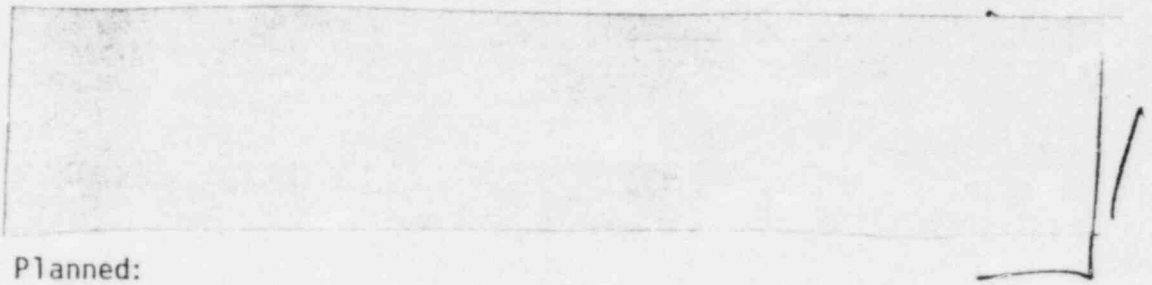

- Planned:

U Commercial-scale PWR fuel fabrication facility; 200 metric tons/year design capacity; project to begin in 1984, operation in 1988. Capacity sufficient for 10 of Korea's power reactors.

SAFEGUARDS-RELATED INFORMATION:

U o Milling facility not subject to safeguards--is before the the "starting point."

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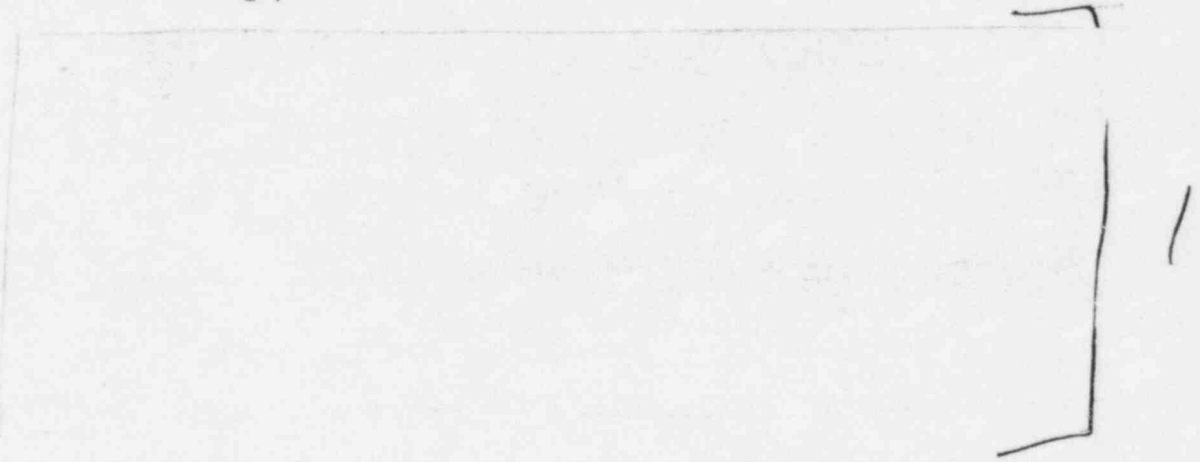


(6/82)

FACILITY PROFILE (A-2)

FACILITY NAME: AGN 201-109

LOCATION/OWNER: Seoul, Kyung-Hee University

TYPE: Solid homogeneous; zero power; polyethylene moderated, graphite reflected, uncooled

USE: Education and training

DESCRIPTION:

- Initial criticality (in Korea) - 1975; acquired from University of Colorado, Ft. Collins
- Manufacturer: Aerojet-General Nucleonics (U.S.)
- Power rating: zero (0.1 watt thermal)
- Fuel: 20% enriched in U-235; U.S. supplied
- Core: 665 grams U-235 at rated design; core typically lasts indefinitely.

SAFEGUARDS-RELATED INFORMATION:

- Reactor declared to IAEA; Subsidiary Arrangements with Facility Attachment in force.

(6/82)

FACILITY PROFILE (A3)

FACILITY NAME: KRR-1 (U.S. grant reactor)

LOCATION/OWNER: Seoul; Korea Advanced Energy Research Institute

TYPE: Triga Mark II; solid homogeneous; light water moderated and cooled, graphite reflected

USE: Research and training; in past, isotope production

DESCRIPTION:

- o Initial criticality: 1962 (construction began 1959)
- o Manufacturer: General Atomic (U.S.)
- o Design rating: Initially 100 kWth; upgraded in 1969 to 250 kWth
- o Fuel: 20% enriched in U-235; U.S. supplied
- o Core: 78 positions for fuel elements; uranium/zirconium hydride

  Loading: 2.1 kg U-235 at initial rated power

SAFEGUARDS-RELATED INFORMATION:

- o Declared to IAEA; Subsidiary Arrangements with Facility Attachment in force

(6/82)

FACILITY PROFILE (A4)

FACILITY NAME: KRR-2

LOCATION/OWNER: Seoul; Korea Advanced Energy Research Institute

TYPE: TRIGA Mark III; homogeneous, uranium/zirconium - hydride metal alloy fuel

USE: Research; isotope production; engineering training

DESCRIPTION:

- Initial criticality: May 19, 1972
- Manufacturer: General Atomic (U.S.)
- Design rating: 2MWth (2000 MW max. pulse operation); under study in 1980 for upgrading to 14 MWth (fixed core).
- Fuel: 70% enriched in U-235; U.S. supplied
- Core: Moveable; initial loading of 100 standard (low enriched) fuel elements, although 121 total fuel positions, 1979-1981 loading understood to be 87 "FLIP" elements and 5 standard; "FLIP" Fuel Lifetime Improvement Program, uses above-20% enriched uranium.

SAFEGUARDS-RELATED INFORMATION:

- Declared to IAEA; Subsidiary Arrangements with Facility Attachment in force

(6/82)

FACILITY PROFILE (A-5)

FACILITY NAME: "Kori" I (Korea Nuclear Unit #1)

LOCATION/OWNER: Near Pusan, southeast coast (Ko-Ri, Changnam-myun, Tongnae-kun, Kyungsangnam-do); Korea Electric Power Corp.

TYPE: LWR (PWR)

USE: Electrical power generation

DESCRIPTION:

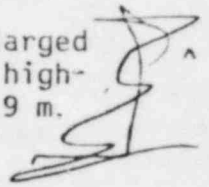
- o Commercial operation April 1978 (critical - June 1977)
- o Rated power: gross - 595 MWe (1728.6 MWth)
  net - 564 MWe
- o Fuel: First core - 2.7% average U-235 enrichment, reload - 3.2% average; U.S. enrichment services (current contract: 30-year adjustable fixed-commitment contract concluded 1979); Westinghouse fabrication services for first core and 10 reloads under contract.
- o Core: 121 fuel assemblies in 3 zones; 179 rods/assembly in 14x14 array (less 17 positions for control and instrumentation); 400 kg. U/assembly; initial load-48.4 metric tons UO_2.

(OUO)o

Estimated Pu producted in first core: 410 kg total
280 kg fissile

- o Refueling Schedule: About 1/3 per year, between November 1979 and April 1982
- o NSSS supplier: Westinghouse

o Fuel storage pool: Current capacity - 637 assemblies (enlarged from design by internal rearrangement of racks and use of high-density, non-poison racks. Dimensions - 12.6 m. deep, 14.9 m. long, 7.9 m. wide



Operating Schedule:

5/29/78	-	Initial operation
10/24/78 - 1/2/79	-	Scheduled maintenance
10/28/79 - 1/12/80	-	Scheduled maintenance and 1st refueling
2/1/81 - 4/15/81	-	Scheduled maintenance and 2nd refueling
April-June 1982	-	3rd refueling 'schedule slippage).

Performance Data:

A. Operation Record*

Item / Year	Power Generated (MHW)	Capactity Factor (%)	Availability Factor (%)
'78	1,586,939	46.0	92.7
'79	3,151,904	61.3	93.3
'80	3,477, 154	67.4	88.3

(Note) 1. The records before commercial operation were excluded from 1978 data.
2. Refueling and scheduled maintenace time were included in the calculation of Availability Factor.

B. Outage Record

Item / Year	No. of Scheduled Outages	No. of Forced Outages	Total Hours
'78	6	12	2,070
'79	3	11	2,204
'80	2	7	1,799

*Source: 1982 issuance of report on Korea Electric Power Corporation for calendar 1981

SAFEGUARDS-RELATED INFORMATION:

- Reactor declared to IAEA; subsidiary arrangements with Facility Attachment in force

(6/82)

FACILITY PROFILE (A-6)

FACILITY NAME: "Kori" II (Korea Nuclear Unit #2)

LOCATION/OWNER: Near Pusan, southeast coast (Ko-Ri, Changnam-myun, Tongnae-kun, Kyumgsangnam-do; Korea Electric Power Corp.

TYPE: LWR (PWR)

USE: Electrical power generation

DESCRIPTION:

- Scheduled operation: December 1983, core loading scheduled to start July 1982
- Rated power: gross - 650 MWe (1876 MWth)
  net - 605 MWe
- Fuel: First core average - 2.6% U-235; U.S. enrichment services (current contract is for 30 years, adjustable fixed-commitment type concluded in 1979), Westinghouse licensed to export first core, spares, and 3 reloads.
- Core: 56.4 metric tons UO_2 inital loading, 121 fuel assemblies, 16 x 16 array, 235 fuel rods, 20 control rod locations, 1 instrument tube locator
- Burn-up: 33000 MWD/MTU (average for equilibrium cycles)
- NSSS supplier: Westinghouse
- Refueling: 13.5 months, 1/3 core; may be reduced to 12 month cycle

SAFEGUARDS-RELATED INFORMATION:

- Declared to IAEA; Facility Attachment under negotiation.

(6/82)

FACILITY PROFILE (A-7)

FACILITY NAME: "Kori" III & IV (Korea Nuclear Units 5 & 6)

LOCATION/OWNER: Near Pusan, southeast coast (Ko-Ri, Changnam-myun, Tongnae-kun, Kyungsangnam-do), Korea Electric Power Corp.

TYPE: LWR (PWR)

USE: Electrical power generation

DESCRIPTION:

- Scheduled operation: Sept. 1984 and Sept. 1985; Construction 53% complete in 1981
- Rated Power (each): gross - 950 MWe (2775 MWth)
  net - 900 MWe
- Fuel: First core average - 2.35% in U-235; U.S. enrichment services (current contract is for 30 years, adjustable fixed-commitment type concluded in 1979; initial cores to be delivered in FY 1983 and 1984, respectively); Westinghouse licensed to export initial core, spares and 3 reloads
- Core: 82.2 tons UO_2 initial loading; 157 assemblies, 264 rods/assembly
- Burn-up: 33000 MWD/MTU (average for equilibrium cycles)
- NSSS supplier: Westinghouse
- Refueling: 13.5 months, 1/3 core
- Korean firm of Hyundai Heavy Industries Co., Shipyard, Nuclear Power Industries in Kyungnam to provide machining and assembly services regarding reactor.

- Reactor like U.S. reactors: Farley 1 & 2, Surry 1 & 2, North Anna 1 & 2, and Beaver Valley 1

SAFEGUARDS-RELATED INFORMATION:

- None available

(6/82)

FACILITY PROFILE (A-8)

FACILITY NAME: Wolsung I (Korea Nuclear Unit #3; second unit project, KNU#4, cancelled). Also seen as "Weolsong"

LOCATION/OWNER: Napori, Ulsan, Yangnam-myun; Korea Electric Power Corp.

TYPE: PHWR

USE: Electric power generation

DESCRIPTION:

- Scheduled operation: April 1983 (core loading scheduled to have started April 1982)
- Rated power: gross - 678.7 MWe (2180 MWth)
  net - 628.6 MWe
- Core: Natural uranium, 85.3 MTU initial loading; 4560 bundles, 37 rods/bundle; rods (or elements) contain pellets, zircaloy cladding
- Burnup: 7500 MWD/MTU
- NSSS supplier: Atomic Energy of Canada Ltd. (AECL)
- Refueling: on load
- Fuel storage pool: Capacity - 1995 trays that can store 47,880 bundles. 8.7 meters wide, 29.8 meters long, 7 meters deep

SAFEGUARDS-RELATED INFORMATION:

- Declared to IAEA; Facility Attachment under negotiation (since 1980)
- No "trilateral" (INFCIRC/66 type) document; only "NPT" safeguards (INFCIRC/153)

(6/82)

FACILITY PROFILE (A-9)

FACILITY NAME: "Yeonggwang" I & II (Korea Nuclear Units #7 and 8)
(Also seen as "Young Kwang")

LOCATION/OWNER: Hongnong-myun, Yeonggwang-gun, Jeonlanam-do; on southwest coast, about 54 km. northwest of Kwangju; site name changed from Gyaema Ri in October 1979; Korea Electric Power Corp. (Site adequate for 6 units)

TYPE: LWR (PWR)

USE: Electrical power generation

DESCRIPTION:

- o Scheduled operation: March 1986 and March 1987; Core loading scheduled to start in October 1985. Construction 13% complete in 1981.
- o Rated power (each): gross - 950 MWe (2775 MWth)
  net - 900 MWe
- o Fuel: Enriched to maximum 3.6% in U-235; U.S. enrichment services (current contract is for 30 years, adjustable fixed-commitment typed concluded in 1979; initial cores to be delivered in 1984 and 1985 respectively). Westinghouse licensed to export initial core, spares and 3 reloads.
- o Core: 66.5 tons UO_2 initial load; 157 fuel assemblies, 264 rods/assembly
- o Burnup: 33000 MWD/MTU (est.)
- o NSSS supplier: Westinghouse, is committed to a "localization" (technology transfer) program for NSSS components, with Korean manufacture of selected components. Korean Nuclear Engineering Services and KECO, with A/E's advice (Bechtel), is responsible for design of some nonsafety-related systems.

- Spent Fuel: Refueling schedule - 13.5 months, 1/3 of core. Estimated 750 metric tons total per unit, over 30-year economic life at rate of 25 metric tons/unit/year.

- Storage: Each unit designed to have at-reactor storage for 4 cores, i.e., sufficient for 12 years, or 9 years if space always preserved for one complete core.

SAFEGUARDS-RELATED INFORMATION:

- None available

(6/82)

FACILITY PROFILE (A-10)

FACILITY NAME: "Yeonggwang" III & IV (Korea Nuclear Units #11 and 12)

LOCATION/OWNER: Hongnong-myun, Yeonggwang-gun, Jeonlandam-do, on southwest coast, about 54 km. northwest of Kwangju; Korea Electric Power Corp.

TYPE: LWR (PWR)

USE: Electrical power generation

DESCRIPTION:

- Scheduled operation: to be determined
- Rated power: 900 MWe nominal (each)
- NSSS supplier: to be determined

SAFEGUARDS-RELATED INFORMATION:

- None available

(6/82)

FACILITY PROFILE (A-11)

FACILITY NAME: Uljin I & II (Korea Nuclear Units 9 & 10)

LOCATION/OWNER: Uljin-gun, Kyongsang-Pukto, Kang Neung; Korea Electric Corp.

TYPE: LWR (PWR)

USE: Electrical power generation

DESCRIPTION:

- o Scheduled operation: 1988 and 1989; core loading schedule to start in October 1987 (delay likely). Construction 5.9% complete in February 1982.
- o Rated power: 950 MWe nominal (each)
- o Fuel: COGEMA (France) has contract for 10-year supply, 1985-1994. U.S. also holds (1979) adjustable fixed-commitment enrichment services contracts designated for these units. Under terms of contracts, designations, can be changed without penalty. U.S. contract re KNU #9 to commence with delivery of a reload in 1987; contract re. KNU#10 schedules initial core delivery in 1986. Contracts expected to be reassigned to "Yeonggwang" III & IV (KNU 11 & 12).
- o NSSS Supplier: Framatome

SAFEGUARDS-RELATED INFORMATION:

- o French/Korea/IAEA"Trilateral" (INFCIRC/66 type) agreement concluded on September 22, 1975 (INFCIRC/233); it was suspended on November 14, 1975, the date on which the Korean/IAEA "NPT" Safeguards agreement (INFCIRC/236) entered into force.

(6/82)

FACILITY PROFILE (A-12)

FACILITY NAME: Uljin III & IV (Korea Nuclear Units 13 & 14)

LOCATION/OWNER: Uljin-gun, Lyongsang-Pukto, Kang Neung; Korea Electric Corp.

TYPE: LWR (PWR)

USE: Electrical power generation

DESCRIPTION:

- Scheduled operation: Est. 1990 and 1991
- Rated power: 900 MWe nominal (each)
- NSSS supplier: to be determined

SAFEGUARDS-RELATED INFORMATION:

- None available

APPENDIX B: INTERNATIONAL NUCLEAR COOPERATION

APPENDIX B: INTERNATIONAL NUCLEAR COOPERATION

This appendix provides perspective relative to involvement of other countries, which bears on full-scope safeguards considerations.

Korea has concluded the following cooperative nuclear arrangements:

France - October 19, 1974

Agreement for Technical Corporation in Atomic Energy between the Korean Ministry of Science and Technology and the French Atomic Energy Commission.

September 22, 1975

Trilateral (IAEA/Korea/French) Safeguards agreement relative to French supply. (Suspended on November 14, 1975 with entry into force of IAEA/Korean "NPT" Safeguards Agreement).

April 4, 1981

Agreement for Cooperation in Peaceful Uses of Nuclear Energy between Korean and French governments.

Canada - January 26, 1976

Agreement between Korean and Canadian governments for Cooperation in the Development and Application of Atomic Energy for Peaceful Purposes.

Spain - December 1, 1975

Complementary Agreement for Cooperation between the Korean Atomic Energy Commission, pursuant to 1975 Convention on Scientific and Technical Cooperation.

Australia - May 2, 1979

Agreement between Korean and Australian governments on Cooperation in Peaceful Uses of Nuclear Energy and Transfer of Nuclear Material.

Belgium - March 3, 1981

Agreement between Korean and Belgium governments in Peaceful Uses of Nuclear Energy.

U *All except France and Spain are NPT parties. France (a nuclear-weapon state) has stated that it will act as if it were a party. Spain did not sign the Treaty when it was open for signature; it has not yet acceded to the Treaty.

U Of the foregoing bilaterals, texts of the Korean-Canadian and Korean-Australian bilaterals are available to staff. Their safeguards-related significance, in terms of U.S. interest, is in the requirements for supplier approvals and for IAEA safeguards on supplied and derived nuclear material. Thus, there are multiple national rights of approval of various Korean actions, e g., retransfers from Korea to countries other than the supplier nation, undertaking reprocessing, and undertaking uranium enrichment.

U The Korean government has been active in pursuing technology and training which will permit it to achieve indigenous capabilities, particularly with respect to assured electrical power supply. Available information concerning recent arrangements reflects the following:

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[redacted]

U In addition to the governmental arrangements, Korean organizations have international cooperative relationships. The Korean Electric Power Corporation (KEPCO) has such arrangements with utility companies in Argentina, Canada, Republic of China (Taiwan), and Japan. KEPCO also has a cooperative technical arrangement with the Argentine Atomic Energy Commission.

U With respect to uranium resources, the domestic reserves are not now economically worth developing. The government encourages investment in overseas arrangements. KECO has entered into joint exploration ventures: (a) with the Anschutz Corp. (U.S.) and Taiwan Power Corp., in Paraguay; and (b) with COGEMA (France) and the Gabon government, in Gabon. At present, uranium enrichment services are under contract with the U.S. (Department of Energy, eight contracts) and France (COGEMA, two contracts).

APPENDIX C:

SUMMARY--IAEA SAFEGUARDS ACTIVITIES AND KEY THRESHOLDS FOR APPLICATION

APPENDIX C:

SUMMARY--IAEA SAFEGUARDS ACTIVITIES AND KEY THRESHOLDS FOR APPLICATION UNDER "NPT" SAFEGUARDS

U Specific activities of the IAEA's safeguards system are designed primarily to follow the flow of nuclear material. Facilities become involved in specific safeguards activities primarily as they utilize safeguarded material under "NPT" safeguards agreements. (This also has been the thrust of U.S. unilateral safeguards rights of the Agreement for Cooperation now held in abeyance).

U Basic action elements include the following:

a. Review of facility design information:

- to identify features of facilities and nuclear material relevant to safeguards on nuclear material,
- to determine material balance areas for accounting purposes,
- to determine timing and procedures for taking physical inventory for accounting purposes,
- to establish record and reporting requirements,
- to establish verification procedures regarding quantities and location of nuclear materials,
- to select combination of containment and surveillance methods;

b. Inspection to verify design information;

c. Maintenance of material accounting and control system, including inventories and operating records.

d. Submission of accounting reports to the IAEA;

e. Inspections relating to material:

Ad hoc:

(a) To verify information contained in initial report on nuclear material subject to safeguards;

(b) To identify and verify changes in situation which have occurred since date of initial report; and

(c) To identify, and if possible verify quantity and composition of, nuclear material before transfer out of or into the State.

- Routine:

(a) To verify that reports are consistent with records;

(b) To verify the location, identity, quantity and composition of all nuclear material subject to safeguards, and

(c) To verify information on possible causes of material unaccounted for, shipper/receiver differences, and uncertainties in book inventory.

- Special:

(a) To verify information contained in special reports; or

(b) If the Agency considers that information made available by the State, including explanations from the State and information obtained from routine inspections, is not adequate for the Agency to fulfill its responsibilities under the Agreement.

U The Subsidiary Arrangements and Facility Attachments address specific application of these elements. The starting point of safeguards basically is when source material (or depleted uranium) has been improved and is suitable for fabrication or enrichment, e.g., when converted from U_3O_8 to UO_2. There is a threshold which governs employment intensity of specific safeguards efforts, i.e., one "effective" kilogram, which is determined by formula based on material type and enrichment. The IAEA annually lists facilities with safeguarded material over one "effective" kilogram. Further, quantities of nuclear material below certain levels can be exempted upon request from IAEA safeguards, e.g.,

gram quantities in sensing components for instruments and quantities below certain thresholds. Under "NPT" safeguards these exemption thresholds, applicable to an entire country at any one time, are quantities not exceeding:

Special nuclear material: 1 kilogram, consisting of one or more of following:

- plutonium,
- uranium with enrichment of 20% and greater, taken account of by multiplying its weight by its enrichment, and
- uranium with enrichment below 20% and above that of natural U, multiplying its weight by five times the square of its enrichment, and

Source material:
- 10 metric tons of natural uranium and depleted uranium with enrichment above 0.5%,
- 20 metric tons of depleted uranium with an enrichment of 0.5% or less, and
- 20 metric tons of thorium.

Such exempted material, however, if processed or stored with safeguarded material would again become subject to safeguards.

REFERENCES

1. 1982 Annual Report on 1981 "Activities of the Daeduk Engineering Center, Korea Advanced Energy Research Institute."

2. a. Seoul 505, January 19, 1982 (C)
   b. Seoul 499, January 19, 1982 (S)
   c. Seoul 12690, October 16, 1981 (C)

3. SECY 78-653 "Spent Fuel Disposition Plans in South Korea," December 14, 1978. (U)

4. a. "Summary Record" of 5th Joint Committee Meeting between U.S. and Korea on Nuclear and Other Energy Technology, January 13-16, 1982, held in Seoul. (OUO)

   b. Seoul 2816, March 24, 1982 (C)

5. Vienna 7713, June 2, 1980 (U)

6. Seoul 15064, October 1979 (C)

7. a. Seoul 2165, February 21, 1980 (C)

   b. Seoul 12690, October 16, 1981 (C)

8. State 84369, March 30, 1982 (C)

9. Brussels 18768, December 17, 1980 (C)

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July 26, 1982

FREEDOM OF INFORMATION ACT REQUEST
FOIA-82-334
Rec'd 7-27-82

BY HAND

Patricia G. Norry
Director of Administration
Office of Administration
Nuclear Regulatory Commission
Washington, D.C. 20555

Freedom of Information Act Request

Dear Ms. Norry:

This is a request under the Freedom of Information Act ("FOIA" or the "Act"), as amended, 5 U.S.C. §552, for records within the possession or control of the Nuclear Regulatory Commission (the "NRC"). This request is made on behalf of the Nuclear Control Institute.

We wish to obtain a copy of any and all records which relate to, refer to or concern:

(1) The nuclear materials safeguards program of the International Atomic Energy Agency (the "IAEA"), which were prepared or received between November 16, 1981 and the present;

(2) Any inquiry by the Commission into the public disclosure of a memorandum prepared by Emanuel Morgan in July, 1981, concerning the IAEA nuclear materials safeguards program (the "Morgan Memorandum"); and

(3) Any review of the Morgan Memorandum for possible declassification.

If all or any part is denied, please list the specific exemption(s) which is (are) being claimed to withhold information.

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If you determine that some portions of the requested material are exempt, we will expect, as the Act provides, that you will provide me with the remaining non-exempt portions. We, of course, reserve the right to appeal any decision to withhold information and expect that you will list the address and office where such an appeal can be sent.

As you know, the amended FOIA permits you to reduce or waive search and/or copying fees when release of the requested information would be "in the public interest." We believe that this request plainly fits that category and we therefore ask that you waive such fees.

If the fee waiver is not granted and copying fees will exceed $25.00, we request permission to review the records which are responsive to this request and to select those which are to be copied.

If you have any questions regarding this request, please telephone me at the above number.

As provided in the Act, I will expect to receive a reply within ten working days.

Sincerely,

TUTTLE & TAYLOR

By
Eldon V. C. Greenberg

EVCG:ah

cc: Irwin Rothschild
Thomas Peebles