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WORLD ENERGY DATA SYSTEM

WENDS

VOLUME IX
NUCLEAR FACILITY PROFILES
IN—PL

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VOLUME IX
WENDS NUCLEAR FACILITY PROFILES
IN-PL

TABLE OF CONTENTS

The World Energy Data System v

Introduction to Nuclear Facility Profiles ix

Tables

1. Countries and State Department Tags Codes xi
2. General Activities and Corresponding Categories xii
3. Facility Type Abbreviations xiii
4. Capacity Units of Measurement xv
5. Status Codes xv

Index by Country C-I

Index by Type or Category T-I

Nuclear Facility Profiles

India	IN
Indonesia	ID
Iran	IR
Ireland	EI
Israel	IS
Italy	IT
Japan	JA
Korea (South)	KS
Madagascar	MA
Mexico	MX
Namibia	WA
Netherlands	NL
Niger	NG
Norway	NO
Pakistan	PK
Peru	PE
Philippines	RP
Poland	PL

THE WORLD ENERGY DATA SYSTEM

The World Energy Data System (WENDS) is a managerial level information bank containing organized data on those countries and international organizations that may have critical impact on the world energy scene. The system was developed by the Office of Program Management Support at Argonne National Laboratory for the Office of International Affairs of the Department of Energy (DOE). The Office of International Affairs also provided funds for the collection of the following information:

- Country data which provides general background information on the economy, government, and energy orientation.
- Similar compilations of information concerning energy-related international organizations.
- Summaries of energy-related international agreements.

Nuclear fission information was collected for the Plans and Analysis Division, Office of Nuclear Energy Programs, DOE. It includes the following:

- Nuclear facility profiles which provide resumes of facts concerning specific installations.
- Nuclear program summaries, that is, overviews of the fission R&D programs in selected countries.

All the WENDS data contains references to enable verification and expansion of the information. Since all data sources are non-classified, complete information is not always available. The Office of Program Management Support at Argonne welcomes any information that will complete these synopses in future publications. Please address comments to:

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This compendium of international energy-related information was compiled from a computerized database and is now available in a series of volumes. The total set of information is as follows:

Volume	Title	Contents
I	COUNTRY DATA Afghanistan, Algeria, Argentina, Australia, Austria, Bangladesh, Belgium, Bolivia, Brazil, Burma, Canada, China, Colombia	Review of background information for each country listed.
II	COUNTRY DATA Czechoslovakia, Denmark, Egypt, Finland, France, Germany (East), Germany (West), Greece, Guinea, India, Indonesia, Iran, Italy, Japan, Korea (South)	
III	COUNTRY DATA Libya, Luxembourg, Malaysia, Mexico, Netherlands, New Zealand, Niger, Nigeria, Norway, Pakistan, Peru, Philippines, Poland, Portugal	
IV	COUNTRY DATA Senegal, South Africa, Soviet Union, Spain, Sweden, Switzerland, Taiwan, Tanzania, Thailand, Turkey, United Kingdom, United States, Upper Volta, Venezuela, Yugoslavia	
V	INTERNATIONAL ORGANIZATION DATA Asian Development Bank, European Economic Community, Inter-American Development Bank, International Atomic Energy Agency, International Energy Agency, Nuclear Energy Agency, United Nations, World Bank	Review of backgound information for each international organization listed.

VI	INTERNATIONAL AGREEMENT PROFILES	Summaries of energy-related international agreements with indexes by country and by energy technology.
VII	NUCLEAR FACILITY PROFILES Algeria, Argentina, Australia, Austria, Belgium, Bolivia, Brazil, Bulgaria, Canada, Central African Republic, China	Fact sheets on nuclear facilities, with indexes by facility type and by country. Power reactors and U.S. installations excluded.
VIII	NUCLEAR FACILITY PROFILES Colombia, Czechoslovakia, Denmark, Egypt, Finland, France, Gabon, Germany (East), Germany (West), Greece, Greenland, Hungary	
IX	NUCLEAR FACILITY PROFILES India, Indonesia, Iran, Ireland, Israel, Italy, Japan, Korea (South), Madagascar, Mexico, Namibia, Netherlands, Niger, Norway, Pakistan, Peru, Philippines, Poland	
X	NUCLEAR FACILITY PROFILES Portugal, Puerto Rico, Romania, South Africa, Soviet Union, Spain, Sweden, Switzerland, Taiwan, Thailand, Turkey, United Kingdom, Venezuela, Vietnam, Yugoslavia, Zaire, Zambia	
XI	NUCLEAR FISSION PROGRAM SUMMARIES Argentina, Brazil, China, France, Germany (West), India, Iran, Israel, Italy, Japan, Peru, Pakistan, Saudi Arabia, South Africa, Spain, Taiwan, United Kingdom, Soviet Union, Venezuela	Overviews of fission R&D programs in 19 foreign countries.

INTRODUCTION TO

NUCLEAR FACILITY PROFILES

ORIENTATION

In this compendium each profile of a nuclear facility is a capsule summary of pertinent facts regarding that particular installation. The facilities described include the entire fuel cycle in the broadest sense, encompassing resource recovery through waste management. Power plants and all U.S. facilities have been excluded from this initial effort due to time and cost limitations.

To facilitate comparison the profiles have been recorded in a standard format. Because of the breadth of the undertaking some data fields do not apply to the establishment under discussion and accordingly are blank.

ORGANIZATION

The set of nuclear facility profiles occupies four volumes; the profiles are ordered by country name, and then by facility code. The list of countries with known nuclear facilities is in Table 1. It also includes the two-character State Department tags code, which is used to aggregate the nuclear facilities for each country in this publication. The nuclear facility code is obtained from the Advanced Nuclear Materials Information System. This code is composed of four capitalized characters (e.g., RIDJ) and appears at the extreme right side of the fifth line of each profile.

INDEXES

Each nuclear facility profile volume contains two complete indexes to the information. The first index aggregates the facilities alphabetically by country. It is further organized by category of facility, and then by the four-character facility code. It provides a quick summary of the nuclear energy capability or interest in each country and also an identifier, the facility code, which can be used to access the information contained in the profile.

The second index is ordered primarily by type or category of installation. Within this grouping, the profiles are listed alphabetically by country and by facility code. This index enables a worldwide comparison of nuclear energy-related activities.

The categories under discussion relate to general activities, such as mining, enrichment, and fuel reprocessing. The category and activity are described in the heading of each profile; their relationship is defined in Table 2.

Profile Contents

Each profile contains the following items:

Country code	Latitude
Activity	Longitude
Category	Technology source
Initials of researcher	Owner/Operator
Date of research	Supply source
Facility name	Safeguards
Location of installation	Product/Use
Facility type	Fuel storage capacity
Capacity	Process
Status	Schedule
Year related to status	Remarks
Facility code	References

Most of the data items have been discussed or are self-evident in meaning. Note that each profile is supported by references, in which any conflicting reference information is noted. Space limitations of the general purpose format necessitated abbreviations which are defined in three tables: Table 3 lists the abbreviations for facility types; Table 4 explains the capacity units; and Table 5 contains the status codes.

TABLE 1. Countries and State Department Tags Codes

ALGERIA	AG	JAPAN	JA
ARGENTINA	AR	KOREA (SOUTH)	KS
AUSTRALIA	AS	MADAGASCAR	MA
AUSTRIA	AU	MEXICO	MX
BELGIUM	BE	NAMIBIA	WA
BOLIVIA	BL	NETHERLANDS	NL
BRAZIL	BR	NIGER	NG
BULGARIA	BU	NORWAY	NO
CANADA	CA	PAKISTAN	PK
CENTRAL AFRICAN REPUBLIC	CT	PERU	PE
CHINA	CH	PHILIPPINES	RP
COLOMBIA	CO	POLAND	PL
CZECHOSLOVAKIA	CZ	PORTUGAL	PO
DENMARK	DA	PUERTO RICO	RQ
EGYPT	EG	ROMANIA	RO
FINLAND	FI	SOUTH AFRICA	SF
FRANCE	FR	SOVIET UNION	UR
GABON	GB	SPAIN	SP
GERMANY (EAST)	GE	SWEDEN	SW
GERMANY (WEST)	GW	SWITZERLAND	SZ
GREECE	GR	TAIWAN	TW
GREENLAND	GL	THAILAND	TH
HUNGARY	HU	TURKEY	TU
INDIA	IN	UNITED KINGDOM	UK
INDONESIA	ID	VENEZUELA	VE
IRAN	IR	VIETNAM, NORTH	VN
IRELAND	EI	YUGOSLAVIA	YO
ISRAEL	IS	ZAIRE	CG
ITALY	IT	ZAMBIA	ZA

TABLE 2. General Activities and Corresponding Categories

Resource Recovery	
	Mines
	Mills
	Conversion Plants
Enrichment Plant	
	Enrichment Plants
Fuel Fabrication	
	Heavy Water Production
	Fuel Fabrication Plants
Research and Test Reactor	
	Research and Test Reactors
Spent Fuel Processing	
	Fuel Reprocessing Facilities
	Separate Fuel Storage Facilities
Waste Management	
	Waste Disposal Facilities

TABLE 3. Facility Type Abbreviations

MINES

URAN - Uranium
THOR - Thorium
UTh - Uranium and Thorium

MILLS

URAN - Uranium
THOR - Thorium
UTh - Uranium and Thorium

CONVERSION PLANTS

UO2 - Conversion to Uranium Dioxide
UF6 - Conversion to Uranium Hexaflouride
UF4 - Conversion to Uranium Tetraflouride

ENRICHMENT PLANTS

DIFF - Gaseous Diffusion
CENT - Gaseous Centrifuge
LASR - Laser Isotope Separation
STAT - Stationary Wall Centrifuge
CHEM - Chemical Exchange
JET - Becker Jet-Nozzle

FUEL FABRICATION PLANTS

UO - Uranium Oxide
UM - Uranium Metal
UPuO - Uranium-Plutonium Mixed-Oxide
FB - Fast Breeder
UC - Uranium Carbide
U3O8 - Yellowcake

RESEARCH AND TEST REACTORS

TANK - Tank-type
TK-L - Tank-type, light water moderated
TK-H - Tank-type, heavy water moderated
POOL - Pool type
OMRR - Organic moderated research reactor
GMRR - Graphite moderated research reactor
FNRR - Fast neutron research reactor
SHRR - Solid homogeneous research reactor
LHRR - Liquid homogeneous research reactor
ARGO - Argonaut-type research reactor

TABLE 3 continued. Facility Type Abbreviations

FUEL REPROCESSING FACILITIES

FB - Fast Breeder
UO - Uranium Oxide
UM - Uranium Metal
UThO - Uranium-Thorium Mixed-Oxide
HTGR - High Temperature Graphite Reactor

SEPARATE FUEL STORAGE FACILITIES

ROCK - Hard-rock formations
SURF - Surface
HOLE - Near-surface Hole
SALT - Salt deposit
POOL - Pool-type

WASTE DISPOSAL FACILITIES

PREP - Waste Preparation
DISP - Waste Disposal

TABLE 4. Capacity Units of Measurement

kg/d	kilograms/day
kg/h	kilograms/hour
KSWU	1000 tonnes of separative work units (yearly)
KWt	1000 watts thermal (yearly)
l/d	liters/day
l/h	liters/hour
MWt	1 million watts thermal (yearly)
m3/h	cubic meters/hour
te	metric ton (tonne)
Wt	Watts thermal

TABLE 5. Status Codes

R&D	Research and development operation
Explor	Mine under exploration
Plan	Planned facility
Constr	Facility under construction
Oper	Facility in operation
Inactv	Facility inactive
(blank)	Status unknown

NFP INDEX BY COUNTRY

COUNTRY	FACILITY NAME	LOCATION	FAC TYPE	CAPACITY	STATUS	YR	NFP CODE
ALGERIA							
	CATEGORY-MINES (URANIUM & THORIUM)						
		Tamanrasset	URAN		Explor	82	RAGA
		Timgaouine/Abankor	URAN		Explor		RAGC
ARGENTINA							
	CATEGORY-MINES (URANIUM & THORIUM)						
		Los Gigantes	URAN		Explor		RANA
		Comechingones	URAN		Explor		RANB
		Los Chihvidos	URAN		Explor		RANC
		Sierra Cavdrada	URAN		Explor		RAND
		Los Adobes	URAN	50 te/y	Plan		RANE
		Don Otto	URAN	30 te/y	Oper	83	RARQ
		Sierra Pintada	URAN	600 te/y	Constr	83	RARR
		Malargue	URAN	30 te/y	Oper		RARS
		Sierra de Pichinan	URAN		Explor		RART
		Tonco-Amblayo	URAN		Explor		RARW
		Conquin	URAN		Explor		RARX
		Sano Gasta					RARY
		Guandacol	URAN		Explor		RARZ
	CATEGORY-HEAVY WATER PRODUCTION						
		Buenos Aires			Plan	84	RARF
	CATEGORY-FUEL FABRICATION PLANTS						
	Constituyentes Pilot	Buenos Aires	UO	50 te/yr	Oper	77	RARA
	CATEGORY-RESEARCH AND TEST REACTORS						
	RA-0	Cordoba			Oper	68	RARJ
	RA-1	Buenos Aires	TANK	.15 MWt	Oper	58	RARK
	RA-2	Buenos Aires			Oper	58	RARL
	RA-3	Buenos Aires	TANK	5 MWt	Oper	67	RARM
	RA-4	Rosario	SHRR		Oper	66	RARN
	RA-5		FNRR		Constr	75	RARV
	CATEGORY-FUEL REPROCESSING FACILITIES						
	Ezeiza Atomic Centre	Ezeiza	UM	(small)	Oper	77	RARG
AUSTRALIA							
	CATEGORY-MINES (URANIUM & THORIUM)						
		Maureen	URAN		Explor		RASA
		Ben Lomond	URAN		Explor		RASB
		Ngalia Basin	URAN		Explor		RASC
		Beverley	URAN		Explor		RASD
		Radium Hill	URAN		Inactv	61	RASF

NFP INDEX BY COUNTRY

COUNTRY	FACILITY NAME	LOCATION	FAC TYPE	CAPACITY	STATUS	YR	NFP CODE
AUSTRALIA (CONT.)							
CATEGORY-MINES (URANIUM & THORIUM) (CONT.)							
		Flinders Range	URAN		Explor		RASJ
	Lake Way	Wiluna			Explor		RASK
	Olympic Dam		URAN		Explor		RASL
	Honeymoon	Honeymoon	URAN		Explor		RASM
		Yeelirrie	URAN	2300te/y	Plan	84	RAUL
	Jabirv	Ranger	URAN	3000te/y	Plan	81	RAUM
		Alligator Rivers	URAN		Explor		RAUP
		Koongarra		1500te/y	Plan		RAUQ
		Nabarlek	URAN	900 te/y	Plan	81	RAUR
		Jabiluka	URAN	2500te/y	Plan	83	RAUT
		Westmoreland	URAN		Explor		RAUU
	Mary Kathleen	Mt. Isa	URAN	700 te/y	Oper	56	RAUV
		Rum Jungle	URAN	200 te/y	Inactv	71	RAUX
	South Alligator	Northern Territory	URAN		Inactv	62	RAUY
	El Sherana	El Sharana	URAN		Inactv	65	RAUZ
CATEGORY-MILLS							
	Jabiru	Ranger	URAN	3000te/y	Plan	82	RAUN
		Nabarlek	URAN	900 te/y	Plan	81	RAUS
	Mary Kathleen	Mt. Isa	URAN	700 te/y	Oper	56	RAUW
CATEGORY-ENRICHMENT PLANTS							
	Lucas Heights	Lucas Heights	CENT		Oper	65	RASE
			LASR		R&D		RASH
CATEGORY-RESEARCH & TEST REACTORS							
	High Flux Australian	Sutherland, New S.W.	TANK	10 MWt	Oper	58	RAUE
	Moata Reactor	Lucas Heights	ARGO	.01 MWt	Oper	61	RAUH
AUSTRIA							
CATEGORY-MINES (URANIUM & THORIUM)							
		Forstau	URAN		Explor		RATF
		Tweng	URAN		Explor		RATG
CATEGORY-RESEARCH AND TEST REACTORS							
	ASTRA Adapted Swim.	See remarks	POOL	Remarks	Oper	60	RATE
	Sar-Graz	Graz	ARGO	.001 MWt	Oper	65	RATH
	Triga Mark II	Vienna	SHRR	25 MWt	Oper	62	RATK
BELGIUM							
CATEGORY-FUEL FABRICATION PLANTS							
	Dessel Pu Fuel Prod.	Dessel	UPuO	35 te/yr	Oper	73	RBEH
	FBFC	Dessel	UO	200 te	Oper	59	RBER
	Plutonium Lab.	Mol	UPuO	(small)	Oper	60	RBEZ

NFP INDEX BY COUNTRY

COUNTRY	FACILITY NAME	LOCATION	FAC TYPE	CAPACITY	STATUS	YR	NFP CODE
BELGIUM (CONT.)							
CATEGORY-RESEARCH AND TEST REACTORS							
	BR-02	Mol	TK-L	500Wt	Oper	59	RBEE
	BR-1	Mol		4 MWt	Oper	56	RBEF
	Belgian Reactor BR-2	Mol	TK-L	100 MWt	Oper	60	RBEG
	BR-3/VN	Mol	TANK	40.9 MWt		65	RBEJ
	Thetis	Ghent		41 MWt	Oper	67	RBET
	VENUS	Mol	TANK	500Wt	Oper	64	RBEX
	BR-3	Mol	PWR	10.5 MWe	Oper	72	RBGE
CATEGORY-FUEL REPROCESSING FACILITIES							
	Eurochemic	Mol	UMUO	60 te/yr	Inactv	66	RBEQ
CATEGORY-WASTE DISPOSAL FACILITIES							
	Eurobitum	Mol	PREP	650 m3	Oper	77	RBGF
	PAMELA II	Mol	PREP	40 l/hr	Plan	81	RBGG
		Mol	DISP	10000 m3	Plan	79	RBGH
		Mol	PREP	80 l/hr	Oper	64	RBGJ
	EUROSTORAGE	Mol	DISP		Oper		RBGK
		Mol	PREP	150 Kg/h	Oper	75	RBGL
		Atlantic Ocean	DISP	2000 te	Oper		RBGM
	Eurowatt	Mol	PREP	1000 l/d	Constr		RBGN
		Mol	PREP	200 kg/h	Inactv	60	RBGP
		Mol	PREP	10 Kg/hr	Oper	70	RBGR
BOLIVIA							
CATEGORY-MINES (URANIUM & THORIUM)							
		Cotaje	URAN		Plan	80	RBOC
BRAZIL							
CATEGORY-MINES (URANIUM & THORIUM)							
		Campos Belos	URAN		Explor		RBRT
		Figueira	URAN		Explor		RBZD
		Pocos de Caldas	URAN	500 te/y	Constr	79	RBZG
		Pocos de Caldas	URAN	500 te/y	Constr	79	RBZH
		Olinda	URAN		Explor		RBZJ
		Araxa	URAN		Explor		RBZK
		Amorinopolis	URAN		Explor		RBZL
		Quadilatero	URAN		Explor		RBZM
		Itabapoana	THOR		Oper		RBZN
		Cumuruxatiba	THOR		Oper		RBZP
CATEGORY-ENRICHMENT PLANTS							
	Nuclei	Sepetiba	JET	180 KSWU	Plan	82	RBRA
		Sepetiba	JET	5000 K	Plan		RBZA

NFP INDEX BY COUNTRY

COUNTRY	FACILITY NAME	LOCATION	FAC TYPE	CAPACITY	STATUS	YR	NFP CODE
BRAZIL (CONT.)							
CATEGORY-FUEL FABRICATION PLANTS							
	Inst Energie Atomica	Sao Paulo	U308	10 te/yr	Oper		RBRS
		Sepetiba	UO	50 te/yr	Constr	78	RBZE
CATEGORY-RESEARCH AND TEST REACTORS							
	IEAR-1	Sao Paulo, Brazil	POOL	5 MWt		58	RBRR
	RIEN-1	Rio de Janeiro	ARGO	.01 MWt	Oper	65	RBRW
	Triga-Brazil	Belo Horizonte	SHRR	30 KWt	Oper	59	RBRY
CATEGORY-FUEL REPROCESSING FACILITIES							
		Sepetiba	UO	5 kg/day	Plan	86	RBRB
BULGARIA							
CATEGORY-MINES (URANIUM & THORIUM)							
	Buhovo	Sofia			Oper		RBLL
CATEGORY-RESEARCH AND TEST REACTORS							
	IRT-Sofia	Sofia	POOL		Oper	61	RBLE
CANADA							
CATEGORY-MINES (URANIUM & THORIUM)							
	Cluff Lake	Cluff Lake	URAN	1500te/y	Constr	79	RDCG
	Birch Island	Clearwater	URAN	110 te/y	Constr	80	RDCK
	Beaverlodge	Beaverlodge	URAN	460 te/y	Oper	53	RDCL
	Key Lake	La Ronge	URAN	2300te/y	Plan	83	RDCN
	Rabbit Lake	Rabbit Lake		1730te/y	Oper	75	RDCP
	Baker Lake	Baker Lake	URAN		Explor		RDCR
	Preston	Elliot Lake	URAN		Inactv	61	RDCS
	Rio Algon	Elliot Lake	URAN	1900te/y	Oper	68	RDCU
	Agnew Lake	Sudbury	URAN	270 te/y	Oper	77	RDCW
	James Bay	James Bay	URAN		Explor		RDCZ
	Wollaston Lake	Wollaston Lake	URAN		Explor		RDDA
	Madawaska	Bancroft	URAN	320 te/y	Oper	76	RDDC
	Kitts-Michelin	Makkovik	URAN		Explor	83	RDDE
	Johan Beetz	Quebec	URAN		Explor		RDJH
		Port Radium	URAN		Inactv	60	RDJU
	Rayrock	Lake Marion	URAN		Inactv	57	RDJV
		Great Slave Lake	URAN		Explor		RDJW
		St. Armand	URAN		Explor		RDJX
		Otish Mountains	URAN		Explor		RDJY
		Mont Laurier	URAN		Explor		RDJZ
	Charlebois Lake	Charlebois Lake	URAN		Explor		RDKA
		St. Germaine Lake					RDKB
		Tyee Lake					RDKC

NFP INDEX BY COUNTRY

COUNTRY	FACILITY NAME	LOCATION	FAC TYPE	CAPACITY	STATUS	YR	NFP CODE
CANADA (CONT.)							
CATEGORY-MINES (URANIUM & THORIUM) (CONT.)							
		Mazenod Lake					RDKC
		Dudderidge Lake					RDKE
		Thunder Bay					RDKF
		Cape Dorset					RDKG
		Ungara					RDKH
		Jourdan Lake					RDKJ
		Sakami Lake					RDKK
		Uranium City					RDKL
		Lake Athabaska					RDKM
		Blind River					RDKN
		Cobequid Mountain					RDKP
		Churchill					RDKQ
		Dismal Lake					RDKR
		Fond du Lac					RDKS
	Denison	Elliot Lake	URAN	1900te/y	Oper	57	RDKZ
CATEGORY-MILLS							
	Beaverlodge	Beaverlodge		460 te/y	Oper	53	RDCM
	Rabbit Lake	Rabbit Lake		1730te/y	Oper	75	RDCQ
	Denison	Elliot Lake	URAN	1900te/y	Oper	57	RDCT
	Rio Algon	Elliot Lake	URAN	1900te/y	Oper	68	RDCV
	Agnew Lake	Sudbury	URAN	270 te/y	Oper	77	RDCX
	Madawaska	Bancroft	URAN	320 te/y	Oper	76	RDDC
CATEGORY-CONVERSION PLANTS							
	Eldorado Nuclear	Port Hope	UF6	4000 te	Oper	70	RDAY
	Eldorado Nuclear	Port Granby	UF6	10000 te	Plan	81	RDDN
CATEGORY-HEAVY WATER PRODUCTION							
	Port Hawkesbury	Port Hawkesbury		400te/y	Oper	70	RDFA
	Glace Bay	Glace Bay		400 te/y	Oper	76	RDJP
	Bruce A	Douglas Point		800 te/y	Oper	73	RDJQ
	Bruce B	Douglas Point		800 te/y	Constr	78	RDJR
	Bruce C	Douglas Point		800 te/y	Plan	80	RDJS
	Bruce D	Douglas Point		800 te/y	Plan	79	RDJT
	La Prade	La Prade		800 te/y	Constr	79	RDKU
		Trail		6 te/y	Inactv		RDKV
CATEGORY-FUEL FABRICATION PLANTS							
	Canadian Gen Electr.	Peterborough	UO		Oper		RDAT
	Canadian Gen Electr.	Toronto	UO		Oper		RDAU
	Westinghouse	Port Hope	UO		Oper		RDCD
	Chalk River Nuclear	Chalk River	UPuO	(small)	Inactv	76	RDDB
	Westinghouse	Varennes	UO		Oper		RDHX
CATEGORY-RESEARCH & TEST REACTORS							
	McMaster Nuclear	Hamilton, Ontario,	POOL	2 MWt	Oper	59	RDBF
	NRU Reactor	Chalk River, Ontario	TK-H	110 MWt	Oper	58	RDBJ

NFP INDEX BY COUNTRY

COUNTRY	FACILITY NAME	LOCATION	FAC TYPE	CAPACITY	STATUS	YR	NFP CODE
CANADA (CONT.)							
CATEGORY-RESEARCH & TEST REACTORS (CONT.)							
	NRX	Chalk River, Ontario	TK-H	33 MWt	Oper	47	RDBK
	NRX Reactor	Chalk River, Ontario	TK-H	40 MWt	Oper	48	RDBL
	Pool Test Reactor	Chalk River, Ontario	POOL	10 Wt	Oper	57	RDBZ
	Slowpoke-2	Ottowa, Ontario	POOL	.021 MWt	Oper	71	RDCA
	Slowpoke-1	Toronto, Ontario	POOL	.021 MWt	Oper	70	RDCB
	WR-1	Pinawa, Manitoba	TK-H	40 MWt	Oper	65	RDCE
	ZED-2	Chalk River, Ontario	TK-H	200 Wt	Oper	60	RDCH
	ZEEP	Chalk River, Ontario	TK-H	Remarks	Remark	45	RDCJ
CATEGORY-FUEL REPROCESSING FACILITIES							
	Chalk River Nucl Lab	Chalk River	UO	(small)	Inactv		RDAD
CATEGORY-SEPARATE FUEL STORAGE FACILITIES							
	Whiteshell	Whiteshell	SURF		Oper		RDJJ
	Chalk River Nuclear	Chalk River	HOLE		Oper		RDJL
	Pickering Nucl Power	Pickering	POOL		Oper		RDJM
	Bruce Nuclear Power	Tiverton	POOL		Oper		RDJN
CATEGORY-WASTE DISPOSAL FACILITIES							
		White Lake	ROCK		Oper		RDJK
	Chalk R Nucl Lab	Chalk River	PREP	200 kg/h	Inactv	60	RDKW
	RWVRF	Tiverton	PREP		Oper	77	RDKX
	Chalk R Nucl Lab	Chalk River	PREP		Oper		RDKY
CENTRAL AFRICAN REPUBLIC							
CATEGORY-MINES (URANIUM & THORIUM)							
		Bakouma	URAN	1000te/y	Plan	81	RCAA
CHINA							
CATEGORY-MINES (URANIUM & THORIUM)							
		Kuetchou	UTh		Oper		RPCD
		Tsinghai	UTh		Oper		RPCE
		Szechwan	UTh		Oper		RPCF
		Sinkiang	UTh		Oper		RPCG
		Chuannan	URAN		Oper		RPCJ
		Chuchou	URAN		Oper		RPCK
		Chushan	URAN		Oper		RPCL
	Hsia Chuang	Weiyuan	URAN		Oper		RPCM
CATEGORY-ENRICHMENT PLANTS							
	China 1	Lanchou	DIFF	180 KSWU	Oper	63	RPCB
			LASR		R&D		RPCH

NFP INDEX BY COUNTRY

COUNTRY	FACILITY NAME	LOCATION	FAC TYPE	CAPACITY	STATUS	YR	NFP CODE
COLOMBIA							
	CATEGORY-RESEARCH & TEST REACTORS						
	Instituto De Asuntos	Bogota	POOL	20 KWt	Oper	65	RCOB
CZECHOSLOVAKIA							
	CATEGORY-MINES (URANIUM & THORIUM)						
		Jachymov	URAN				RCKE
	Pribram	Pribram	URAN		Oper	54	RCZN
	CATEGORY-FUEL FABRICATION PLANTS						
	Nuclear Fuel Inst.	Prague			Oper		RCKF
	CATEGORY-RESEARCH AND TEST REACTORS						
	HWGCR (KS-150)	Bohunice, Slovakia		590 MWt	Oper	65	RCKD
	WWR-C Praque	Rez	TK-L	2 MWt	Oper	57	RCZL
	CATEGORY-WASTE DISPOSAL FACILITIES						
	NRI-Rez	Prague	PREP	3.6 m3/h	Oper	61	RCKG
DENMARK							
	CATEGORY-FUEL FABRICATION PLANTS						
	Riso Research Est.	Roskilde			Oper		RENP
		Elsinore	UOUM		Oper		RENR
	CATEGORY-RESEARCH AND TEST REACTORS						
	DR-1	Roskilde	LHRR	500Wt		57	RENG
	DR-2	Roskilde	POOL	5 MWt	Oper	58	RENJ
	DR-3	Copenhagen	TK-H	10 MWt	Oper	59	RENL
EGYPT							
	CATEGORY-RESEARCH & TEST REACTORS						
	UAR WWR-C Reactor	Inshas	TK-L	2 MWt	Oper	61	RVAE
FINLAND							
	CATEGORY-MINES (URANIUM & THORIUM)						
		Joensuu	URAN		Inactv	61	REFF
	CATEGORY-RESEARCH AND TEST REACTORS						
	FIR-1	Helsinki		250 MWt	Oper	62	REFA
	Fir-1	Otaniemi	SHRR	Remarks	Oper	62	REFB

NFP INDEX BY COUNTRY

COUNTRY	FACILITY NAME	LOCATION	FAC TYPE	CAPACITY	STATUS	YR	NFP CODE
FRANCE							
	CATEGORY-MINES (URANIUM & THORIUM)						
		Vendee	URAN		Oper		RFEW
		La Crouzille	URAN	200 te/y	Oper	50	RFEZ
		St. Priest	URAN				RFFA
		Lodeve	URAN	500 te/y	Oper	78	RFFK
		Roven	URAN	100 te/y	Plan	81	RFGC
		Langogne	URAN	135 te/y	Oper	77	RFGR
		St. Pierre du Cantal	URAN	100 te/y	Oper	78	RFGU
	CATEGORY-MILLS						
		L'Ecarpier	URAN	700 te/y	Oper	77	RFEV
		Bessines-sur-Gartemp	URAN	1500te/y	Oper	77	RFEY
		St. Priest	URAN	500 te/y	Oper	77	RFFB
		Langogne	URAN	135 te/y	Oper	77	RFGS
		Lodeve	URAN	1000te/y	Constr	80	RFGT
	CATEGORY-CONVERSION PLANTS						
	Conversion Facility,	Pierrelatte	UF6	8000 te	Oper	77	RFFC
	Malvesi Refining Fac	Malvesi	UF4		Oper		RFFL
	CATEGORY-ENRICHMENT PLANTS						
	Enrichment Facility	Pierrelatte	DIFF	500 KSWU	Oper	67	RFAA
	Eurodif 1	Tricastin	DIFF	10800 K	Constr	81	RFBC
	Eurodif 2 (Coredif)		DIFF	5000 K	Plan	85	RFBR
			CHEM	50-100 K	Plan	85	RFFZ
			LASR		R&D	60	RFGA
	CATEGORY-HEAVY WATER PRODUCTION						
		Toulouse	D20	2 te/y	Inactv		RFGW
		Mazingarbe	D20	26 te/y	Inactv		RFGX
	CATEGORY-FUEL FABRICATION PLANTS						
	FBFC	Romans	UO	300 te	Constr	78	RFFE
	Pu Workshops ATPu,	St-Paul-les-Durance	UPuO	10 te/yr	Oper		RFFF
	SICN	Veurey	FB		Oper		RFFM
	CERCA	Romans	UM	900 te	Oper		RFGZ
	SICN	Annecy	UM	1200 te	Oper		RFHA
	CATEGORY-RESEARCH AND TEST REACTORS						
	Reactor Alecto	Saclay	LHRR	1 Wt	Inactv	64	RFAD
	Reactor Alize	Saclay	TK-L	1 Wt	Inactv	59	RFAE
	Aquilon	Sarclay, near Paris	TK-H	Remarks	Inactv	56	RFAH
	Azur	Cadarache	POOL	(small)	Oper	62	RFAK
	Cabri	Cadarache	POOL	Remarks	Oper	63	RFAR
	Reactor Cesar	Cadarache	GMRR	10 KWt	Oper	64	RFBA
	Reactor Zoe	Fontenay-Aux-Roses	TK-H	150 KWt	Oper	48	RFBK
	Reactor EL-2	Saclay	TK-H	2 MWt	Inactv	52	RFBL
	Reactor EL-3	Saclay	TK-H	20 MWt	Oper	57	RFBM

NFP INDEX BY COUNTRY

COUNTRY	FACILITY NAME	LOCATION	FAC TYPE	CAPACITY	STATUS	YR	NFP CODE
FRANCE (CONT.)							
CATEGORY-RESEARCH & TEST REACTORS (CONT.)							
	Eole Reactor	Cadarache	TK-H	10KW max	Oper	65	RFBN
	Harmonie Reactor	Bouches-du-Rhone	FNRR	.002 MWt	Oper	65	RFCC
	Isis Reactor	Saclay	POOL	.08 KWt	Oper	66	RFCR
	Reactor Marius	Cadarache	GMRR	(small)	Oper	60	RFCW
	MASURCA	Cadarache	FNRR	1 KWt	Oper	66	RFCX
	Reactor Melusine	Grenoble, Isere	POOL	8.0 MWt	Oper	58	RFCY
	Reactor Minerve	Fontenay-Aux-Roses	POOL	100 MWt	Oper	59	RFCZ
	Nereide Reactor	Fontenay-aux-Roses	POOL	.6 MWt	Oper	60	RFDB
	Osiris Reactor	Saclay, Seine-et-Ois	TK-L	50 MWt	Oper	66	RFDC
	Reactor Pegase	Cadarache	TK-L	30 MWt	Oper	63	RFDH
	Peggy	Cadarache	TK-L	1 KWt	Oper	61	RFDJ
	Proserpine	Saclay	LHRR	1 Wt	Oper	58	RFDM
	Rapsodie Reactor	Bouches-du Rhone	FNRR	41 MWt	Oper	67	RFDR
	Reactor Siloe	Grenoble	POOL	Remarks	Oper	63	RFDV
	Reactor Siloette	Grenoble	POOL	.1 MWt	Oper	64	RFDW
	Strasbourg-Cronenbg.	Strasbourg	ARGO	.1 MWt	Oper	66	RFED
	Reactor Triton	Fontenay-Aux-Roses	POOL	100 Wt	Oper	59	RFEM
	Ulysse Reactor	Saclay	ARGO	.1 MWt	Oper	61	RFEN
	Chaudiere	Cadarache		100 MWt	Oper	75	RFGC
	High-Flux Reactor	Grenoble	TK-H	60 MWt	Oper	71	RFGD
CATEGORY-FUEL REPROCESSING FACILITIES							
	UP-2	Cap de La Hague	UMUO	800 te	Oper	66	RFAU
	UP-3	Cap de La Hague	UO	1600 te	Plan	87	RFAV
	AT-1	Cap de La Hague	FB	200 kg	Oper	66	RFER
	UP-1	Marcoule	UM	1000 te	Oper	58	RFFJ
	SAP	Marcoule	FB	5 te/yr	Oper		RFGB
CATEGORY-WASTE DISPOSAL FACILITIES							
	Saclay Nucl Res Cen	Seine-et-Oise	PREP		Oper		RFGE
		Cap de La Hague	DISP	1.3 Mbbl	Oper		RFGF
	VULCAIN	Marcoule	PREP		Oper		RFGG
	PIVER	Marcoule	PREP		Inactv	69	RFGH
	GULLIVER	Fontenay-aux-Roses	PREP		Inactv	63	RFGJ
	AVM	Marcoule	PREP	30 l/hr	Oper	78	RFGK
	AVH	Cap de La Hague	PREP	100 l/hr	Plan	82	RFGL
	Center of Nucl Study	Grenoble	PREP		Constr		RFGM
	Center of Nucl Study	Grenoble	PREP	30 kg/hr	Oper	61	RFGN
	Cadarache Nuclear	St. Paul-les-Durance	PREP		Oper	77	RFGP
	Fontenay-aux-Roses	Fontenay-aux-Roses	PREP	50 kg/hr	Oper	67	RFGY
		Strasbourg	PREP	15 kg/hr	Oper	70	RFHB
GABON							
CATEGORY-MINES (URANIUM & THORIUM)							
		Mikouloungou	URAN		Explor		RHBA
		Oklo	URAN		Oper	70	RHBB
		Mounana	URAN		Inactv		RHBC
		Boyindzi	URAN		Explor		RHBE
		Okelobondo	URAN		Explor		RHBF

NFP INDEX BY COUNTRY

COUNTRY	FACILITY NAME	LOCATION	FAC TYPE	CAPACITY	STATUS	YR	NFP CODE
GABON (CONT.)							
	CATEGORY-MILLS						
		Mounana	URAN		Inactv		RHBC
GERMANY(EAST)							
	CATEGORY-MINES (URANIUM & THORIUM)						
		Weringerode	URAN		Oper	50	REGU
	Sorgesettendorf		URAN				REGV
		Thuringia	URAN		Oper		REGW
	CATEGORY-WASTE DISPOSAL FACILITIES						
		Bartensleben	DISP		Plan		REGT
GERMANY(WEST)							
	CATEGORY-MINES (URANIUM & THORIUM)						
		Menzenschwand	URAN		Explor		RGFJ
		Mullenbach	URAN		Explor		RGGT
		Oberpfalzer	URAN		Explor		RGGU
		Saxony	URAN		Inactv		RGGV
	CATEGORY-CONVERSION PLANTS						
	RBU-1	Hanau	UO2	1000 te	Oper	64	RGDF
	CATEGORY-ENRICHMENT PLANTS						
		Julich	CENT		Oper		RGFC
	Karlsruhe Nuclear	Karlsruhe	JET	2 KSWU	Oper	67	RGFH
		Gronau	CENT	1000 K	Plan	85	RGFR
			LASR		R&D	71	RGFS
	CATEGORY-HEAVY WATER PRODUCTION						
		Frankfurt	D20	6 te/y	Inactv		RGGS
	CATEGORY-FUEL FABRICATION PLANTS						
	RBU-II	Grosswelzheim	UO	150 te	Oper	66	RGDG
	RBU-I	Hanau	UO	600 te	Oper	64	RGDH
		Lingen	UO		Constr	77	RGFB
	Alkem GmbH	Hanau	UPuO	50 te/yr	Oper	66	RGFE
	Hobeg	Hanau	UOUC		Oper	72	RGFK
	CATEGORY-RESEARCH AND TEST REACTORS						
	AVR	KFA, Julich	GMRR	46 MWt	Oper	67	RGAF
	Adibka-1 Reactor	Julich	LHRR	10 Wt	Oper	67	RGAC
	AEG Nullenergie	Grosswelzheim	TK-L	100 Wt	Oper	67	RGAD
	ANEX	Geesthacht		0 MWt	Oper	64	RGAE
	BER	Berlin-Wannsee	LHRR	50 KWt	Oper	58	RGAH
	FMRB	Braunschweig	POOL	1 MWt	Oper	67	RGAV

NFP INDEX BY COUNTRY

COUNTRY	FACILITY NAME	LOCATION	FAC TYPE	CAPACITY	STATUS	YR	NFP CODE
GERMANY(WEST) (CONT.)							
CATEGORY-RESEARCH & TEST REACTORS (CONT.)							
	FR-2	Karlsruhe	ARGO	12 MWt	Oper	61	RGAW
	Rsch Reactor	Frankfurt/Main	LHRR	50 KWt		58	RGAX
	Rsch Reac Geesthacht	Geesthacht/Elbe	POOL	5 MWt	Oper	58	RGAY
	FRG-2	Geesthacht/Elbe	POOL	15 MWt	Oper	68	RGAZ
	Dido-Julich	Julich	TK-H	10 MWt	Oper	61	RGBB
	Rsch Reactor Muenchen	Garching	POOL	4 MWt	Oper	57	RGBC
	Triga-I-Hannover	Hannover		.25 MWt	Oper	72	RGBF
	React. Merlin-Julich	Julich, W. Germany	POOL	5 MWt	Oper	61	RGCP
	PR-10	Grosswelzheim					RGDD
	SAR-1	Garching	ARGO		Oper	59	RGDQ
	SNEAK	Leopoldshafen	FNRR	1KWt max	Oper	66	RGDR
	Stark	Karlsruhe	ARGO		Oper	64	RGDU
	SUR-Aachen	Aachen	SHRR	.1 Wt	Oper	66	RGDW
	SUR-Berlin	Berlin	SHRR	.1 Wt	Oper	63	RGDX
	SUR-Bremen	Bremen	SHRR	.1 Wt	Oper	67	RGDY
	SUR-Darmstadt	Darmstadt	SHRR	.1 Wt	Oper	63	RGDZ
	SUR-Hamburg	Hamburg	SHRR	.1 Wt	Oper	65	RGEA
	SUR-Karlsruhe	Karlsruhe	SHRR	.1 Wt	Oper	66	RGEB
	SUR-Kiel	Kiel	SHRR	.1 Wt	Oper	66	RGEC
	SUR-Stuttgart	Stuttgart	SHRR	.1 Wt	Oper	64	RGEF
	SUR-Ulm	Ulm	SHRR	.1 Wt	Oper	65	RGEG
	Triga-I-Heidelberg	Heidelberg	SHRR	.25 MWt	Oper	66	RGEM
	German Triga	Mainz, West Germany	SHRR	10 KWt	Oper	65	RGEN
	HDR	Grosswelzheim/Main		100 MWt		68	RGFC
	CFG	Karlsruhe	SHRR	Max 100W	Oper	64	RGFT
	BER-2	Berlin	POOL	5 MWt	Oper	73	RGFX
	Kather	Julich			Oper	73	RGFY
	SUR-100	Furtwangen	SHRR		Oper	73	RGFZ
	AEG-PR-10	Unterfranken	ARGO	10 Wt	Oper	61	RGGA
	SUR-Hannover	Hannover	SHRR		Oper	61	RGGE
	Triga Conversion	Frankfurt	SHRR	1 MWt			RGGF
	WWR-5 (m)	Rossendorf	TANK	6 MWt			RGGG
CATEGORY-FUEL REPROCESSING FACILITIES							
	URG/KEWA		UO	1500 te	Plan	86	RGCC
	JUPITER	Julich	HTGR	2 kg/day	Oper	77	RGCF
	WAK	Karlsruhe	UOFB	40 te/yr	Oper	71	RGEW
	DWK	Gorleben	UO	1400 te	Plan	88	RGFU
CATEGORY-SEPARATE FUEL STORAGE FACILITIES							
		Ahaus	POOL	1500 te	Plan	83	RGGB
		Gorleben	POOL	4000 te	Plan		RGGC
CATEGORY-WASTE DISPOSAL FACILITIES							
	Asse Salt Mine	Remlingen	DISP	4 Mm3	Oper	67	RGGD
	KfK-1	Karlsruhe	PREP	2.5 te/d	Oper	77	RGGH
	KfK-2	Karlsruhe	PREP	15 kg	Oper	75	RGGJ
	FIPS-II	Julich	PREP	1 kg/hr	Oper	77	RGGK
	FIPS-I	Julich	PREP	1 kg/hr	Inactv	72	RGGL

NFP INDEX BY COUNTRY

COUNTRY	FACILITY NAME	LOCATION	FAC TYPE	CAPACITY	STATUS	YR	NFP CODE
GERMANY(WEST) (CONT.)							
	CATEGORY-WASTE DISPOSAL FACILITIES (CONT.)						
	VERA	Karlsruhe	PREP		Inactv	70	RGGM
		Karlsruhe	PREP	30 l/hr	Oper	76	RGGN
GREECE							
	CATEGORY-RESEARCH AND TEST REACTORS						
	GRR	Athens	POOL	1 MWt		59	RHCE
GREENLAND							
	CATEGORY-MINES (URANIUM & THORIUM)						
	Kvanefjeld	Ilimaussaq	URAN		Explor		RHLA
HUNGARY							
	CATEGORY-MINES (URANIUM & THORIUM)						
		Pecs	URAN		Oper	55	RHUK
	CATEGORY-RESEARCH AND TEST REACTORS						
	Hungarian WWR-C	Csillererc	TANK	2 MWt	Oper	59	RHUF
INDIA							
	CATEGORY-MINES (URANIUM & THORIUM)						
		Bhatin	URAN		Constr		RHEE
		Quilor	THOR	60 te/y	Oper		RHEJ
		Manavalakurichi	THOR	450 te/y	Oper		RHEK
		Narwapahar	URAN		Constr		RHIY
		Jaduguda	URAN		Oper	56	RHNA
	CATEGORY-MILLS						
		Narwapahar	URAN		Constr		RHIZ
		Jaduguda	URAN		Oper	56	RHNB
	CATEGORY-CONVERSION PLANTS						
	Nucl Fuel Complex	Hyderabad	UO2	124 te	Oper	71	RHIA
	CATEGORY-HEAVY WATER PRODUCTION						
	Nangal	Nangal	D20	14 te/y	Oper	62	RHNK
	Baroda Plant	Baroda	D20	67.2te/y	Oper	76	RHNL
	Kota Plant	Kota	D20	100 te/y	Constr	80	RHNM
	Tuticorin Plant	Tuticorin	D20	71.3te/y	Constr	78	RHNN
	Talcher Plant	Talcher	D20	62.7te/y	Constr	80	RHNP
	Nuclear Fuels	Hyderabad	UO	124 te	Oper	71	RHNQ

NFP INDEX BY COUNTRY

COUNTRY	FACILITY NAME	LOCATION	FAC TYPE	CAPACITY	STATUS	YR	NFP CODE
INDIA (CONT.)							
	CATEGORY-RESEARCH AND TEST REACTORS						
	Kalpakkum PFR	Kalpakkam	FNRR	.03 MWt	Plan		RHEB
	FBTR	Kalpakkam	FNRR	50 MWt	Constr		RHEL
	Reactor Apsara	Trombay	POOL	1 MWt	Oper	56	RHIF
	CIR	Trombay	TK-H	40 MWt	Oper	60	RHIG
	Zerlina	Trombay	TANK	MAX100Wt	Oper	61	RHIW
	Purnima	Trombay			Oper	72	RHNZ
	CATEGORY-FUEL REPROCESSING FACILITIES						
		Kalpakkam	UO	50 te/yr	Plan	82	RHED
	PREFRE	Tarapur	UOUM	100 te	Oper	77	RHIC
		Trombay	UThO	(small)	Oper		RHID
	Plutonium Plant	Trombay	UMUO	60 te/yr	Oper	65	RHIL
	CATEGORY-WASTE DISPOSAL FACILITIES						
	Waste Immobilization	Tarapur	PREP	25 l/hr	Constr	79	RHEF
	BARC	Trombay	PREP	45 kg/hr	Oper	66	RHEM
INDONESIA							
	CATEGORY-RESEARCH AND TEST REACTORS						
	Triga-Mark II	Bandung	SHRR	.25 MWt	Oper	65	RHOE
IRAN							
	CATEGORY-MINES (URANIUM & THORIUM)						
		Anarak	URAN		Explor		RORR
		Yazd	URAN		Explor		RORS
	CATEGORY-RESEARCH AND TEST REACTORS						
	U of Teheran Rsch	Teheran	POOL	5 MWt	Oper	67	RORM
	UTRR Conversion	Tehran	SHRR	10 MWt	Constr		RORQ
IRELAND							
	CATEGORY-MINES (URANIUM & THORIUM)						
	Leinster	Mt. Leinster	URAN		Explor		RHRF
ISRAEL							
	CATEGORY-ENRICHMENT PLANTS						
	Weizmann Institute	Rehovot	LASR		R&D		RTSK

NFP INDEX BY COUNTRY

COUNTRY	FACILITY NAME	LOCATION	FAC TYPE	CAPACITY	STATUS	YR	NFP CODE
ISRAEL (CONT.)							
CATEGORY-RESEARCH AND TEST REACTORS							
	IRR	Rehovath	POOL	5 MWt	Oper	59	RTSF
	IRR-2	NegeV		26 MWt	Oper		RTSG
ITALY							
CATEGORY-MINES (URANIUM & THORIUM)							
		Val Rendena	URAN		Explor		RICP
	Novazza	Valgoglio	URAN	110 te/y	Constr	80	RICQ
		Preit Valley	URAN		Explor		RIDM
		Latium	URAN		Explor		RIDN
		Lazio	URAN		Explor		RIDP
CATEGORY-MILLS							
		Novazza	URAN	200 te/y	Constr	80	RIDG
CATEGORY-CONVERSION PLANTS							
	Fabricazzioni Nucl	Bosco Marengo	UO2	360 te	Plan		RICT
CATEGORY-FUEL FABRICATION PLANTS							
	Fabricazioni	Bosco Marengo	UO	200 te	Oper	74	RIBM
		San Donato	UPuO	8 te/yr	Oper		RICR
	Casaccia Center,	Rome	UPuO	8 te/yr	Oper		RICX
	Combustibili	Rotondella	UM	30 te/yr	Oper	69	RICZ
	COREN	Saluggia	UO	60 te/yr	Oper	68	RIDH
CATEGORY-RESEARCH AND TEST REACTORS							
	AGN-201-110	near Palermo	SHRR	.1 Wt	Oper	60	RIAD
	Avogadro RS-1	Saluggia	POOL	7 MWt	Inactv	60	RIAE
	CIRENE	Latina		128.5MWt			RIAG
	ECO	Ispra (Varese)	TK-H	1KWt max	Inactv	65	RIAK
	Essor reactor	Ispra (Varese)	TK-H	36.6 MWt	Oper	67	RIBK
	RTS-1	San Piero a Grado	POOL	5 MWt	Oper	65	RIBN
	Reactor Ispra-1	Ispra, Varese	TK-H	5 MWt	Inactv	59	RIBR
	ISPRA-2 (RANA)	Casaccia	POOL	Remarks	Oper	61	RICA
	RB-1	Montecuccolino	GMRR	10 Wt	Oper	62	RICB
	RB/2	Bologna	ARGO	10 KWt	Oper	63	RICC
	ROSPO	Roma	OMRR	(small)	Oper	63	RICE
	Triga-II Pavia	Pavia	SHRR	Remarks	Oper	65	RICK
	Triga Mark II	Rome	SHRR	1 MWt	Oper	59	RIDA
	CESNEF	Milan	LHRR	50 KWt	Oper	60	RIDC
	PEC	Lake Brasimore	FNRR	140 MWt	Constr	78	RIDD
	RB-3	Univ. of Bologna	TK-H		Oper	71	RIDE
	Triga-II	Rome	SHRR		Oper	60	RIDF
	TAPIRO	CSN, Casaccia	FNRR	5 KWt	Oper	71	RIDJ
	RITMO (RC-4)	Rome	POOL	100 Wt	Oper	65	RICD

NFP INDEX BY COUNTRY

COUNTRY	FACILITY NAME	LOCATION	FAC TYPE	CAPACITY	STATUS	YR	NFP CODE
ITALY (CONT.)							
CATEGORY-FUEL REPROCESSING FACILITIES							
			UO	500 te	Plan	85	RIAA
	Eurex-1	Saluggia	UOUM	10 te/yr	Inactv	69	RIBL
	ITREC Pilot Plant	Rotondella	UThO	15 kg	Oper	75	RIBS
CATEGORY-WASTE DISPOSAL FACILITIES							
	ESTER	Rome	PREP		Oper	78	RIDK
JAPAN							
CATEGORY-MINES (URANIUM & THORIUM)							
		Tono	URAN	10 te/y	Oper		RJFB
		Ningyo Toge	URAN		Oper	64	RJFV
CATEGORY-MILLS							
		Ningyo Toge	URAN		Oper	64	RJFW
CATEGORY-CONVERSION PLANTS							
	Mitsubishi Nucl Fuel	Tokai-Mura	UO2	420 te	Oper	72	RJDL
	Sumitomo Metal	Tokai-Mura	UO2	240 te	Oper	73	RJFF
	Sumitomo Metal	Tokai-Mura	UO2	340 te	Plan	79	RJGC
CATEGORY-ENRICHMENT PLANTS							
	C-1	Tokai-Mura	CENT		Oper	74	RJCE
	C-2	Tokai-Mura	CENT		Oper	76	RJCG
		Tokai-Mura	CENT	50 KSWU	Constr	80	RJGA
			LASR		R&D	75	RJGB
CATEGORY-FUEL FABRICATION PLANTS							
	Japan Nuclear Fuel	Yokosuka	UO	560 te	Oper	72	RJBS
	Kumatori Works	Osaka		40 te/yr	Oper		RJCW
	Mitsubishi Nucl Fuel	Tokai-Mura	UO	420 te	Oper	72	RJDK
	Tokai Works	Tokai-Mura	UPuO		Oper		RJDY
	Tokayama Works	Tokayama		20 te/yr	Oper		RJEW
	Nuclear Fuel	Tokai-Mura	UO	100 te	Constr	78	RJFZ
CATEGORY-RESEARCH AND TEST REACTORS							
	AHCF	Tokai-mura, Naka-gun	LHRR	50 Wt	Oper	63	RJAE
	DCA	Tokai-Mura		(small)	Oper	69	RJAN
	FCA	Tokai-Mura	TK	(small)	Oper	67	RJAQ
	HTR	Kawasaki	ARGO	.1 MWt	Oper	61	RJBN
	HTR	Ozenji, Kawasaki	ARGO	.1 MWt	Oper	62	RJBP
	JMTR	Oarai	TK-L	50 MWt	Oper	68	RJBX
	JMTRC	Oarai-machi	POOL	.01 MWt	Oper	67	RJBZ
	Joyo	Oarai	FNRR	50 MWt	Oper	74	RJCA
	Japan Rsch Reac No 1	Tokai-Mura	LHRR	.05 MWt	Oper	57	RJCC
	JRR-2	Tokai-Mura	TK-H	10 MWt	Oper	62	RJCD

NFP INDEX BY COUNTRY

COUNTRY	FACILITY NAME	LOCATION	FAC TYPE	CAPACITY	STATUS	YR	NFP CODE
JAPAN (CONT.)							
RESEARCH & TEST REACTORS (CONT.)							
	JRR-3	Tokai-Mura	TK-H	10 MWt	Oper	64	RJCF
	JRR-4	Tokai-Mura	POOL	1 MWt	Oper	65	RJCJ
	Kinki University	Fuse-City, Osaka		.1 Wt			RJCU
	Kuca	Kumatori	FNRR	(small)	Constr		RJCV
	KUR Kyato Univ.	Kumatori-cho,	POOL	5 MWt	Oper	64	RJDB
	Kyoto Univ. Reactor	Kumatori-machi	TK-L	1 MWt			RJDC
	NCA NAIG Critical	Kawasaki-shi	POOL	200W max	Oper	63	RJDW
	NSRR	Tokai		.3 MWt	Constr		RJDX
	OCF	Ozenji, Kawasaki	TK-L	100W max	Oper	62	RJDZ
	SHCA	Tokai-Mura	SHRR	10 Wt	Oper	61	RJEL
	TCA	Tokai-Mura	TK-L	200W max	Oper	62	RJEX
	YAYOI	Tokai-Mura	FNRR	(small)	Oper	71	RJGD
	St. Paul Univ. Reac.	Yokosuka-City		.1 MWt			RJGE
	Toshiba Reactor	Kawasaki-City	POOL	.1 MWt			RJGF
	Hitachi Reactor	kawasaki-City	POOL	.1 MWt			RJGG
	Goto Ikuei-Kai Reac.	Kawasaki-City		.1 MWt			RJGH
	Triga-II-Musashi	Kawasaki	SHRR	.1 MWt	Oper	63	RJGT
	Triga-II-Rikkyo	Sajima, Yokosuka	SHRR	.1 MWt	Oper	61	RJGU
	TTR	Kawasaki		.1 MWt	Oper	62	RJGW
	TTR-1	Suchirocho and	POOL	.03 MWt	Oper	62	RJGX
	UTR-10-Kinki	Kawakae, Fuse-shi	ARGO	.1 Wt	Oper	61	RJGY
CATEGORY-FUEL REPROCESSING FACILITIES							
	PNC	Tokai-Mura	UO	1500 te	Plan	85	RJAA
	PNC		FB	120 kg/d	Plan	86	RJEE
	PNC	Tokai-Mura	UO	210 te	Oper	78	RJEF
CATEGORY-WASTE DISPOSAL FACILITIES							
	JAERI-Oarai Res Est.	Oarai	PREP	30 kg/hr	Oper	73	RJGJ
	JAERI	Tokai-Mura	PREP	50 kg/hr	Oper	66	RJGK
KOREA(SOUTH)							
CATEGORY-MINES (URANIUM & THORIUM)							
		Taeduck	URAN		Explor		RKOV
CATEGORY-RESEARCH AND TEST REACTORS							
	Triga Mark II	Seoul	SHRR	.25 MWt	Oper	62	RKOR
MADAGASCAR							
CATEGORY-MINES (URANIUM & THORIUM)							
		Fort Dauphin	URAN	450 te/y	Inactv	63	RMDA

NFP INDEX BY COUNTRY

COUNTRY	FACILITY NAME	LOCATION	FAC TYPE	CAPACITY	STATUS	YR	NFP CODE
MEXICO							
	CATEGORY-MINES (URANIUM & THORIUM)						
	Sierra Pena Blanca	Tamaulipos	URAN		Explor	75	RMEN
		La Coma	URAN		Explor		RMEV
		Buenavista	URAN		Explor		RMEX
		Otros	URAN		Explor		RMEY
		La Domitila	URAN		Explor		RMEZ
		Nopal III	URAN		Explor		RMXA
		Margaritas-PuertoIII	URAN		Explor		RMXB
		El Nopal	URAN		Explor		RMXC
		Los Amoles	URAN		Explor		RMXD
		La Preciosa	URAN		Explor		RMXE
		El Chapote	URAN		Explor		RMXF
	CATEGORY-MILLS						
	Sierra Pena Blanca	Tamaulipos	URAN	15 te/y	Oper	75	RMEP
	Villa Aldama		URAN		Oper		RMEU
		La Coma	URAN		Plan		RMEW
	CATEGORY-RESEARCH AND TEST	REACTORS					
	RCN	Salazar		1 MWt	Oper	68	RMES
	SUR-Mexico	Mexico City	SHRR	(small)	Oper	72	RMET
NAMIBIA							
	CATEGORY-MILLS						
	Rossing	Swakopmund	URAN	6500te/y	Oper		RYBB
		Lvderitz	URAN		Explor		RYBC
		Namib Desert	URAN		Explor		RYBD
		Trekkopje			Explor		RYBE
		Langer Heinrich	URAN		Explor		RYBF
NETHERLANDS							
	CATEGORY-ENRICHMENT PLANTS						
	Pilot Plant SP1	Almelo	CENT	25 KSWU	Oper	72	RNAT
	Pilot Plant SP2	Almelo	CENT	25 KSWU	Oper	72	RNAX
	Production Plant SP3	Almelo	CENT	60 KSWU	Oper	77	RNAY
	CATEGORY-RESEARCH AND TEST	REACTORS					
	ATHENE	Eindhoven	ARGO	10KW max	Inactv	69	RNAC
	High Flux Reactor	Petten	TK-L	45 MWt	Oper	61	RNAJ
	Hoger Onderwits	Delft	POOL	2 MWt	Oper	63	RNAL
	Kirto Drito Crit	Petten	POOL	Max 100W	Inactv	63	RNAN
	Low Flux Reactor	Petten	ARGO	.01 MWt	Oper	60	RNAP
	Subscript Suspension	N V Kema, Arnhem	LHRR	Remarks	Oper	59	RNAS
	BARN	Wageningen	POOL	.1 MWt	Oper	63	RNAZ
	SIEK	Petten	POOL	(small)		69	RNEA

NFP INDEX BY COUNTRY

COUNTRY	FACILITY NAME	LOCATION	FAC TYPE	CAPACITY	STATUS	YR	NFP CODE
NIGER							
CATEGORY-MINES (URANIUM & THORIUM)							
		Djado	URAN		Explor		RMGA
	SOMAIR	Arlit	URAN	1000te/y	Oper	71	RMGB
	SOMAIR	Arlit	URAN	1000te/y	Oper	71	RMGC
	COMINAK	Akouta	URAN	2600te/y	Oper	78	RMGD
		Madaouela	URAN		Explor		RMGG
		Azelik	URAN		Explor		RMGH
		Imouraren	URAN		Explor		RMGJ
		Techili	URAN		Explor		RMGK

NFP INDEX BY COUNTRY

COUNTRY	FACILITY NAME	LOCATION	FAC TYPE	CAPACITY	STATUS	YR	NFP CODE
		Arni	URAN		Explor		RMGL
		I-n-Adrar	URAN				RMGM
		West Afasto	URAN		Explor		RMGN
		Tegidda-in-Tessoum			Explor		RMGP
CATEGORY-MILLS							
	COMINAK	Akouta	URAN	2600te/y	Oper	78	RMGE
NORWAY							
CATEGORY-HEAVY WATER PRODUCTION							
		Rjukan		20 te/y	Oper	34	RMON
CATEGORY-FUEL FABRICATION PLANTS							
	Fuel Element Pilot	Kjeller			Oper		RMOF
CATEGORY-RESEARCH AND TEST REACTORS							
	Halden	Halden, Norway	TK-H	20 MWt	Oper	59	RMOD
	JEEP	Kjeller	TK-H	450 KWt	Oper	51	RMOF
	JEEP No. 2	Kjeller	TK-H	2 MWt	Oper	65	RMOH
	Nora Reactor	Kjeller	TK-H	100 Wt	Oper	61	RMOJ
CATEGORY-FUEL REPROCESSING FACILITIES							
	IFA	Kjeller	UM	(small)	Inactv	61	RMOM
PAKISTAN							
CATEGORY-MINES (URANIUM & THORIUM)							
		Dera Ghazi Khan			Constr		RPAJ
CATEGORY-RESEARCH AND TEST REACTORS							
	PARR	Islamabad	POOL	5 MWt	Oper	65	RPAD
	Pak. Atomic Rsch	Islamabad	POOL	5 MWt	Oper	65	RPAE

NFP INDEX BY COUNTRY

COUNTRY	FACILITY NAME	LOCATION	FAC TYPE	CAPACITY	STATUS	YR	NFP CODE
PAKISTAN (CONT.)							
CATEGORY-FUEL REPROCESSING FACILITIES							
		Chasma	UO	100 te	Plan		RPAF
PERU							
CATEGORY-MINES (URANIUM & THORIUM)							
	Vilcabamba	Cuzco	URAN	2.5 te/y	Oper	75	RPED
	Restauradora	Huancavelica	URAN		Plan	75	RPEE
	Area Ica	Ica	URAN		Plan		RPEF
	Churin	Lima	URAN		Plan		RPEG
	Jesus Maria	Moguegua	URAN		Plan		RPEH
	Colquijirca	Pasco	URAN	2.5 te/y	Oper	75	RPEJ
	Bayovar	Piura	URAN		Plan		RPEK
PHILIPPINES							
CATEGORY-MINES (URANIUM & THORIUM)							
	Larap	Camarines Norte	URAN		Explor		RPHC
	Bagacay	Sama-Island	URAN		Explor		RPHR
	Magna Rosa	Caramoan Peninsula	URAN		Explor		RPHS
CATEGORY-RESEARCH AND TEST REACTORS							
	Phil Rsch Reac. 1	Quezon City, Phil.	POOL	1 MWt	Oper	63	RPHG
POLAND							
CATEGORY-RESEARCH AND TEST REACTORS							
	ZERA	Swierk	GMRR	100 Wt	Oper	63	RPDB
	EWA Reactor	Swierk	TK-L	2 MWt	Oper	58	RPDD
	Maryla Reactor	Inst. of Nuclear	POOL	10 KWt	Oper	67	RPDG
CATEGORY-WASTE DISPOSAL FACILITIES							
	Rad Waste Storage	Rozan	DISP	2870 m3	Oper		RPDK
PORTUGAL							
CATEGORY-MINES (URANIUM & THORIUM)							
		Senhora das Fontes	URAN		Oper		RPOJ
		Urgeirica	URAN		Oper		RPOK
		Cunha Baixa	URAN		Explor		RPOM
	Alto Alentejo	Nisa	URAN		Plan		RPON
		Quinta do Bispo	URAN		Explor		RPOQ
		Azere	URAN		Explor		RPOR
		Guarda	URAN		Explor		RPOS

NFP INDEX BY COUNTRY

COUNTRY	FACILITY NAME	LOCATION	FAC TYPE	CAPACITY	STATUS	YR	NFP CODE
PORTUGAL (CONT.)							
CATEGORY-MILLS							
		Urgeirica	URAN	150 te/y	Oper		RPOL
	Alto Alentejo	Nisa	URAN		Plan	85	RPOP
CATEGORY-RESEARCH AND TEST REACTORS							
	JEN	Lisbon	POOL	1 MWt	Oper	58	RPOF
PUERTO RICO							
CATEGORY-RESEARCH AND TEST REACTORS							
	PRR	Mayaguez	LHRR	10 Wt	Oper	59	RPUE
ROMANIA							
CATEGORY-RESEARCH AND TEST REACTORS							
	WWR-C Reactor	Magurele	TK-L	3 MWt	Oper	59	RPNE
SOUTH AFRICA							
CATEGORY-MINES (URANIUM & THORIUM)							
		Palabora	URAN	120 te/y	Oper		RTAK
		Karroo	URAN		Explor		RTAM
	Hartebeestfontein	Hartebeestfontein	URAN	450 te/y	Oper		RTAN
	Buffelsfontein	Far West Rand	URAN	620 te/y	Oper		RTAP
	Vaal Reefs	Orkney	URAN	1200te/y	Oper		RTAQ
	Blyvooruitzicht	Blyvooruitzicht	URAN	287 te/y	Oper		RTAR
	West Rand	West Rand	URAN	295 te/y	Oper		RTAS
	West Driefontein	Carletonville	URAN	286 te/y	Oper		RTAT
	Western Deep Levels	Casletonville	URAN	167 te/y	Oper		RTAU
	Randfontein	Randfontein	URAN	70 te/y	Oper		RTAV
	JMS	Riebeeckstad	URAN	480 te/y	Oper	78	RTAX
	Harmony	Virginia	URAN	525 te/y	Oper		RTAY
	East Rand Gold & U	East Rand	URAN	100 te/y	Oper	78	RTFA
	Afrikander Lease	Klerksdorp	URAN	300 te/y	Plan	81	RTFB
		Parmeitkuil	URAN		Plan	82	RTFC
CATEGORY-MILLS							
	Millsite	Randfontein	URAN		Oper	77	RTAW
CATEGORY-ENRICHMENT PLANTS							
	UCOR	Valindaba	STAT	6 KSWU	Oper	76	RTAA
	UCOR	Valindaba	STAT	5000 K	Plan		RTAZ
CATEGORY-RESEARCH AND TEST REACTORS							
	Pelinduna Zero	Pelinduna, Transvaal	TK-H	(small)	Oper	67	RTAG
	Safari-1	Pelindaba	TK-L	Remarks	Oper	64	RTAJ

NFP INDEX BY COUNTRY

COUNTRY	FACILITY NAME	LOCATION	FAC TYPE	CAPACITY	STATUS	YR	NFP CODE
SOVIET UNION							
CATEGORY-MINES (URANIUM & THORIUM)							
		Norilsk	URAN		Oper		RRFC
		Taboshar	URAN		Oper		RRFD
		Pervomaisk	URAN		Oper		RRFE
		Tuya Muyum	URAN		Inactv		RRFF
		Mailiy Su	URAN		Oper		RRFG
		Uigur Say	URAN		Oper		RRFH
CATEGORY-ENRICHMENT PLANTS							
		Siberia	DIFF	10000 K	Oper		RRAA
			LASR				RRAB
CATEGORY-RESEARCH AND TEST REACTORS							
	IRT	Moscow	POOL	2 MWt	Oper	57	RRAM
	IRT-A	Moscow	POOL	2 MWt	Oper		RRAN
	IRT-B	Tbilishi, Georgia	POOL	2 MWt	Oper	59	RRAP
	IRT-C	Riga	POOL	2 MWt	Oper		RRAQ
	IRT-D	Tomsk	POOL	2 MWt	Oper		RRAR
	IRT-E	Sverdlovsk	POOL	2 MWt	Oper		RRAS
	IRT-F	Minsk	POOL	2 MWt	Oper		RRAT
	MR Rsch Reactor	Moscow	POOL	40 MWt	Oper	67	RRBC
	RPT	Moscow	TK-H	20 MWt	Oper	52	RRBN
	BR-1 Soviet Breeder	Obninsk	FNRR	50 Wt	Inactv	55	RRBP
	BR-2	Obninsk	FNRR	.2 MWt	Inactv	57	RRBQ
	BR-5	Obninsk	FNRR	50 MWe	Oper	59	RRBR
	TR	Moscow	TK-H	2.5 MWt	Oper	57	RRBY
	WWR-C Rsch Reactor	Moscow	TK-L	2 MWt	Oper	54	RRCG
	UZBEK WWR-C Reactor	Tashkent	TK-L	2 MWt	Oper	59	RRCH
	WWR-M Research	Kiev, Ukraine	TK-L	10 MWt	Oper	60	RRCJ
	WWR-M Rsch Reactor	Leningrad	TK-L	10 MWt	Oper	59	RRCK
	WWR-2 Research	Alma-atam Kazakh	TK-L	10 MWt	Oper	63	RRCL
	WWR-C Rsch Reactor	Moscow	TK-L	3 MWt	Oper	57	RRCM
	Romashka	Moscow	FNRR	.040 MWt		64	RRES
	AM-1 Reactor	Obninsk	GMRR	30 MWt	Oper		RRET
	APS	Obninsk	GMRR	3 MWt		54	RREU
	MIR	Dimitrovgrad	TK-L	100 MWt	Oper	66	RREV
	SM-2 Test Reactor	Melekess	TK-L	75 MWt	Oper	61	RREW
	ARBUS	Melekess	OMRR	5 MWt	Oper	63	RREY
CATEGORY-FUEL REPROCESSING FACILITIES							
	Fregat-SRIAR	Melekess	FB	(small)	Oper		RREZ
CATEGORY-WASTE DISPOSAL FACILITIES							
	Moscow Plant	Moscow	PREP		Oper	65	RRFA
	NIIAR	Novikovka	DISP		Oper	66	RRFB

NFP INDEX BY COUNTRY

COUNTRY	FACILITY NAME	LOCATION	FAC TYPE	CAPACITY	STATUS	YR	NFP CODE
SPAIN							
	CATEGORY-MINES (URANIUM & THORIUM)						
		Soria	URAN		Explor		RSCC
		Cuidad Rodrigo	URAN	118te/y	Oper	75	RSCS
	El Pedregal	Don Benito	URAN	60 te/y	Oper		RSCU
		Andvjar	URAN	65 te/y	Oper	59	RSCV
	CATEGORY-MILLS						
		Cuidad Rodrigo	URAN	118te/y	Oper	75	RSCT
		Andujar	URAN	65 te/y	Oper	59	RSDC
	Lobo	Badajoz	URAN	25 te/y	Oper		RSDD
	CATEGORY-FUEL FABRICATION PLANTS						
	Juan Vigon Nuclear	Madrid			R&D		RSBM
	Fabrication Facility	Juzbada	UO	400 te	Plan	81	RSDA
	CATEGORY-RESEARCH AND TEST REACTORS						
	Arbi Reactor	Bilbao	ARGO	.01 MWt	Oper	62	RSAH
	Argos Reactor	Barcelona	ARGO	.01 MWt	Oper	61	RSAK
	Coral-1 Reactor	Madrid	FNRR	10Wt max	Oper	68	RSAX
	Sp Rsch Reac. Jen-1	Madrid	POOL	6 MWt	Oper	59	RSBK
	JEN-2	Madrid	POOL	.01 MWt	Oper	66	RSBL
	CATEGORY-FUEL REPROCESSING FACILITIES						
	Juan Vigon Nuclear	Madrid	UM	(small)	Oper		RSBP
	CATEGORY-WASTE DISPOSAL FACILITIES						
		Sierra de Albarracin	DISP		Oper		RSDB
SWEDEN							
	CATEGORY-MINES (URANIUM & THORIUM)						
	Pleutajokk	Arjeplog-Arvidsjaur	URAN		Explor		RWBP
	Ranstad	Billingen	URAN	140 te/y	Oper		RWBX
	Kvarntorp		URAN		Inactv		RWBY
	CATEGORY-CONVERSION PLANTS						
	Vasteras Fuel Fac.	Vasteras	UO2	400 te	Oper	76	RWAD
	CATEGORY-ENRICHMENT PLANTS						
	Royal Inst of Tech	Stockholm	LASR		R&D		RWAB
	CATEGORY-HEAVY WATER PRODUCTION						
		Domat Ems		2 te/y	Inactv		RZBE
	CATEGORY-FUEL FABRICATION PLANTS						
	Vasteras Fuel Fac	Vasteras	UO	400 te	Oper	72	RWAE

NFP INDEX BY COUNTRY

COUNTRY	FACILITY NAME	LOCATION	FAC TYPE	CAPACITY	STATUS	YR	NFP CODE
SWEDEN (CONT.)							
	CATEGORY-RESEARCH AND TEST REACTORS						
	FR-0	Studsvik	FNRR	10 Wt	Inactv	64	RWAP
	KRITZ	Studsvik		(small)	Oper	69	RWAS
	Swedish Reac. R-0	Studsvik site	TK-H	< 50 Wt	Inactv	59	RWAY
	R-1 Heavy Water Reac	Studsvik	TK-H	600 KWt	Oper	54	RWAZ
	R-2 Rsch Reactor	Studsvik	TK-L	50 MWt	Oper	60	RWBB
	R2-0	Studsvik	POOL	1 MWt	Oper	64	RWBH
	CATEGORY-FUEL REPROCESSING FACILITIES						
			UO	800 te	Plan	90	RWAC
	CATEGORY-SEPARATE FUEL STORAGE FACILITIES						
	Stripa Mine	Studsvik	ROCK		Oper	77	RWBW
	Spent Fuel Storage		ROCK	1500 te	Plan	83	RWBZ
	CATEGORY-WASTE DISPOSAL FACILITIES						
	AB Atomenergi	Studsvik	PREP		Oper		RWBA
		Vasteras	PREP		Oper		RWCA
SWITZERLAND							
	CATEGORY-RESEARCH AND TEST REACTORS						
	AGN-201 P-111	Geneva	SHRR	20 Wt	Oper	58	RZAA
	AGN-211P-100	Basel	SHRR	100 Wt	Oper	59	RZAB
	Crocus	Lausanne	POOL	(small)	Oper	68	RZAG
	Rector Diorit	Wurenlingen	TK-H	20 MWt	Oper	60	RZAJ
	Proteus Reactor	Wurenlingen	GMRR	.001 MWt	Oper	68	RZAW
	Reactor Saphir	Wurenlingen	POOL	1 MWt	Oper	57	RZAZ
	CATEGORY-WASTE DISPOSAL FACILITIES						
	EIR	Wurenlingen	DISP		R&D		RZBD
TAIWAN							
	CATEGORY-FUEL FABRICATION PLANTS						
	INER	Lungt'an			Oper		RCIC
	CATEGORY-RESEARCH AND TEST REACTORS						
	THOR	Hsin-Chu	POOL	1 MWt	Oper	64	RCIT
	CATEGORY-FUEL REPROCESSING FACILITIES						
	Lungt'an Institute	Lungt'an	UM	(Small)	Constr		RCID
THAILAND							
	CATEGORY-RESEARCH AND TEST REACTORS						
	Thai Rsch Reactor-1	Bangkok	POOL	1 MWt	Oper	62	RTHE

NFP INDEX BY COUNTRY

COUNTRY	FACILITY NAME	LOCATION	FAC TYPE	CAPACITY	STATUS	YR	NFP CODE
TURKEY							
	CATEGORY-MINES (URANIUM & THORIUM)						
		Koprubasi	URAN		Oper		RTYD
		Fakili	URAN		Explor		RTYF
		Kucuk Kuyu	URAN		Explor		RTYG
		Sebinkarahisar	URAN		Explor		RTYH
		Kocarli	URAN		Explor		RTYJ
	CATEGORY-RESEARCH AND TEST REACTORS						
	TR-1	Lake K. Cekmece,	POOL	1 MWt	Oper	62	RTYA
UNITED KINGDOM							
	CATEGORY-MINES (URANIUM & THORIUM)						
		Caithness	URAN		Explor		RUEC
	Stromness	Orkney	URAN		Explor		RUEZ
		Cornwall	URAN		Explor		RUFA
	CATEGORY-CONVERSION PLANTS						
	Springfields	Preston	UF6	8000 te	Oper	68	RUEG
	CATEGORY-ENRICHMENT PLANTS						
			LASR		R&D	75	RUAB
	Diffusion Enr. Plant	Capenhurst	DIFF	400 KSWU	Oper	75	RUAU
	Production Plant	Capenhurst	CENT	50 KSWU	Oper	77	RUDL
	Pilot Plant	Capenhurst	CENT	15 KSWU	Oper	72	RUEK
	CATEGORY-FUEL FABRICATION PLANTS						
	Springfields Fab.	Preston	UM	2500 te	Oper	58	RUEH
	Springfields Fab.	Preston	UO	300 te	Oper	72	RUEJ
	Windscale Mixed-Ox.	Windscale	UPuO	10 te/y	Oper		RUEM
	CATEGORY-RESEARCH AND TEST REACTORS						
	Reactor Herald	Aldermaston,	POOL	5 MWt	Oper	59	RBUV
	Brit Exp Pile Oper	Harwell, Berkshire	GMRR	65 MWt	Inactv	48	RUAE
	Consort Reactor	Silwood Park, Ascot	POOL	100 KWt	Oper	65	RUBA
	DAPHNE	Harwell, Berkshire	TK-H	100 Wt	Oper	62	RUBB
	Dido Reactor	Harwell, Berkshire	TK-H	22 MWt	Oper	56	RUBC
	DIMPLE	Winfrith Rsch Estab.	TANK	100 Wt	Oper	62	RUBD
	Dounreay Mat Test	Dounreay, Caithness	TK-H	25 MWt	Inactv	58	RUBE
	Dragon	Winfrith, Dorset	GMRR	20 MWt	Inactv	64	RUBH
	GLEEP	Harwell, Berkshire	GMRR	Remarks	Oper	47	RUBQ
	Hazel	Harwell, Berkshire	LHRR	(small)	Oper	58	RUBT
	HECTOR	Winfrith, Dorset	GMRR	100 Wt	Oper	63	RUBU
	HERO	Windscale	GMRR	3KWt max	Inactv	62	RUBW
	Reactor Horace	Aldermaston,	POOL	10 Wt	Oper	58	RUCD
	Jason Reactor	Greenwich, London	ARGO	.01 MWt	Oper	62	RUCK
	Juno Reactor	Winfrith, Dorset	TANK	100 Wt	Oper	64	RUCL

NFP INDEX BY COUNTRY

COUNTRY	FACILITY NAME	LOCATION	FAC TYPE	CAPACITY	STATUS	YR	NFP CODE
UNITED KINGDOM (CONT.)							
CATEGORY-RESEARCH & TEST REACTORS (CONT.)							
	Lido Reactor	Harwell, Berkshire	POOL	100 Kwt	Oper	56	RUCM
	Reactor Merlin	Aldermaston,	POOL	5 MWt	Inactv	60	RUCN
	NERO	Winfrith, Dorset	GMRR	100 Wt	Inactv	60	RUCP
	NESTOR	Winfrith, Dorset	ARGO	.01 MWt	Oper	61	RUCQ
	Pluto Reactor	Harwell, Berkshire	TK-H	22 MWt	Oper	57	RUCV
	UTR-B	London	ARGO	.1 MWt	Oper	64	RUCW
	SRRC-UTR-100	East Kilbride	ARGO	.1 MWt	Oper	63	RUDC
	URR	Risley, Warrington	ARGO	Remarks		64	RUDM
	VERA	Aldermaston, Berks.	FNRR	100 Wt	Oper	61	RUDP
	VIPER	AWRE, Aldermaston	FNRR	Remarks	Oper	67	RUDQ
	ZEBRA	Winfrith, Dorset	FNRR	.001 MWt	Oper	62	RUDV
	ZENITH	Winfrith, Dorset	GMRR	200 Wt	Oper	59	RUDX
	ZEPHYR	Harwell, Berkshire	FNRR	Remarks	Inactv	54	RUDY
	Zero Energy Thermal	Harwell, Berkshire	LHRR	(small)	Oper	52	RUDZ
	ZEUS	Harwell, Berkshire	FNRR	Max 100W	Inactv	55	RUEA
	Atazel	Harwell	LHRR	.1 MWt	Oper	64	RUEN
	Queen Mary College	London	ARGO	10 Wt			RUEP
CATEGORY-FUEL REPROCESSING FACILITIES							
	Reprocessing Plant	Windscale	UMUO	2500 te	Oper	64	RUAJ
	THORP	Windscale	MO	1200 te	Plan	87	RUAL
	Dounreay II	Dounreay	FB	10 te/yr	Oper	61	RUBF
CATEGORY-SEPERATE FUEL STORAGE FACILITIES							
		Windscale	POOL		Oper		RUEY
CATEGORY-WASTE DISPOSAL FACILITIES							
	Windscale Works	Windscale	PREP		Oper	73	RUEC
		Windscale	PREP		Plan	86	RUER
		Windscale	PREP		Constr	80	RUES
	Glass Examination	Windscale	PREP		Constr	78	RUET
		Dounreay	PREP	30 l/hr	Plan		RUEU
		Harwell	PREP		Oper	62	RUEV
	Bradwell Power Stat.	Bradwell	PREP		Oper	67	RUEW
	Berkeley Nucl Lab	Berkeley	PREP		Oper	65	RUEX
	Hunterston A	Hunterston	PREP		Oper	67	RUFB
VENEZUELA							
CATEGORY-RESEARCH AND TEST REACTORS							
	RV-1	Alt. De Ripe,	POOL	3 MWt	Oper	60	RVEA
VIETNAM(NORTH)							
CATEGORY-RESEARCH AND TEST REACTORS							
	Triga Mark II	Dalat	SHRR	250 KWt	Oper	63	RVNA

NFP INDEX BY COUNTRY

COUNTRY	FACILITY NAME	LOCATION	FAC TYPE	CAPACITY	STATUS	YR	NFP CODE
YUGOSLAVIA							
	CATEGORY-MINES (URANIUM & THORIUM)						
		Zirovski Vrh	URAN	255 te/y	Constr	82	RYUF
	CATEGORY-RESEARCH AND TEST REACTORS						
	RA	Belgrade	TK-H	6.5 MWt	Oper	59	RYUD
	RB	Vinca	TK-H	Neglig	Oper	58	RYUG
	Triga-II-Ljubljana	Ljubljana	SHRR	.25 MWt	Oper	65	RYUH
	CATEGORY-FUEL REPROCESSING FACILITIES						
	Boris Kidric	Belgrade	UM	(small)	Oper		RYUU
ZAIRE							
	CATEGORY-MINES (URANIUM & THORIUM)						
		Shinkolobwe	URAN	1000te/y	Inactv	60	RCGD
	CATEGORY-RESEARCH AND TEST REACTORS						
	Bel Congo Triga Reac	Kinshasa	SHRR	10 KWt	Oper	59	RCGC
ZAMBIA							
	CATEGORY-MINES (URANIUM & THORIUM)						
		Lake Kariba	URAN		Explor		RYAC

NFP INDEX BY CATEGORY-MINES (URANIUM & THORIUM)

COUNTRY	FACILITY NAME	LOCATION	FAC TYPE	CAPACITY	STATUS	YR	NFP CODE
ALGERIA							
		Tamanrasset	URAN		Explor	82	RAGA
		Timgaouine/Abankor	URAN		Explor		RAGC
ARGENTINA							
		Los Gigantes	URAN		Explor		RANA
		Comechingones	URAN		Explor		RANB
		Los Chihvidos	URAN		Explor		RANC
		Sierra Cavdrada	URAN		Explor		RAND
		Los Adobes	URAN	50 te/y	Plan		RANE
		Don Otto	URAN	30 te/y	Oper	83	RARQ
		Sierra Pintada	URAN	600 te/y	Constr	83	RARR
		Malargue	URAN	30 te/y	Oper		RARS
		Sierra de Pichinan	URAN		Explor		RART
		Tonco-Amblayo	URAN		Explor		RARW
		Conquin	URAN		Explor		RARX
		Sano Gasta					RARY
		Guandacol	URAN		Explor		RARZ
AUSTRALIA							
		Maureen	URAN		Explor		RASA
		Ben Lomond	URAN		Explor		RASB
		Ngalia Basin	URAN		Explor		RASC
		Beverley	URAN		Explor		RASD
		Radium Hill	URAN		Inactv	61	RASF
		Flinders Range	URAN		Explor		RASJ
	Lake Way	Wiluna			Explor		RASK
	Olympic Dam		URAN		Explor		RASL
	Honeymoon	Honeymoon	URAN		Explor		RASM
		Yeelirrie	URAN	2300te/y	Plan	84	RAUL
	Jabiru	Ranger	URAN	3000te/y	Plan	81	RAUM
		Alligator Rivers	URAN		Explor		RAUP
		Koongarra		1500te/y	Plan		RAUQ
		Nabarlek	URAN	900 te/y	Plan	81	RAUR
		Jabiluka	URAN	2500te/y	Plan	83	RAUT
		Westmoreland	URAN		Explor		RAUU
	Mary Kathleen	Mt. Isa	URAN	700 te/y	Oper	56	RAUV
		Rum Jungle	URAN	200 te/y	Inactv	71	RAUX
	South Alligator	Northern Territory	URAN		Inactv	62	RAUY
	El Sherana	El Sharana	URAN		Inactv	65	RAUZ
AUSTRIA							
		Forstau	URAN		Explor		RATP
		Tweng	URAN		Explor		RATQ

NFP INDEX BY CATEGORY-MINES (URANIUM & THORIUM)

COUNTRY	FACILITY NAME	LOCATION	FAC TYPE	CAPACITY	STATUS	YR	NFP CODE
BOLIVIA							
		Cotaje	URAN		Plan	80	RBCC
BRAZIL							
		Campos Belos	URAN		Explor		RBRT
		Figueira	URAN		Explor		RBZD
		Pocos de Caldas	URAN	500 te/y	Constr	79	RBZG
		Pocos de Caldas	URAN	500 te/y	Constr	79	RBZH
		Olinda	URAN		Explor		RBZJ
		Araxa	URAN		Explor		RBZK
		Amorinopolis	URAN		Explor		RBZL
		Quadilatero	URAN		Explor		RBZM
		Itabapoana	THOR		Oper		RBZN
		Cumuruxatiba	THOR		Oper		RBZP
BULGARIA							
	Buhovo	Sofia			Oper		RBLL
CANADA							
	Cluff Lake	Cluff Lake	URAN	1500te/y	Constr	79	RDCG
	Birch Island	Clearwater	URAN	110 te/y	Constr	80	RDCK
	Beaverlodge	Beaverlodge	URAN	460 te/y	Oper	53	RDCL
	Key Lake	La Ronge	URAN	2300te/y	Plan	83	RDCN
	Rabbit Lake	Rabbit Lake		1730te/y	Oper	75	RDCP
	Baker Lake	Baker Lake	URAN		Explor		RDCR
	Preston	Elliot Lake	URAN		Inactv	61	RDCS
	Rio Algon	Elliot Lake	URAN	1900te/y	Oper	68	RDCU
	Agnew Lake	Sudbury	URAN	270 te/y	Oper	77	RDCW
	James Bay	James Bay	URAN		Explor		RDCZ
	Wollaston Lake	Wollaston Lake	URAN		Explor		RDDA
	Madawaska	Bancroft	URAN	320 te/y	Oper	76	RDDC
	Kitts-Michelin	Makkovik	URAN		Explor	83	RDDE
	Johan Beetz	Quebec	URAN		Explor		RDJH
		Port Radium	URAN		Inactv	60	RDJU
	Rayrock	Lake Marion	URAN		Inactv	57	RDJV
		Great Slave Lake	URAN		Explor		RDJW
		St. Armand	URAN		Explor		RDJX
		Otish Mountains	URAN		Explor		RDJY
		Mont Laurier	URAN		Explor		RDJZ
	Charlebois Lake	Charlebois Lake	URAN		Explor		RDKA
		St. Germaine Lake					RDKB
		Tyee Lake					RDKC
		Mazenod Lake					RDKD
		Dudderidge Lake					RDKE
		Thunder Bay					RDKF
		Cape Dorset					RDKG

NFP INDEX BY CATEGORY-MINES (URANIUM & THORIUM)

COUNTRY	FACILITY NAME	LOCATION	FAC TYPE	CAPACITY	STATUS	YR	NFP CODE
CANADA (CONT.)							
		Ungara					RDKH
		Jourdan Lake					RDKJ
		Sakami Lake					RDKK
		Uranium City					RDKL
		Lake Athabaska					RDKM
		Blind River					RDKN
		Cobequid Mountain					RDKP
		Churchill					RDKQ
		Dismal Lake					RDKR
		Fond du Lac					RDKS
	Denison	Elliot Lake	URAN	1900te/y	Oper	57	RDKZ
CENTRAL AFRICAN REPUBLIC							
		Bakouma	URAN	1000te/y	Plan	81	RCAA
CHINA							
		Kuetchou	UTh		Oper		RPCD
		Tsinghai	UTh		Oper		RPCE
		Szechwan	UTh		Oper		RPCF
		Sinkiang	UTh		Oper		RPCG
		Chuannan	URAN		Oper		RPCJ
		Chuchou	URAN		Oper		RPCK
		Chushan	URAN		Oper		RPCL
	Hsia Chuang	Weiyuan	URAN		Oper		RPCM
CZECHOSLOVAKIA							
		Jachymov	URAN				RCKE
	Pribram	Pribram	URAN		Oper	54	RCZN
FINLAND							
		Joensuu	URAN		Inactv	61	REFF
FRANCE							
		Vendee	URAN		Oper		RFEW
		La Crouzille	URAN	200 te/y	Oper	50	RFEZ
		St. Priest	URAN				RFFA
		Lodeve	URAN	500 te/y	Oper	78	RFFK
		Roven	URAN	100 te/y	Plan	81	RFGQ
		Langogne	URAN	135 te/y	Oper	77	RFGR
		St. Pierre du Cantal	URAN	100 te/y	Oper	78	RFGU

NFP INDEX BY CATEGORY-MINES (URANIUM & THORIUM)

COUNTRY	FACILITY NAME	LOCATION	FAC TYPE	CAPACITY	STATUS	YR	NFP CODE
GABON							
		Mikouloungou	URAN		Explor		RHBA
		Oklo	URAN		Oper	70	RHBB
		Mounana	URAN		Inactv		RHBC
		Boyindzi	URAN		Explor		RHBE
		Okelobondo	URAN		Explor		RHBF
GERMANY(EAST)							
		Weringerode	URAN		Oper	50	REGU
	Sorgesettendorf		URAN				REGV
		Thuringia	URAN		Oper		REGW
GERMANY(WEST)							
		Menzenschwand	URAN		Explor		RGFJ
		Mullenbach	URAN		Explor		RGGT
		Oberpfalzer	URAN		Explor		RGGU
		Saxony	URAN		Inactv		RGGV
GREENLAND							
	Kvanefjeld	Ilimaussaq	URAN		Explor		RHLA
HUNGARY							
		Pecs	URAN		Oper	55	RHUK
INDIA							
		Bhatin	URAN		Constr		RHEH
		Quilor	THOR	60 te/y	Oper		RHEJ
		Manavalakurichi	THOR	450 te/y	Oper		RHEK
		Narwapahar	URAN		Constr		RHIY
		Jaduguda	URAN		Oper	56	RHNA
IRAN							
		Anarak	URAN		Explor		RORR
		Yazd	URAN		Explor		RORS
IRELAND							
	Leinster	Mt. Leinster	URAN		Explor		RHRF
ITALY							
		Val Rendena	URAN		Explor		RICP
	Novazza	Valgoglio	URAN	110 te/y	Constr	80	RICQ
		Preit Valley	URAN		Explor		RIDM
		Latium	URAN		Explor		RIDN
		Lazio	URAN		Explor		RIDP

NFP INDEX BY CATEGORY-MINES (URANIUM & THORIUM)

COUNTRY	FACILITY NAME	LOCATION	FAC TYPE	CAPACITY	STATUS	YR	NFP CODE
JAPAN							
		Tono	URAN	10 te/y	Oper		RJFF
		Ningyo Toge	URAN		Oper	64	RJFV
KOREA(SOUTH)							
		Taeduck	URAN		Explor		RKOV
MADAGASCAR							
		Fort Dauphin	URAN	450 te/y	Inactv	63	RMDA
MEXICO							
	Sierra Pena Blanca	Tamaulipos	URAN		Explor	75	RMEN
		La Coma	URAN		Explor		RMEV
		Buenavista	URAN		Explor		RMEX
		Otros	URAN		Explor		RMEY
		La Domitila	URAN		Explor		RMEZ
		Nopal III	URAN		Explor		RMXA
		Margaritas-PuertoIII	URAN		Explor		RMXB
		El Nopal	URAN		Explor		RMXC
		Los Amoles	URAN		Explor		RMXD
		La Preciosa	URAN		Explor		RMXE
		El Chapote	URAN		Explor		RMXF
NAMIBIA							
	Rossing	Swakopmund	URAN	6500te/y	Oper		RYBB
		Lvderitz	URAN		Explor		RYBC
		Namib Desert	URAN		Explor		RYBD
		Trekkopje			Explor		RYBE
		Langer Heinrich	URAN		Explor		RYBF
NIGER							
		Djado	URAN		Explor		RMGA
	SOMAIR	Arlit	URAN	1000te/y	Oper	71	RMGB
	SOMAIR	Arlit	URAN	1000te/y	Oper	71	RMGC
	COMINAK	Akouta	URAN	2600te/y	Oper	78	RMGD
		Madaouela	URAN		Explor		RMGG
		Azelik	URAN		Explor		RMGH
		Imouraren	URAN		Explor		RMGJ
		Techili	URAN		Explor		RMGK
		Arni	URAN		Explor		RMGL
		I-n-Adrar	URAN				RMGM
		West Afasto	URAN		Explor		RMGN
		Tegidda-in-Tessoum			Explor		RMGP

NFP INDEX BY CATEGORY-MINES (URANIUM & THORIUM)

COUNTRY	FACILITY NAME	LOCATION	FAC TYPE	CAPACITY	STATUS	YR	NFP CODE
PAKISTAN							
		Dera Ghazi Khan			Constr		RPAJ
PERU							
	Vilcabamba	Cuzco	URAN	2.5 te/y	Oper	75	RPED
	Restauradora	Huancavelica	URAN		Plan	75	RPEE
	Area Ica	Ica	URAN		Plan		RPEF
	Churin	Lima	URAN		Plan		RPEG
	Jesus Maria	Moguegua	URAN		Plan		RPEH
	Colquijirca	Pasco	URAN	2.5 te/y	Oper	75	RPEJ
	Bayovar	Piura	URAN		Plan		RPEK
PHILIPPINES							
	Larap	Camarines Norte	URAN		Explor		RPHQ
	Bagacay	Sama-Island	URAN		Explor		RPHR
	Magna Rosa	Caramoan Peninsula	URAN		Explor		RPHS
PORTUGAL							
		Senhora das Fontes	URAN		Oper		RPOJ
		Urgeirica	URAN		Oper		RPOK
		Cunha Baixa	URAN		Explor		RPOM
	Alto Alentejo	Nisa	URAN		Plan		RPON
		Quinta do Bispo	URAN		Explor		RPOQ
		Azere	URAN		Explor		RPOR
		Guarda	URAN		Explor		RPOS
SOUTH AFRICA							
		Palabora	URAN	120 te/y	Oper		RTAK
		Karroo	URAN		Explor		RTAM
	Hartebeestfontein	Hartebeestfontein	URAN	450 te/y	Oper		RTAN
	Buffelsfontein	Far West Rand	URAN	620 te/y	Oper		RTAP
	Vaal Reefs	Orkney	URAN	1200te/y	Oper		RTAQ
	Blyvooruitzicht	Blyvooruitzicht	URAN	287 te/y	Oper		RTAR
	West Rand	West Rand	URAN	295 te/y	Oper		RTAS
	West Driefontein	Carletonville	URAN	286 te/y	Oper		RTAT
	Western Deep Levels	Casletonville	URAN	167 te/y	Oper		RTAU
	Randfontein	Randfontein	URAN	70 te/y	Oper		RTAV
	JMS	Riebeeckstad	URAN	480 te/y	Oper	78	RTAX
	Harmony	Virginia	URAN	525 te/y	Oper		RTAY
	East Rand Gold & U	East Rand	URAN	100 te/y	Oper	78	RTFA
	Afrikander Lease	Klerksdorp	URAN	300 te/y	Plan	81	RTFB
		Parmeitkuil	URAN		Plan	82	RTFC

NFP INDEX BY CATEGORY-MINES (URANIUM & THORIUM)

COUNTRY	FACILITY NAME	LOCATION	FAC TYPE	CAPACITY	STATUS	YR	NFP CODE
SOVIET UNION							
		Norilsk	URAN		Oper		RRFC
		Taboshar	URAN		Oper		RRFD
		Pervomaisk	URAN		Oper		RRFE
		Tuya Muyum	URAN		Inactv		RRFF
		Mailiy Su	URAN		Oper		RRFG
		Uigur Say	URAN		Oper		RRFH
SPAIN							
		Soria	URAN		Explor		RSCQ
		Cuidad Rodrigo	URAN	118te/y	Oper	75	RSCS
	El Pedregal	Don Benito	URAN	60 te/y	Oper		RSCU
		Andvjar	URAN	65 te/y	Oper	59	RSCV
SWEDEN							
	Pleutajokk	Arjeplog-Arvidsjaur	URAN		Explor		RWBP
	Ranstad	Billingen	URAN	140 te/y	Oper		RWBX
	Kvarntorp		URAN		Inactv		RWBY
TURKEY							
		Koprubasi	URAN		Oper		RTYD
		Fakili	URAN		Explor		RTYF
		Kucuk Kuyu	URAN		Explor		RTYG
		Sebinkarahisar	URAN		Explor		RTYH
		Kocarli	URAN		Explor		RTYJ
UNITED KINGDOM							
		Caithness	URAN		Explor		RUEC
	Stromness	Orkney	URAN		Explor		RUEZ
		Cornwall	URAN		Explor		RUFA
YUGOSLAVIA							
		Zirovski Vrh	URAN	255 te/y	Constr	82	RYUP
ZAIRE							
		Shinkolobwe	URAN	1000te/y	Inactv	60	RCGD
ZAMBIA							
		Lake Kariba	URAN		Explor		RYAC

NFP INDEX BY CATEGORY-MILLS

COUNTRY	FACILITY NAME	LOCATION	FAC TYPE	CAPACITY	STATUS	YR	NFP CODE
AUSTRALIA							
	Jabiru	Ranger	URAN	3000te/y	Plan	82	RAUN
		Nabarlek	URAN	900 te/y	Plan	81	RAUS
	Mary Kathleen	Mt. Isa	URAN	700 te/y	Oper	56	RAUW
CANADA							
	Beaverlodge	Beaverlodge		460 te/y	Oper	53	RDCM
	Rabbit Lake	Rabbit Lake		1730te/y	Oper	75	RDCC
	Denison	Elliot Lake	URAN	1900te/y	Oper	57	RDCT
	Rio Algon	Elliot Lake	URAN	1900te/y	Oper	68	RDCV
	Agnew Lake	Sudbury	URAN	270 te/y	Oper	77	RDCX
	Madawaska	Bancroft	URAN	320 te/y	Oper	76	RDDD
FRANCE							
		L'Ecarpier	URAN	700 te/y	Oper	77	RFEV
		Bessines-sur-Gartemp	URAN	1500te/y	Oper	77	RFEY
		St. Priest	URAN	500 te/y	Oper	77	RFFB
		Langogne	URAN	135 te/y	Oper	77	RFGS
		Lodeve	URAN	1000te/y	Constr	80	RFGT
GABON							
		Mounana	URAN		Inactv		RHBD
INDIA							
		Narwapahar	URAN		Constr		RHIZ
		Jaduguda	URAN		Oper	56	RHNB
ITALY							
		Novazza	URAN	200 te/y	Constr	80	RIDC
JAPAN							
		Ningyo Toge	URAN		Oper	64	RJFW
MEXICO							
	Sierra Pena Blanca	Tamaulipos	URAN	15 te/y	Oper	75	RMEP
	Villa Aldama		URAN		Oper		RMEU
		La Coma	URAN		Plan		RMEW
NIGER							
	COMINAK	Akouta	URAN	2600te/y	Oper	78	RMGE

NFP INDEX BY CATEGORY-MILLS

COUNTRY	FACILITY NAME	LOCATION	FAC TYPE	CAPACITY	STATUS	YR	NFP CODE
PORTUGAL							
		Urgeirica	URAN	150 te/y	Oper		RPOL
	Alto Alentejo	Nisa	URAN		Plan	85	RPOF
SOUTH AFRICA							
	Millsite	Randfontein	URAN		Oper	77	RTAW
SPAIN							
		Cuidad Rodrigo	URAN	118te/y	Oper	75	RSCT
		Andujar	URAN	65 te/y	Oper	59	RSDC
	Lobo	Badajoz	URAN	25 te/y	Oper		RSDD

NFP INDEX BY CATEGORY-CONVERSION PLANTS

COUNTRY	FACILITY NAME	LOCATION	FAC TYPE	CAPACITY	STATUS	YR	NFP CODE
CANADA							
	Eldorado Nuclear	Port Hope	UF6	4000 te	Oper	70	RDAY
	Eldorado Nuclear	Port Granby	UF6	10000 te	Plan	81	RDDN
FRANCE							
	Conversion Facility,	Pierrelatte	UF6	8000 te	Oper	77	RFFC
	Malvesi Refining Fac	Malvesi	UF4		Oper		RFFL
GERMANY(WEST)							
	RBU-1	Hanau	UO2	1000 te	Oper	64	RGDF
INDIA							
	Nucl Fuel Complex	Hyderabad	UO2	124 te	Oper	71	RHIA
ITALY							
	Fabricazzioni Nucl	Bosco Marengo	UO2	360 te	Plan		RICT
JAPAN							
	Mitsubishi Nucl Fuel	Tokai-Mura	UO2	420 te	Oper	72	RJDL
	Sumitomo Metal	Tokai-Mura	UO2	240 te	Oper	73	RJFF
	Sumitomo Metal	Tokai-Mura	UO2	340 te	Plan	79	RJGC
SWEDEN							
	Vasteras Fuel Fac.	Vasteras	UO2	400 te	Oper	76	RWAD
UNITED KINGDOM							
	Springfields	Preston	UF6	8000 te	Oper	68	RUEG

NFP INDEX BY CATEGORY-ENRICHMENT PLANTS

COUNTRY	FACILITY NAME	LOCATION	FAC TYPE	CAPACITY	STATUS	YR	NFP CODE
AUSTRALIA							
	Lucas Heights	Lucas Heights	CENT		Oper	65	RASE
			LASR		R&D		RASH
BRAZIL							
	Nuclei	Sepetiba	JET	180 KSWU	Plan	82	RBRA
		Sepetiba	JET	5000 K	Plan		RBZA
CHINA							
	China 1	Lanchou	DIFF	180 KSWU	Oper	63	RPCB
			LASR		R&D		RPCH
FRANCE							
	Enrichment Facility	Pierrelatte	DIFF	500 KSWU	Oper	67	RFAA
	Eurodif 1	Tricastin	DIFF	10800 K	Constr	81	RFBC
	Eurodif 2 (Coredif)		DIFF	5000 K	Plan	85	RFBR
			CHEM	50-100 K	Plan	85	RFFZ
			LASR		R&D	60	RFGA
GERMANY(WEST)							
		Julich	CENT		Oper		RGFC
	Karlsruhe Nuclear	Karlsruhe	JET	2 KSWU	Oper	67	RGFH
		Gronau	CENT	1000 K	Plan	85	RGFR
			LASR		R&D	71	RGFS
ISRAEL							
	Weizmann Institute	Rehovot	LASR		R&D		RTSK
JAPAN							
	C-1	Tokai-Mura	CENT		Oper	74	RJCE
	C-2	Tokai-Mura	CENT		Oper	76	RJCG
		Tokai-Mura	CENT	50 KSWU	Constr	80	RJGA
			LASR		R&D	75	RJGB
NETHERLANDS							
	Pilot Plant SP1	Almelo	CENT	25 KSWU	Oper	72	RNAT
	Pilot Plant SP2	Almelo	CENT	25 KSWU	Oper	72	RNAX
	Production Plant SP3	Almelo	CENT	60 KSWU	Oper	77	RNAY
SOUTH AFRICA							
	UCOR	Valindaba	STAT	6 KSWU	Oper	76	RTAA
	UCOR	Valindaba	STAT	5000 K	Plan		RTAZ

NFP INDEX BY CATEGORY-ENRICHMENT PLANTS

COUNTRY	FACILITY NAME	LOCATION	FAC TYPE	CAPACITY	STATUS	YR	NFP CODE
SOVIET UNION							
		Siberia	DIFF	10000 K	Oper		RRAA
			LASR				RRAB
SWEDEN							
	Royal Inst of Tech	Stockholm	LASR		R&D		RWAB
UNITED KINGDOM							
			LASR		R&D	75	RUAB
	Diffusion Enr. Plant	Capenhurst	DIFF	400 KSWU	Oper	75	RUAU
	Production Plant	Capenhurst	CENT	50 KSWU	Oper	77	RUDL
	Pilot Plant	Capenhurst	CENT	15 KSWU	Oper	72	RUEK

NFP INDEX BY CATEGORY-HEAVY WATER PRODUCTION

COUNTRY	FACILITY NAME	LOCATION	FAC TYPE	CAPACITY	STATUS	YR	NFP CODE
ARGENTINA							
		Buenos Aires			Plan	84	RARF
CANADA							
	Port Hawkesbury	Port Hawkesbury		400te/y	Oper	70	RDFA
	Glace Bay	Glace Bay		400 te/y	Oper	76	RDJP
	Bruce A	Douglas Point		800 te/y	Oper	73	RDJQ
	Bruce B	Douglas Point		800 te/y	Constr	78	RDJR
	Bruce C	Douglas Point		800 te/y	Plan	80	RDJS
	Bruce D	Douglas Point		800 te/y	Plan	79	RDJT
	La Prade	La Prade		800 te/y	Constr	79	RDKU
		Trail		6 te/y	Inactv		RDKV
FRANCE							
		Toulouse	D20	2 te/y	Inactv		RFGW
		Mazingarbe	D20	26 te/y	Inactv		RFGX
GERMANY (WEST)							
		Frankfurt	D20	6 te/y	Inactv		RGGS
INDIA							
	Nangal	Nangal	D20	14 te/y	Oper	62	RHNK
	Baroda Plant	Baroda	D20	67.2te/y	Oper	76	RHNL
	Kota Plant	Kota	D20	100 te/y	Constr	80	RHNM
	Tuticorin Plant	Tuticorin	D20	71.3te/y	Constr	78	RHNN
	Talcher Plant	Talcher	D20	62.7te/y	Constr	80	RHNP
NORWAY							
		Rjukan		20 te/y	Oper	34	RMON
SWEDEN							
		Domat Ems		2 te/y	Inactv		RZBE

NFP INDEX BY CATEGORY-FUEL FABRICATION PLANTS

COUNTRY	FACILITY NAME	LOCATION	FAC TYPE	CAPACITY	STATUS	YR	NFP CODE
ARGENTINA							
	Constituyentes Pilot	Buenos Aires	UO	50 te/yr	Oper	77	RARA
BELGIUM							
	Dessel Pu Fuel Prod.	Dessel	UPuO	35 te/yr	Oper	73	RBEH
	FBFC	Dessel	UO	200 te	Oper	59	RBER
	Plutonium Lab.	Mol	UPuO	(small)	Oper	60	RBEZ
BRAZIL							
	Inst Energie Atomica	Sao Paulo	U308	10 te/yr	Oper		RBRS
		Sepetiba	UO	50 te/yr	Constr	78	RBZE
CANADA							
	Canadian Gen Electr.	Peterborough	UO		Oper		RDAT
	Canadian Gen Electr.	Toronto	UO		Oper		RDAU
	Westinghouse	Port Hope	UO		Oper		RDCD
	Chalk River Nuclear	Chalk River	UPuO	(small)	Inactv	76	RDDB
	Westinghouse	Varennes	UO		Oper		RDHX
CZECHOSLOVAKIA							
	Nuclear Fuel Inst.	Prague			Oper		RCKF
DENMARK							
	Riso Research Est.	Roskilde			Oper		RENP
		Elsinore	UOUM		Oper		RENR
FRANCE							
	FBFC	Romans	UO	300 te	Constr	78	RFFE
	Pu Workshops ATPu,	St-Paul-les-Durance	UPuO	10 te/yr	Oper		RFFF
	SICN	Veurey	FB		Oper		RFFM
	CERCA	Romans	UM	900 te	Oper		RFGZ
	SICN	Annecy	UM	1200 te	Oper		RFHA
GERMANY(WEST)							
	RBU-II	Grosswelzheim	UO	150 te	Oper	66	RGDG
	RBU-I	Hanau	UO	600 te	Oper	64	RGDH
		Lingen	UO		Constr	77	RGFB
	Alkem GmbH	Hanau	UPuO	50 te/yr	Oper	66	RGFE
	Hobeg	Hanau	UOUC		Oper	72	RGFK
INDIA							
	Nuclear Fuels	Hyderabad	UO	124 te	Oper	71	RHNQ

NFP INDEX BY CATEGORY-FUEL FABRICATION PLANTS

COUNTRY	FACILITY NAME	LOCATION	FAC TYPE	CAPACITY	STATUS	YR	NFP CODE
ITALY							
	Fabricazioni	Bosco Marengo	UO	200 te	Oper	74	RIBM
		San Donato	UPuO	8 te/yr	Oper		RICF
	Casaccia Center,	Rome	UPuO	8 te/yr	Oper		RICX
	Combustibili	Rotondella	UM	30 te/yr	Oper	69	RICZ
	COREN	Saluggia	UO	60 te/yr	Oper	68	RIDH
JAPAN							
	Japan Nuclear Fuel	Yokosuka	UO	560 te	Oper	72	RJBS
	Kumatori Works	Osaka		40 te/yr	Oper		RJCW
	Mitsubishi Nucl Fuel	Tokai-Mura	UO	420 te	Oper	72	RJDK
	Tokai Works	Tokai-Mura	UPuO		Oper		RJDY
	Tokayama Works	Tokayama		20 te/yr	Oper		RJEW
	Nuclear Fuel	Tokai-Mura	UO	100 te	Constr	78	RJFZ
NORWAY							
	Fuel Element Pilot	Kjeller			Oper		RMOF
SPAIN							
	Juan Vigon Nuclear	Madrid			R&L		RSBM
	Fabrication Facility	Juzbada	UO	400 te	Plan	81	RSDA
SWEDEN							
	Vasteras Fuel Fac	Vasteras	UO	400 te	Oper	72	RWAE
TAIWAN							
	INER	Lungt'an			Oper		RCIC
UNITED KINGDOM							
	Springfields Fab.	Preston	UM	2500 te	Oper	58	RUEH
	Springfields Fab.	Preston	UO	300 te	Oper	72	RUEJ
	Windscale Mixed-Ox.	Windscale	UPuO	10 te/y	Oper		RUEM

NFP INDEX BY CATEGORY-RESEARCH AND TEST REACTORS

COUNTRY	FACILITY NAME	LOCATION	FAC TYPE	CAPACITY	STATUS	YR	NFP CODE
ARGENTINA							
	RA-O	Cordoba			Oper	68	RARJ
	RA-1	Buenos Aires	TANK	.15 MWt	Oper	58	RARK
	RA-2	Buenos Aires			Oper	58	RARL
	RA-3	Buenos Aires	TANK	5 MWt	Oper	67	RARM
	RA-4	Rosario	SHRR		Oper	66	RARN
	RA-5		FNRR		Constr	75	RARV
AUSTRALIA							
	High Flux Australian	Sutherland, New S.W.	TANK	10 MWt	Oper	58	RAUE
	Moata Reactor	Lucas Heights	ARGO	.01 MWt	Oper	61	RAUH
AUSTRIA							
	ASTRA Adapted Swim.	See remarks	POOL	Remarks	Oper	60	RATE
	Sar-Graz	Graz	ARGO	.001 MWt	Oper	65	RATH
	Triga Mark II	Vienna	SHRR	25 MWt	Oper	62	RATK
BELGIUM							
	BR-02	Mol	TK-L	500Wt	Oper	59	RBEE
	BR-1	Mol		4 MWt	Oper	56	RBEF
	Belgian Reactor BR-2	Mol	TK-L	100 MWt	Oper	60	RBEG
	BR-3/VN	Mol	TANK	40.9 MWt		65	RBEJ
	Thetis	Ghent		41 MWt	Oper	67	RBET
	VENUS	Mol	TANK	500Wt	Oper	64	RBEX
	BR-3	Mol	PWR	10.5 MWe	Oper	72	RBGE
BRAZIL							
	IEAR-1	Sao Paulo, Brazil	POOL	5 MWt		58	RBRR
	RIEN-1	Rio de Janeiro	ARGO	.01 MWt	Oper	65	RBRW
	Triga-Brazil	Belo Horizonte	SHRR	30 KWt	Oper	59	RBRY
BULGARIA							
	IRT-Sofia	Sofia	POOL		Oper	61	RBLE
CANADA							
	McMaster Nuclear	Hamilton, Ontario,	POOL	2 MWt	Oper	59	RDBF
	NRU Reactor	Chalk River, Ontario	TK-H	110 MWt	Oper	58	RDBJ
	NRX	Chalk River, Ontario	TK-H	33 MWt	Oper	47	RDBK
	NRX Reactor	Chalk River, Ontario	TK-H	40 MWt	Oper	48	RDBL
	Pool Test Reactor	Chalk River, Ontario	POOL	10 Wt	Oper	57	RDBZ
	Slowpoke-2	Ottowa, Ontario	POOL	.021 MWt	Oper	71	RDCA
	Slowpoke-1	Toronto, Ontario	POOL	.021 MWt	Oper	70	RDCB
	WR-1	Pinawa, Manitoba	TK-H	40 MWt	Oper	65	RDCE
	ZED-2	Chalk River, Ontario	TK-H	200 Wt	Oper	60	RDCH
	ZEEP	Chalk River, Ontario	TK-H	Remarks	Remark	45	RDCJ

NFP INDEX BY CATEGORY-RESEARCH AND TEST REACTORS

COUNTRY	FACILITY NAME	LOCATION	FAC TYPE	CAPACITY	STATUS	YR	NFP CODE
COLOMBIA							
	Instituto De Asuntos	Bogota	POOL	20 KWt	Oper	65	RCOB
CZECHOSLOVAKIA							
	HWGCR (KS-150)	Bohunice, Slovakia		590 MWt	Oper	65	RCKD
	WWR-C Praque	Rez	TK-L	2 MWt	Oper	57	RCZL
DENMARK							
	DR-1	Roskilde	LHRR	500Wt		57	RENG
	DR-2	Roskilde	POOL	5 MWt	Oper	58	RENJ
	DR-3	Copenhagen	TK-H	10 MWt	Oper	59	RENL
EGYPT							
	UAR WWR-C Reactor	Inshas	TK-L	2 MWt	Oper	61	RVAE
FINLAND							
	FIR-1	Helsinki		250 MWt	Oper	62	REFA
	Fir-1	Otaniemi	SHRR	Remarks	Oper	62	REFB
FRANCE							
	Reactor Alecto	Saclay	LHRR	1 Wt	Inactv	64	RFAC
	Reactor Alize	Saclay	TK-L	1 Wt	Inactv	59	RFAE
	Aquilon	Sarclay, near Paris	TK-H	Remarks	Inactv	56	RFAH
	Azur	Cadarache	POOL	(small)	Oper	62	RFAK
	Cabri	Cadarache	POOL	Remarks	Oper	63	RFAR
	Reactor Cesar	Cadarache	GMRR	10 KWt	Oper	64	RFBA
	Reactor Zoe	Fontenay-Aux-Roses	TK-H	150 KWt	Oper	48	RFBK
	Reactor EL-2	Saclay	TK-H	2 MWt	Inactv	52	RFBL
	Reactor EL-3	Saclay	TK-H	20 MWt	Oper	57	RFBM
	Eole Reactor	Cadarache	TK-H	10KW max	Oper	65	RFBN
	Harmonie Reactor	Bouches-du-Rhone	FNRR	.002 MWt	Oper	65	RFCC
	Isis Reactor	Saclay	POOL	.08 KWt	Oper	66	RFCR
	Reactor Marius	Cadarache	GMRR	(small)	Oper	60	RFCW
	MASURCA	Cadarache	FNRR	1 KWt	Oper	66	RFCX
	Reactor Melusine	Grenoble, Isere	POOL	8.0 MWt	Oper	58	RFCY
	Reactor Minerve	Fontenay-Aux-Roses	POOL	100 MWt	Oper	59	RFCZ
	Nereide Reactor	Fontenay-aux-Roses	POOL	.6 MWt	Oper	60	RFDB
	Osiris Reactor	Saclay, Seine-et-Ois	TK-L	50 MWt	Oper	66	RFDC
	Reactor Pegase	Cadarache	TK-L	30 MWt	Oper	63	RFDH
	Peggy	Cadarache	TK-L	1 KWt	Oper	61	RFDJ
	Proserpine	Saclay	LHRR	1 Wt	Oper	58	RFDM
	Rapsodie Reactor	Bouches-du Rhone	FNRR	41 MWt	Oper	67	RFDR
	Reactor Siloe	Grenoble	POOL	Remarks	Oper	63	RFDV
	Reactor Siloette	Grenoble	POOL	.1 MWt	Oper	64	RFDW
	Strasbourg-Cronenbg.	Strasbourg	ARGO	.1 MWt	Oper	66	RFED

NFP INDEX BY CATEGORY-RESEARCH AND TEST REACTORS

COUNTRY	FACILITY NAME	LOCATION	FAC TYPE	CAPACITY	STATUS	YR	NFP CODE
FRANCE (CONT.)							
	Reactor Triton	Fontenay-Aux-Roses	POOL	100 Wt	Oper	59	RFEM
	Ulysse Reactor	Saclay	ARGO	.1 MWt	Oper	61	RFEN
	Chaudiere	Cadarache		100 MWt	Oper	75	RFGC
	High-Flux Reactor	Grenoble	TK-H	60 MWt	Oper	71	RFGD
GERMANY (WEST)							
	AVR	KFA, Julich	GMRR	46 MWt	Oper	67	RGAF
	Adibka-1 Reactor	Julich	LHRR	10 Wt	Oper	67	RGAC
	AEG Nullenergie	Grosswelzheim	TK-L	100 Wt	Oper	67	RGAD
	ANEX	Geesthacht		0 MWt	Oper	64	RGAE
	BER	Berlin-Wannsee	LHRR	50 KWt	Oper	58	RGAH
	FMRB	Braunschweig	POOL	1 MWt	Oper	67	RGAV
	FR-2	Karlsruhe	ARGO	12 MWt	Oper	61	RGAW
	Rsch Reactor	Frankfurt/Main	LHRR	50 KWt		58	RGAX
	Rsch Reac Geesthacht	Geesthacht/Elbe	POOL	5 MWt	Oper	58	RGAY
	FRG-2	Geesthacht/Elbe	POOL	15 MWt	Oper	68	RGAZ
	Dido-Julich	Julich	TK-H	10 MWt	Oper	61	RGBB
	Rsch Reactor Muenchen	Garching	POOL	4 MWt	Oper	57	RGBC
	Triga-I-Hannover	Hannover		.25 MWt	Oper	72	RGBF
	React. Merlin-Julich	Julich, W. Germany	POOL	5 MWt	Oper	61	RGCF
	PR-10	Grosswelzheim					RGDD
	SAR-1	Garching	ARGO		Oper	59	RGDG
	SNEAK	Leopoldshafen	FNRR	1KWt max	Oper	66	RGDR
	Stark	Karlsruhe	ARGO		Oper	64	RGDU
	SUR-Aachen	Aachen	SHRR	.1 Wt	Oper	66	RGDW
	SUR-Berlin	Berlin	SHRR	.1 Wt	Oper	63	RGDX
	SUR-Bremen	Bremen	SHRR	.1 Wt	Oper	67	RGDY
	SUR-Darmstadt	Darmstadt	SHRR	.1 Wt	Oper	63	RGDZ
	SUR-Hamburg	Hamburg	SHRR	.1 Wt	Oper	65	RGEA
	SUR-Karlsruhe	Karlsruhe	SHRR	.1 Wt	Oper	66	RGEE
	SUR-Kiel	Kiel	SHRR	.1 Wt	Oper	66	RGEC
	SUR-Stuttgart	Stuttgart	SHRR	.1 Wt	Oper	64	RGEF
	SUR-Ulm	Ulm	SHRR	.1 Wt	Oper	65	RGEG
	Triga-I-Heidelberg	Heidelberg	SHRR	.25 MWt	Oper	66	RGEM
	German Triga	Mainz, West Germany	SHRR	10 KWt	Oper	65	RGEN
	HDR	Grosswelzheim/Main		100 MWt		68	RGFC
	CFG	Karlsruhe	SHRR	Max 100W	Oper	64	RGFT
	BER-2	Berlin	POOL	5 MWt	Oper	73	RGFX
	Kather	Julich			Oper	73	RGFY
	SUR-100	Furtwangen	SHRR		Oper	73	RGFZ
	AEG-PR-10	Unterfranken	ARGO	10 Wt	Oper	61	RGGA
	SUR-Hannover	Hannover	SHRR		Oper	61	RGGE
	Triga Conversion	Frankfurt	SHRR	1 MWt			RGGF
	WWR-5 (m)	Rossendorf	TANK	6 MWt			RGGG
GREECE							
	GRR	Athens	POOL	1 MWt		59	RHCE

NFP INDEX BY CATEGORY-RESEARCH AND TEST REACTORS

COUNTRY	FACILITY NAME	LOCATION	FAC TYPE	CAPACITY	STATUS	YR	NFP CODE
HUNGARY							
	Hungarian WWR-C	Csillererc	TANK	2 MWt	Oper	59	RHUF
INDIA							
	Kalpakkum PFR	Kalpakkam	FNRR	.03 MWt	Plan		RHEE
	FBTR	Kalpakkam	FNRR	50 MWt	Constr		RHEL
	Reactor Apsara	Trombay	POOL	1 MWt	Oper	56	RHIF
	CIR	Trombay	TK-H	40 MWt	Oper	60	RHIG
	Zerlina	Trombay	TANK	MAX100Wt	Oper	61	RHIW
	Purnima	Trombay			Oper	72	RHNZ
INDONESIA							
	Triga-Mark II	Bandung	SHRR	.25 MWt	Oper	65	RHOE
IRAN							
	U of Teheran Rsch	Teheran	POOL	5 MWt	Oper	67	RORM
	UTRR Conversion	Tehran	SHRR	10 MWt	Constr		RORC
ISRAEL							
	IRR	Rehovath	POOL	5 MWt	Oper	59	RTSF
	IRR-2	NegeV		26 MWt	Oper		RTSG
ITALY							
	AGN-201-110	near Palermo	SHRR	.1 Wt	Oper	60	RIAD
	Avogadro RS-1	Saluggia	POOL	7 MWt	Inactv	60	RIAE
	CIRENE	Latina		128.5MWt			RIAG
	ECO	Ispra (Varese)	TK-H	1KWt max	Inactv	65	RIAK
	Essor reactor	Ispra (Varese)	TK-H	36.6 MWt	Oper	67	RIBK
	RTS-1	San Piero a Grado	POOL	5 MWt	Oper	65	RIBN
	Reactor Ispra-1	Ispra, Varese	TK-H	5 MWt	Inactv	59	RIBF
	ISPRA-2 (RANA)	Casaccia	POOL	Remarks	Oper	61	RICA
	RB-1	Montecuccolino	GMRR	10 Wt	Oper	62	RICB
	RB/2	Bologna	ARGO	10 KWt	Oper	63	RICC
	ROSPO	Roma	OMRR	(small)	Oper	63	RICE
	Triga-II Pavia	Pavia	SHRR	Remarks	Oper	65	RICK
	Triga Mark II	Rome	SHRR	1 MWt	Oper	59	RIDA
	CESNEF	Milan	LHRR	50 KWt	Oper	60	RIDC
	PEC	Lake Brasimore	FNRR	140 MWt	Constr	78	RIDD
	RB-3	Univ. of Bologna	TK-H		Oper	71	RIDE
	Triga-II	Rome	SHRR		Oper	60	RIDF
	TAPIRO	CSN, Casaccia	FNRR	5 KWt	Oper	71	RIDJ
	RITMO (RC-4)	Rome	POOL	100 Wt	Oper	65	RICD

NFP INDEX BY CATEGORY-RESEARCH AND TEST REACTORS

COUNTRY	FACILITY NAME	LOCATION	FAC TYPE	CAPACITY	STATUS	YR	NFP CODE
JAPAN							
	AHCF	Tokai-mura, Naka-gun	LHRR	50 Wt	Oper	63	RJAE
	DCA	Tokai-Mura		(small)	Oper	69	RJAN
	FCA	Tokai-Mura	TK	(small)	Oper	67	RJAQ
	HTR	Kawasaki	ARGO	.1 MWt	Oper	61	RJBN
	HTR	Ozenji, Kawasaki	ARGO	.1 MWt	Oper	62	RJBP
	JMTR	Oarai	TK-L	50 MWt	Oper	68	RJBX
	JMTRC	Oarai-machi	POOL	.01 MWt	Oper	67	RJBZ
	Joyo	Oarai	FNRR	50 MWt	Oper	74	RJCA
	Japan Rsch Reac No 1	Tokai-Mura	LHRR	.05 MWt	Oper	57	RJCC
	JRR-2	Tokai-Mura	TK-H	10 MWt	Oper	62	RJCD
	JRR-3	Tokai-Mura	TK-H	10 MWt	Oper	64	RJCF
	JRR-4	Tokai-Mura	POOL	1 MWt	Oper	65	RJCJ
	Kinki University	Fuse-City, Osaka		.1 Wt			RJCU
	Kuca	Kumatori	FNRR	(small)	Constr		RJCV
	KUR Kyato Univ.	Kumatori-cho,	POOL	5 MWt	Oper	64	RJDB
	Kyoto Univ. Reactor	Kumatori-machi	TK-L	1 MWt			RJDC
	NCA NAIG Critical	Kawasaki-shi	POOL	200W max	Oper	63	RJDW
	NSRR	Tokai		.3 MWt	Constr		RJDX
	OCF	Ozenji, Kawasaki	TK-L	100W max	Oper	62	RJDZ
	SHCA	Tokai-Mura	SHRR	10 Wt	Oper	61	RJEL
	TCA	Tokai-Mura	TK-L	200W max	Oper	62	RJEX
	YAYOI	Tokai-Mura	FNRR	(small)	Oper	71	RJGD
	St. Paul Univ. Reac.	Yokosuka-City		.1 MWt			RJGE
	Toshiba Reactor	Kawasaki-City	POOL	.1 MWt			RJGF
	Hitachi Reactor	kawasaki-City	POOL	.1 MWt			RJGG
	Goto Ikuei-Kai Reac.	Kawasaki-City		.1 MWt			RJGH
	Triga-II-Musashi	Kawasaki	SHRR	.1 MWt	Oper	63	RJGT
	Triga-II-Rikkyo	Sajima, Yokosuka	SHRR	.1 MWt	Oper	61	RJGU
	TTR	Kawasaki		.1 MWt	Oper	62	RJGW
	TTR-1	Suchirocho and	POOL	.03 MWt	Oper	62	RJGX
	UTR-10-Kinki	Kawakae, Fuse-shi	ARGO	.1 Wt	Oper	61	RJGY
KOREA(SOUTH)							
	Triga Mark II	Seoul	SHRR	.25 MWt	Oper	62	RKOR
MEXICO							
	RCN	Salazar		1 MWt	Oper	68	RMES
	SUR-Mexico	Mexico City	SHRR	(small)	Oper	72	RMET
NETHERLANDS							
	ATHENE	Eindhoven	ARGO	10KW max	Inactv	69	RNAC
	High Flux Reactor	Petten	TK-L	45 MWt	Oper	61	RNAJ
	Hoger Onderwits	Delft	POOL	2 MWt	Oper	63	RNAL
	Kirto Drito Crit	Petten	POOL	Max 100W	Inactv	63	RNAN
	Low Flux Reactor	Petten	ARGO	.01 MWt	Oper	60	RNAP
	Subscript Suspension	N V Kema, Arnhem	LHRR	Remarks	Oper	59	RNAS
	BARN	Wageningen	POOL	.1 MWt	Oper	63	RNAZ
	SIEK	Petten	POOL	(small)		69	RNEA

NFP INDEX BY CATEGORY-RESEARCH AND TEST REACTORS

COUNTRY	FACILITY NAME	LOCATION	FAC TYPE	CAPACITY	STATUS	YR	NFP CODE
NORWAY							
	Halden	Halden, Norway	TK-H	20 MWt	Oper	59	RMOL
	JEEP	Kjeller	TK-H	450 KWt	Oper	51	RMOF
	JEEP No. 2	Kjeller	TK-H	2 MWt	Oper	65	RMOH
	Nora Reactor	Kjeller	TK-H	100 Wt	Oper	61	RMOJ
PAKISTAN							
	PARR	Islamabad	POOL	5 MWt	Oper	65	RPAL
	Pak. Atomic Rsch	Islamabad	POOL	5 MWt	Oper	65	RPAE
PHILIPPINES							
	Phil Rsch Reac. 1	Quezon City, Phil.	POOL	1 MWt	Oper	63	RPHG
POLAND							
	ZERA	Swierk	GMRR	100 Wt	Oper	63	RPDB
	EWA Reactor	Swierk	TK-L	2 MWt	Oper	58	RPDL
	Maryla Reactor	Inst. of Nuclear	POOL	10 KWt	Oper	67	RPDG
PORTUGAL							
	JEN	Lisbon	POOL	1 MWt	Oper	58	RPOF
PUERTO RICO							
	PRR	Mayaguez	LHRR	10 Wt	Oper	59	RPUE
ROMANIA							
	WWR-C Reactor	Magurele	TK-L	3 MWt	Oper	59	RPNE
SOUTH AFRICA							
	Pelinduna Zero	Pelinduna, Transvaal	TK-H	(small)	Oper	67	RTAG
	Safari-1	Pelindaba	TK-L	Remarks	Oper	64	RTAJ
SOVIET UNION							
	IRT	Moscow	POOL	2 MWt	Oper	57	RRAM
	IRT-A	Moscow	POOL	2 MWt	Oper		RRAN
	IRT-B	Tbilishi, Georgia	POOL	2 MWt	Oper	59	RRAP
	IRT-C	Riga	POOL	2 MWt	Oper		RRAQ
	IRT-D	Tomsk	POOL	2 MWt	Oper		RRAR
	IRT-E	Sverdlovsk	POOL	2 MWt	Oper		RRAS
	IRT-F	Minsk	POOL	2 MWt	Oper		RRAT
	MR Rsch Reactor	Moscow	POOL	40 MWt	Oper	67	RRBC
	RPT	Moscow	TK-H	20 MWt	Oper	52	RREN
	BR-1 Soviet Breeder	Obninsk	FNRR	50 Wt	Inactv	55	RRBP
	BR-2	Obninsk	FNRR	.2 MWt	Inactv	57	RRBQ

NPP INDEX BY CATEGORY-RESEARCH AND TEST REACTORS

COUNTRY	FACILITY NAME	LOCATION	FAC TYPE	CAPACITY	STATUS	YR	NPP CODE
SOVIET UNION (CONT.)							
	BR-5	Obninsk	FNRR	50 MWe	Oper	59	RRBF
	TR	Moscow	TK-H	2.5 MWt	Oper	57	RRBI
	WWR-C Rsch Reactor	Moscow	TK-L	2 MWt	Oper	54	RRCG
	UZBEK WWR-C Reactor	Tashkent	TK-L	2 MWt	Oper	59	RRCH
	WWR-M Research	Kiev, Ukraine	TK-L	10 MWt	Oper	60	RRCJ
	WWR-M Rsch Reactor	Leningrad	TK-L	10 MWt	Oper	59	RRCK
	WWR-2 Research	Alma-atam Kazakh	TK-L	10 MWt	Oper	63	RRCL
	WWR-C Rsch Reactor	Moscow	TK-L	3 MWt	Oper	57	RRCM
	Romashka	Moscow	FNRR	.040 MWt		64	RRES
	AM-1 Reactor	Obninsk	GMRR	30 MWt	Oper		RRET
	APS	Obninsk	GMRR	3 MWt		54	RREU
	MIR	Dimitrovgrad	TK-L	100 MWt	Oper	66	RREV
	SM-2 Test Reactor	Melekess	TK-L	75 MWt	Oper	61	RREW
	ARBUS	Melekess	OMRR	5 MWt	Oper	63	RREY
SPAIN							
	Arbi Reactor	Bilbao	ARGO	.01 MWt	Oper	62	RSAE
	Argos Reactor	Barcelona	ARGO	.01 MWt	Oper	61	RSAK
	Coral-1 Reactor	Madrid	FNRR	10Wt max	Oper	68	RSAX
	Sp Rsch Reac. Jen-1	Madrid	POOL	6 MWt	Oper	59	RSBK
	JEN-2	Madrid	POOL	.01 MWt	Oper	68	RSBI
SWEDEN							
	FR-O	Studsvik	FNRR	10 Wt	Inactv	64	RWAE
	KRITZ	Studsvik		(small)	Oper	69	RWAS
	Swedish Reac. R-O	Studsvik site	TK-H	< 50 Wt	Inactv	59	RWAY
	R-1 Heavy Water Reac	Studsvik	TK-H	600 KWt	Oper	54	RWAZ
	R-2 Rsch Reactor	Studsvik	TK-L	50 MWt	Oper	60	RWBE
	R2-O	Studsvik	POOL	1 MWt	Oper	64	RWBF
SWITZERLAND							
	AGN-201 P-111	Geneva	SHRR	20 Wt	Oper	58	RZAA
	AGN-211P-100	Basel	SHRR	100 Wt	Oper	59	RZAB
	Crocus	Lausanne	POOL	(small)	Oper	68	RZAG
	Rector Diorit	Wurenlingen	TK-H	20 MWt	Oper	60	RZAJ
	Proteus Reactor	Wurenlingen	GMRR	.001 MWt	Oper	68	RZAW
	Reactor Saphir	Wurenlingen	POOL	1 MWt	Oper	57	RZAZ
TAIWAN							
	THOR	Hsin-Chu	POOL	1 MWt	Oper	64	RCIT
THAILAND							
	Thai Rsch Reactor-1	Bangkok	POOL	1 MWt	Oper	62	RTHE
TURKEY							
	TR-1	Lake K. Cekmece,	POOL	1 MWt	Oper	62	RTYA

NFP INDEX BY CATEGORY-RESEARCH AND TEST REACTORS

COUNTRY	FACILITY NAME	LOCATION	FAC TYPE	CAPACITY	STATUS	YR	NFP CODE
UNITED KINGDOM							
	Reactor Herald	Aldermaston,	POOL	5 MWt	Oper	59	RBUV
	Brit Exp Pile Oper	Harwell, Berkshire	GMRR	65 MWt	Inactv	48	RUAE
	Consort Reactor	Silwood Park, Ascot	POOL	100 KWt	Oper	65	RUBA
	DAPHNE	Harwell, Berkshire	TK-H	100 Wt	Oper	62	RUBB
	Dido Reactor	Harwell, Berkshire	TK-H	22 MWt	Oper	56	RUBC
	DIMPLE	Winfrith Rsch Estab.	TANK	100 Wt	Oper	62	RUBD
	Dounreay Mat Test	Dounreay, Caithness	TK-H	25 MWt	Inactv	58	RUBE
	Dragon	Winfrith, Dorset	GMRR	20 MWt	Inactv	64	RUBH
	GLEEP	Harwell, Berkshire	GMRR	Remarks	Oper	47	RUBG
	Hazel	Harwell, Berkshire	LHRR	(small)	Oper	58	RUBI
	HECTOR	Winfrith, Dorset	GMRR	100 Wt	Oper	63	RUBU
	HERO	Windscale	GMRR	3KWt max	Inactv	62	RUBW
	Reactor Horace	Aldermaston,	POOL	10 Wt	Oper	58	RUCD
	Jason Reactor	Greenwich, London	ARGO	.01 MWt	Oper	62	RUCK
	Juno Reactor	Winfrith, Dorset	TANK	100 Wt	Oper	64	RUCL
	Lido Reactor	Harwell, Berkshire	POOL	100 Kwt	Oper	56	RUCM
	Reactor Merlin	Aldermaston,	POOL	5 MWt	Inactv	60	RUCN
	NERO	Winfrith, Dorset	GMRR	100 Wt	Inactv	60	RUCP
	NESTOR	Winfrith, Dorset	ARGO	.01 MWt	Oper	61	RUCQ
	Pluto Reactor	Harwell, Berkshire	TK-H	22 MWt	Oper	57	RUCV
	UTR-B	London	ARGO	.1 MWt	Oper	64	RUCW
	SRRC-UTR-100	East Kilbride	ARGO	.1 MWt	Oper	63	RUDC
	URR	Risley, Warrington	ARGO	Remarks		64	RUDM
	VERA	Aldermaston, Berks.	FNRR	100 Wt	Oper	61	RUDP
	VIPER	AWRE, Aldermaston	FNRR	Remarks	Oper	67	RUDQ
	ZEBRA	Winfrith, Dorset	FNRR	.001 MWt	Oper	62	RUDV
	ZENITH	Winfrith, Dorset	GMRR	200 Wt	Oper	59	RUDX
	ZEPHYR	Harwell, Berkshire	FNRR	Remarks	Inactv	54	RUDY
	Zero Energy Thermal	Harwell, Berkshire	LHRR	(small)	Oper	52	RUDZ
	ZEUS	Harwell, Berkshire	FNRR	Max 100W	Inactv	55	RUEA
	Atazel	Harwell	LHRR	.1 MWt	Oper	64	RUEN
	Queen Mary College	London	ARGO	10 Wt			RUEP
VENEZUELA							
	RV-1	Alt. De Ripe,	POOL	3 MWt	Oper	60	RVEA
VIETNAM(NORTH)							
	Triga Mark II	Dalat	SHRR	250 KWt	Oper	63	RVNA
YUGOSLAVIA							
	RA	Belgrade	TK-H	6.5 MWt	Oper	59	RYUD
	RB	Vinca	TK-H	Neglig	Oper	58	RYUG
	Triga-II-Ljubljana	Ljubljana	SHRR	.25 MWt	Oper	65	RYUH
ZAIRE							
	Bel Congo Triga Reac	Kinshasa	SHRR	10 KWt	Oper	59	RCGC

NFP INDEX BY CATEGORY-FUEL REPROCESSING FACILITIES

COUNTRY	FACILITY NAME	LOCATION	FAC TYPE	CAPACITY	STATUS	YR	NFP CODE
ARGENTINA	Ezeiza Atomic Centre	Ezeiza	UM	(small)	Oper	77	RARG
BELGIUM	Eurochemic	Mol	UMUO	60 te/yr	Inactv	66	RBEQ
BRAZIL		Sepetiba	UO	5 kg/day	Plan	86	RBRB
CANADA	Chalk River Nucl Lab	Chalk River	UO	(small)	Inactv		RDAD
FRANCE	UP-2	Cap de La Hague	UMUO	800 te	Oper	66	RFAU
	UP-3	Cap de La Hague	UO	1600 te	Plan	87	RFAV
	AT-1	Cap de La Hague	FB	200 kg	Oper	66	RFER
	UP-1	Marcoule	UM	1000 te	Oper	58	RFFJ
	SAP	Marcoule	FB	5 te/yr	Oper		RFGB
GERMANY(WEST)	URG/KEWA		UO	1500 te	Plan	86	RGCC
	JUPITER	Julich	HTGR	2 kg/day	Oper	77	RGCF
	WAK	Karlsruhe	UOFB	40 te/yr	Oper	71	RGEW
	DWK	Gorleben	UO	1400 te	Plan	88	RGFU
INDIA		Kalpakkam	UO	50 te/yr	Plan	82	RHED
	PREFRE	Tarapur	UOUM	100 te	Oper	77	RHIC
		Trombay	UThO	(small)	Oper		RHID
	Plutonium Plant	Trombay	UMUO	60 te/yr	Oper	65	RHIL
ITALY			UO	500 te	Plan	85	RIAA
	Eurex-1	Saluggia	UOUM	10 te/yr	Inactv	69	RIBL
	ITREC Pilot Plant	Rotondella	UThO	15 kg	Oper	75	RIBS
JAPAN	PNC	Tokai-Mura	UO	1500 te	Plan	85	RJAA
	PNC		FB	120 kg/d	Plan	86	RJEE
	PNC	Tokai-Mura	UO	210 te	Oper	78	RJEF

NFP INDEX BY CATEGORY-FUEL REPROCESSING FACILITIES

COUNTRY	FACILITY NAME	LOCATION	FAC TYPE	CAPACITY	STATUS	YR	NFP CODE
NORWAY							
	IFA	Kjeller	UM	(small)	Inactv	61	RMOM
PAKISTAN							
		Chasma	UO	100 te	Plan		RPAF
SOVIET UNION							
	Fregat-SRIAR	Melekess	FB	(small)	Oper		RREZ
SPAIN							
	Juan Vigon Nuclear	Madrid	UM	(small)	Oper		RSBF
SWEDEN							
			UO	800 te	Plan	90	RWAC
TAIWAN							
	Lungt'an Institute	Lungt'an	UM	(Small)	Constr		RCID
UNITED KINGDOM							
	Reprocessing Plant	Windscale	UMUO	2500 te	Oper	64	RUAJ
	THORP	Windscale	UO	1200 te	Plan	87	RUAL
	Dounreay II	Dounreay	FB	10 te/yr	Oper	61	RUBF
YUGOSLAVIA							
	Boris Kidric	Belgrade	UM	(small)	Oper		RYUU

NFP INDEX BY CATEGORY-SEPARATE FUEL STORAGE FACILITIES

COUNTRY	FACILITY NAME	LOCATION	FAC TYPE	CAPACITY	STATUS	YR	NFP CODE
CANADA							
	Whiteshell	Whiteshell	SURF		Oper		RDJJ
	Chalk River Nuclear	Chalk River	HOLE		Oper		RDJL
	Pickering Nucl Power	Pickering	POOL		Oper		RDJM
	Bruce Nuclear Power	Tiverton	POOL		Oper		RDJN
GERMANY(WEST)							
		Ahaus	POOL	1500 te	Plan	83	RGGB
		Gorleben	POOL	4000 te	Plan		RGGC
SWEDEN							
	Stripa Mine	Studsvik	ROCK		Oper	77	RWBW
	Spent Fuel Storage		ROCK	1500 te	Plan	83	RWBZ
UNITED KINGDOM							
		Windscale	POOL		Oper		RUEY

NFP INDEX BY CATEGORY-WASTE DISPOSAL FACILITIES

COUNTRY	FACILITY NAME	LOCATION	FAC TYPE	CAPACITY	STATUS	YR	NFP CODE
BELGIUM							
	Eurobitum	Mol	PREP	650 m3	Oper	77	RBGF
	PAMELA II	Mol	PREP	40 l/hr	Plan	81	RBGG
		Mol	DISP	10000 m3	Plan	79	RBGH
		Mol	PREP	80 l/hr	Oper	64	RBGJ
	EUROSTORAGE	Mol	DISP		Oper		RBGK
		Mol	PREP	150 Kg/h	Oper	75	RBGL
		Atlantic Ocean	DISP	2000 te	Oper		RBGM
	Eurowatt	Mol	PREP	1000 l/d	Constr		RBGN
		Mol	PREP	200 kg/h	Inactv	60	RBGP
		Mol	PREP	10 Kg/hr	Oper	70	RBGR
CANADA							
		White Lake	ROCK		Oper		RDJK
	Chalk R Nucl Lab	Chalk River	PREP	200 kg/h	Inactv	60	RDKW
	RWVRF	Tiverton	PREP		Oper	77	RDKX
	Chalk R Nucl Lab	Chalk River	PREP		Oper		RDKY
CZECHOSLOVAKIA							
	NRI-Rez	Prague	PREP	3.6 m3/h	Oper	61	RCKG
FRANCE							
	Saclay Nucl Res Cen	Seine-et-Oise	PREP		Oper		RFGE
		Cap de La Hague	DISP	1.3 Mbbl	Oper		RFGF
	VULCAIN	Marcoule	PREP		Oper		RFGG
	PIVER	Marcoule	PREP		Inactv	69	RFGH
	GULLIVER	Fontenay-aux-Roses	PREP		Inactv	63	RFGJ
	AVM	Marcoule	PREP	30 l/hr	Oper	78	RFGK
	AVH	Cap de La Hague	PREP	100 l/hr	Plan	82	RFGL
	Center of Nucl Study	Grenoble	PREP		Constr		RFGM
	Center of Nucl Study	Grenoble	PREP	30 kg/hr	Oper	61	RFGN
	Cadarache Nuclear	St. Paul-les-Durance	PREP		Oper	77	RFGP
	Fontenay-aux-Roses	Fontenay-aux-Roses	PREP	50 kg/hr	Oper	67	RFGY
		Strasbourg	PREP	15 kg/hr	Oper	70	RFHB
GERMANY(EAST)							
		Bartensleben	DISP		Plan		REGT
GERMANY(WEST)							
	Asse Salt Mine	Remlingen	DISP	4 Mm3	Oper	67	RGGD
	KfK-1	Karlsruhe	PREP	2.5 te/d	Oper	77	RGGH
	KfK-2	Karlsruhe	PREP	15 kg	Oper	75	RGGJ
	FIPS-II	Julich	PREP	1 kg/hr	Oper	77	RGGK
	FIPS-I	Julich	PREP	1 kg/hr	Inactv	72	RGGL
	VERA	Karlsruhe	PREP		Inactv	70	RGGM
		Karlsruhe	PREP	30 l/hr	Oper	76	RGGN

NFP INDEX BY CATEGORY-WASTE DISPOSAL FACILITIES

COUNTRY	FACILITY NAME	LOCATION	FAC TYPE	CAPACITY	STATUS	YR	NFP CODE
INDIA							
	Waste Immobilization	Tarapur	PREP	25 l/hr	Constr	79	RHEF
	BARC	Trombay	PREP	45 kg/hr	Oper	66	RHEM
ITALY							
	ESTER	Rome	PREP		Oper	78	RIDK
JAPAN							
	JAERI-Oarai Res Est.	Oarai	PREP	30 kg/hr	Oper	73	RJGJ
	JAERI	Tokai-Mura	PREP	50 kg/hr	Oper	66	RJGK
POLAND							
	Rad Waste Storage	Rozan	DISP	2870 m3	Oper		RPDK
SOVIET UNION							
	Moscow Plant	Moscow	PREP		Oper	65	RRFA
	NIIAR	Novikovka	DISP		Oper	66	RRPB
SPAIN							
		Sierra de Albarracin	DISP		Oper		RSDB
SWEDEN							
	AB Atomenergi	Studsvik	PREP		Oper		RWBA
		Vasteras	PREP		Oper		RWCA
SWITZERLAND							
	EIR	Wurenlingen	DISP		R&D		RZBC
UNITED KINGDOM							
	Windscale Works	Windscale	PREP		Oper	73	RUEC
		Windscale	PREP		Plan	86	RUER
		Windscale	PREP		Constr	80	RUES
	Glass Examination	Windscale	PREP		Constr	78	RUET
		Dounreay	PREP	30 l/hr	Plan		RUEU
		Harwell	PREP		Oper	62	RUEV
	Bradwell Power Stat.	Bradwell	PREP		Oper	67	RUEW
	Berkeley Nucl Lab	Berkeley	PREP		Oper	65	RUEX
	Hunterston A	Hunterston	PREP		Oper	67	RUFB

IN 1

ACTIVITY--INDIA RESEARCH AND TEST REACTOR NUCLEAR FACILITY PROFILE
CATEGORY-RESEARCH AND TEST REACTORS DMK 30 SEP 78

FACILITY NAME	LOCATION	FAC TYPE	CAPACITY	STATUS	YR	FAC CODE
Kalpakkum PFR	Kalpakkam	FNRR	.03 MWt	Plan		RHEB

LATITUDE- DEG MIN LONGITUDE- DEG MIN

TECHNOLOGY SOURCE- OWNER/OPERATOR-

SUPPLY SOURCE- SAFEGUARDS-

PRODUCT/USE-

FUEL STORAGE CAPACITY-

PROCESS-

SCHEDULE-

REMARKS-PFR=Pulsed Fast Reactor

REFERENCES-
1-Intl Data Collection and Analysis, Vol III, NAC, June 1978

IN 2

ACTIVITY--INDIA SPENT FUEL PROCESSING
CATEGORY-FUEL REPROCESSING FACILITIES

NUCLEAR FACILITY PROFILE
SRM 31 JUL 78

FACILITY NAME	LOCATION	FAC TYPE	CAPACITY	STATUS	YR	FAC CODE
	Kalpakkam (Cheyur)	UO	50 te/yr	Plan	82	RHED

LATITUDE- 12 DEG 22 MIN N
LONGITUDE- 80 DEG 82 MIN E

TECHNOLOGY SOURCE-IAEC (Indian Atomic Energy Commission)
SUPPLY SOURCE-Madras and Norora power reactors
PRODUCT/USE-

OWNER/OPERATOR-BARC (Bhabha Atomic Research Centre)
SAFEGUARDS-

FUEL STORAGE CAPACITY-

PROCESS-U-oxide fuel reprocessing

SCHEDULE-Planned for operation at 50 te/yr in 1982; increasing to 125 te/yr after 1982
REMARKS-

REFERENCES-
1-Nuclear Proliferation Factbook; Congressional Research Service, Library of Congress; 9/23/77
2-NAC; Intl Data Collection and Analysis; Task 1, Vol III; 6/78

IN 3

ACTIVITY--INDIA WASTE MANAGEMENT
CATEGORY-WASTE DISPOSAL FACILITIES

NUCLEAR FACILITY PROFILE
SRM 28 AUG 78

FACILITY NAME	LOCATION	FAC TYPE	CAPACITY	STATUS	YR	FAC CODE
Waste Immobilization Plant	Tarapur	PREP	25 l/hr	Constr	79	RHEF

LATITUDE- 25 DEG 05 MIN N
LONGITUDE- 86 DEG 39 MIN E

TECHNOLOGY SOURCE-India, BARC-Trombay (Bhaba Atomic Res Cen)
OWNER/OPERATOR-Atomic Energy Comm/Tarapur Atomic Power Station
SUPPLY SOURCE-Tarapur Reprocessing Plant
SAFEGUARDS-
PRODUCT/USE-Vitrified high-level waste in stainless steel storage canisters (about 125 kg glass/canister)/disposal
FUEL STORAGE CAPACITY-Canisters will be stored underground in concrete vaults starting in 1979 or 1980 until a disposal site is found
PROCESS-Pot vitrification of high-level wastes using calcination based on atomization suspension technique
SCHEDULE-Prototype plant currently under construction for hot operation in 1979 or 1980
REMARKS-

REFERENCES-

1-Harmon, K.M.; Intl Source Book: A Compendium of Worldwide Programs in Nuclear Energy Supply and Radioactive Waste Management Research and Development; Vol III; 1/78

IN 4

ACTIVITY--INDIA RESOURCE RECOVERY NUCLEAR FACILITY PROFILE
CATEGORY-MINES (URANIUM & THORIUM) PSM 18 SEP 78

FACILITY NAME	LOCATION	FAC TYPE	CAPACITY	STATUS	YR	FAC CODE
	Bhatin Singhbhum	URAN		Constr		RHEH

LATITUDE- 22 DEG MIN N LONGITUDE- 86 DEG MIN E

TECHNOLOGY SOURCE- OWNER/OPERATOR-UCIL

SUPPLY SOURCE- SAFEGUARDS-

PRODUCT/USE-Uranium

FUEL STORAGE CAPACITY-

PROCESS-Underground mining

SCHEDULE-

REMARKS-UCIL- Uranium Corporation of India, Ltd.

REFERENCES-
1-International Data Collection and Analysis, Task 1, Vol III, 6/78, India, p. 14

ACTIVITY--INDIA RESOURCE RECOVERY
CATEGORY-MINES (URANIUM & THORIUM)

NUCLEAR FACILITY PROFILE
PSM 25 SEP 78

FACILITY NAME	LOCATION	FAC TYPE	CAPACITY	STATUS	YR	FAC CODE
	Quilor Kerala	THOR	60 te/y	Oper		RHEJ

LATITUDE- 08 DEG 53 MIN N

LONGITUDE- 76 DEG 38 MIN E

TECHNOLOGY SOURCE-

OWNER/OPERATOR-IRE- India Rare Earths Ltd.

SUPPLY SOURCE-

SAFEGUARDS-

PRODUCT/USE-Thorium

FUEL STORAGE CAPACITY-

PROCESS-

SCHEDULE-

REMARKS-Plant is rated in monazite production of which 8% to 10% is thorium dioxide. Monazite production was 600 tonnes in 1973

REFERENCES-

1-Minerals Yearbook, US Bureau of Mines, 1973, Vol I, p. 1208

ACTIVITY--INDIA RESOURCE RECOVERY
CATEGORY-MINES (URANIUM & THORIUM)

NUCLEAR FACILITY PROFILE
PSM 25 SEP 78

FACILITY NAME	LOCATION	FAC TYPE	CAPACITY	STATUS	YR	FAC CODE
	Manavalakurichi Kenniyakumari	THOR	450 te/y	Oper		RHEK

LATITUDE- 08 DEG MIN N LONGITUDE- 77 DEG 30 MIN E

TECHNOLOGY SOURCE-

OWNER/OPERATOR-IRE- India Rare Earths Ltd.

SUPPLY SOURCE-

SAFEGUARDS-

PRODUCT/USE-Thorium

FUEL STORAGE CAPACITY-

PROCESS-

SCHEDULE-

REMARKS-Thorium dioxide accounts for 8-10% of the 4500 tonnes of monazite processed by this plant in 1973

REFERENCES-

1-Minerals Yearbook, US Bureau of Mines, 1973, Vol I, p. 1208

ACTIVITY--INDIA RESEARCH & TEST REACTOR NUCLEAR FACILITY PROFILE
CATEGORY-RESEARCH AND TEST REACTORS DMK 05 SEP 78

FACILITY NAME	LOCATION	FAC TYPE	CAPACITY	STATUS	YR	FAC CODE
FBTR	Kalpakkam	FNRR	50 MWt	Constr		RHEL

LATITUDE- DEG MIN LONGITUDE- DEG MIN

TECHNOLOGY SOURCE- OWNER/OPERATOR-

SUPPLY SOURCE- SAFEGUARDS-

PRODUCT/USE-

FUEL STORAGE CAPACITY-

PROCESS-

SCHEDULE-

REMARKS-

REFERENCES-
1-Intl Data Collection and Analysis, Vol III, NAC, June 1978

ACTIVITY--INDIA WASTE MANAGEMENT NUCLEAR FACILITY PROFILE
CATEGORY-WASTE DISPOSAL FACILITIES SRM 18 APR 79

FACILITY NAME	LOCATION	FAC TYPE	CAPACITY	STATUS	YR	FAC CODE
BARC	Trombay	PREP	45 kg/hr	Oper	66	RHEM

LATITUDE- 19 DEG 01 MIN N LONGITUDE- 72 DEG 58 MIN E

TECHNOLOGY SOURCE- OWNER/OPERATOR-BARC (Bhabha Atomic Research Center)

SUPPLY SOURCE- SAFEGUARDS-

PRODUCT/USE-Treated waste/disposal

FUEL STORAGE CAPACITY-

PROCESS-Incineration of low-level wastes and bitumenization of other non-high-level wastes
SCHEDULE-Incineration at 45 kg/hr since 1966; bitumenization currently in operation
REMARKS-
Incinerator process- dual chamber; 500-1000 degrees C; kerosene fired
Bitumenization process- thin-film evaporator process

REFERENCES-
1-ERDA; Alternatives for Managing Wastes from Reactors and Post-Fission Operations of the LWR Fuel Cycle; Vol II; 5/76
2-Harmon, K.M.; Intl Source Book: A Compendium of Worldwide Programs in Nuclear Energy Supply and Radioactive Waste Management Research and Development; Vol III; 1/78

ACTIVITY--INDIA RESOURCE RECOVERY NUCLEAR FACILITY PROFILE
CATEGORY-CONVERSION PLANTS SRM 02 AUG 78

FACILITY NAME	LOCATION	FAC TYPE	CAPACITY	STATUS	YR	FAC CODE
Nucl Fuel Complex	Hyderabad	UO2	124 te (te/yr)	Oper	71	RHIA

LATITUDE- 17 DEG 22 MIN N LONGITUDE- 78 DEG 26 MIN E

TECHNOLOGY SOURCE- OWNER/OPERATOR-Indian Government

SUPPLY SOURCE-Enriched UF6 from U.S. SAFEGUARDS-

PRODUCT/USE-UO2/fabricated into Candu fuel for Indian reactores

FUEL STORAGE CAPACITY-

PROCESS-Conversion of U3O8 to UO2, capacity- 100 te/yr; Conversion of enriched UF6 to UO2, capacity- 24 te/yr

SCHEDULE-Currently in operation since 1971

REMARKS-MARKET STRATEGY- Capacity for domestic fuel production only. No plans to export product

REFERENCES-
1-IAEA; The Annual Report for 1976; 7/77
2-NAC; Intl Data Collection and Analysis; Task 1, Vol III; 6/78

ACTIVITY--INDIA SPENT FUEL PROCESSING
CATEGORY-FUEL REPROCESSING FACILITIES

NUCLEAR FACILITY PROFILE
SRM 31 JUL 78

FACILITY NAME	LOCATION	FAC TYPE	CAPACITY UOUM	STATUS	YR	FAC CODE
PREFRE	Tarapur		100 te (te/yr)	Oper	77	RHIC

LATITUDE- 25 DEG 05 MIN N
LONGITUDE- 86 DEG 39 MIN E

TECHNOLOGY SOURCE-IAEC (Indian Atomic Energy Commission)
SUPPLY SOURCE-Tarapur, Rajasthan Atomic Power Stations
PRODUCT/USE-

OWNER/OPERATOR-BARC (Bhabha Atomic Research Centre)
SAFEGUARDS-Safeguarded only when reprocessing U.S.-supplied fuel

FUEL STORAGE CAPACITY-

PROCESS-U-oxide and U-metal fuel reprocessing using Purex process

SCHEDULE-Undergoing cold testing- since 1977

REMARKS-PREFRE (Power Reactor Fuel Reprocessing Plant)
Concentrated high-level liquid waste is stored underground in cooled, stainless steel tanks of capacity 200 cubic meters

REFERENCES-

1-Chayes, Abram and W. Bennett Lewis; International Arrangements for Nuclear Fuel Reprocessing; 1977
2-Harmon, K. M., Intl Source Book: A Compendium of Worldwide Programs in Nuclear Energy Supply and Radioactive Waste Management Research and Development; Vol III, 1/78
3-NAC; Intl Data Collection and Analysis; Task 1, Vol III; 6/78

IN 11

ACTIVITY--INDIA SPENT FUEL PROCESSING
CATEGORY-FUEL REPROCESSING FACILITIES

NUCLEAR FACILITY PROFILE
SRM 31 JUL 78

FACILITY NAME	LOCATION	FAC TYPE	CAPACITY	STATUS	YR	FAC CODE
	Trombay	UThO	(small)	Oper		RHID

LATITUDE- 19 DEG 01 MIN N

LONGITUDE- 72 DEG 58 MIN E

TECHNOLOGY SOURCE-IAEC (Indian Atomic Energy Commission)

OWNER/OPERATOR-BARC (Bhabha Atomic Research Center)

SUPPLY SOURCE-

SAFEGUARDS-

PRODUCT/USE-

FUEL STORAGE CAPACITY-

PROCESS-U-Th mixed oxide fuel reprocessing

SCHEDULE-Lab scale facility in operation

REMARKS-

REFERENCES-
1-Chayes, Abram and W. Bennett Lewis; International Arrangements for Nuclear Fuel Reprocessing; 1977

ACTIVITY--INDIA RESEARCH AND TEST REACTOR NUCLEAR FACILITY PROFILE
CATEGORY-RESEARCH AND TEST REACTORS DMK 30 SEP 78

FACILITY NAME	LOCATION	FAC TYPE	CAPACITY	STATUS	YR	FAC CODE
Reactor Apsara	Trombay	POOL	1 MWt	Oper	56	RHIF

LATITUDE- 19 DEG 01 MIN N LONGITUDE- 72 DEG 58 MIN E

TECHNOLOGY SOURCE-Atomic Energy Establishment, Trombay
SUPPLY SOURCE-

OWNER/OPERATOR-Atomic Energy Establishment, Trombay
SAFEGUARDS-

PRODUCT/USE-Experimental neutron physics, isotope production, biological irradiation, and training
FUEL STORAGE CAPACITY-Irradiated fuel storage pits inside of pool with lead covers; each pit can store up to 16 fuel assemblies
PROCESS-Pool type, highly (46%) enriched uranium, light water moderated, cooled and reflected
SCHEDULE-Start of construction: July 1955
Reactor critical: Aug 1956
REMARKS-Fuel loading and unloading done manually, under water with the aid of long hooks

REFERENCES-
1-Directory of Nuclear Reactors, Vol III, IAEA, p. 7

ACTIVITY--INDIA RESEARCH AND TEST REACTOR NUCLEAR FACILITY PROFILE
CATEGORY-RESEARCH AND TEST REACTORS DMK 30 SEP 78

FACILITY NAME	LOCATION	FAC TYPE	CAPACITY	STATUS	YR	FAC CODE
CIR Canada-India React	Trombay	TK-H	40 MWt	Oper	60	RHIG

LATITUDE- 19 DEG 01 MIN N LONGITUDE- 72 DEG 58 MIN E

TECHNOLOGY SOURCE-Atomic Energy of Canada Ltd (See remarks)
SUPPLY SOURCE-

OWNER/OPERATOR-Atomic Energy Establishment, Trombay
SAFEGUARDS-

PRODUCT/USE-Neutron physics, reactor technology, production of isotopes, testing fuel elements and materials, education
FUEL STORAGE CAPACITY-Irradiated fuel: storage block in the reactor hall
PROCESS-Tank-type, natural uranium, heavy water moderated, light water cooled, graphite reflected, NRX-type
SCHEDULE-In operation; start of construction: Dec. 1955; reactor critical: July 1960
REMARKS-Tech source: Shawinegan Engineering Co. Ltd., Montreal, Canada
Neutron flux: Thermal av 2.4 x (10 E 13)n/(cm E 2)sec; Thermal max 6.7 x (10 E 13)n/(cm E 2)sec; Fast av. 1.6 x (10 E 13)n/(cm E 2)sec; Fast max 4.4 x (10 E 130n/(cm E 2)sec
Critical mass: 10,500 Kg nat. uranium fixed charge, heavy water level variable, Critical height: 181 cm Av. specific power in fuel: 3.8 KW/Kg

REFERENCES-
1-Directory of Nuclear Reactors, Vol III, IAEA, 1960, p. 281
2-Intl Data Collection and Analysis, Vol III, NAC, June 1978

IN 14

ACTIVITY--INDIA SPENT FUEL PROCESSING
CATEGORY-FUEL REPROCESSING FACILITIES

NUCLEAR FACILITY PROFILE
SRM 31 JUL 78

FACILITY NAME	LOCATION	FAC TYPE	CAPACITY	STATUS	YR	FAC CODE
Plutonium Plant	Trombay	UMUO	60 te/yr	Oper	65	RHIL

LATITUDE- 19 DEG 01 MIN N

LONGITUDE- 72 DEG 58 MIN E

TECHNOLOGY SOURCE-IAEC (Indian Atomic Energy Commission)
SUPPLY SOURCE-Indian research reactors
PRODUCT/USE-

OWNER/OPERATOR-IAEC/BARC (Bhabha Atomic Research Centre)
SAFEGUARDS-No safeguards

FUEL STORAGE CAPACITY-

PROCESS-U-metals and U-oxide fuel reprocessing using Purex process

SCHEDULE-Pilot plant in operation since 1965

REMARKS-Originally designed exclusively for U-metal fuel from Indian research reactors but has been refurbished for reprocessing of U-oxide fuel also.

REFERENCES-
1-Chayes, Abram and W. Bennett Lewis; International Arrangements for Nuclear Fuel Reprocessing; 1977
2-Nuclear Proliferation Factbook; Congressional Research Service, Library of Congress; 9/23/77
3-Harmon, K. M.; Intl Source Book: A Compendium of Worldwide Programs in Nucl Energy Supply and Radioactive Waste Management Research and Development; Vol III; 1/78
4-NAC; Intl Data Collection and Analysis; Task 1, Vol III; 6/78

ACTIVITY--INDIA RESEARCH AND TEST REACTOR NUCLEAR FACILITY PROFILE
CATEGORY-RESEARCH AND TEST REACTORS DMK 30 SEP 78

FACILITY NAME	LOCATION	FAC TYPE	CAPACITY	STATUS	FAC YR	FAC CODE
Zerlina	Trombay	TANK	MAX100Wt	Oper	61	RHIW

See remarks

LATITUDE- 19 DEG 01 MIN N LONGITUDE- 72 DEG 58 MIN E

TECHNOLOGY SOURCE-Design & bldr: Atomic Energy Establishment
OWNER/OPERATOR-Atomic Energy Estab, Govt. of India
SUPPLY SOURCE-
SAFEGUARDS-

PRODUCT/USE-Lattice investigation, critical experiments

FUEL STORAGE CAPACITY-

PROCESS-Variable fuel, heavy water or hydrocarbons moderated, uncooled
SCHEDULE-Critical: mid 1960

REMARKS-Zerlina=Zero Energy Reactor for lattice investigation & new assemblies. Reactor may be used for zero energy lattice studies and temperature coefficient measurements.

REFERENCES-
1-Directory of Nuclear Reactors, Vol III, IAEA, 1960, p. 293
2-Intl Data Collection and Analysis, Vol III, NAC, June 1978

IN 16

ACTIVITY--INDIA RESOURCE RECOVERY NUCLEAR FACILITY PROFILE
CATEGORY-MINES (URANIUM & THORIUM) PSM 18 SEP 79

FACILITY NAME	LOCATION	FAC TYPE	CAPACITY	STATUS	YR	FAC CODE
	Narwapahar Shinghbhum	URAN		Constr		RHIY

LATITUDE- 22 DEG 30 MIN N LONGITUDE- 86 DEG MIN W

TECHNOLOGY SOURCE- OWNER/OPERATOR-UCIL

SUPPLY SOURCE- SAFEGUARDS-

PRODUCT/USE-Uranium

FUEL STORAGE CAPACITY-

PROCESS-Underground mining

SCHEDULE-

REMARKS-UCIL-Uranium Corporation of India, Ltd.

REFERENCES-
1-International Data Collection and Analysis, Task 1, Vol III, 6/78, India, p. 14

IN 17

ACTIVITY--INDIA RESOURCE RECOVERY NUCLEAR FACILITY PROFILE
CATEGORY-MILLS PSM 18 SEP 78

FACILITY NAME	LOCATION	FAC TYPE	CAPACITY	STATUS	YR	FAC CODE
	Narwapahar Shinghbhum	URAN		Constr		RHIZ

LATITUDE- 22 DEG 30 MIN N LONGITUDE- 86 DEG MIN E

TECHNOLOGY SOURCE- OWNER/OPERATOR-UCIL

SUPPLY SOURCE- SAFEGUARDS-

PRODUCT/USE-Uranium

FUEL STORAGE CAPACITY-

PROCESS-

SCHEDULE-

REMARKS-UCIL-Uranium Corporation of India, Ltd.

REFERENCES-
1-International Data Collection and Analysis, Task 1, Vol III, 6/78, India, p. 14

ACTIVITY--INDIA RESOURCE RECOVERY
CATEGORY-MINES (URANIUM & THORIUM)

NUCLEAR FACILITY PROFILE
PSM 15 AUG 78

FACILITY NAME	LOCATION	FAC TYPE	CAPACITY	STATUS	YR	FAC CODE
	Jaduguda Singhbhum	URAN		Oper	56	RHNA

LATITUDE- 22 DEG 30 MIN N

LONGITUDE- 85 DEG MIN E

TECHNOLOGY SOURCE-

OWNER/OPERATOR-Uranium Corporation of India, Ltd.

SUPPLY SOURCE-

SAFEGUARDS-

PRODUCT/USE-Uranium

FUEL STORAGE CAPACITY-

PROCESS-Underground mining

SCHEDULE-

REMARKS-

REFERENCES-
1-Mining Magazine, March 1978, p. 236
2-Uranium Resources, Production and Demand, IAEA, Dec 1977, p. 75
3-Foreign Uranium Supply, EPRI EA-725, p. 5-18
4-International Data Collection and Analysis, NAC, 6/78, Task 1, Vol III, India

IN 19

ACTIVITY--INDIA RESOURCE RECOVERY
CATEGORY-MILLS

NUCLEAR FACILITY PROFILE
PSM 18 SEP 78

FACILITY NAME	LOCATION	FAC TYPE	CAPACITY	STATUS	YR	FAC CODE
	Jaduguda Singhbhum	URAN		Oper	56	RHNB

LATITUDE- 22 DEG 30 MIN N

LONGITUDE- 85 DEG MIN E

TECHNOLOGY SOURCE-

OWNER/OPERATOR-Uranium Corporation of India, Ltd.

SUPPLY SOURCE-

SAFEGUARDS-

PRODUCT/USE-Uranium

FUEL STORAGE CAPACITY-

PROCESS-

SCHEDULE-

REMARKS-

REFERENCES-
1-Mining Magazine, March 1978, p. 236
2-Uranium Resources, Production and Demand, IAEA, Dec 1977, p. 75
3-Foreign Uranium Supply, EPRI EA-725, p. 5-18
4-International Data Collection and Analysis, NAC, 6/78, Task 1, Vol III, India

IN 20

ACTIVITY--INDIA FUEL FABRICATION
CATEGORY-HEAVY WATER PRODUCTION

NUCLEAR FACILITY PROFILE
PSM 18 SEP 78

FACILITY NAME	LOCATION	FAC TYPE	CAPACITY	STATUS	YR	FAC CODE
Nangal Heavy Water Plant	Nangal	D20	14 te/y	Oper	62	RHNK

LATITUDE- 31 DEG 19 MIN N

LONGITUDE- 76 DEG 26 MIN E

TECHNOLOGY SOURCE-

OWNER/OPERATOR-Indian Government
Linde

SUPPLY SOURCE-

SAFEGUARDS-

PRODUCT/USE-Heavy water (99.7%+ pure)

FUEL STORAGE CAPACITY-

PROCESS-Water electrolysis

SCHEDULE-

REMARKS-

REFERENCES-
1-International Data Collection and Analysis, NAC, Task 1, Vol III; 6/78, India pp. 13-18
2-Nucleonics Week, 30 June 1977, p. 11

IN 21

ACTIVITY--INDIA FUEL FABRICATION
CATEGORY-HEAVY WATER PRODUCTION

NUCLEAR FACILITY PROFILE
PSM 18 SEP 78

FACILITY NAME	LOCATION	FAC TYPE	CAPACITY	STATUS	YR	FAC CODE
Baroda Plant	Baroda Gujarat	D20	67.2te/y	Oper	76	RHNL

LATITUDE- 22 DEG 19 MIN N LONGITUDE- 73 DEG 14 MIN E

TECHNOLOGY SOURCE-

OWNER/OPERATOR-Indian Government
GELPRA

SUPPLY SOURCE-

SAFEGUARDS-

PRODUCT/USE-Heavy water (99.7%+ pure)

FUEL STORAGE CAPACITY-

PROCESS-Ammonia hydrogen exchange

SCHEDULE-Initial production run yielded low grade D2O. Recent explosion will delay recommissioning until 1979

REMARKS-GELPRA- Groupement Eau Lourde Procede Ammoniac

REFERENCES-
1-International Data Collection and Analysis, NAC, Task 1, Vol III; 6/78, India pp. 13-18
2-Nucleonics Week, 30 June 1977, p. 11

IN 22

ACTIVITY--INDIA FUEL FABRICATION
CATEGORY-HEAVY WATER PRODUCTION

NUCLEAR FACILITY PROFILE
PSM 18 SEP 78

FACILITY NAME	LOCATION	FAC TYPE	CAPACITY	STATUS	YR	FAC CODE
Kota Plant	Kota Rajasthan	D20	100 te/y	Constr	80	RHNM

LATITUDE- 25 DEG 11 MIN N

LONGITUDE- 75 DEG 58 MIN E

TECHNOLOGY SOURCE-

OWNER/OPERATOR-Indian Government

SUPPLY SOURCE-

SAFEGUARDS-

PRODUCT/USE-Heavy water (99.7%+ pure)

FUEL STORAGE CAPACITY-

PROCESS-Girdler Sulfide

SCHEDULE-Difficulties in aquiring export licenses from Germany for compressors delayed construction two years

REMARKS-

REFERENCES-
1-International Data Collection and Analysis, NAC, Task 1, Vol III, 6/78, India, pp. 13-18
2-Nucleonics Week, 30 June 1977, p. 11

ACTIVITY--INDIA FUEL FABRICATION
CATEGORY-HEAVY WATER PRODUCTION

NUCLEAR FACILITY PROFILE
PSM 18 SEP 78

FACILITY NAME	LOCATION	FAC TYPE	CAPACITY	STATUS	YR	FAC CODE
Tuticorin Plant	Tuticorin Madras	D20	71.3te/y	Constr	78	RHNN

LATITUDE- 08 DEG 48 MIN N

LONGITUDE- 78 DEG 10 MIN E

TECHNOLOGY SOURCE-

OWNER/OPERATOR-Indian Government
GELPRA

SUPPLY SOURCE-

SAFEGUARDS-

PRODUCT/USE-Heavy water (99.7%+ pure)

FUEL STORAGE CAPACITY-

PROCESS-Ammonia-Hydrogen exchange

SCHEDULE-Start-up expected in late 1978

REMARKS-GELPRA-Groupement Eau Lourde Procede Ammoniac

REFERENCES-
1-International Data Collection and Analysis, NAC, Task 1, Vol III; 6/78, India, pp. 13-18
2-Nucleonics Week, 30 June 1977, p. 11

IN 24

ACTIVITY--INDIA FUEL FABRICATION
CATEGORY-HEAVY WATER PRODUCTION

NUCLEAR FACILITY PROFILE
PSM 18 SEP 78

FACILITY NAME	LOCATION	FAC TYPE	CAPACITY	STATUS	YR	FAC CODE
Talcher Plant	Talcher Orissa	D20	62.7te/y	Constr	80	RHNP

LATITUDE- 21 DEG 00 MIN N

LONGITUDE- 85 DEG 18 MIN E

TECHNOLOGY SOURCE-

OWNER/OPERATOR-Indian Government

SUPPLY SOURCE-

SAFEGUARDS-

PRODUCT/USE-Heavy water (99.7%+ pure)

FUEL STORAGE CAPACITY-

PROCESS-Ammonia-Hydrogen exchange

SCHEDULE-Three year delay resulted from equipment damaged in transit

REMARKS-

REFERENCES-
1-International Data Collection and Analysis, NAC, Task 1, Vol III; 6/78, India, pp. 13-18
2-Nucleonics Week, 30 June 1977, p. 11

ACTIVITY--INDIA FUEL FABRICATION
CATEGORY-FUEL FABRICATION PLANTS

NUCLEAR FACILITY PROFILE
SRM 10 AUG 78

FACILITY NAME	LOCATION	FAC TYPE	CAPACITY	STATUS	YR	FAC CODE
Nuclear Fuels Complex	Hyderabad	UO	124 te (te/yr)	Oper	71	RHNQ

LATITUDE- 17 DEG 22 MIN N
LONGITUDE- 78 DEG 26 MIN E

TECHNOLOGY SOURCE-AECL- Canada, General Electric- US
OWNER/OPERATOR-Indian Government
SUPPLY SOURCE-
SAFEGUARDS-

PRODUCT/USE-100 te/yr Candu-type fuel, 24 te/yr Boiling Water Reactor fuel
FUEL STORAGE CAPACITY-

PROCESS-Complete new fuel processing with exception of enrichment step is done at NFC
SCHEDULE-Currently in operation since 1971

REMARKS-Expansion of plant will take place as demand requires

REFERENCES-
1-NAC; Intl Data Collection and Analysis; Task 1, Vol III; 6/78

ACTIVITY--INDIA RESEARCH AND TEST REACTOR NUCLEAR FACILITY PROFILE
CATEGORY-RESEARCH AND TEST REACTORS DMK 30 SEP 78

FACILITY NAME	LOCATION	FAC TYPE	CAPACITY	STATUS	YR	FAC CODE
Purnima	Trombay			Oper	72	RHNZ

LATITUDE- 19 DEG 01 MIN N LONGITUDE- 72 DEG 58 MIN E

TECHNOLOGY SOURCE- OWNER/OPERATOR-

SUPPLY SOURCE- SAFEGUARDS-

PRODUCT/USE-

FUEL STORAGE CAPACITY-

PROCESS-

SCHEDULE-In operation

REMARKS-

REFERENCES-
1-Intl Data Collection and Analysis, Vol III, NAC, June 1978

ID 1

ACTIVITY--INDONESIA RESEARCH & TEST REACTOR NUCLEAR FACILITY PROFILE
CATEGORY-RESEARCH AND TEST REACTORS DMK 30 SEP 78

FACILITY NAME	LOCATION	FAC TYPE	CAPACITY	STATUS	YR	FAC CODE
Triga-Mark II	Bandung	SHRR	.25 MWt	Oper	65	RHOE

LATITUDE- DEG MIN LONGITUDE- DEG MIN

TECHNOLOGY SOURCE-Bldg: Universal Construction Bureau (remarks)
SUPPLY SOURCE-

OWNER/OPERATOR-Owner: Indonesian Natl Atomic Energy Agency
SAFEGUARDS-IAEA (non-NPT)

PRODUCT/USE-Neutron physics, isotope production, educational purposes

FUEL STORAGE CAPACITY-

PROCESS-Solid homogeneous, enriched (20%) uranium, zirconium-hydride and light water moderated, light water cooled, graphite reflected
SCHEDULE-In operation; start of construction: April 1961; reactor critical: Oct. 1964; full power operation: Jan. 1965
REMARKS-Operated by Bandung Reactor Centre of INAEA. Designed by Gen. Atomic Div. of Gen. Dynamics Corp.
Reference 2: Capacity 1 MWt
Neutron flux: Thermal av 4 x (10 E 12)n/(cm E 2)sec; Thermal max 7.2 x (10 E 12)n/(cm E 2)sec; Fast av 9 x (10 E 13)n/(cm E 2)sec; Fast max 1.2 x (10 E 13)n/(cm E 2)sec
Critical mass: 2.106 Kg U-235
Core loading: 2.33 Kg U-235
Specific power: 108 KW/Kg
Power density: 2.2 KW/litre

REFERENCES-
1-Directory of Nuclear Reactors, Vol VIII, IAEA, 1970, p. 125
2-Intl Data Collection and Analysis, Vol III, NAC, June 1978
3-Intl Atomic Energy Agency Bulletin, Vol XIX, No 5, Oct. 1977

ACTIVITY--IRAN RESEARCH AND TEST REACTOR NUCLEAR FACILITY PROFILE
CATEGORY-RESEARCH AND TEST REACTORS DMK 30 SEP 78

FACILITY NAME	LOCATION	FAC TYPE	CAPACITY	STATUS	YR	FAC CODE
U of Teheran Rsch Reactor	Teheran	POOL	5 MWt	Oper	67	RORM

LATITUDE- 35 DEG 40 MIN N LONGITUDE- 51 DEG 26 MIN E

TECHNOLOGY SOURCE-Dsgn & Bldr: AMF OWNER/OPERATOR-University of Atomics, Div of Amer Mach & Found Teheran
SUPPLY SOURCE- SAFEGUARDS-

PRODUCT/USE-Program area at Teheran Nuclear Research Center: Nuclear Physics, radioisotopes
FUEL STORAGE CAPACITY-

PROCESS-Pool type, highly enriched (20%) uranium, light water moderated, cooled and reflected
SCHEDULE-Reactor critical: early 1960

REMARKS-Reactor is very similar to other AMF 1 MW open pool type reactors

REFERENCES-
1-Directory of Nuclear Reactors, Vol II, IAEA, p. 33
2-Intl Data Collection and Analysis, Vol III, NAC, June 1978

ACTIVITY--IRAN RESEARCH & TEST REACTOR NUCLEAR FACILITY PROFILE
CATEGORY-RESEARCH AND TEST REACTORS DMK 05 SEP 78

FACILITY NAME	LOCATION	FAC TYPE	CAPACITY	STATUS	YR	FAC CODE
UTRR Conversion	Tehran	SHRR	10 MWt	Constr		RORQ

LATITUDE- 35 DEG 40 MIN N LONGITUDE- 51 DEG 26 MIN E

TECHNOLOGY SOURCE-Constructor: Gen. Atomic
OWNER/OPERATOR-Owner: Inst. of Nucl Science & Tech., Univ. of Tehran
SUPPLY SOURCE-
SAFEGUARDS-

PRODUCT/USE-

FUEL STORAGE CAPACITY-

PROCESS-

SCHEDULE-Under construction

REMARKS-

REFERENCES-
1-Intl Data Collection and Analysis, Vol III, NAC, June 1978

IR 3

ACTIVITY--IRAN RESOURCE RECOVERY
CATEGORY-MINES (URANIUM & THORIUM)

NUCLEAR FACILITY PROFILE
PSM 28 SEP 78

FACILITY NAME	LOCATION	FAC TYPE	CAPACITY	STATUS	YR	FAC CODE
	Anarak	URAN		Explor		RORR

LATITUDE- 33 DEG 20 MIN N

LONGITUDE- 53 DEG 44 MIN E

TECHNOLOGY SOURCE-

OWNER/OPERATOR-

SUPPLY SOURCE-

SAFEGUARDS-

PRODUCT/USE-Uranium

FUEL STORAGE CAPACITY-

PROCESS-

SCHEDULE-

REMARKS-

REFERENCES-
1-International Data Collection and Analysis, NAC, Task 1, Vol III, June 1978, Iran, p. 30

IR 4

ACTIVITY--IRAN RESOURCE RECOVERY
CATEGORY-MINES (URANIUM & THORIUM)

NUCLEAR FACILITY PROFILE
PSM 28 SEP 78

FACILITY NAME	LOCATION	FAC TYPE	CAPACITY	STATUS YR	FAC CODE
	Yazd	URAN		Explor	RORS

LATITUDE- 31 DEG 55 MIN N

LONGITUDE- 54 DEG 22 MIN E

TECHNOLOGY SOURCE-

OWNER/OPERATOR-

SUPPLY SOURCE-

SAFEGUARDS-

PRODUCT/USE-Uranium

FUEL STORAGE CAPACITY-

PROCESS-

SCHEDULE-

REMARKS-

REFERENCES-
1-International Data Collection and Analysis, NAC, Task 1, Vol III, June 1978, Iran, p. 30

ACTIVITY--IRELAND RESOURCE RECOVERY
CATEGORY-MINES (URANIUM & THORIUM)

NUCLEAR FACILITY PROFILE
PSM 18 SEP 78

FACILITY NAME	LOCATION	FAC TYPE	CAPACITY	STATUS	YR	FAC CODE
Leinster	Mt. Leinster	URAN		Explor		RHRF

LATITUDE- 52 DEG 37 MIN N

LONGITUDE- 06 DEG 47 MIN W

TECHNOLOGY SOURCE-

OWNER/OPERATOR-Minatome

SUPPLY SOURCE-

SAFEGUARDS-

PRODUCT/USE-Uranium

FUEL STORAGE CAPACITY-

PROCESS-

SCHEDULE-

REMARKS-Minatome- Joint venture, formed in 1975, by Pechinery Ugine Kuhlmann (PUK) and Total Compagnie Francaise des Petroles

REFERENCES-

1-Uranium Supply and Demand, The Uranium Institute, Proceedings of the Second International Symposium on Uranium Supply and Demand, London, June 22-24, 1977, p. 127

ACTIVITY--ISRAEL RESEARCH AND TEST REACTOR NUCLEAR FACILITY PROFILE
CATEGORY-RESEARCH AND TEST REACTORS DMK 30 SEP 78

FACILITY NAME	LOCATION	FAC TYPE	CAPACITY	STATUS	YR	FAC CODE
IRR	Rehovath See remarks	POOL	5 MWt	Oper	59	RTSF

LATITUDE- DEG MIN LONGITUDE- DEG MIN

TECHNOLOGY SOURCE-Atomics
Div. of Amer. Mach. & Foundry
SUPPLY SOURCE-

OWNER/OPERATOR-Israeli AEC
(See remarks)
SAFEGUARDS-

PRODUCT/USE-Research

FUEL STORAGE CAPACITY-

PROCESS-Pool-type, enriched (20%) uranium, light water moderated, cooled and reflected
SCHEDULE-Reactor critical: Late 1959

REMARKS-Reactor is very similar to other AMF 1 open pool-type reactors
Reference 2 claims location is Tel Aviv and owner is SRE.

REFERENCES-
1-Directory of Nuclear Reactors, Vol II, IAEA, 1959, p. 31
2-Intl Data Collection and Analysis, Vol III, NAC, June 1978

ACTIVITY--ISRAEL RESEARCH AND TEST REACTOR NUCLEAR FACILITY PROFILE
CATEGORY-RESEARCH AND TEST REACTORS DMK 30 SEP 78

FACILITY NAME	LOCATION	FAC TYPE	CAPACITY	STATUS	YR	FAC CODE
IRR-2	NegeV		26 MWt	Oper		RTSG

LATITUDE- DEG MIN LONGITUDE- DEG MIN

TECHNOLOGY SOURCE-Construction: France
OWNER/OPERATOR-Owner: Govt.
SUPPLY SOURCE-
SAFEGUARDS-

PRODUCT/USE-

FUEL STORAGE CAPACITY-

PROCESS-

SCHEDULE-

REMARKS-

REFERENCES-
1-Intl Data Collection and Analysis, Vol III, NAC, June 1978

ACTIVITY--ISRAEL ENRICHMENT PLANTS
CATEGORY-ENRICHMENT PLANTS

NUCLEAR FACILITY PROFILE
SRM 24 JUL 78

FACILITY NAME	LOCATION	FAC TYPE	CAPACITY	STATUS YR	FAC CODE
Weizmann Institute of Science	Rehovot	LASR		R&D	RTSK

LATITUDE- 31 DEG 54 MIN N

LONGITUDE- 34 DEG 46 MIN E

TECHNOLOGY SOURCE-

OWNER/OPERATOR-

SUPPLY SOURCE-

SAFEGUARDS-

PRODUCT/USE-

FUEL STORAGE CAPACITY-

PROCESS-Laser isotope separation

SCHEDULE-Some papers have been published on laser isotope separation

REMARKS-

REFERENCES-
1-Wilcox, Wm. J. Jr.; Uranium Enrichment- A Review of the Present World Status: Capacity, Technology, and Plans; 5/6/78

ACTIVITY--ITALY SPENT FUEL PROCESSING NUCLEAR FACILITY PROFILE
CATEGORY-FUEL REPROCESSING FACILITIES SRM 31 JUL 78

FACILITY NAME	LOCATION	FAC TYPE	CAPACITY	STATUS	YR	FAC CODE
		UO	500 te (te/yr)	Plan	85	RIAA

LATITUDE- DEG MIN LONGITUDE- DEG MIN

TECHNOLOGY SOURCE- OWNER/OPERATOR-

SUPPLY SOURCE- SAFEGUARDS-

PRODUCT/USE-

FUEL STORAGE CAPACITY-

PROCESS-U-oxide low-enriched fuel reprocessing

SCHEDULE-Plans temporarily shelved at this time

REMARKS-

REFERENCES-
1-Chayes, Abram and W. Bennett Lewis; International Arrangements for Nuclear Fuel Reprocessing; 1977

ACTIVITY--ITALY RESEARCH AND TEST REACTOR NUCLEAR FACILITY PROFILE
CATEGORY-RESEARCH AND TEST REACTORS DMK 30 SEP 78

FACILITY NAME	LOCATION	FAC TYPE	CAPACITY	STATUS	YR	FAC CODE
AGN-201-110	near Palermo	SHRR	.1 Wt	Oper	60	RIAD
Reactor Constanza	Villa d'Orleans					

LATITUDE- 38 DEG 08 MIN N LONGITUDE- 13 DEG 23 MIN E

TECHNOLOGY SOURCE-Aerojet-General Nucleonics
OWNER/OPERATOR-University of Palermo
SUPPLY SOURCE-
SAFEGUARDS-

PRODUCT/USE-Research in medicine, chemistry, isotope production, training
FUEL STORAGE CAPACITY-

PROCESS-Solid homogenous, enriched (20%) uranium, polyethylene moderated, graphite reflected, uncooled
SCHEDULE-In operation; Reactor critical: Feb. 1960

REMARKS-This reactor is identical with the AGN-201-100 reactor at the U.S. Naval Postgraduate School. In the future the reactor will be converted to a AGN-201P-type with 20W operating power.

REFERENCES-
1-Directory of Nuclear Reactors; Vol III; IAEA; 1960; p. 229
2-Intl Data Collection and Analysis; Vol III: NAC; June 1978

ACTIVITY--ITALY RESEARCH AND TEST REACTOR NUCLEAR FACILITY PROFILE
CATEGORY-RESEARCH AND TEST REACTORS DMK 30 SEP 78

FACILITY NAME	LOCATION	FAC TYPE	CAPACITY	STATUS	YR	FAC CODE
Avogadro RS-1 Reactor	Saluggia	POOL	7 MWt	Inactv	60	RIAE

LATITUDE- 45 DEG 13 MIN N LONGITUDE- 8 DEG 01 MIN E

TECHNOLOGY SOURCE-AMF Atomics, Div of Amer Mach & Foundary Co.
OWNER/OPERATOR-CNEN
SUPPLY SOURCE-
SAFEGUARDS-

PRODUCT/USE-Research

FUEL STORAGE CAPACITY-

PROCESS-Pool type, highly enriched (20%) uranium, light water moderated, cooled, and reflected
SCHEDULE-Reactor critical: Sept 1959
Full power operation: June 1960, Shutdown: 1973
REMARKS-Reactor is very similar to other AMF 1 MW open pool type reactors. Nominal reactor power: 1 MWt convertible to 5 MW

REFERENCES-
1-Directory of Nuclear Reactors, Vol II, IAEA, pg. 25
2-Intl Data Collection and Analysis, Vol III, NAC, June 1978

ACTIVITY--ITALY RESEARCH AND TEST REACTOR NUCLEAR FACILITY PROFILE
CATEGORY-RESEARCH AND TEST REACTORS DMK 05 SEP 78

FACILITY NAME	LOCATION	FAC TYPE	CAPACITY	STATUS	YR	FAC CODE
CIRENE	Latina		128.5MWt			RIAG

LATITUDE- 41 DEG 28 MIN N LONGITUDE- 12 DEG 53 MIN E

TECHNOLOGY SOURCE-Bldg.: NIRA OWNER/OPERATOR-Owner: CNEN & ENEL

SUPPLY SOURCE- SAFEGUARDS-

PRODUCT/USE-

FUEL STORAGE CAPACITY-

PROCESS-

SCHEDULE-

REMARKS-

REFERENCES-
1-Intl Data Collection and Analysis, Vol III, NAC, June 1978

ACTIVITY--ITALY RESEARCH AND TEST REACTOR NUCLEAR FACILITY PROFILE
CATEGORY-RESEARCH AND TEST REACTORS DMK 30 SEP 78

FACILITY NAME	LOCATION	FAC TYPE	CAPACITY	STATUS	YR	FAC CODE
ECO	Ispra (Varese)	TK-H	1KWt max	Inactv	65	RIAK

See remarks

LATITUDE- 45 DEG 49 MIN N LONGITUDE- 8 DEG 36 MIN E

TECHNOLOGY SOURCE-Designer and builder: N.V. Neratoom
OWNER/OPERATOR-Centre Commun de Recherches, Euratom
SUPPLY SOURCE-
SAFEGUARDS-

PRODUCT/USE-Lattice studies

FUEL STORAGE CAPACITY-

PROCESS-Tank-type, natural uranium, heavy water moderated, graphite reflected, various organic coolants
SCHEDULE-Start of construction: Sept. 1962;
Reactor critical: Dec. 1965; Shutdown: 1972
REMARKS-ECO = Experience Critique Orgel
Neutron flux: Thermal max 12.7 x (10 E 8) n/(cm E 2) sec
Fast max 6.45 x (10 E 8) n/(cm E 2) sec
Critical mass: 70.3 Kg of U-235 with 22.3 cm pitch

REFERENCES-
1-Directory of Nuclear Reactors, Vol VI, IAEA, 1966, p. 189
2-Intl Data Collection and analysis, Vol III, NAC, June 1978

ACTIVITY--ITALY RESEARCH AND TEST REACTOR NUCLEAR FACILITY PROFILE
CATEGORY-RESEARCH AND TEST REACTORS DMK 30 SEP 78

FACILITY NAME	LOCATION	FAC TYPE	CAPACITY	STATUS	YR	FAC CODE
Essor reactor See remarks	Ispra (Varese)	TK-H	36.6 MWt	Oper	67	RIBK

LATITUDE- 45 DEG 49 MIN N LONGITUDE- 8 DEG 36 MIN E

TECHNOLOGY SOURCE-Bldr.: GAAA, Int-OWNER/OPERATOR-Euratom; Reference
eratom, Montecatini (See remarks) 2: Centre commune de Recherches
SUPPLY SOURCE- SAFEGUARDS-

PRODUCT/USE-Engineering tests for Orgel-type reactors

FUEL STORAGE CAPACITY-Irrad. fuel: 2 basins for 78 nat uranium elements and 60 enriched uranium elements
PROCESS-Natural uranium and enriched (90%) uranium, heavy water moderated and organic cooled
SCHEDULE-In operation; Start of construction: Aug. 1963
Reactor critical: early 1967
REMARKS-Av. specific power in fuel: 23.8 KW/Kg UC in nat. uranium zone. Fuel loading and unloading: Fuel elements handled by 2 charging machines.
Name: Essai Organique
Loc: Centre Commun de Recherches. The reactor was designed by Groupement Atomique Alsacienne Atlantique (GAAA), Interatom
Critical mass: 4.8 Kg U-235 in enriched uranium zone, 700 Kg UC (natural) in natural uranium zone.
Core loading at rated power: 6.3 Kg U-235 in enriched uranium zone, 700 Kg UC (natural) in natural uranium zone
Av. power density in core: 11KW/litre in natural uranium zone.
REFERENCES-
1-Directory of Nuclear Reactors, Vol VI, IAEA, 1966, p. 197
2-Intl Data Collection and Analysis, Vol III, NAC, June 1978

ACTIVITY--ITALY SPENT FUEL PROCESSING
CATEGORY-FUEL REPROCESSING FACILITIES

NUCLEAR FACILITY PROFILE
SRM 28 JUL 78

FACILITY NAME	LOCATION	FAC TYPE	CAPACITY	STATUS	YR	FAC CODE
Eurex-1	Saluggia	UOUM	10 te/yr	Inactv	69	RIBL

LATITUDE- 45 DEG 13 MIN N

LONGITUDE- 8 DEG 01 MIN E

TECHNOLOGY SOURCE-CNEN (Comitato Nazionale per l'Energie Nucl)

OWNER/OPERATOR-CNEN/Saluggia Nuclear Research Center

SUPPLY SOURCE-

SAFEGUARDS-NPT Safeguards Agreement

PRODUCT/USE-

FUEL STORAGE CAPACITY-

PROCESS-U-oxide and U-metal fuel reprocessing using Purex process

SCHEDULE-Pilot plant currently down for modification

REMARKS-Originally designed and built to reprocess high-enriched MTR-type fuels. It has since been modified to accept natural and low-enriched metal fuels and oxide fuels. Future plans include: experiments on Candu-type fuel and reprocessing of high-burnup fuels

REFERENCES-

1-Nucl Eng Intl, Vol XXI, No 239; 2/76
2-Chayes, Abram and W. Bennett Lewis; International Arrangements for Nuclear Fuel Reprocessing; 1977
3-Harmon, K. M.; International Source Book: A Compendium of Worldwide Programs in Nuclear Energy Supply and Radioactive Waste Management Research and Development; Vol III; 1/78

ACTIVITY--ITALY FUEL FABRICATION NUCLEAR FACILITY PROFILE
CATEGORY-FUEL FABRICATION PLANTS SRM 10 AUG 78

FACILITY NAME	LOCATION	FAC TYPE	CAPACITY	STATUS	YR	FAC CODE
Fabricazioni Nucleari	Bosco Marengo	UO	200 te (te/yr)	Oper	74	RIBM

LATITUDE- 44 DEG 49 MIN N LONGITUDE- 8 DEG 40 MIN E

TECHNOLOGY SOURCE-General Electric Company- US
OWNER/OPERATOR-Agip Nucleare (85%), AMN (15%)
SUPPLY SOURCE-
SAFEGUARDS-NPT Safeguards Agreement
PRODUCT/USE-U-oxide fuel assemblies/Boiling Water Reactors

FUEL STORAGE CAPACITY-

PROCESS-Pellet production, rod production, and final assembly

SCHEDULE-Currently in operation since 1974

REMARKS-MARKET SHARE- FN controls 100% of domestic BWR fuel market and will continue to do so into the 1980's.
CAPACITY LIMITATIONS AND NEW FACILITY PLANS- Capacity could be doubled within existing buildings. Expansion will be based on growth of domestic requirements and will not be needed until early 1980's. A UF6 to UO2 powder conversion facility is planned for the early 1980's.

REFERENCES-
1-NAC; Intl Data Collection and Analysis; Task 1, Vol III, 6/78

ACTIVITY--ITALY RESEARCH AND TEST REACTOR NUCLEAR FACILITY PROFILE
CATEGORY-RESEARCH AND TEST REACTORS DMK 30 SEP 78

FACILITY NAME	LOCATION	FAC TYPE	CAPACITY	STATUS	YR	FAC CODE
RTS-1	San Piero a Grado	POOL	5 MWt	Oper	65	RIBN
Galileo Galilei	Pisa					

LATITUDE- 43 DEG 43 MIN N LONGITUDE- 10 DEG 24 MIN E

TECHNOLOGY SOURCE-Babcock & Wilcox Co., Vitro Italiana-Camen
OWNER/OPERATOR-Ministero della Difesa & University of Pisa
SUPPLY SOURCE-
SAFEGUARDS-

PRODUCT/USE-Research in neutron physics solid state physics, engineering tests, isotope production, educational purposes
FUEL STORAGE CAPACITY-7 scorage racks with 42 positions, suspended along edge of pool
PROCESS-Pool-type, highly enriched (89-93%) uranium, light water moderated and cooled, light water and graphite reflected
SCHEDULE-In operation; Start of construction: May 1961; Reactor critical: April 1963; Full power operation: April 1965
REMARKS-Av. power density in core: 38.47 KW/litre
Burnup: Average 25%, maximum 35%
Neutron flux in core: Thermal av 2.63 x (10 E 13)n/(cm E 2)sec;Thermal max 3.55 x (10 E 13)n/(cm E 2) sec; Fast av (>1 MeV) 5.5 x (10 E 13)n/(cm E 2)sec; Fast max(>1 MeV) 7.45 x (10 E 13)n/(cm E 2)sec In water, 3 cm from core: Thermal max 8.01 x (10 E 13)n/(cm E 2)sec;Fast max(>1 MeV) 1.45 x (10 E 13)n/(cm E 2) sec Critical mass: 2.9 Kg U-235 for min. loading water reflected
Core loading at rated power: Approx 5 Kg U-235
Av. specific power in fuel: Approx (10 E 3)KW/Kg

REFERENCES-
1-Directory of Nuclear Reactors, Vol VIII, IAEA, p. 23

ACTIVITY--ITALY RESEARCH AND TEST REACTOR NUCLEAR FACILITY PROFILE
CATEGORY-RESEARCH AND TEST REACTORS DMK 30 SEP 78

FACILITY NAME	LOCATION	FAC TYPE	CAPACITY	STATUS	YR	FAC CODE
Reactor Ispra-1	Ispra, Varese	TK-H	5 MWt	Inactv	59	RIBR

LATITUDE- 45 DEG 49 MIN N LONGITUDE- 8 DEG 36 MIN E

TECHNOLOGY SOURCE-ACF Indust Inc & CNRN with many station firms
SUPPLY SOURCE-
OWNER/OPERATOR-Comitato Nazionale per le Richerche Nucleari
SAFEGUARDS-

PRODUCT/USE-Research in neutron and solid state physics, engineering and technological tests, isotope production
FUEL STORAGE CAPACITY-

PROCESS-Tank-type, highly enriched (20%) uranium, heavy water moderated and cooled graphite reflected
SCHEDULE-Start of construction: May 1958; Reactor critical: March 1959 Full power operation: Nov. 1959; Shutdown: 1974
REMARKS-Reactor is very similar to the Mass Inst. of Tech. Reactor

REFERENCES-
1-Directory of Nuclear Reactors, Vol III, IAEA, 1960, p. 271
2-Intl. Data Collection and Analysis, Vol III, NAC, June 1978

ACTIVITY--ITALY SPENT FUEL PROCESSING
CATEGORY-FUEL REPROCESSING FACILITIES

NUCLEAR FACILITY PROFILE
SRM 28 JUL 78

FACILITY NAME	LOCATION	FAC TYPE	CAPACITY	STATUS	YR	FAC CODE
ITREC Pilot Plant	Rotondella	UThO	15 kg (kg/day)	Oper	75	RIBS

LATITUDE- 40 DEG 10 MIN N
LONGITUDE- 16 DEG 32 MIN E

TECHNOLOGY SOURCE-CNEN (Comitato Nazionale per l'Energia Nucl)
OWNER/OPERATOR-CNEN/Trisaia Nuclear Research Center
SUPPLY SOURCE-
SAFEGUARDS-NPT Safeguards Agreement

PRODUCT/USE-U-Th mixed oxide and U-Pu mixed oxide fuel recovery/ refabrication of reprocessed fuel
FUEL STORAGE CAPACITY-

PROCESS-U-Th mixed oxide and U-Pu mixed oxide fuel reprocessing using Purex process
SCHEDULE-Construction completed in 1968. Active operations as pilot plant started in 1975
REMARKS-

REFERENCES-
1-Chayes, Abram and W. Bennett Lewis; International Arrangements for Nuclear Fuel Reprocessing; 1977
2-Harmon, K. M.; Intl Source Book: A Compendium of Worldwide Programs in Nuclear Energy Supply and Radioactive Waste Management Research and Development; Vol III; 1/78

ACTIVITY--ITALY RESEARCH AND TEST REACTOR NUCLEAR FACILITY PROFILE
CATEGORY-RESEARCH AND TEST REACTORS DMK 30 SEP 78

FACILITY NAME	LOCATION	FAC TYPE	CAPACITY	STATUS	YR	FAC CODE
ISPRA-2 (RANA)	Casaccia Nucl. Studies Center	POOL	Remarks	Oper	61	RICA

LATITUDE- DEG MIN LONGITUDE- DEG MIN

TECHNOLOGY SOURCE-CENE, Lab. Ingegneria e Servomeccanismi
OWNER/OPERATOR-CNEN, Laboratorio Fisica e Calcolo Reattori
SUPPLY SOURCE-
SAFEGUARDS-

PRODUCT/USE-Neutron physics

FUEL STORAGE CAPACITY-

PROCESS-Pool-type 20% enriched uranium, light water moderated and cooled, water and graphite reflected
SCHEDULE-In operation; Reactor critical: Dec. 1961

REMARKS-CAPACITY: 10 KW (max. 100 KW) usually operated at zero power
Neutron flux: (10 E 8)n/(cm E 2) sec.
Critical mass: 3.55 K U-235

REFERENCES-
1-Directory of Nuclear Reactors, Vol VI, IAEA, 1966, p. 43
2-Intl. Data Collection and Analysis, Vol III, NAC, June 1978

ACTIVITY--ITALY RESEARCH AND TEST REACTOR NUCLEAR FACILITY PROFILE
CATEGORY-RESEARCH AND TEST REACTORS DMK 30 SEP 78

FACILITY NAME	LOCATION	FAC TYPE	CAPACITY	STATUS	YR	FAC CODE
RB-1	Montecuccolino	GMRR	10 Wt	Oper	62	RICB
Reattore Bologna-1	Bologna					

LATITUDE- DEG MIN LONGITUDE- DEG MIN

TECHNOLOGY SOURCE-See remarks
OWNER/OPERATOR-CNEN, Centro di Calcolo, Bologna
SUPPLY SOURCE-
SAFEGUARDS-

PRODUCT/USE-Determination of nuclear parameters for specific reactor designs, basic reactor physics research
FUEL STORAGE CAPACITY-

PROCESS-Enriched (20%) uranium, graphite moderated and reflected, uncooled
SCHEDULE-In operation; start of construction: Dec 1960; reactor critical: July 1962
REMARKS-Designer and builder: Scuola di Specializzazione in Ingegneria Nucleare, Bologna, and Centro di Calcolo, Bologna
Neutron flux: Thermal av approx (10 E 7)n/(cm E 2)sec
Critical mass: Approx 9 Kg U-235, but variable to a certain extent with the test assembly. Core loading at rated power: Approx 9 Kg U-235, but variable to a certain extent with the test assembly.
Fuel loading and unloading: After reactor shut-down, by hand.

REFERENCES-
1-Directory of Nuclear Reactors, Vol V, IAEA, 1964, p. 269

ACTIVITY--ITALY RESEARCH AND TEST REACTOR NUCLEAR FACILITY PROFILE
CATEGORY-RESEARCH AND TEST REACTORS DMK 30 SEP 78

FACILITY NAME	LOCATION	FAC TYPE	CAPACITY	STATUS	YR	FAC CODE
RB/2	Bologna	ARGO	10 KWt	Oper	63	RICC

See remarks

LATITUDE- 44 DEG 30 MIN N LONGITUDE- 11 DEG 20 MIN E

TECHNOLOGY SOURCE-Design & bldr.: AGIP Nucleare & SNAM LABORATORI
SUPPLY SOURCE-
OWNER/OPERATOR-AGIP Nucleare and SNAM LABORATORI
SAFEGUARDS-

PRODUCT/USE-Reactor physics, isotope production, educational purposes

FUEL STORAGE CAPACITY-Irradiated fuel stored in pits with heavy concrete plugs
PROCESS-Argonaut-type, enriched (20%) uranium, light water moderated and cooled, graphite and light water reflected
SCHEDULE-In operation; Reactor critical: May 1963

REMARKS-RB/2 = Reattore Argonaut AGIP-Nucleare
Neutron flux: Thermal max (10 E 11)n/(cm E 2) sec
Av power density in core: 0.1 to .25 KW/litre
Critical mass: 2 to 4.5 Kg U-235 according to core configuration
Core loading at rated power: 2 to 4.5 Kg U-235
Av. specific power in fuel: 2.2 to 5 KW/Kg U-235
Fuel loading and unloading done manually

REFERENCES-
1-Directory of Nuclear Reactors, Vol VI, IAEA, 1966, p. 107

ACTIVITY--ITALY RESEARCH AND TEST REACTOR NUCLEAR FACILITY PROFILE
CATEGORY-RESEARCH AND TEST REACTORS DMK 30 SEP 78

FACILITY NAME	LOCATION	FAC TYPE	CAPACITY	STATUS	YR	FAC CODE
RITMO (RC-4) See remarks	Rome	POOL	100 Wt	Oper	65	RICD

LATITUDE- 41 DEG 53 MIN N LONGITUDE- 12 DEG 30 MIN E

TECHNOLOGY SOURCE-Amer. Machine and Foundry Co. & CNEN
OWNER/OPERATOR-See remarks
SUPPLY SOURCE-
SAFEGUARDS-

PRODUCT/USE-Reactor physics at low neutron fluxes

FUEL STORAGE CAPACITY-Irradiated fuel: 4 underwater racks in reactor tank, each providing space for three elements
PROCESS-Pool-type, enriched (90%) uranium, light water moderated and cooled, beryllium, and light water reflected
SCHEDULE-In operation; Start of construction: Oct. 1963; Reactor critical: July 1965; Full power operation: Nov. 1965
REMARKS-RITMO = Reattore Ingegneria Technologica Metallurgica Potenza
Owner and operator: Comitato Nazionale per l'Energia Nucleare-Laboratorio Fisica e Calcolo Reattori
Neutron flux: At 100 W, thermal av. 3 x (10 E 8)n/(cm E 2)sec; Thermal max 5.6 x (10 E 8)n/(cm E 2) sec
Critical mass: Approx 6.9 Kg U-235
Core loading at rated power: 7.4 Kg U-235
Av. specific power in fuel: .0135 KW/Kg
Av. power density in core: .00125 KW/litre
Fuel loading and unloading: Manual

REFERENCES-
1-Directory of Nuclear Reactors, Vol VIII, IAEA, 1970, p. 49

ACTIVITY--ITALY RESEARCH AND TEST REACTOR NUCLEAR FACILITY PROFILE
CATEGORY-RESEARCH AND TEST REACTORS DMK 30 SEP 78

FACILITY NAME	LOCATION	FAC TYPE	CAPACITY	STATUS	YR	FAC CODE
ROSPO	Roma	OMRR	(small)	Oper	63	RICE
See remarks	Centro Studi Nucleri					

LATITUDE- 41 DEG 53 MIN N LONGITUDE- 12 DEG 30 MIN E

TECHNOLOGY SOURCE-Designer and builder: CNEN
SUPPLY SOURCE-

OWNER/OPERATOR-Owner: Comitato Naxionale per l'Energia Nucleare
SAFEGUARDS-

PRODUCT/USE-Critical experiments with organic liquid moderators

FUEL STORAGE CAPACITY-

PROCESS-Tank-type, enriched (89.85%) uranium, organic terphenyl moderated and reflected
SCHEDULE-In operation; Start of construction: April 1961; Reactor critical: June 1963
REMARKS-Reference 2: Constructor: Luigi Serra, Inc.
Reactor is operated by: Reactor Physics Laboratory (CNEN)
ROSPO = Reattore Organico Sperimentale Potenza Zero
ROSPO is used for the investigation of the nuclear parameters of reactor cores with different configurations and uranium concentrations. Neutron flux: Thermal max 1 x (10 E 6)n/(cm E 2)sec; Fast max 3 x (10 E 6)n/(cm E 2)sec
Critical mass: 17 Kg U-235

REFERENCES-
1-Directory of Nuclear Reactors, Vol VI, IAEA, 1966, p. 205
2-Intl. Data Collection and Analysis, Vol III, NAC; June 1978

ACTIVITY--ITALY RESEARCH AND TEST REACTOR NUCLEAR FACILITY PROFILE
CATEGORY-RESEARCH AND TEST REACTORS DMK 30 SEP 78

FACILITY NAME	LOCATION	FAC TYPE	CAPACITY	STATUS	YR	FAC CODE
Triga-II Pavia See remarks	Pavia	SHRR	Remarks	Oper	65	RICK

LATITUDE- 45 DEG 12 MIN N LONGITUDE- 9 DEG 09 MIN E

TECHNOLOGY SOURCE-Design & bldr.: Gen. Atomic Div. of Gen. Dynamics
SUPPLY SOURCE-
OWNER/OPERATOR-University of Pavia, LENA Laboratory
SAFEGUARDS-

PRODUCT/USE-Neutron and solid state physics, engineering tests, medicine, chemistry, isotope production, educational purposes
FUEL STORAGE CAPACITY-Irradiated fuel: 6 racks, each having space for 6 elements, attached to side of reactor tank and shielded by water
PROCESS-Solid homogeneous, enriched (20%) uranium, zirconium-hydride and light water moderated, light water cooled, graphite reflected
SCHEDULE-In operation; Start of construction: Nov. 1963, Reactor critical: Nov. 1965
REMARKS-Reactor name: Lena Triga-Mark-II Pulsed Reactor
Nominal reactor power: 250 KWt, steady-state operation; 250 MW peak power during pulse
Critical mass: Approx 2Kg U-235
Core loading at rated power: At 250 KW 2.3 Kg U-235
Av. specific power in fuel: At 250 KW Approx 110 KW/Kg
Fuel loading and unloading: Manual remote loading through approx 16 ft. of shielding water. Manual remote unloading through shielding water into fuel handling cask.

REFERENCES-
1-Directory of Nuclear Reactors, Vol VIII, IAEA, 1970, p. 133

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ACTIVITY--ITALY RESOURCE RECOVERY NUCLEAR FACILITY PROFILE
CATEGORY-MINES (URANIUM & THORIUM) PSM 28 AUG 78

FACILITY NAME	LOCATION	FAC TYPE	CAPACITY	STATUS	YR	FAC CODE
	Val Rendena Trento	URAN		Explor		RICP

LATITUDE- DEG MIN LONGITUDE- DEG MIN

TECHNOLOGY SOURCE- OWNER/OPERATOR-AGIP Minerarie

SUPPLY SOURCE- SAFEGUARDS-

PRODUCT/USE-Uranium

FUEL STORAGE CAPACITY-

PROCESS-

SCHEDULE-

REMARKS-AGIP- Azienda Generale Italiani Petroli

REFERENCES-
1-Uranium Resources, Production and Demand, IAEA, Dec 1977, p. 77
2-International Data Collection and Analysis, NAC, Task 1, Vol III, June 1978, Italy

ACTIVITY--ITALY RESOURCE RECOVERY
CATEGORY-MINES (URANIUM & THORIUM)

NUCLEAR FACILITY PROFILE
PSM 28 AUG 78

FACILITY NAME	LOCATION	FAC TYPE	CAPACITY	STATUS	YR	FAC CODE
Novazza	Valgoglio Bergamo	URAN	110 te/y	Constr	80	RICQ

LATITUDE- 45 DEG 45 MIN N

LONGITUDE- 09 DEG 40 MIN E

TECHNOLOGY SOURCE-

OWNER/OPERATOR-AGIP- Azienda Generale Italiani Petroli

SUPPLY SOURCE-

SAFEGUARDS-

PRODUCT/USE-Uranium

FUEL STORAGE CAPACITY-

PROCESS-

SCHEDULE-Expected completion: 1980

REMARKS-Reserves: 1400 te
Average grade of ore: 0.09%

REFERENCES-
1-Minerals Yearbook, US Bureau of Mines, 1979, Vol III, p. 510
2-Mining Magazine, March 1978, p. 250
3-Uranium Resources, Production and Demand, IAEA, Dec 1977, p. 77
4-International Data Collection and Analysis, NAC, 6/78, Vol III, Task 1, Italy

ACTIVITY--ITALY FUEL FABRICATION
CATEGORY-FUEL FABRICATION PLANTS

NUCLEAR FACILITY PROFILE
SRM 10 AUG 78

FACILITY NAME	LOCATION	FAC TYPE	CAPACITY	STATUS	YR	FAC CODE
	San Donato	UPuO	8 te/yr	Oper		RICR

LATITUDE- DEG MIN

LONGITUDE- DEG MIN

TECHNOLOGY SOURCE-

OWNER/OPERATOR-

SUPPLY SOURCE-

SAFEGUARDS-

PRODUCT/USE-U-Pu mixed oxide fuel

FUEL STORAGE CAPACITY-

PROCESS-

SCHEDULE-Currently in operation

REMARKS-

REFERENCES-
1-Nucl Eng Intl; Vol XXI, No 250; 11/76

ACTIVITY--ITALY RESOURCE RECOVERY NUCLEAR FACILITY PROFILE
CATEGORY-CONVERSION PLANTS SRM 02 AUG 78

FACILITY NAME	LOCATION	FAC TYPE	CAPACITY	STATUS	YR	FAC CODE
Fabricazzioni Nucl	Bosco Marengo	UO2	360 te (te/yr)	Plan		RICT

LATITUDE- 44 DEG 49 MIN N LONGITUDE- 8 DEG 40 MIN E

TECHNOLOGY SOURCE- OWNER/OPERATOR-85% Agip Nucleare, 15% AMN

SUPPLY SOURCE- SAFEGUARDS-NPT safeguards Agreement

PRODUCT/USE-UO2 powder/pelletized for fuel rod fabrication

FUEL STORAGE CAPACITY-

PROCESS-Conversion of UF6 to UO2 powder

SCHEDULE-Planned for operation in early 1980's

REMARKS-

REFERENCES-
1-NAC; Intl Data Collection and Analysis, Task 1, Vol III; 6/78
2-Nucl Eng Int; Vol XXI, No 250; 11/76
3-IAEA Bulletin; Vol XIX, No 5; 10/77

ACTIVITY--ITALY FUEL FABRICATION
CATEGORY-FUEL FABRICATION PLANTS

NUCLEAR FACILITY PROFILE
SRM 10 AUG 78

FACILITY NAME	LOCATION	FAC TYPE	CAPACITY	STATUS	YR	FAC CODE
Casaccia Center, Nuclear Studies	Rome	UPuO	8 te/yr	Oper		RICX

LATITUDE- 41 DEG 53 MIN N

LONGITUDE- 12 DEG 30 MIN E

TECHNOLOGY SOURCE-

OWNER/OPERATOR-Comitato Nazionale per l'Energia Nucleare (CNEN)

SUPPLY SOURCE-

SAFEGUARDS-

PRODUCT/USE-U-Pu mixed oxide fuel

FUEL STORAGE CAPACITY-

PROCESS-

SCHEDULE-Currently in operation

REMARKS-

REFERENCES-
1-Nucl Eng Intl; Vol XXI, No 250; 11/76

ACTIVITY--ITALY FUEL FABRICATION
CATEGORY-FUEL FABRICATION PLANTS

NUCLEAR FACILITY PROFILE
SRM 10 AUG 78

FACILITY NAME	LOCATION	FAC TYPE	CAPACITY	STATUS	YR	FAC CODE
Combustibili Nucleari	Rotondella	UM	30 te/yr	Oper	69	RICZ

LATITUDE- 40 DEG 10 MIN N
LONGITUDE- 16 DEG 32 MIN E

TECHNOLOGY SOURCE-

OWNER/OPERATOR-Agip Nucleare (50%), British Nucl Fuels Ltd (50%)

SUPPLY SOURCE-U-metal fuel rods purchased from UK

SAFEGUARDS-NPT Safeguards Agreement

PRODUCT/USE-U-metal fuel assemblies/Magnox reactors

FUEL STORAGE CAPACITY-

PROCESS-Loading of U-metal fuel rods into Magnox alloy cans, and completion of fuel assemblies

SCHEDULE-Currently in operation since 1969

REMARKS-MARKET SHARE- CN controls approximately 25% of domestic market (Latina reactor). Operating at full capacity, 30 te/yr, CN will control 70% of future domestic market.
NEW FACILITY PLANS- No known plans for expansion as Latina reactor is the only one in Italy using Magnox fuel.

REFERENCES-

1-NAC; Intl Data Collection and Analysis; Task 1, Vol III; 6/78
2-IAEA Bulletin; Vol XIX, No 5; 10/77

ACTIVITY--ITALY RESEARCH AND TEST REACTOR NUCLEAR FACILITY PROFILE
CATEGORY-RESEARCH AND TEST REACTORS DMK 30 SEP 78

FACILITY NAME	LOCATION	FAC TYPE	CAPACITY	STATUS	YR	FAC CODE
Triga Mark II Reactor	Rome	SHRR	1 MWt	Oper	59	RIDA

LATITUDE- 41 DEG 53 MIN N LONGITUDE- 12 DEG 30 MIN E

TECHNOLOGY SOURCE-Design & Bldr: Gen Atomic Div of Gen Dynamics
SUPPLY SOURCE-

OWNER/OPERATOR-Comitato Naxionale Per le Ricerche Nucleari
SAFEGUARDS-

PRODUCT/USE-Neutron & solid state physics, engineering tests, medicine, chemistry, isotope production, educational purposes
FUEL STORAGE CAPACITY-

PROCESS-Solid homogeneous, highly enriched(20%)uranium, zirconium hydride & light water moderated, light water cooled,graphite reflected
SCHEDULE-Reactor critical: 1959

REMARKS-The reactor is identical in its main parts with the Triga Rsch Reactor; John Jay Hopkins Lab., San Diego, Cal. (Prototype)

REFERENCES-
1-Directory of Nuclear Reactors, Vol II, IAEA, p. 237

ACTIVITY--ITALY RESEARCH AND TEST REACTOR NUCLEAR FACILITY PROFILE
CATEGORY-RESEARCH AND TEST REACTORS DMK 30 SEP 78

FACILITY NAME	LOCATION	FAC TYPE	CAPACITY	STATUS	YR	FAC CODE
CESNEF	Milan	LHRR	50 KWt	Oper	60	RIDC

LATITUDE- 45 DEG 28 MIN N LONGITUDE- 9 DEG 12 MIN E

TECHNOLOGY SOURCE-Atomics Intl. Div of N. Amer. Aviation, Inc.
SUPPLY SOURCE-
OWNER/OPERATOR-CESNEF Politecnico di Milano; Refer 2: Univ of Milan
SAFEGUARDS-

PRODUCT/USE-Research in neutron and solid states physics, medicine, chem., engineering tests, isotope production, instruction
FUEL STORAGE CAPACITY-

PROCESS-Homogeneous, L-54 type, enriched (20%) uranium, light water cooled and moderated, graphite reflected
SCHEDULE-In operation; Start of construction: Jan. 1959; Reactor critical: Nov. 1959
REMARKS-Most of the construction details are identical or of the same order of magnitude as for the Armour Research Reactor.

REFERENCES-
1-Directory of Nuclear Reactors, Vol III, 1960, IAEA, p. 195
2-Intl Data collection and Analysis, Vol III, NAC, June 1978

ACTIVITY--ITALY RESEARCH AND TEST REACTOR NUCLEAR FACILITY PROFILE
CATEGORY-RESEARCH AND TEST REACTORS DMK 05 SEP 78

FACILITY NAME	LOCATION	FAC TYPE	CAPACITY	STATUS	YR	FAC CODE
PEC	Lake Brasimore	FNRR	140 MWt	Constr	78	RIDD

LATITUDE- DEG MIN LONGITUDE- DEG MIN

TECHNOLOGY SOURCE-Bldg.: NIRA OWNER/OPERATOR-Owner: CNEN

SUPPLY SOURCE- SAFEGUARDS-

PRODUCT/USE-

FUEL STORAGE CAPACITY-

PROCESS-

SCHEDULE-

REMARKS-

REFERENCES-
1-Intl Data Collection and Analysis, Vol III, NAC, June 1978

ACTIVITY--ITALY RESEARCH AND TEST REACTOR NUCLEAR FACILITY PROFILE
CATEGORY-RESEARCH AND TEST REACTORS DMK 05 SEP 78

FACILITY NAME	LOCATION	FAC TYPE	CAPACITY	STATUS	YR	FAC CODE
RB-3	Univ. of Bologna	TK-H		Oper	71	RIDE

LATITUDE- 44 DEG 30 MIN N LONGITUDE- 11 DEG 20 MIN E

TECHNOLOGY SOURCE- OWNER/OPERATOR-Owner: CNEN

SUPPLY SOURCE- SAFEGUARDS-

PRODUCT/USE-

FUEL STORAGE CAPACITY-

PROCESS-

SCHEDULE-

REMARKS-

REFERENCES-
1-Intl Data Collection and Analysis, Vol III, NAC, June 1978

ACTIVITY--ITALY RESEARCH & TEST REACTOR NUCLEAR FACILITY PROFILE
CATEGORY-RESEARCH AND TEST REACTORS DMK 05 SEP 78

FACILITY NAME	LOCATION	FAC TYPE	CAPACITY	STATUS	YR	FAC CODE
Triga-II	Rome	SHRR		Oper	60	RIDF

LATITUDE- 41 DEG 53 MIN N LONGITUDE- 12 DEG 30 MIN E

TECHNOLOGY SOURCE-Bldr.: Gen. Atomic Co.
OWNER/OPERATOR-Owner: CNEN

SUPPLY SOURCE-
SAFEGUARDS-

PRODUCT/USE-

FUEL STORAGE CAPACITY-

PROCESS-

SCHEDULE-

REMARKS-

REFERENCES-
1-Intl Data Collection and Analysis, Vol III, NAC, June 1978

ACTIVITY--ITALY RESOURCE RECOVERY NUCLEAR FACILITY PROFILE
CATEGORY-MILLS PSM 28 AUG 78

FACILITY NAME	LOCATION	FAC TYPE	CAPACITY	STATUS	YR	FAC CODE
	Novazza Bergamo	URAN	200 te/y	Constr	80	RIDG

LATITUDE- 45 DEG 45 MIN N LONGITUDE- 09 DEG 40 MIN E

TECHNOLOGY SOURCE-STEC OWNER/OPERATOR-AGIP/Pechiney

SUPPLY SOURCE- SAFEGUARDS-

PRODUCT/USE-Uranium

FUEL STORAGE CAPACITY-

PROCESS-

SCHEDULE-Completion slated for early 1980's

REMARKS-AGIP- Azienda Generale Italiani Petroli
Mill will service several small Italian mines
STEC- Societe Technique d'Enterprises Chimiques

REFERENCES-
1-Foreign Uranium Supply, EPRI EA-725, pp. 5-16
2-Minerals Yearbook, US Bureau of Mines, 1974, Vol III, p. 510
3-International Data Collection and Analysis, NAC, Task 1, Vol III, Italy
4-Nucleonics Week, 5 Aug 1976, p. 9

ACTIVITY--ITALY FUEL FABRICATION
CATEGORY-FUEL FABRICATION PLANTS

NUCLEAR FACILITY PROFILE
SRM 10 AUG 78

FACILITY NAME	LOCATION	FAC TYPE	CAPACITY	STATUS	YR	FAC CODE
COREN	Saluggia	UO	60 te/yr	Oper	68	RIDH

LATITUDE- 45 DEG 13 MIN N

LONGITUDE- 8 DEG 01 MIN E

TECHNOLOGY SOURCE-Westinghouse Electric Corporation- US

OWNER/OPERATOR-Fiat (24.5%), Breda (24.5%), Westinghouse (51%)

SUPPLY SOURCE-Westinghouse supplies UO2 pellets

SAFEGUARDS-NPT Safeguards Agreement

PRODUCT/USE-U-oxide fuel/Pressurized Water Reactors

FUEL STORAGE CAPACITY-

PROCESS-Loading of pellets into Zircaloy or stainless steel tubes, and final assembly of fuel rods

SCHEDULE-Currently in operation since 1968

REMARKS-Will be restricted in the future to manufacture of reload assemblies for Trino Vercellese reactor, therefore no expansion plans or market share available

REFERENCES-

1-NAC; Intl Data Collection and Analysis; Task 1, Vol III; 6/78
2-IAEA Bulletin; Vol XIX, No 5; 10/77

ACTIVITY--ITALY RESEARCH AND TEST REACTOR NUCLEAR FACILITY PROFILE
CATEGORY-RESEARCH AND TEST REACTORS DMK 05 SEP 78

FACILITY NAME	LOCATION	FAC TYPE	CAPACITY	STATUS	YR	FAC CODE
TAPIRO See remarks	CSN, Casaccia	FNRR	5 KWt	Oper	71	RIDJ

LATITUDE- DEG MIN LONGITUDE- DEG MIN

TECHNOLOGY SOURCE-Designer: CNEN (See remarks)
SUPPLY SOURCE-

OWNER/OPERATOR-Comitato Nazionale per l'Energia Nucleare (CNEN)
SAFEGUARDS-

PRODUCT/USE-Neutron physics and radiobiology

FUEL STORAGE CAPACITY-

PROCESS-Fast, U-Mo alloy (1.5 wt% molybdenum), 93.5% enriched, not moderated, copper reflected, helium cooled
SCHEDULE-In operation; Reactor critical: April 1971

REMARKS-TAPIRO=Pila Rapida Di Potenza O Per Tarature
Builders: Bombrini Parodi Delfino, Rome, and SICLIET, Rome, for mechanical components, Societe Generale des Minerais, Brussels, for fuel elements
Neutron flux: Fast max 4 x (10 E 12)n/(cm E 2)sec; Fast av. in core: 2.5 x (10 E 12)n/(cm E 2)sec; Fast av in reflector: 1.5 x (10 E 11) n/(cm E 2)sec
Av. power density in core 3.6 KW/litre
Critical mass: 23.14 + or -1.32 Kg U-235
Av. specific power in fuel: .2 KW/Kg U-235
Fuel loading and unloading: Manual

REFERENCES-
1-Directory of Nuclear Reactors, Vol X, IAEA, 1976, p. 343

ACTIVITY--ITALY WASTE MANAGEMENT
CATEGORY-WASTE DISPOSAL FACILITIES

NUCLEAR FACILITY PROFILE
SRM 28 AUG 78

FACILITY NAME	LOCATION	FAC TYPE	CAPACITY	STATUS	YR	FAC CODE
ESTER	Rome	PREP		Oper	78	RIDK

LATITUDE- 41 DEG 53 MIN N

LONGITUDE- 12 DEG 30 MIN E

TECHNOLOGY SOURCE-Italy, CSN-Casaccia

OWNER/OPERATOR-CSN (Centre for Nuclear Studies)

SUPPLY SOURCE-

SAFEGUARDS-

PRODUCT/USE-Vitrified high-level waste/testing and disposal

FUEL STORAGE CAPACITY-

PROCESS-Pot vitrification of high-level wastes using metallic melter

SCHEDULE-Scaled-up model of 2 kg-glass lab-scale model shut down in 1977 will be ready for operation in 1978

REMARKS-ESTER process has been under development in Italy since 1968

REFERENCES-

1-Harmon, K.M.; Intl Source Book: A Compendium of Worldwide Programs in Nuclear Energy Supply and Radioactive Waste Management Research and Development; Vol III; 1/78

ACTIVITY--ITALY RESOURCE RECOVERY NUCLEAR FACILITY PROFILE
CATEGORY-MINES (URANIUM& THORIUM) PSM 28 AUG 78

FACILITY NAME	LOCATION	FAC TYPE	CAPACITY	STATUS	YR	FAC CODE
	Preit Valley Cuneo	URAN		Explor		RIDM

LATITUDE- DEG MIN LONGITUDE- DEG MIN

TECHNOLOGY SOURCE- OWNER/OPERATOR-

SUPPLY SOURCE- SAFEGUARDS-

PRODUCT/USE-Uranium

FUEL STORAGE CAPACITY-

PROCESS-

SCHEDULE-

REMARKS-

REFERENCES-
1-Uranium Resources, Production and Demand, IAEA, Dec 1977, p. 77
2-International Data Collection and Analysis, NAC, Task 1, Vol III, Italy

ACTIVITY--ITALY RESOURCE RECOVERY NUCLEAR FACILITY PROFILE
CATEGORY-MINES (URANIUM & THORIUM) PSM 28 AUG 78

FACILITY NAME	LOCATION	FAC TYPE	CAPACITY	STATUS	YR	FAC CODE RIDN
	Latium	URAN		Explor		

LATITUDE- DEG MIN LONGITUDE- DEG MIN

TECHNOLOGY SOURCE- OWNER/OPERATOR-

SUPPLY SOURCE- SAFEGUARDS-

PRODUCT/USE-Uranium

FUEL STORAGE CAPACITY-

PROCESS-

SCHEDULE-

REMARKS-

REFERENCES-
1-Uranium Resources, Production and Demand, IAEA, Dec 1977, p. 77
2-International Data Collection and Analysis, NAC, Task 1, Vol III, Italy

ACTIVITY--ITALY RESOURCE RECOVERY
CATEGORY-MINES (URANIUM & THORIUM)

NUCLEAR FACILITY PROFILE
PSM 28 AUG 78

FACILITY NAME	LOCATION	FAC TYPE	CAPACITY	STATUS	YR	FAC CODE
	Lazio	URAN		Explor		RIDP

LATITUDE- DEG MIN LONGITUDE- DEG MIN

TECHNOLOGY SOURCE- OWNER/OPERATOR-

SUPPLY SOURCE- SAFEGUARDS-

PRODUCT/USE-Uranium

FUEL STORAGE CAPACITY-

PROCESS-

SCHEDULE-Development planned for early 1980s

REMARKS-Estimated reserves: 9000 te

REFERENCES-
1-Minerals Yearbook, US Bureau of Mines, 1974, Vol III, p. 510

ACTIVITY--JAPAN SPENT FUEL PROCESSING
CATEGORY-FUEL REPROCESSING FACILITIES

NUCLEAR FACILITY PROFILE
SRM 28 JUL 78

FACILITY NAME	LOCATION	FAC TYPE	CAPACITY	STATUS	YR	FAC CODE
PNC	Tokai-Mura (Mito)	UO	1500 te (te/yr)	Plan	85	RJAA

LATITUDE- 36 DEG 22 MIN N

LONGITUDE-140 DEG 29 MIN E

TECHNOLOGY SOURCE-PNC (Japan)

OWNER/OPERATOR-Power Reactor and Nucl Fuel Development Corp (PNC)

SUPPLY SOURCE-

SAFEGUARDS-Covered by IAEA Safeguards Agreement

PRODUCT/USE-

FUEL STORAGE CAPACITY-

PROCESS-U-oxide low-enriched fuel reprocessing

SCHEDULE-Under consideration for operation in 1985 or later

REMARKS-Severe public opposition to this plant could delay or cancel plans.

REFERENCES-
1-Nuclear Proliferation Factbook; Congressional Research Service, Library of Congress; 9/23/77
2-Nucl Eng Intl; Vol XXII, No 239; 2/76
3-IAEA Bulletin; Vol XIX, No 5; 10/77

ACTIVITY--JAPAN RESEARCH AND TEST REACTOR NUCLEAR FACILITY PROFILE
CATEGORY-RESEARCH AND TEST REACTORS DMK 30 SEP 78

FACILITY NAME	LOCATION	FAC TYPE	CAPACITY	STATUS	YR	FAC CODE
AHCF See remarks	Tokai-mura, Naka-gun Ibaraki-ken	LHRR	50 Wt	Oper	63	RJAE

LATITUDE- 36 DEG 22 MIN N LONGITUDE-140 DEG 29 MIN E

TECHNOLOGY SOURCE-Design & bldr.: JAERI & Nippon At. Ind. Group Co.
SUPPLY SOURCE-
OWNER/OPERATOR-Japan Atomic Energy Research Institute (JAERI)
SAFEGUARDS-IAEA (non-NPT)

PRODUCT/USE-Research in reactor physics

FUEL STORAGE CAPACITY-

PROCESS-Zero energy, aqueous homogeneous, enriched (20%) uranium, ThO-2 slurry blanket, heavy water moderated and reflected
SCHEDULE-In operation; Reactor critical with D-20 reflector: June 1961
Reactor critical with ThO-2/D-20 slurry blanket: Aug. 1963
REMARKS-AHCF=Aqueous Homogeneous Critical Facility
Neutron flux: 1 x (10 E 9)n/(cm E 2)sec
Core loading: 1100 to 4500g U-235 (depending on ThO-2 concentration) in form of UO-250-4, 20% enriched, in soln. in D-20, ratio of concentration D/U-235=1000 to 7000

REFERENCES-
1-Directory of Nuclear Reactors, Vol VI, IAEA, 1966, p. 119
2-Intl Atomic Energy Agency Bulletin, Vol XIX, No. 5, Oct. 1977

ACTIVITY--JAPAN RESEARCH & TEST REACTOR NUCLEAR FACILITY PROFILE
CATEGORY-RESEARCH AND TEST REACTORS DMK 30 SEP 78

FACILITY NAME	LOCATION	FAC TYPE	CAPACITY	STATUS	YR	FAC CODE
DCA	Tokai-Mura		(small)	Oper	69	RJAN

LATITUDE- 36 DEG 22 MIN N LONGITUDE-140 DEG 29 MIN E

TECHNOLOGY SOURCE- OWNER/OPERATOR-

SUPPLY SOURCE- SAFEGUARDS-IAEA (non-NPT)

PRODUCT/USE-

FUEL STORAGE CAPACITY-

PROCESS-

SCHEDULE-In operation

REMARKS-

REFERENCES-
1-Intl Data Collection and Analysis, Vol III, NAC, June 1978
2-Intl Atomic Energy Agency Bulletin, Vol XIX, No. 5, Oct. 1977

ACTIVITY--JAPAN RESEARCH & TEST REACTOR NUCLEAR FACILITY PROFILE
CATEGORY-RESEARCH AND TEST REACTORS DMK 30 SEP 78

FACILITY NAME	LOCATION	FAC TYPE	CAPACITY	STATUS	YR	FAC CODE
FCA	Tokai-Mura	TK	(small)	Oper	67	RJAQ

LATITUDE- 36 DEG 22 MIN N LONGITUDE-140 DEG 29 MIN E

TECHNOLOGY SOURCE- OWNER/OPERATOR-

SUPPLY SOURCE- SAFEGUARDS-IAEA (non-NPT)

PRODUCT/USE-

FUEL STORAGE CAPACITY-

PROCESS-

SCHEDULE-In operation

REMARKS-

REFERENCES-
1-Intl Data Collection and Analysis, Vol III, NAC, June 1978
2-Intl Atomic Energy Agency Bulletin, Vol XIX, No. 5, Oct. 1977

ACTIVITY--JAPAN RESEARCH AND TEST REACTOR NUCLEAR FACILITY PROFILE
CATEGORY-RESEARCH AND TEST REACTORS DMK 30 SEP 78

FACILITY NAME	LOCATION	FAC TYPE	CAPACITY	STATUS	YR	FAC CODE
HTR	Kawasaki	ARGO	.1 MWt	Oper	61	RJBN

LATITUDE- 35 DEG 32 MIN N LONGITUDE-139 DEG 41 MIN E

TECHNOLOGY SOURCE-Bldr.: Hitachi OWNER/OPERATOR-Owner: Tokyo Atomic Ind. Rsch Lab

SUPPLY SOURCE- SAFEGUARDS-IAEA (non-NPT)

PRODUCT/USE-

FUEL STORAGE CAPACITY-

PROCESS-

SCHEDULE-In operation

REMARKS-

REFERENCES-
1-Intl Data Collection and Analysis, Vol III, NAC, June 1978
2-Intl Atomic Energy Agency Bulletin, Vol XIX, No 5, Oct. 1977

ACTIVITY--JAPAN RESEARCH AND TEST REACTOR NUCLEAR FACILITY PROFILE
CATEGORY-RESEARCH AND TEST REACTORS DMK 30 SEP 78

FACILITY NAME	LOCATION	FAC TYPE	CAPACITY	STATUS	YR	FAC CODE
HTR	Ozenji, Kawasaki	ARGO	.1 MWt	Oper	62	RJBP

See remarks

LATITUDE- 35 DEG 32 MIN N LONGITUDE-139 DEG 41 MIN E

TECHNOLOGY SOURCE-Design & bldr.: Hitachi Ltd.
SUPPLY SOURCE-
OWNER/OPERATOR-Tokyo Atomic Industrial Research Laboratory
SAFEGUARDS-IAEA Safeguards (Non-NPT)

PRODUCT/USE-Research, training, isotope production

FUEL STORAGE CAPACITY-Storage pool

PROCESS-Pool-type, enriched (10%) uranium, light water moderated and cooled, graphite reflected
SCHEDULE-In operation; start of Construction: May 1960; reactor critical: Dec. 1961; full power operation: June 1962
REMARKS-Neutron flux: Thermal av 1.4 x (10 E 12)n/(cm E 2)sec; thermal max 2.7 x (10 E 12)n/(cm E 2)sec; fast average: 3.8 x (10 E 12)n/(cm E 2)sec; fast max 7.4 x (10 E 12)n/(cm E 2)sec
Critical mass: 2.6 Kg U-235; Core loading at rated power: 2.9 Kg U-235;
Av. specific power in fuel: 34.5 KW/Kg U-235
HTR=Hitachi Training Reactor

REFERENCES-
1-Directory of Nuclear Reactors, Vol VI, IAEA, 1966, p. 35
2-Intl Data Collection and Analysis, Vol III, NAC; June 1978
3-Intl Atomic Energy Agency Bulletin, Vol XIX, No 5; Oct. 1977

ACTIVITY--JAPAN FUEL FABRICATION
CATEGORY-FUEL FABRICATION PLANTS

NUCLEAR FACILITY PROFILE
SRM 11 AUG 78

FACILITY NAME	LOCATION	FAC TYPE	CAPACITY	STATUS	YR	FAC CODE
Japan Nuclear Fuel Co., Ltd.	Yokosuka (Kanagawa-ken)	UO	560 te (te/yr)	Oper	72	RJBS

LATITUDE- 35 DEG 18 MIN N LONGITUDE-139 DEG 39 MIN E

TECHNOLOGY SOURCE-General Electric Co.- US
SUPPLY SOURCE-UO2 powder from GE-Wilmington Plant
OWNER/OPERATOR-Japan Nuclear Fuel Co., Ltd.
SAFEGUARDS-IAEA Safeguards Agreement
PRODUCT/USE-U-oxide fuel assemblies/Boiling Water Reactors

FUEL STORAGE CAPACITY-

PROCESS-Pellet production, rod loading, and final assembly

SCHEDULE-Currently in operation since 1972

REMARKS-Japan Nuclear Fuel Co., Ltd. (JNF) is owned by General Electric (40%), Hitachi (30%), and Toshiba (30%)
PRODUCTION HISTORY- JNF has delivered over 500 te of completed fuel assemblies to BWR's since 1972.
MARKET SHARE- JNF will continue to be primary supplier of domestic BWR fuel. No plans to market outside Japan.
CAPACITY LIMITATIONS- Capacity can be increased 50% within existing buildings. No expansion plans at this time.

REFERENCES-
1-NAC; Intl Data Collection and Analysis; Task 1, Vol III; 6/78
2-IAEA Bulletin; Vol XIX, No 5; 10/77

ACTIVITY--JAPAN RESEARCH AND TEST REACTOR NUCLEAR FACILITY PROFILE
CATEGORY-RESEARCH AND TEST REACTORS DMK 30 SEP 78

FACILITY NAME	LOCATION	FAC TYPE	CAPACITY	STATUS	YR	FAC CODE
JMTR	Oarai	TK-L	50 MWt	Oper	68	RJBX

LATITUDE- DEG MIN LONGITUDE- DEG MIN

TECHNOLOGY SOURCE-JAERI & NAIG, Hitachi, MAPI, Sumitomo & Dai-ichi
OWNER/OPERATOR-Japan Atomic Energy Research Institute (JAERI)
SUPPLY SOURCE-
SAFEGUARDS-IAEA (non-NPT)

PRODUCT/USE-Engineering tests on fuel elements and components of nuclear plants
FUEL STORAGE CAPACITY-Underwater racks in service canal, made of Al and cadmium plates used as poisoning curtain (See remarks)
PROCESS-Tank-type, highly enriched (90%) uranium, light water moderated and cooled, beryllium reflected
SCHEDULE-In operation; start of construction: March 1965; reactor critical: March 1968; routine operation: Dec. 1968
REMARKS-JMTR=Japan Materials Testing Reactor
Fuel loading and unloading: Lowering of water level in reactor pool to pressure vessel top head, manual handling with remote handling tools through water layer.
Neutron flux: (At 50 MW in fuel region)
Thermal av 2.8 x (10 E 14)n/(cm E 2)sec; thermal max 5.4 x (10 E 14) n/(cm E 2)sec; fast av 3.1 x (10 E 14)n/(cm E 2)sec; fast max 5.5 x (10 E 14)n/(cm E 2)sec. Critical mass: 3.8 Kg U-235
Core loading at rated power: Variable, 5.3-7.0 Kg U-235
Av. specific power in fuel: Variable, 9400-7000 KW/Kg U-235
Each storage rack has 15 fuel elements
REFERENCES-
1-Directory of Nuclear Reactors, Vol VIII, IAEA, 1970, p. 83
2-Intl Atomic Energy Agency Bulletin, Vol XIX, No. 5, Oct. 1977
3-Intl Data Collection and Analysis, Vol III, NAC, June 1978

ACTIVITY--JAPAN RESEARCH AND TEST REACTOR NUCLEAR FACILITY PROFILE
CATEGORY-RESEARCH AND TEST REACTORS DMK 30 SEP 78

FACILITY NAME	LOCATION	FAC TYPE	CAPACITY	STATUS	YR	FAC CODE
JMTRC See remarks	Oarai-machi	POOL	.01 MWt	Oper	67	RJBZ

LATITUDE- DEG MIN LONGITUDE- DEG MIN

TECHNOLOGY SOURCE-JAERI, Sumitomo Atomic Industries Co. Ltd.
SUPPLY SOURCE-
OWNER/OPERATOR-Japan Atomic Energy Research Institute (JAERI)
SAFEGUARDS-IAEA (non-NPT)

PRODUCT/USE-Reactor physics, measurements of nuclear characteristics for JMTR
FUEL STORAGE CAPACITY-Irradiated fuel: New fuel storage racks and two poison-racks in pool, providing space for 47 fuel elements
PROCESS-Pool-type, highly enriched (90%) uranium, light water moderated and cooled, beryllium reflected
SCHEDULE-In operation; start of construction: Aug. 1965; reactor critical in Tokai: Oct. 1965; reactor critical in Oarai: Sept. 1967
REMARKS-JMTRC=Japan Materials Testing Reactor Critical Facility
Neutron flux: Thermal av 5.6 x (10 E 7)n/(cm E 2)sec; thermal max 1.1 x (10 E 8)n/(cm E 2)sec; fast av 6.2 x (20 E 7)n/(cm E 2); fast max 1.1 x (10 E 8)n/(cm E 2) sec
Critical mass: 3.8 Kg U-235
Core loading at rated power: Variable, from 5.3-7.0 Kg U-235
Av. specific power in fuel: 1.4 W/Kg
Av. power density in core: .1 W/litre
Fuel loading and unloading: Manual with handling tools

REFERENCES-
1-Directory of Nuclear Reactors, Vol VIII, IAEA, 1970, p. 63
2-Intl Atomic Energy Agency Bulletin, Vol XIX, No 5; Oct. 1977

ACTIVITY--JAPAN RESEARCH & TEST REACTOR NUCLEAR FACILITY PROFILE
CATEGORY-RESEARCH AND TEST REACTORS DMK 30 SEP 78

FACILITY NAME	LOCATION	FAC TYPE	CAPACITY	STATUS	YR	FAC CODE
Joyo	Oarai Engineering Center	FNRR	50 MWt	Oper	74	RJCA

LATITUDE- DEG MIN LONGITUDE- DEG MIN

TECHNOLOGY SOURCE-JAPAN (FBR Program Director)
OWNER/OPERATOR-
SUPPLY SOURCE-
SAFEGUARDS-IAEA (non-NPT)

PRODUCT/USE-Study of the problems of core design, sodium technology, fuel development and mock-up tests
FUEL STORAGE CAPACITY-Liq. rad waste is first sent to one of 2 (high or low level) storage tanks, depending on its rad level(See remarks)
PROCESS-Sodium-cooled fast breeder reactor, fueled with a mixed oxide of plutonium and uranium
SCHEDULE-Start of construction: Fall-1969; Construction complete: 1974
REMARKS-Waste is then sent to a flocculator for chemical treatment. Treated liq. is filtered & monitored for rad. level. If it is lower than allowable level, it is released. If not, it is condensed & stored in tank to decay.
Solid rad waste and sludge precipitated in the floculator are concreted. Gaseous rad waste is filtered & stored in 1 of 3 gas tanks where it decays to the permissible level. It is re-filtered & released to air through an 80 m high stack. Reac. is a major step in Japanese LMFBR program.

REFERENCES-
1-Intl Data Collection and Analysis, Vol III, NAC, June 1978
2-Intl Atomic Energy Agency Bulletin, Vol XIX, No 5, Oct. 1977
3-Japan's Experimental Fast Breeder Reactor Joyo, Hanford Engineering Development Laboratory, Feb. 1978

ACTIVITY--JAPAN RESEARCH & TEST REACTOR NUCLEAR FACILITY PROFILE
CATEGORY-RESEARCH AND TEST REACTORS DMK 30 SEP 78

FACILITY NAME	LOCATION	FAC TYPE	CAPACITY	STATUS	FAC YR	FAC CODE
Japan Rsch Reac No 1 JRR-1	Tokai-Mura	LHRR	.05 MWt	Oper	57	RJCC

LATITUDE- 36 DEG 22 MIN N LONGITUDE-140 DEG 29 MIN E

TECHNOLOGY SOURCE-Atomics Intl Div of N. Amer Aviation
SUPPLY SOURCE-
OWNER/OPERATOR-Japan Atomic Energy Research Institute
SAFEGUARDS-IAEA Safeguards (Non-NPT)
PRODUCT/USE-Research, training and isotope production

FUEL STORAGE CAPACITY-Moderated and cooled, graphite reflected

PROCESS-Aqueous homogeneous, L-54 type, enriched (20%) uranium, light water moderated
SCHEDULE-Start of construction: Aug. 1956; reactor critical: Aug 1957; full power operation: Nov 1957
REMARKS-The reactor is of the Atomics International L-54 type. Most of the construction details, physical data, etc. are identical or of same order of magnitude as for the Armour Research Reactors, BER, FRF, CESNEF.

REFERENCES-
1-Directory of Nuclear Reactors, Vol III, IAEA, 1960 p. 193
2-Intl Atomic Energy Agency Bulletin, Vol XIX, No. 5, Oct. 1977

ACTIVITY--JAPAN RESEARCH AND TEST REACTOR NUCLEAR FACILITY PROFILE
CATEGORY-RESEARCH AND TEST REACTORS DMK 30 SEP 78

FACILITY NAME	LOCATION	FAC TYPE	CAPACITY	STATUS	YR	FAC CODE
JRR-2	Tokai-Mura	TK-H	10 MWt	Oper	62	RJCD

See remarks
LATITUDE- 36 DEG 22 MIN N LONGITUDE-140 DEG 29 MIN E

TECHNOLOGY SOURCE-Dsgn: AMF Atomics Div of Amer Mach & Foundry
SUPPLY SOURCE-
OWNER/OPERATOR-Japan Atomic Energy Research Institute (JAERI)
SAFEGUARDS-IAEA (non-NPT)

PRODUCT/USE-Neutron physics, materials irradiation, isotope production

FUEL STORAGE CAPACITY-Irradiated fuel: storage pool with critically safe racks
PROCESS-Tank-type, highly enriched (90%) uranium, heavy water cooled, moderated and reflected
SCHEDULE-In operation; start of construction: April 1958; reactor critical: Oct. 1960; full power operation: Oct. 1962
REMARKS-Av. power density in core: 29.2 KW/litre
Fuel loading and unloading: After shut-down, the spent fuel elements are drawn up into a refueling cask and transferred to a storage pool
Reactor built by AMF Co. and Mitsubishi Atomic Power Industries, Inc
Neutron flux: Thermal av 5.9 x (10 E 13)n/(cm E 2)sec; fast max 5 x (10 E 13)n/(cm E 2)sec
Critical mass: Approx 2.3 Kg U-235
Core loading at rated power: Approx 3.8 Kg U-235
Av specific power in fuel: 2.6 MW/Kg U-235
JRR-2=Japan Research Reactor No. 2

REFERENCES-
1-Directory of Nuclear Reactors, Vol VI, IAEA, 1966, p. 157
2-Intl Atomic Energy Agency Bulletin, Vol XIX, No 5; Oct. 1977

ACTIVITY--JAPAN ENRICHMENT PLANTS
CATEGORY-ENRICHMENT PLANTS

NUCLEAR FACILITY PROFILE
SRM 19 JUL 78

FACILITY NAME	LOCATION	FAC TYPE	CAPACITY	STATUS	YR	FAC CODE
C-1	Tokai-Mura (Mito)	CENT		Oper	74	RJCE

LATITUDE- 36 DEG 22 MIN N
LONGITUDE-140 DEG 29 MIN E

TECHNOLOGY SOURCE-PNC, Toshiba, Mitsubishi, Hitachi
SUPPLY SOURCE-
OWNER/OPERATOR-Power Reactor and Nuclear Fuel Development Corp
SAFEGUARDS-IAEA Safeguards Agreement

PRODUCT/USE-Slightly enriched uranium

FUEL STORAGE CAPACITY-

PROCESS-Gaseous Centrifuge

SCHEDULE-Small cascade (180 machines) in operation for centrifuge research-1974
REMARKS-Facility used to test centrifuge model designed by three corporations-Hitachi, Toshiba, and Mitsubishi

REFERENCES-
1-Nucl Eng Intl; Vol XXI, No 250; 11/76
2-NAC; Intl Data Collection and Analysis; Task 1, Vol III; 6/78
3-General Acctg Office; Overview of Nuclear Export Policies of Major Foreign Supplier Nations; 10/21/77
4-IAEA Bulletin; Vol XIX, No 5; 10/77

ACTIVITY--JAPAN RESEARCH AND TEST REACTOR NUCLEAR FACILITY PROFILE
CATEGORY-RESEARCH AND TEST REACTORS DMK 30 SEP 78

FACILITY NAME	LOCATION	FAC TYPE	CAPACITY	STATUS	YR	FAC CODE
JRR-3	Tokai-Mura Ibaraki-ken	TK-H	10 MWt	Oper	64	RJCF

LATITUDE- 36 DEG 22 MIN N LONGITUDE-140 DEG 29 MIN E

TECHNOLOGY SOURCE-See remarks
OWNER/OPERATOR-Japan Atomic Energy Research Institute (JAERI)
SUPPLY SOURCE-
SAFEGUARDS-IAEA (non-NPT)

PRODUCT/USE-Tank-type, natural uranium, heavy water moderated and cooled, graphite reflected
FUEL STORAGE CAPACITY-Irradiated fuel: Vertical storage rack for 270 sub-assemblies, underwater
PROCESS-Tank-type, natural uranium, heavy water moderated and cooled, graphite reflected
SCHEDULE-In operation; reactor critical: Sept. 1962; full power operation: March 1964
REMARKS-Core loading at rated power: Approx 6100 Kg natural uranium Av specific power in fuel: 1.64 KW/Kg nat. U. Average power density in core: .685 KW/litre. Fuel loading and unloading: From top of reactor by lead shielded flask moving on rails.
Design & bldr.: JAERI, Hitachi Ltd., Mitsubishi Atomic Power Ind. Inc., Tokyo Shibaura Electric Co Ltd., Ishikawajima-Harima Heavy Ind Co Ltd., Fuji Electric Mfg Co Ltd., Showa Denko Co Ltd., Takenaka-Komuten Co Ltd.
Neutron flux: Thermal av 9.05 x (10 E 12)n/(cm E 2)sec; thermal max 2.15 x (10 E 13)n/(cm E 2)sec; fast max 8.75 x (10 E 12)n/(cm E 2) x sec; critical mass: Approx 3500 Kg natural uranium
REFERENCES-
1-Directory of Nuclear Reactors, Vol VI, IAEA, 1966, p. 163
2-Intl Atomic Energy Agency Bulletin, Vol XIX, No 5; Oct. 1977

ACTIVITY--JAPAN ENRICHMENT
CATEGORY-ENRICHMENT PLANTS

NUCLEAR FACILITY PROFILE
SRM 19 JUL 78

FACILITY NAME	LOCATION	FAC TYPE	CAPACITY	STATUS	YR	FAC CODE
C-2	Tokai-Mura (Mito)	CENT		Oper	76	RJCG

LATITUDE- 36 DEG 22 MIN N LONGITUDE-140 DEG 29 MIN E

TECHNOLOGY SOURCE-PNC, Toshiba, Mitsubishi, Hitachi
SUPPLY SOURCE-

OWNER/OPERATOR-Power Reactor and Nuclear Fuel Developmt Corp (PNC)
SAFEGUARDS-IAEA Safeguards Agreement

PRODUCT/USE-1.5% U235 enriched uranium

FUEL STORAGE CAPACITY-

PROCESS-Gaseous Centrifuge

SCHEDULE-247 centrifuge cascade used for centrifuge research-1976

REMARKS-Facility used to test centrifuge model designed by three corporations-Hitachi, Toshiba, and Mitsubishi. C-2 model is a larger and improved design of C-1.

REFERENCES-

1-Nucl Eng Intl; Vol XXI, No 250; 11/76
2-NAC; Intl Data Collection and Analysis; Task 1, Vol III; 6/78
3-General Acctg Office; Overview of Nuclear Export Policies of Major Foreign Supplier Nations; 10/21/77
4-IAEA Bulletin; Vol XIX, No 5; 10/77

ACTIVITY--JAPAN RESEARCH AND TEST REACTOR NUCLEAR FACILITY PROFILE
CATEGORY-RESEARCH AND TEST REACTORS DMK 30 SEP 78

FACILITY NAME	LOCATION	FAC TYPE	CAPACITY	STATUS	YR	FAC CODE
JRR-4	Tokai-Mura	POOL	1 MWt	Oper	65	RJCJ
Japan Rsch Reac-4	Ibaraki-ken					

LATITUDE- 36 DEG 22 MIN N LONGITUDE-140 DEG 29 MIN E

TECHNOLOGY SOURCE-Design & bldr: Hitachi Works
SUPPLY SOURCE-See remarks
OWNER/OPERATOR-Japan Atomic Energy Research Institute
SAFEGUARDS-IAEA Safeguards (non-NPT)
PRODUCT/USE-Reactor physics and shielding experiments

FUEL STORAGE CAPACITY-

PROCESS-Pool-type, highly enriched (90%) uranium, light water moderated and cooled, graphite reflected
SCHEDULE-In operation; start of construction: Sept. 1963; reactor critical: Jan. 1965
REMARKS-Japan has developed and is developing all processes needed for fuel production. Companies involved are: Mitsubishi, Furukawa and PNC.
Neutron flux: Thermal av 1.1 x (10 E 13)n/(cm E 2)sec; thermal max 2.2 x (10 E 13)n/(cm E 2)sec; fast av 2.2 x (10 E 13)n/(cm E 2)sec; Fast max 4.7 x (10 E 13)n/(cm E 2)sec
Critical mass: 2.3 Kg U-235
Core loading: 3.0 Kg U-235

REFERENCES-
1-Directory of Nuclear Reactors, Vol VI, IAEA, 1966, p. 69
2-Intl Atomic Energy Agency Bulletin, Vol XIX, No 5; Oct. 1977
3-Intl Data Collection and Analysis, Vol III, NAC, June 1978

ACTIVITY--JAPAN RESEARCH & TEST REACTOR NUCLEAR FACILITY PROFILE
CATEGORY-RESEARCH AND TEST REACTORS DMK 30 SEP 78

FACILITY NAME	LOCATION	FAC TYPE	CAPACITY	STATUS	YR	FAC CODE
Kinki University	Fuse-City, Osaka		.1 Wt			RJCU

LATITUDE- 34 DEG 40 MIN N LONGITUDE-135 DEG 36 MIN E

TECHNOLOGY SOURCE- OWNER/OPERATOR-

SUPPLY SOURCE- SAFEGUARDS-IAEA (non-NPT)

PRODUCT/USE-Training

FUEL STORAGE CAPACITY-

PROCESS-UTR-type reactor, enriched uranium, light water moderated

SCHEDULE-Start up: Nov. 1961

REMARKS-

REFERENCES-
1-Intl Atomic Energy Agency Bulletin, Vol VII, No 5; Sept. 1965
2-Intl Atomic Energy Agency Bulletin, Vol XIX, No 5; Oct. 1977

ACTIVITY--JAPAN RESEARCH AND TEST REACTOR NUCLEAR FACILITY PROFILE
CATEGORY-RESEARCH AND TEST REACTORS DMK 30 SEP 78

FACILITY NAME	LOCATION	FAC TYPE	CAPACITY	STATUS	YR	FAC CODE
Kuca	Kumatori	FNRR	(small)	Constr		RJCV

LATITUDE- DEG MIN LONGITUDE- DEG MIN

TECHNOLOGY SOURCE- OWNER/OPERATOR-

SUPPLY SOURCE- SAFEGUARDS-IAEA (non-NPT)

PRODUCT/USE-

FUEL STORAGE CAPACITY-

PROCESS-

SCHEDULE-Under construction

REMARKS-

REFERENCES-
1-Intl Data Collection and Analysis, Vol III, NAC, June 1978
2-Intl Atomic Energy Agency Bulletin, Vol XIX, No 5; Oct. 1977

JA 19

ACTIVITY--JAPAN FUEL FABRICATION
CATEGORY-FUEL FABRICATION PLANTS

NUCLEAR FACILITY PROFILE
SRM 10 AUG 78

FACILITY NAME	LOCATION	FAC TYPE	CAPACITY	STATUS	YR	FAC CODE
Kumatori Works	Osaka		40 te/yr	Oper		RJCW

LATITUDE- 34 DEG 40 MIN N

LONGITUDE-135 DEG 30 MIN E

TECHNOLOGY SOURCE-

OWNER/OPERATOR-Nuclear Fuel Industries, Ltd.

SUPPLY SOURCE-

SAFEGUARDS-IAEA Safeguards Agreement

PRODUCT/USE-

FUEL STORAGE CAPACITY-

PROCESS-Unspecified fuel fabrication

SCHEDULE-Currently in operation since early 1960's

REMARKS-Originally built to produce fuel for research reactors by Sumitomo Electric. Taken over in 1972 by Nuclear Fuel Industries, a joint venture of Sumitomo Electric (50%) and Furukawa Electric (50%)

REFERENCES-

1-NAC; Intl Data Collection and Analysis; Task 1, Vol III, 6/78
2-IAEA Bulletin; Vol XIX, No 5, 10/77

ACTIVITY--JAPAN RESEARCH AND TEST REACTOR NUCLEAR FACILITY PROFILE
CATEGORY-RESEARCH AND TEST REACTORS DMK 30 SEP 78

FACILITY NAME	LOCATION	FAC TYPE	CAPACITY	STATUS	YR	FAC CODE
KUR Kyato Univ. Reactor	Kumatori-cho, Sennangun Osaka	POOL	5 MWt	Oper	64	RJDB

LATITUDE- 35 DEG 57 MIN N LONGITUDE-137 DEG 17 MIN E

TECHNOLOGY SOURCE-Design: Kyoto Univ & Internucl Co(USA) (Remarks)
OWNER/OPERATOR-Owned by Japanese Govt Operated by Kyoto University
SUPPLY SOURCE-See remarks
SAFEGUARDS-IAEA safeguards (non NPT)
PRODUCT/USE-Neutron physics, solid state physics, chemistry, isotope production, training
FUEL STORAGE CAPACITY-

PROCESS-Pool-type, highly enriched (90%) uranium, light water moderated and cooled, graphite reflected
SCHEDULE-In operation; Start of construction: August 1962; Reactor critical: June 1964
REMARKS-Reactor built by Hitachi Ltd., Yamatake Honeywell and Nippon Kokan. Japan has developed and is developing all processes needed for fuel production. Companies involved are Mitsubishi, Sumitoma, Eurukawa and PNC.

REFERENCES-
1-Directory of Nuclear Reactors, Vol VI, IAEA, 1966, p. 67
2-Intl Atomic Energy Agency Bulletin, Vol XIX, No 5, Oct 1977
3-Intl Data Collection and Analysis, Vol III, NAC, June 1978

ACTIVITY--JAPAN RESEARCH AND TEST REACTOR NUCLEAR FACILITY PROFILE
CATEGORY-RESEARCH AND TEST REACTORS DMK 05 SEP 78

FACILITY NAME	LOCATION	FAC TYPE	CAPACITY	STATUS	YR	FAC CODE
Kyoto Univ. Reactor	Kumatori-machi Osaka	TK-L	1 MWt			RJDC

LATITUDE- DEG MIN LONGITUDE- DEG MIN

TECHNOLOGY SOURCE- OWNER/OPERATOR-

SUPPLY SOURCE- SAFEGUARDS-IAEA (non-NPT)

PRODUCT/USE-Academic study, training (used jointly by all colleges and universities)
FUEL STORAGE CAPACITY-

PROCESS-

SCHEDULE-Start up: June 1964

REMARKS-

REFERENCES-
1-Intl Atomic Energy Agency Bulletin, Vol VII, No 5, Sept 1965
2-Intl Atomic Energy Agency Bulletin, Vol XIX, No 5, Oct 1977

ACTIVITY--JAPAN FUEL FABRICATION
CATEGORY-FUEL FABRICATION PLANTS

NUCLEAR FACILITY PROFILE
SRM 10 AUG 78

FACILITY NAME	LOCATION	FAC TYPE	CAPACITY	STATUS	YR	FAC CODE
Mitsubishi Nucl Fuel Co., Ltd.	Tokai-Mura (Mito)	UO	420 te (te/yr)	Oper	72	RJDK

LATITUDE- 36 DEG 22 MIN N
LONGITUDE-140 DEG 29 MIN E

TECHNOLOGY SOURCE-Westinghouse-US, and Mitsubishi-Japan
SUPPLY SOURCE-
OWNER/OPERATOR-Mitsubishi Nuclear Fuel Co., Ltd.
SAFEGUARDS-IAEA Safeguards Agreement

PRODUCT/USE-U-oxide fuel assemblies/Pressurized Water Reactors

FUEL STORAGE CAPACITY-

PROCESS-Pellet production, fuel rod fabrication, and final assembly

SCHEDULE-Currently in operation since 1972

REMARKS-Mitsubishi Nuclear Fuel Co., Ltd. is a joint venture of Mitsubishi Metal Corp (51%), Mitsubishi Heavy Industries (15%), and Westinghouse (34%).
MARKET SHARE- MNF is now and will remain the primary domestic PWR fuel supplier. No plans to market outside Japan.
CAPACITY LIMITATIONS- MNF plans to increase capacity by 50% when justified by increased demand- probably around 1980.

REFERENCES-
1-NAC; Intl Data Collection and Analysis; Task 1, Vol III; 6/78
2-IAEA Bulletin; Vol XIX, No 5; 10/77

ACTIVITY--JAPAN RESOURCE RECOVERY
CATEGORY-CONVERSION PLANTS

NUCLEAR FACILITY PROFILE
SRM 02 AUG 78

FACILITY NAME	LOCATION	FAC TYPE	CAPACITY	STATUS	YR	FAC CODE
Mitsubishi Nucl Fuel Co., Limited	Tokai-Mura (Mito)	UO2	420 te (te/yr)	Oper	72	RJDL

LATITUDE- 36 DEG 22 MIN N
LONGITUDE-140 DEG 29 MIN E

TECHNOLOGY SOURCE-
OWNER/OPERATOR-Mitsubishi Nuclear Fuel Co., Ltd.
SUPPLY SOURCE-
SAFEGUARDS-IAEA Safeguards Agreement
PRODUCT/USE-UO2 powder/pelletized for fuel rod fabrication

FUEL STORAGE CAPACITY-

PROCESS-Conversion of UF6 to UO2 powder

SCHEDULE-Currently in operation since 1972

REMARKS-Mitsubishi Nuclear Fuel Co., Ltd. owned by: Mitsubishi Metal Corp. (51%), Mitsubishi Heavy Industries (15%), and Westinghouse Electric Corp (34%)
NEW FACILITY PLANS- Will increase capacity by 50% when justified by demand, probably around 1980.

REFERENCES-
1-NAC; Intl Data Collection and Analysis; Task 1, Vol III; 6/78
2-IAEA Bulletin; Vol XIX, No 5; 10/77

ACTIVITY--JAPAN RESEARCH AND TEST REACTOR NUCLEAR FACILITY PROFILE
CATEGORY-RESEARCH AND TEST REACTORS DMK 30 SEP 78

FACILITY NAME	LOCATION	FAC TYPE	CAPACITY	STATUS	YR	FAC CODE
NCA NAIG Critical Assembly	Kawasaki-shi	POOL	200W max	Oper	63	RJDW

LATITUDE- 35 DEG 32 MIN N LONGITUDE-139 DEG 41 MIN E

TECHNOLOGY SOURCE-Tokyo Shibaura Elec Co NAIG; Constructor:Hitachi
OWNER/OPERATOR-Nippon Atomic Ind. Group Co., Ltd (NAIG)
SUPPLY SOURCE-See remarks
SAFEGUARDS-IAEA safeguards(non NPT)

PRODUCT/USE-Research on light water-uranium oxide lattices

FUEL STORAGE CAPACITY-

PROCESS-Pool-type, slightly enriched (1%, 2%, 3%) uranium oxide, light water moderated and cooled
SCHEDULE-In operation; Start of construction: Jan 1963; Reactor critical: Dec 1963
REMARKS-Through Hitachi, Tokyo Shibaura, JAERI, and Nippon Atomic, Japan can design and construct research reactors.
Neutron flux: At 200W, thermal av 2 to 11 x (10 E 8)n/(cm E 2)sec
Japan has developed and is developing all processes needed for fuel production. Companies involved are Mitsubishi, Sumitoma, Fucukawa and PNC

REFERENCES-
1-Directory of Nuclear Reactors, Vol VI, IAEA, 1966, p. 59
2-Intl Atomic Energy Agency Bulletin, Vol XIX, No. 5, Oct 1977
3-Intl Data Collection and Analysis, Vol III, NAC, June 1978

ACTIVITY--JAPAN RESEARCH AND TEST REACTOR NUCLEAR FACILITY PROFILE
CATEGORY-RESEARCH AND TEST REACTORS DMK 30 SEP 78

FACILITY NAME	LOCATION	FAC TYPE	CAPACITY	STATUS	YR	FAC CODE
NSRR	Tokai		.3 MWt	Constr		RJDX

LATITUDE- DEG MIN LONGITUDE- DEG MIN

TECHNOLOGY SOURCE- OWNER/OPERATOR-

SUPPLY SOURCE- SAFEGUARDS-IAEA (non-NPT)

PRODUCT/USE-

FUEL STORAGE CAPACITY-

PROCESS-

SCHEDULE-Under construction

REMARKS-

REFERENCES-
1-Intl Data Collection and Analysis, Vol III, NAC, June 1978
2-Intl Atomic Energy Agency Bulletin, Vol XIX, No. 5, Oct. 1977

ACTIVITY--JAPAN FUEL FABRICATION
CATEGORY-FUEL FABRICATION PLANTS

NUCLEAR FACILITY PROFILE
SRM 11 AUG 78

FACILITY NAME	LOCATION	FAC TYPE	CAPACITY	STATUS	YR	FAC CODE
Tokai Works	Tokai-Mura (Mito)	UPuO		Oper		RJDY

LATITUDE- 36 DEG 22 MIN N

LONGITUDE-140 DEG 29 MIN E

TECHNOLOGY SOURCE-

OWNER/OPERATOR-Power Reactor and Nucl Fuel Development Corp (PNC)

SUPPLY SOURCE-

SAFEGUARDS-IAEA Safeguards Agreement

PRODUCT/USE-U-Pu mixed-oxide fuel/Fast Breeder and Advanced Thermal Reactors

FUEL STORAGE CAPACITY-

PROCESS-

SCHEDULE-Currently in operation

REMARKS-

REFERENCES-
1-Nucl Eng Intl; Vol XVIII, No 206; 7/73
2-IAEA; The Annual Report for 1976; 7/77
3-IAEA Bulletin; Vol XIX, No 5; 10/77

ACTIVITY--JAPAN RESEARCH AND TEST REACTOR NUCLEAR FACILITY PROFILE
CATEGORY-RESEARCH AND TEST REACTORS DMK 30 SEP 78

FACILITY NAME	LOCATION	FAC TYPE	CAPACITY	STATUS	FAC YR	FAC CODE
OCF Ozenji Crit Fac	Ozenji, Kawasaki	TK-L	100W max	Oper	62	RJDZ

LATITUDE- 35 DEG 32 MIN N LONGITUDE-139 DEG 41 MIN E

TECHNOLOGY SOURCE-Design & bldr: Hitachi Ltd.
OWNER/OPERATOR-Hitachi Ltd.
SUPPLY SOURCE-
SAFEGUARDS-IAEA (Non-NPT)

PRODUCT/USE-Research and development of boiling water type power reactors
FUEL STORAGE CAPACITY-

PROCESS-Tank-type, slightly enriched (1.5 and 2.5%) uranium, light water moderated, cooled and reflected
SCHEDULE-In operation; Reactor critical: Oct. 1962

REMARKS-Critical mass: Approx. 5.75 Kg U-235

REFERENCES-
1-Directory of Nuclear Reactors, Vol VI, IAEA, 1966, p. 89
2-Intl Atomic Energy Agency Bulletin, Vol XIX, No. 5, Oct. 1977

ACTIVITY--JAPAN SPENT FUEL PROCESSING NUCLEAR FACILITY PROFILE
CATEGORY-FUEL REPROCESSING FACILITIES SRM 14 AUG 78

FACILITY NAME	LOCATION	FAC TYPE	CAPACITY	STATUS	YR	FAC CODE
PNC		FB	120 kg/d (kg/day)	Plan	86	RJEE

LATITUDE- DEG MIN LONGITUDE- DEG MIN

TECHNOLOGY SOURCE-

OWNER/OPERATOR-Power Reactor and Nucl Fuel Development Corp (PNC)

SUPPLY SOURCE-

SAFEGUARDS-

PRODUCT/USE-

FUEL STORAGE CAPACITY-

PROCESS-Fast-breeder reactor fuel reprocessing

SCHEDULE-Planned for operation in 1986. Construction scheduled to start in 1983

REMARKS-

REFERENCES-

1-Nucl Eng Intl; Vol XXIII, No 270; 3/78

ACTIVITY--JAPAN SPENT FUEL PROCESSING
CATEGORY-FUEL REPROCESSING FACILITIES

NUCLEAR FACILITY PROFILE
SRM 28 JUL 78

FACILITY NAME	LOCATION	FAC TYPE	CAPACITY	STATUS	YR	FAC CODE
PNC	Tokai-Mura (Mito)	UO	210 te (te/yr)	Oper	78	RJEF

LATITUDE- 36 DEG 22 MIN N
LONGITUDE-140 DEG 29 MIN E

TECHNOLOGY SOURCE-France, PNC (Japan)
SUPPLY SOURCE-

OWNER/OPERATOR-Power Reactor and Nucl Fuel Development Corp (PNC)
SAFEGUARDS-IAEA Safeguards Agreement

PRODUCT/USE-

FUEL STORAGE CAPACITY-

PROCESS-U-oxide low-enriched fuel reprocessing using Purex process

SCHEDULE-Pilot plant tested and closed for alterations, start up in 1978
REMARKS-Plant built by PNC with assistance from French company-St. Gobain Techniques Nouvelles (SGN). No expansion plans for this pilot plant. By agreement with U.S., PNC is limited to reprocessing 99 te over two year.

REFERENCES-
1-Chayes, Abram and W. Bennett Lewis; International Arrangements for Nuclear Fuel Reprocessing; 1977
2-NAC; Intl Data Collection and Analysis; Task 1, Vol III; 6/78

ACTIVITY--JAPAN RESEARCH AND TEST REACTOR NUCLEAR FACILITY PROFILE
CATEGORY-RESEARCH AND TEST REACTORS DMK 30 SEP 78

FACILITY NAME	LOCATION	FAC TYPE	CAPACITY	STATUS	YR	FAC CODE
SHCA See remarks	Tokai-Mura Ibaraki-ken	SHRR	10 Wt	Oper	61	RJEL

LATITUDE- 36 DEG 22 MIN N LONGITUDE-140 DEG 29 MIN E

TECHNOLOGY SOURCE-Design & bldr: JAERI (See remarks)
SUPPLY SOURCE-

OWNER/OPERATOR-Japan Atomic Energy Research Institute (JAERI)
SAFEGUARDS-IAEA (non-NPT)

PRODUCT/USE-Reactor physics

FUEL STORAGE CAPACITY-

PROCESS-Solid homogeneous, enriched (20%) uranium, graphite moderated and reflected, uncooled
SCHEDULE-In operation; start of construction: May 1959; reactor critical: Jan. 1961
REMARKS-SHCA: Semi-Homogeneous Critical Assembly. Design & bldr.: Nippon Atomic Industry Group, Mitsubishi Atomic Power Industry
Neutron flux: Thermal max (10 E 7)n/(cm E 2)sec

REFERENCES-
1-Directory of Nuclear Reactors, Vol VI, IAEA, 1966, p. 125
2-Intl Atomic Energy Bulletin, Vol XIX, No 5, Oct. 1977
3-Intl Data Collection and Analysis, Vol III, NAC, June 1978

ACTIVITY--JAPAN FUEL FABRICATION
CATEGORY-FUEL FABRICATION PLANTS

NUCLEAR FACILITY PROFILE
SRM 10 AUG 78

FACILITY NAME	LOCATION	FAC TYPE	CAPACITY	STATUS	YR	FAC CODE
Tokayama Works	Tokayama (misaki cape)		20 te/yr	Oper		RJEW

LATITUDE- 34 DEG 40 MIN N

LONGITUDE-131 DEG 34 MIN E

TECHNOLOGY SOURCE-

OWNER/OPERATOR-Nuclear Fuel Industries, Ltd.

SUPPLY SOURCE-

SAFEGUARDS-IAEA Safeguards Agreement

PRODUCT/USE-

FUEL STORAGE CAPACITY-

PROCESS-Unspecified fuel fabrication

SCHEDULE-Currently in operation since early 1960's

REMARKS-Originally built to produce fuel for research reactors by Sumitomo Electric. Taken over in 1973 by Nuclear Fuel Industries, a joint venture of Simitomo Electric (50%) and Furukawa Electric (50%)

REFERENCES-

1-NAC; Intl Data Collection and Analysis; Task 1, Vol III; 6/78
2-IAEA Bulletin; Vol XIX, No 5; 10/77

ACTIVITY--JAPAN RESEARCH AND TEST REACTOR NUCLEAR FACILITY PROFILE
CATEGORY-RESEARCH AND TEST REACTORS DMK 30 SEP 78

FACILITY NAME	LOCATION	FAC TYPE	CAPACITY	STATUS	YR	FAC CODE
TCA	Tokai-Mura	TK-L	200W max	Oper	62	RJEX

TK-Type Crit Assem Ibaraki-ken
LATITUDE- 36 DEG 22 MIN N LONGITUDE-140 DEG 29 MIN E

TECHNOLOGY SOURCE-Gen Elect Co and Nippon Atomic Industry Group
SUPPLY SOURCE-
OWNER/OPERATOR-Japan Atomic Energy Research Institute
SAFEGUARDS-IAEA (Non-NPT)

PRODUCT/USE-Reactor physics

FUEL STORAGE CAPACITY-

PROCESS-Tank-type, slightly enriched (2.6%) uranium, light water moderated, cooled and reflected
SCHEDULE-In operation; Reactor critical: August 1962

REMARKS-Neutron flux: .5 x (10 E 7)n/(cm E 2)sec at core centre at 1W operation
Critical mass: 11.3 Kg U-235

REFERENCES-
1-Directory of Nuclear Reactors, Vol VI, IAEA, 1966, p. 87
2-Intl Atomic Energy Agency Bulletin, Vol XIX, No 5, Oct. 1977

ACTIVITY--JAPAN RESOURCE RECOVERY
CATEGORY-CONVERSION PLANTS

NUCLEAR FACILITY PROFILE
SRM 02 AUG 78

FACILITY NAME	LOCATION	FAC TYPE	CAPACITY	STATUS	YR	FAC CODE
Sumitomo Metal Mining Co.	Tokai-Mura (Mito)	UO2	240 te (te/yr)	Oper	73	RJFF

LATITUDE- 36 DEG 22 MIN N
LONGITUDE-140 DEG 29 MIN E

TECHNOLOGY SOURCE-

OWNER/OPERATOR-Sumitomo Metal Mining Co.

SUPPLY SOURCE-

SAFEGUARDS-IAEA Safeguards Agreement

PRODUCT/USE-UO2 powder

FUEL STORAGE CAPACITY-

PROCESS-Conversion of UF6 to UO2 powder using ADU (ammonium diuranate) process
SCHEDULE-Currently in operation since 1973

REMARKS-When new plant is built adjacent to present one in 1979, present plant will be used solely to reprocess scrap UO2 from fuel fabrication process

REFERENCES-
1-NAC; Intl Data Collection and Analysis; Task 1, Vol III; 6/78
2-IAEA Bulletin; Vol XIX, No 5; 10/77

ACTIVITY--JAPAN RESOURCE RECOVERY
CATEGORY-MINES (URANIUM & THORIUM)

NUCLEAR FACILITY PROFILE
PSM 28 AUG 78

FACILITY NAME	LOCATION	FAC TYPE	CAPACITY	STATUS	YR	FAC CODE
	Tono	URAN	10 te/y	Oper		RJFR

LATITUDE- 39 DEG 30 MIN N

LONGITUDE-141 DEG 31 MIN

TECHNOLOGY SOURCE-

OWNER/OPERATOR-PNC

SUPPLY SOURCE-

SAFEGUARDS-

PRODUCT/USE-Uranium

FUEL STORAGE CAPACITY-

PROCESS-Pilot operation

SCHEDULE-

REMARKS-Average ore grade: 0.055%
Reserves: 5040 te
PNC- Power Reactor and Nuclear Fuel Development Corporation

REFERENCES-

1-Uranium Resources, Production and Demand, IAEA, Dec. 1977, pp. 78-80

ACTIVITY--JAPAN RESOURCE RECOVERY NUCLEAR FACILITY PROFILE
CATEGORY-MINES (URANIUM & THORIUM) PSM 28 AUG 78

FACILITY NAME	LOCATION	FAC TYPE	CAPACITY	STATUS	YR	FAC CODE
	Ningyo Toge Okayana	URAN		Oper	64	RJFV

LATITUDE- DEG MIN LONGITUDE- DEG MIN

TECHNOLOGY SOURCE- OWNER/OPERATOR-PNC

SUPPLY SOURCE- SAFEGUARDS-

PRODUCT/USE-Uranium

FUEL STORAGE CAPACITY-

PROCESS-Ore is converted directly to UF-4 or UF-6, bypassing the U3O8 step
SCHEDULE-Pilot scale operation

REMARKS-PNC- Power Reactor and Nuclear Fuel Development Corporation
Average ore grade: 0.050%
Reserves: 2095 te

REFERENCES-
1-International Data Collection and Analysis, NAC, 6/78, Task 1, Vol III
2-Uranium Resources, Production and Demand, IAEA, Dec 1977, p. 78-80

ACTIVITY--JAPAN RESOURCE RECOVERY NUCLEAR FACILITY PROFILE
CATEGORY-MILLS PSM 29 AUG 78

FACILITY NAME	LOCATION	FAC TYPE	CAPACITY	STATUS	YR	FAC CODE
	Ningyo Toge Okayana	URAN		Oper	64	RJFW

LATITUDE- DEG MIN LONGITUDE- DEG MIN

TECHNOLOGY SOURCE- OWNER/OPERATOR-PNC

SUPPLY SOURCE- SAFEGUARDS-

PRODUCT/USE-Uranium (UF-6)

FUEL STORAGE CAPACITY-

PROCESS-Mill processed UF-6 directly, bypassing the U3O8 stage

SCHEDULE-Pilot scale operation

REMARKS-PNC- Power Reactor and Nuclear Fuel Development Corporation

REFERENCES-

1-International Data Collection and Analysis, NAC, Task 1, Vol III, June 1978, Japan, p. 23

ACTIVITY--JAPAN FUEL FABRICATION
CATEGORY-FUEL FABRICATION PLANTS

NUCLEAR FACILITY PROFILE
SRM 10 AUG 78

FACILITY NAME	LOCATION	FAC TYPE	CAPACITY	STATUS	YR	FAC CODE
Nuclear Fuel Industries Ltd.	Tokai-Mura (Mito)	UO	100 te (te/yr)	Constr	78	RJFZ

LATITUDE- 36 DEG 22 MIN N LONGITUDE-140 DEG 29 MIN E

TECHNOLOGY SOURCE-

OWNER/OPERATOR-Sumitomo Electric (50%), Furukawa Electric (50%)

SUPPLY SOURCE-

SAFEGUARDS-IAEA Safeguards Agreement

PRODUCT/USE-U-oxide fuel assemblies/Pressurized Water and Boiling Water reactors

FUEL STORAGE CAPACITY-

PROCESS-

SCHEDULE-Under construction for completion in 1978

REMARKS-MARKET SHARE- Will help NFI in its goal to gain 30% domestic market

REFERENCES-

1-NAC; Intl Data Collection and Analysis; Task 1, Vol III; 6/78
2-IAEA Bulletin; Vol XIX, No 5; 10/77

ACTIVITY--JAPAN ENRICHMENT PLANTS
CATEGORY-ENRICHMENT PLANTS

NUCLEAR FACILITY PROFILE
SRM 20 JUL 78

FACILITY NAME	LOCATION	FAC TYPE	CAPACITY	STATUS	YR	FAC CODE
	Tokai-Mura (Mito)	CENT	50 KSWU	Constr	80	RJGA

LATITUDE- 36 DEG 22 MIN N
LONGITUDE-140 DEG 29 MIN E

TECHNOLOGY SOURCE-PNC, Toshiba, Mitsubishi, Hitachi
SUPPLY SOURCE-
OWNER/OPERATOR-Power Reactor and Nucl. Fuel Development Corp (PNC)
SAFEGUARDS-Will be covered in IAEA Safeguards Agreement

PRODUCT/USE-U235 enriched uranium/some domestic fuel fabrication

FUEL STORAGE CAPACITY-

PROCESS-Gaseous Centrifuge

SCHEDULE-Pilot facility under construction-scheduled for operation in early 1980's
REMARKS-A commercial facility of 6000 KSWU/yr is under consideration for start-up in 1985

REFERENCES-

1-Nucl Eng Intl; Vol XXI, No 250; 11/76
2-Levin, S. A. and S. Blumkin; Enrichment Supply and Technology Outside the United States; 1/13/77
3-General Acctg Office; Overview of Nuclear Export Policies of Major Foreign Supplier Nations; 10/21/77
4-IAEA Bulletin; Vol XIX, No 5; 10/77

ACTIVITY--JAPAN ENRICHMENT PLANTS
CATEGORY-ENRICHMENT PLANTS

NUCLEAR FACILITY PROFILE
SRM 24 JUL 78

FACILITY NAME	LOCATION	FAC TYPE LASR	CAPACITY	STATUS R&D	YR 75	FAC CODE RJGB

LATITUDE- DEG MIN

LONGITUDE- DEG MIN

TECHNOLOGY SOURCE-

OWNER/OPERATOR-

SUPPLY SOURCE-

SAFEGUARDS-

PRODUCT/USE-

FUEL STORAGE CAPACITY-

PROCESS-Laser isotope separation

SCHEDULE-Research and development since 1975

REMARKS-

REFERENCES-

1-Wilcox, Wm J. Jr.; Uranium enrichment- A Review of the Present World Status: Capacity, Technology, and Plans; 5/6/77

ACTIVITY--JAPAN RESOURCE RECOVERY NUCLEAR FACILITY PROFILE
CATEGORY-CONVERSION PLANTS SRM 02 AUG 78

FACILITY NAME	LOCATION	FAC TYPE	CAPACITY	STATUS	YR	FAC CODE
Sumitomo Metal Mining Co.	Tokai-Mura (Mito)	UO2	340 te (te/yr)	Plan	79	RJGC

LATITUDE- 36 DEG 22 MIN N LONGITUDE-140 DEG 29 MIN E

TECHNOLOGY SOURCE-

OWNER/OPERATOR-Sumitomo Metal Mining Co.

SUPPLY SOURCE-

SAFEGUARDS-IAEA Safeguards Agreement

PRODUCT/USE-UO2 powder

FUEL STORAGE CAPACITY-

PROCESS-Conversion of UF6 to UO2 powder

SCHEDULE-Planned for operation in 1979

REMARKS-MARKET STRATEGY- Will control large share, if not all, of domestic market when built.

REFERENCES-

1-NAC; Intl Data Collection and Analysis; Task 1, Vol III; 6/78
2-IAEA Bulletin; Vol XIX, No 5; 10/77

ACTIVITY--JAPAN RESEARCH AND TEST REACTOR NUCLEAR FACILITY PROFILE
CATEGORY-RESEARCH AND TEST REACTORS DMK 05 SEP 78

FACILITY NAME	LOCATION	FAC TYPE	CAPACITY	STATUS	YR	FAC CODE
YAYOI	Tokai-Mura	FNRR	(small)	Oper	71	RJGD

LATITUDE- 36 DEG 22 MIN N LONGITUDE-140 DEG 29 MIN E

TECHNOLOGY SOURCE- OWNER/OPERATOR-

SUPPLY SOURCE- SAFEGUARDS-IAEA (non-NPT)

PRODUCT/USE-

FUEL STORAGE CAPACITY-

PROCESS-

SCHEDULE-In operation

REMARKS-

REFERENCES-
1-Intl Data Collection and Analysis, Vol III, NAC, June 1978
2-Intl Atomic Energy Agency Bulletin, Vol XIX, No 5, Oct. 1977

ACTIVITY--JAPAN RESEARCH AND TEST REACTOR NUCLEAR FACILITY PROFILE
CATEGORY-RESEARCH AND TEST REACTORS DMK 05 SEP 78

FACILITY NAME	LOCATION	FAC TYPE	CAPACITY	STATUS	YR	FAC CODE
St. Paul Univ. Reac.	Yokosuka-City Kanagawa Pref.		.1 MWt			RJGE

LATITUDE- DEG MIN LONGITUDE- DEG MIN

TECHNOLOGY SOURCE- OWNER/OPERATOR-

SUPPLY SOURCE- SAFEGUARDS-IAEA (non-NPT)

PRODUCT/USE-Training, research

FUEL STORAGE CAPACITY-

PROCESS-U-Zr Hydride alloy (TRIGA-2)

SCHEDULE-Start up: Dec. 1961

REMARKS-

REFERENCES-
1-Intl Atomic Energy Agency Bulletin, Vol VII, No 5, Sept 1965
2-Intl Atomic Energy Agency Bulletin, Vol XIX, No 5, Oct 1977

ACTIVITY--JAPAN RESEARCH AND TEST REACTOR NUCLEAR FACILITY PROFILE
CATEGORY-RESEARCH AND TEST REACTORS DMK 05 SEP 78

FACILITY NAME	LOCATION	FAC TYPE	CAPACITY	STATUS	YR	FAC CODE
Toshiba Reactor	Kawasaki-City Kanagawa Pref.	POOL	.1 MWt			RJGF

LATITUDE- 35 DEG 32 MIN N LONGITUDE-139 DEG 41 MIN E

TECHNOLOGY SOURCE- OWNER/OPERATOR-

SUPPLY SOURCE- SAFEGUARDS-IAEA (non-NPT)

PRODUCT/USE-Training, research

FUEL STORAGE CAPACITY-

PROCESS-Enriched uranium, light water moderated, swimming pool type

SCHEDULE-Start up: March 1962

REMARKS-

REFERENCES-

1-Intl Atomic Energy Agency Bulletin, Vol VII, No 5, Sept. 1965
2-Intl Atomic Energy Agency Bulletin, Vol XIX, No 5, Oct. 1977

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ACTIVITY--JAPAN RESEARCH AND TEST REACTOR NUCLEAR FACILITY PROFILE
CATAGORY-RESEARCH AND TEST REACTORS DMK 05 SEP 78

FACILITY NAME	LOCATION	FAC TYPE	CAPACITY	STATUS	YR	FAC CODE
Hitachi Reactor	kawasaki-City Kanagawa Pref.	POOL	.1 MWt			RJGG

LATITUDE- 35 DEG 32 MIN N LONGITUDE-139 DEG 41 MIN E

TECHNOLOGY SOURCE- OWNER/OPERATOR-

SUPPLY SOURCE- SAFEGUARDS-IAEA (non-NPT)

PRODUCT/USE-Training, research

FUEL STORAGE CAPACITY-

PROCESS-Enriched uranium, light water moderated, swimming pool type

SCHEDULE-Start up: Dec 1962

REMARKS-

REFERENCES-
1-Intl Atomic Energy Agency Bulletin, Vol VII, No 5, Sept 1965
2-Intl Atomic Energy Agency Bulletin, Vol XIX, No 5, Oct 1977

ACTIVITY--JAPAN RESEARCH AND TEST REACTOR NUCLEAR FACILITY PROFILE
CATEGORY-RESEARCH AND TEST REACTORS DMK 05 SEP

FACILITY NAME	LOCATION	FAC TYPE	CAPACITY	STATUS	YR	FAC CODE
Goto Ikuei-Kai Reac.	Kawasaki-City Kanagawa Pref.		.1 MWt			RJGH

LATITUDE- 35 DEG 32 MIN N LONGITUDE-139 DEG 41 MIN E

TECHNOLOGY SOURCE- OWNER/OPERATOR-

SUPPLY SOURCE- SAFEGUARDS-IAEA (non-NPT)

PRODUCT/USE-Training, research

FUEL STORAGE CAPACITY-

PROCESS-U-Zr Hydride alloy (TRIGA-2)

SCHEDULE-Start up: Jan. 1963

REMARKS-

REFERENCES-
1-Intl Atomic Energy Agency Bulletin, Vol VII, No 5, Sept 1965
2-Intl Atomic Energy Agency Bulletin, Vol XIX, No 5, Oct 1977

ACTIVITY--JAPAN WASTE MANAGEMENT NUCLEAR FACILITY PROFILE
CATEGORY-WASTE DISPOSAL FACILITIES SRM 23 AUG 78

FACILITY NAME	LOCATION	FAC TYPE	CAPACITY	STATUS	YR	FAC CODE
JAERI-Oarai Res Est.	Oarai	PREP	30 kg/hr	Oper	73	RJGJ

LATITUDE- DEG MIN LONGITUDE- DEG MIN

TECHNOLOGY SOURCE-Japan, JAERI OWNER/OPERATOR-JAERI (Japan Atomic Energy Research Institute)

SUPPLY SOURCE- SAFEGUARDS-

PRODUCT/USE-

FUEL STORAGE CAPACITY-

PROCESS-Incineration of low-level wastes; four chambers, 600-900 degrees C, kerosene fired
SCHEDULE-Currently in operation since 1973

REMARKS-

REFERENCES-
1-ERDA; Alternatives for Managing Wastes from Reactors and Post-Fission Operations of the LWR Fuel Cycle; Vol II; 5/76

ACTIVITY--JAPAN WASTE MANAGEMENT
CATEGORY-WASTE DISPOSAL FACILITIES

NUCLEAR FACILITY PROFILE
SRM 23 AUG 78

FACILITY NAME	LOCATION	FAC TYPE	CAPACITY	STATUS	YR	FAC CODE
JAERI	Tokai-Mura (Mito)	PREP	50 kg/hr	Oper	66	RJGK

LATITUDE- 36 DEG 22 MIN N

LONGITUDE-140 DEG 29 MIN E

TECHNOLOGY SOURCE-Japan, JAERI

OWNER/OPERATOR-JAERI (Japan Atomic Energy Research Institute)

SUPPLY SOURCE-

SAFEGUARDS-

PRODUCT/USE-

FUEL STORAGE CAPACITY-

PROCESS-Incineration of low-level wastes; dual chamber, 1000 degrees C, oil fired

SCHEDULE-Currently in operation since 1966

REMARKS-

REFERENCES-

1-ERDA; Alternatives for Managing Wastes from Reactors and Post-Fission Operations of the LWR Fuel Cycle; Vol II; 5/76

ACTIVITY--JAPAN RESEARCH AND TEST REACTOR NUCLEAR FACILITY PROFILE
CATEGORY-RESEARCH AND TEST REACTORS DMK 30 SEP 78

FACILITY NAME	LOCATION	FAC TYPE	CAPACITY	STATUS	YR	FAC CODE
Triga-II-Musashi	Kawasaki	SHRR	.1 MWt	Oper	63	RJGT
See Remarks	See Remarks					

LATITUDE- 35 DEG 32 MIN N LONGITUDE-139 DEG 41 MIN E

TECHNOLOGY SOURCE-Gen Atomic Div of Gen Dynamics Corp
SUPPLY SOURCE-
OWNER/OPERATOR-Gotoh Educational Foundation
SAFEGUARDS-IAEA (non-NPT)

PRODUCT/USE-Physics, chemistry, isotope production, training, critical experiments
FUEL STORAGE CAPACITY-

PROCESS-Solid homogeneous, enriched (20%) uranium, zirconium hydride and light water moderated, light water cooled, graphite reflected
SCHEDULE-In operation; Start of construction: Oct. 1959; Reactor critical: Jan. 1963
REMARKS-Reactor name: Musashi Institute of Technology Triga Reactor. Loc.: Atomic Research Laboratory, Musashi Inst. of Technology, Kawasaki

REFERENCES-
1-Directory of Nuclear Reactors, Vol VI, IAEA, 1966, p. 139
2-Intl Atomic Energy Agency Bulletin, Vol XIX, No 5, Oct. 1977
3-Intl Data Collection and Analysis, Vol III, NAC, June 1978

ACTIVITY--JAPAN RESEARCH AND TEST REACTOR NUCLEAR FACILITY PROFILE
CATEGORY-RESEARCH AND TEST REACTORS DMK 30 SEP 78

FACILITY NAME	LOCATION	FAC TYPE	CAPACITY	STATUS	YR	FAC CODE
Triga-II-Rikkyo See Remarks	Sajima, Yokosuka See Remarks	SHRR	.1 MWt	Oper	61	RJGU

LATITUDE- DEG MIN LONGITUDE- DEG MIN

TECHNOLOGY SOURCE-Gen Atomic Div of Gen Dynamics Corp
OWNER/OPERATOR-Rikkyo University
SUPPLY SOURCE-
SAFEGUARDS-IAEA (non-NPT)

PRODUCT/USE-Neutron and solid state physics, engineering tests, medicine, chemistry, isotope production, training
FUEL STORAGE CAPACITY-

PROCESS-Solid homogeneous, enriched (20%) uranium, zirconium hydride and light water moderated, light water cooled, graphite reflected
SCHEDULE-In operation; Start of construction: Dec. 1959; Reactor critical: Dec. 1961
REMARKS-Reactor is of Triga Mark II type
Name of Reactor: Rikkyo University Triga Mark II Reactor
Loc.: Inst for Atomic Energy of Rikkyo University
Critical mass: 2.063 Kg U-235
Core loading: 2.063 Kg U-235
Heat flux: Av 3.8 W/(cm E 2); Max 5.5 W/(cm E 2)

REFERENCES-
1-Directory of Nuclear Reactors, Vol VI, IAEA, 1966, p. 135
2-Intl Atomic Energy Agency Bulletin, Vol XIX, No 5, Oct. 1977

ACTIVITY--JAPAN RESEARCH AND TEST REACTOR NUCLEAR FACILITY PROFILE
CATEGORY-RESEARCH AND TEST REACTORS DMK 30 SEP 78

FACILITY NAME	LOCATION	FAC TYPE	CAPACITY	STATUS	YR	FAC CODE
TTR	Kawasaki		.1 MWt	Oper	62	RJGW

LATITUDE- 35 DEG 32 MIN N LONGITUDE-139 DEG 41 MIN E

TECHNOLOGY SOURCE-Bldr.: Tokyo Shibaura Electric
SUPPLY SOURCE-

OWNER/OPERATOR-Owner: Tokyo Shibaura Electric
SAFEGUARDS-IAEA (non-NPT)

PRODUCT/USE-

FUEL STORAGE CAPACITY-

PROCESS-

SCHEDULE-In operation

REMARKS-

REFERENCES-
1-Intl Atomic Energy Agency Bulletin, Vol XIX, No 5, Oct. 1977
2-Intl Data Collection and Analysis, Vol III, NAC, June 1978

ACTIVITY--JAPAN RESEARCH AND TEST REACTOR NUCLEAR FACILITY PROFILE
CATEGORY-RESEARCH AND TEST REACTORS DMK 30 SEP 78

FACILITY NAME	LOCATION	FAC TYPE	CAPACITY	STATUS	YR	FAC CODE
TTR-1 Toshiba Training	Suchirocho and Kawasaki-shi	POOL	.03 MWt	Oper	62	RJGX

LATITUDE- 35 DEG 32 MIN N LONGITUDE-139 DEG 41 MIN E

TECHNOLOGY SOURCE-T.S.E.C., Nippon Atomic Ind. Group Co., Ltd.
SUPPLY SOURCE-

OWNER/OPERATOR-Tokoyo Shibaura Electric Co., Ltd. (T.S.E.C.)
SAFEGUARDS-IAEA Safeguards (Non-NPT)

PRODUCT/USE-Training and research

FUEL STORAGE CAPACITY-Irradiated fuel is stored in a pit in the reactor pool
PROCESS-Pool-type, enriched (20%) uranium, light water moderated and cooled, graphite reflected
SCHEDULE-In operation; start of construction: Oct. 1960; reactor critical: March 1962; full power operation: Aug. 1962
REMARKS-Nominal reac. power: .03 KW (max .100 KW). Reference 2: .10 MW
Neutron flux: At 30 KW; thermal av 2.25 x (10 E 11)n/(cm E 2)sec; thermal max (.03 MW) 4x (10 E 11)n/(cm E 2)sec
Critical mass: 3.032 Kg U-235
Core loading at rated power: 3.2 Kg U-235
Av. specific power in fuel: 9.4 KW/Kg U-235 (at 30 KW)

REFERENCES-
1-Directory of Nuclear Reactors, Vol VI, IAEA, 1966, p. 45
2-Intl Data Collection and Analysis, Vol III, NAC, June 1978
3-Intl Atomic Energy Agency Bulletin, Vol XIX, No 5, Oct. 1977

ACTIVITY--JAPAN RESEARCH AND TEST REACTOR NUCLEAR FACILITY PROFILE
CATEGORY-RESEARCH AND TEST REACTORS DMK 30 SEP 78

FACILITY NAME	LOCATION	FAC TYPE	CAPACITY	STATUS	YR	FAC CODE
UTR-10-Kinki	Kawakae, Fuse-shi	ARGO	.1 Wt	Oper	61	RJGY

Kinki Univ. UTR-10 Osaka
LATITUDE- 34 DEG 40 MIN N LONGITUDE-135 DEG 30 MIN E

TECHNOLOGY SOURCE-See remarks OWNER/OPERATOR-Kinki University

SUPPLY SOURCE- SAFEGUARDS-IAEA (Non-NPT)

PRODUCT/USE-Research, training, critical experiments

FUEL STORAGE CAPACITY-

PROCESS-Argonaut-type, highly enriched (90%) uranium, light water moderated and cooled, graphite reflected
SCHEDULE-In operation: start of construction: Nov. 1960
reactor critical: Nov. 1961
REMARKS-This reactor is very similar to the UTR-10 reactor at Virginia Polytechnic Inst.
Neutron flux: Thermal av 6.5 x (10 E 5)n/(cm E 2)sec; thermal max 1.25 x (10 E 6)n/(cm E 2)sec; fast av 2.1 x (10 E 6)n/(cm E 2)sec; fast max 4.12 x (10 E 6)n/(cm E 2)sec
Critical mass: 3.018 Kg U-235
Core loading: 3.032 Kg U-235
Design & bldr.: Advanced Tech. Lab., Div. of Amer. Rad. & Stand. Sanitary

REFERENCES-
1-Directory of Nuclear Reactors, Vol VI, IAEA, 1966, p. 105
2-Intl Atomic Energy Agency Bulletin, Vol XIX, No 5, Oct. 1977
3-Intl Data Collection and Analysis, Vol III, NAC, June 1978

ACTIVITY--SOUTH KOREA RSCH & TEST REACTOR NUCLEAR FACILITY PROFILE
CATEGORY-RESEARCH AND TEST REACTORS DMK 30 SEP 78

FACILITY NAME	LOCATION	FAC TYPE	CAPACITY	STATUS	YR	FAC CODE
Triga Mark II Reactor	Seoul	SHRR	.25 MWt	Oper	62	RKOR

LATITUDE- 37 DEG 30 MIN N LONGITUDE-127 DEG 00 MIN E

TECHNOLOGY SOURCE-Design & Bldr: Gen Atomic Div of Gen Dynamics
OWNER/OPERATOR-Office of Atomic Energy Authority, Rep of Korea
SUPPLY SOURCE-
SAFEGUARDS-

PRODUCT/USE-Neutron & solid state physics, engineering tests, medicine, chemistry, isotope production, educational purposes
FUEL STORAGE CAPACITY-

PROCESS-Solid homogeneous, highly enriched (20%) uranium,zirconium hydride & light water moderated,light water cooled, graphite processed
SCHEDULE-Reactor critical: 1959

REMARKS-Reactor is identical in its main parts with the Triga Rsch Reactor, John Jay Hopkins Lab., San Diego, Cal. (prototype)

REFERENCES-
1-Directory of Nuclear Reactors, Vol II, IAEA, p. 239

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ACTIVITY--SOUTH KOREA RESOURCE RECOVERY NUCLEAR FACILITY PROFILE
CATEGORY-MINES (URANIUM & THORIUM) PSM 07 SEP 78

FACILITY NAME	LOCATION	FAC TYPE	CAPACITY	STATUS	YR	FAC CODE
	Taeduck	URAN		Explor		RKOV

LATITUDE- DEG MIN LONGITUDE- DEG MIN

TECHNOLOGY SOURCE- OWNER/OPERATOR-

SUPPLY SOURCE- SAFEGUARDS-

PRODUCT/USE-Uranium

FUEL STORAGE CAPACITY-

PROCESS-

SCHEDULE-

REMARKS-Recoverable resources: 2840 tonnes

REFERENCES-
1-International Data Collection and Analysis, NAC, Task 1, Vol IV, South Korea, p. 3
2-Minerals Yearbook, US Bureau of Mines, 1977, Vol III, p. 594

ACTIVITY--MADAGASCAR RESOURCE RECOVERY
CATEGORY-MINES (URANIUM & THORIUM)

NUCLEAR FACILITY PROFILE
PSM 21 SEP 78

FACILITY NAME	LOCATION	FAC TYPE	CAPACITY	STATUS	YR	FAC CODE
	Fort Dauphin	URAN	450 te/y	Inactv	63	RMDA

LATITUDE- 25 DEG 01 MIN S

LONGITUDE- 47 DEG 00 MIN E

TECHNOLOGY SOURCE-

OWNER/OPERATOR-Commissariat a l'Energie Atomique (CEA)-France

SUPPLY SOURCE-

SAFEGUARDS-

PRODUCT/USE-Uranium

FUEL STORAGE CAPACITY-

PROCESS-

SCHEDULE-3986 tonnes were produced from 1955 to 1963

REMARKS-

REFERENCES-

1-Uranium Resources, Production and Demand, IAEA, 12/77, p. 82

ACTIVITY--MEXICO RESOURCE RECOVERY NUCLEAR FACILITY PROFILE
CATEGORY-MINES (URANIUM & THORIUM) PSM 29 AUG 78

FACILITY NAME	LOCATION	FAC TYPE	CAPACITY	STATUS	YR	FAC CODE
Sierra Pena Blanca	Tamaulipos Chihuahua	URAN		Explor	75	RMEN

LATITUDE- DEG MIN LONGITUDE- DEG MIN

TECHNOLOGY SOURCE- OWNER/OPERATOR-Mexican Government

SUPPLY SOURCE- SAFEGUARDS-

PRODUCT/USE-Uranium

FUEL STORAGE CAPACITY-

PROCESS-

SCHEDULE-Occurance of uranium has been noted in this geologically favorable area
REMARKS-Estimated reserves: data incomplete

REFERENCES-
1-Uranium Resources, Production and Demand, IAEA, Dec. 1977, pp. 83-86

ACTIVITY--MEXICO RESOURCE RECOVERY NUCLEAR FACILITY PROFILE
CATEGORY-MILLS PSM 30 AUG 78

FACILITY NAME	LOCATION	FAC TYPE	CAPACITY	STATUS	YR	FAC CODE
Sierra Pena Blanca	Tamaulipos Chihuahua	URAN	15 te/y	Oper	75	RMEP

LATITUDE- DEG MIN N LONGITUDE- DEG MIN W

TECHNOLOGY SOURCE- OWNER/OPERATOR-Mexican Government

SUPPLY SOURCE- SAFEGUARDS-

PRODUCT/USE-Uranium

FUEL STORAGE CAPACITY-

PROCESS-

SCHEDULE-Pilot scale presently, full scale operation (140 te/y) by 1981

REMARKS-Design Capacity: 290 tonnes of ore per day; 2000 tonnes of ore per day by 1981

REFERENCES-
1-Uranium Resources, Production and Demand, IAEA, Dec. 1977, pp. 83-86
2-International Data Collection and Analysis, NAC, Task 1, Vol IV, June 1978, Mexico, p. 13

ACTIVITY--MEXICO RESEARCH AND TEST REACTOR NUCLEAR FACILITY PROFILE
CATEGORY-RESEARCH AND TEST REACTORS DMK 05 SEP 78

FACILITY NAME	LOCATION	FAC TYPE	CAPACITY	STATUS	YR	FAC CODE
RCN	Salazar		1 MWt	Oper	68	RMES

LATITUDE- DEG MIN LONGITUDE- DEG MIN

TECHNOLOGY SOURCE- OWNER/OPERATOR-

SUPPLY SOURCE- SAFEGUARDS-

PRODUCT/USE-

FUEL STORAGE CAPACITY-

PROCESS-

SCHEDULE-In operation

REMARKS-

REFERENCES-

1-Intl Data Collection and Analysis, Vol IV, NAC, June 1978

ACTIVITY--MEXICO RESEARCH & TEST REACTOR NUCLEAR FACILITY PROFILE
CATEGORY-RESEARCH AND TEST REACTORS DMK 05 SEP 78

FACILITY NAME	LOCATION	FAC TYPE	CAPACITY	STATUS	YR	FAC CODE
SUR-Mexico	Mexico City	SHRR	(small)	Oper	72	RMET

LATITUDE- 19 DEG 25 MIN N LONGITUDE- 99 DEG 10 MIN W

TECHNOLOGY SOURCE- OWNER/OPERATOR-

SUPPLY SOURCE- SAFEGUARDS-

PRODUCT/USE-

FUEL STORAGE CAPACITY-

PROCESS-

SCHEDULE-In operation

REMARKS-

REFERENCES-

1-Intl Data Collection and Analysis, Vol IV, NAC, June 1978

ACTIVITY--MEXICO RESOURCE RECOVERY NUCLEAR FACILITY PROFILE
CATEGORY-MILLS PSM 30 AUG 78

FACILITY NAME	LOCATION	FAC TYPE	CAPACITY	STATUS	YR	FAC CODE
Villa Aldama		URAN		Oper		RMEU

LATITUDE- DEG MIN LONGITUDE- DEG MIN

TECHNOLOGY SOURCE- OWNER/OPERATOR-Mexican Government

SUPPLY SOURCE- SAFEGUARDS-

PRODUCT/USE-Uranium

FUEL STORAGE CAPACITY-

PROCESS-Traditional alkaline circuit

SCHEDULE-Currently idle, operations to resume 1978

REMARKS-Design capacity: 80 tonnes of ore per day

REFERENCES-
1-Uranium Resources, Production and Demand, IAEA, Dec 1977, pp. 83-86

ACTIVITY--MEXICO RESOURCE RECOVERY NUCLEAR FACILITY PROFILE
CATEGORY-MINES (URANIUM & THORIUM) PSM 30 AUG 78

FACILITY NAME	LOCATION	FAC TYPE	CAPACITY	STATUS	YR	FAC CODE
	La Coma Neuvo Leon	URAN		Explor		RMEV

LATITUDE- DEG MIN LONGITUDE- DEG MIN

TECHNOLOGY SOURCE- OWNER/OPERATOR-Mexican Government

SUPPLY SOURCE- SAFEGUARDS-

PRODUCT/USE-Uranium

FUEL STORAGE CAPACITY-

PROCESS-

SCHEDULE-

REMARKS-Estimated Reserves: 845 te

REFERENCES-
1-Uranium Resources, Production and Demand, IAEA, Dec 1977, pp. 83-86
2-International Data Collection and Analysis, NAC, Task 1, Vol IV, June 1978, Mexico, p. 13

ACTIVITY--MEXICO RESOURCE RECOVERY NUCLEAR FACILITY PROFILE
CATEGORY-MILLS PSM 30 AUG 78

FACILITY NAME	LOCATION	FAC TYPE	CAPACITY	STATUS	YR	FAC CODE
	La Coma Nuevo Leon	URAN		Plan		RMEW

LATITUDE- DEG MIN LONGITUDE- DEG MIN

TECHNOLOGY SOURCE- OWNER/OPERATOR-Mexican Government

SUPPLY SOURCE- SAFEGUARDS-

PRODUCT/USE-Uranium

FUEL STORAGE CAPACITY-

PROCESS-

SCHEDULE-

REMARKS-Design capacity: 2000 tonnes of ore per day

REFERENCES-
1-Uranium Resources, Production and Demand, IAEA, Dec 1977, pp. 83-86

ACTIVITY--MEXICO RESOURCE RECOVERY NUCLEAR FACILITY PROFILE
CATEGORY-MINES (URANIUM & THORIUM) PSM 30 AUG 78

FACILITY NAME	LOCATION	FAC TYPE	CAPACITY	STATUS	YR	FAC CODE
	Buenavista Nuevo Leon	URAN		Explor		RMEX

LATITUDE- DEG MIN LONGITUDE- DEG MIN

TECHNOLOGY SOURCE- OWNER/OPERATOR-Mexican Government

SUPPLY SOURCE- SAFEGUARDS-

PRODUCT/USE-Uranium

FUEL STORAGE CAPACITY-

PROCESS-

SCHEDULE-

REMARKS-Estimated reserves: 1065 te

REFERENCES-
1-Uranium Resources, Production and Demand, IAEA, Dec 1977, pp. 83-86

ACTIVITY--MEXICO RESOURCE RECOVERY NUCLEAR FACILITY PROFILE
CATEGORY-MINES (URANIUM & THORIUM) PSM 30 AUG 78

FACILITY NAME	LOCATION	FAC TYPE	CAPACITY	STATUS	YR	FAC CODE
	Otros Chihuahua	URAN		Explor		RMEY

LATITUDE- DEG MIN LONGITUDE- DEG MIN

TECHNOLOGY SOURCE- OWNER/OPERATOR-Mexican Government

SUPPLY SOURCE- SAFEGUARDS-

PRODUCT/USE-Uranium

FUEL STORAGE CAPACITY-

PROCESS-

SCHEDULE-

REMARKS-Estimated reserves: 37 te

REFERENCES-
1-Uranium Resources, Production and Demand, IAEA, Dec 1977, pp. 83-86

ACTIVITY--MEXICO RESOURCE RECOVERY NUCLEAR FACILITY PROFILE
CATEGORY-MINES (URANIUM & THORIUM) PSM 30 AUG 78

FACILITY NAME	LOCATION	FAC TYPE	CAPACITY	STATUS	YR	FAC CODE
	La Domitila Chihuahua	URAN		Explor		RMEZ

LATITUDE- DEG MIN LONGITUDE- DEG MIN

TECHNOLOGY SOURCE- OWNER/OPERATOR-Mexican Government

SUPPLY SOURCE- SAFEGUARDS-

PRODUCT/USE-Uranium

FUEL STORAGE CAPACITY-

PROCESS-

SCHEDULE-

REMARKS-Estimated reserves: 52 te

REFERENCES-
1-Uranium Resources, Production and Demand, IAEA, Dec 1977, pp. 83-86

ACTIVITY--MEXICO RESOURCE RECOVERY
CATEGORY-MINES (URANIUM & THORIUM)

NUCLEAR FACILITY PROFILE
PSM 30 AUG 78

FACILITY NAME	LOCATION	FAC TYPE	CAPACITY	STATUS	YR	FAC CODE
	Nopal III Chihuahua	URAN		Explor		RMXA

LATITUDE- DEG MIN LONGITUDE- DEG MIN

TECHNOLOGY SOURCE- OWNER/OPERATOR-Mexican Government

SUPPLY SOURCE- SAFEGUARDS-

PRODUCT/USE-Uranium

FUEL STORAGE CAPACITY-

PROCESS-

SCHEDULE-

REMARKS-Estimated reserves: 178 te

REFERENCES-
1-Uranium Resources, Production and Demand, IAEA, Dec 1977, pp. 83-86

ACTIVITY--MEXICO RESOURCE RECOVERY NUCLEAR FACILITY PROFILE
CATEGORY-MINES (URANIUM & THORIUM) PSM 30 AUG 78

FACILITY NAME	LOCATION	FAC TYPE	CAPACITY	STATUS	YR	FAC CODE
	Margaritas-PuertoIII Chihuahua	URAN		Explor		RMXB

LATITUDE- DEG MIN LONGITUDE- DEG MIN

TECHNOLOGY SOURCE- OWNER/OPERATOR-Mexican Government

SUPPLY SOURCE- SAFEGUARDS-

PRODUCT/USE-Uranium

FUEL STORAGE CAPACITY-

PROCESS-

SCHEDULE-

REMARKS-Estimated reserves: 1996 te

REFERENCES-
1-Uranium Resources, Production and Demand, IAEA, Dec 1977, pp. 83-86

ACTIVITY--MEXICO RESOURCE RECOVERY
CATEGORY-MINES (URANIUM & THORIUM)

NUCLEAR FACILITY PROFILE
PSM 30 AUG 78

FACILITY NAME	LOCATION	FAC TYPE	CAPACITY	STATUS	YR	FAC CODE
	El Nopal Chihuahua	URAN		Explor		RMXC

LATITUDE- DEG MIN

LONGITUDE- DEG MIN

TECHNOLOGY SOURCE-

OWNER/OPERATOR-Mexican Government

SUPPLY SOURCE-

SAFEGUARDS-

PRODUCT/USE-Uranium

FUEL STORAGE CAPACITY-

PROCESS-

SCHEDULE-

REMARKS-Estimated reserves: 306 te

REFERENCES-

1-Uranium Resources, Production and Demand, IAEA, Dec 1977, pp. 83-86

ACTIVITY--MEXICO RESOURCE RECOVERY
CATEGORY-MINES (URANIUM & THORIUM)

NUCLEAR FACILITY PROFILE
PSM 30 AUG 78

FACILITY NAME	LOCATION	FAC TYPE	CAPACITY	STATUS	YR	FAC CODE
	Los Amoles Sonora	URAN		Explor		RMXD

LATITUDE- DEG MIN LONGITUDE- DEG MIN

TECHNOLOGY SOURCE- OWNER/OPERATOR-Mexican Government

SUPPLY SOURCE- SAFEGUARDS-

PRODUCT/USE-Uranium

FUEL STORAGE CAPACITY-

PROCESS-

SCHEDULE-

REMARKS-Estimated reserves: 403 te

REFERENCES-
1-Uranium Resources, Production and Demand, IAEA, Dec 1977, pp. 83-86

ACTIVITY--MEXICO RESOURCE RECOVERY
CATEGORY-MINES (URANIUM & THORIUM)

NUCLEAR FACILITY PROFILE
PSM 30 AUG 78

FACILITY NAME	LOCATION	FAC TYPE	CAPACITY	STATUS	YR	FAC CODE
	La Preciosa Durango	URAN		Explor		RMXE

LATITUDE- DEG MIN LONGITUDE- DEG MIN

TECHNOLOGY SOURCE-

OWNER/OPERATOR-Mexican Government

SUPPLY SOURCE-

SAFEGUARDS-

PRODUCT/USE-Uranium

FUEL STORAGE CAPACITY-

PROCESS-

SCHEDULE-

REMARKS-Estimated reserves: 178 te

REFERENCES-
1-Uranium Resources, Production and Demand, IAEA, Dec 1977, pp. 83-86

ACTIVITY--MEXICO RESOURCE RECOVERY
CATEGORY-MINES (URANIUM & THORIUM)

NUCLEAR FACILITY PROFILE
PSM 30 AUG 78

FACILITY NAME	LOCATION	FAC TYPE	CAPACITY	STATUS	YR	FAC CODE
	El Chapote Nuevo Leon	URAN		Explor		RMXF

LATITUDE- DEG MIN

LONGITUDE- DEG MIN

TECHNOLOGY SOURCE-

OWNER/OPERATOR-Mexican Government

SUPPLY SOURCE-

SAFEGUARDS-

PRODUCT/USE-Uranium

FUEL STORAGE CAPACITY-

PROCESS-

SCHEDULE-

REMARKS-Estimated reserves: 352 te

REFERENCES-
1-Uranium Resources, Production and Demand, IAEA, Dec 1977, pp. 83-86

ACTIVITY--NAMIBIA RESOURCE RECOVERY
CATEGORY-MILLS

NUCLEAR FACILITY PROFILE
PSM 10 AUG 78

FACILITY NAME	LOCATION	FAC TYPE	CAPACITY	STATUS	YR	FAC CODE
Rossing	Swakopmund	URAN	6500te/y	Oper		RYBB

LATITUDE- 22 DEG 31 MIN S

LONGITUDE- 14 DEG 52 MIN E

TECHNOLOGY SOURCE-

OWNER/OPERATOR-Rio Tinto Zinc (RTZ)
Rossing Uranium Limited

SUPPLY SOURCE-

SAFEGUARDS-

PRODUCT/USE-Uranium

FUEL STORAGE CAPACITY-

PROCESS-Open pit

SCHEDULE-1977- 2000 te, 1978- 4500 te, 1980- 5500, 1982- 6500 te

REMARKS-World's largest uranium mine
RTZ is in partnership with Total Compagnie Miniere et Nucleaire, with Total holding 10%.
Unofficial estimate of reserves: 100,000 te

REFERENCES-
1-Foreign Uranium Supply, EPRI EA-725, pp. 4-1 to 4-56
2-Mining Magazine, March 1978, p. 235
3-Minerals Yearbook, 1974, Vol III, p. 823
4-Minerals Yearbook, 1973, Vol I, p. 1281
5-New York Times, 23 July 1978, Section 4, p. 5

ACTIVITY--NAMIBIA RESOURCE RECOVERY
CATEGORY-MINES (URANIUM & THORIUM)

NUCLEAR FACILITY PROFILE
PSM 10 AUG 78

FACILITY NAME	LOCATION	FAC TYPE	CAPACITY	STATUS	YR	FAC CODE
	Lvderitz	URAN		Explor		RYBC

LATITUDE- 26 DEG 38 MIN S

LONGITUDE- 15 DEG 10 MIN E

TECHNOLOGY SOURCE-

OWNER/OPERATOR-Anglo-American Group

SUPPLY SOURCE-

SAFEGUARDS-

PRODUCT/USE-Uranium

FUEL STORAGE CAPACITY-

PROCESS-

SCHEDULE-

REMARKS-

REFERENCES-
1-Foreign Uranium Supply, EPRI EA-725, pp. 4-13

ACTIVITY--NAMIBIA RESOURCE RECOVERY
CATEGORY-MINES (URANIUM & THORIUM)

NUCLEAR FACILITY PROFILE
PSM 10 AUG 78

FACILITY NAME	LOCATION	FAC TYPE	CAPACITY	STATUS	YR	FAC CODE
	Namib Desert	URAN		Explor		RYBD

LATITUDE- DEG MIN

LONGITUDE- DEG MIN

TECHNOLOGY SOURCE-

OWNER/OPERATOR-Johannesburg Consolidated Investments

SUPPLY SOURCE-

SAFEGUARDS-

PRODUCT/USE-Uranium

FUEL STORAGE CAPACITY-

PROCESS-

SCHEDULE-

REMARKS-

REFERENCES-
1-Foreign Uranium Supply, EPRI EA-725, pp. 4-13 & 4-14

ACTIVITY--NAMIBIA RESOURCE RECOVERY
CATEGORY-MINES (URANIUM & THORIUM)

NUCLEAR FACILITY PROFILE
PSM 10 AUG 78

FACILITY NAME	LOCATION	FAC TYPE	CAPACITY	STATUS	YR	FAC CODE
	Trekkopje			Explor		RYBE

LATITUDE- DEG MIN

LONGITUDE- DEG MIN

TECHNOLOGY SOURCE-

OWNER/OPERATOR-Gold Fields of South Africa, Limited (GFSA)

SUPPLY SOURCE-

SAFEGUARDS-

PRODUCT/USE-

FUEL STORAGE CAPACITY-

PROCESS-Open pit mining

SCHEDULE-

REMARKS-

REFERENCES-
1-Foreign Uranium Supply, EPRI EA-725, pp. 4-13
2-Mining Magazine, March 1978, p. 254

ACTIVITY--NAMIBIA RESOURCE RECOVERY
CATEGORY-MINES (URANIUM & THORIUM)

NUCLEAR FACILITY PROFILE
PSM 10 AUG 78

FACILITY NAME	LOCATION	FAC TYPE	CAPACITY	STATUS	YR	FAC CODE
	Langer Heinrich	URAN		Explor		RYBF

LATITUDE- DEG MIN

LONGITUDE- DEG MIN

TECHNOLOGY SOURCE-

OWNER/OPERATOR-General Mining & Finance Corporation

SUPPLY SOURCE-

SAFEGUARDS-

PRODUCT/USE-Uranium

FUEL STORAGE CAPACITY-

PROCESS-Open pit mining

SCHEDULE-

REMARKS-

REFERENCES-
1-Foreign Uranium Supply, EPRI EA-725, pp. 4-13
2-Mining Magazine, March 1978, p. 254

ACTIVITY--NETHERLANDS RESEARCH & TEST REACTOR NUCLEAR FACILITY PROFILE
CATEGORY-RESEARCH AND TEST REACTORS DMK 30 SEP 78

FACILITY NAME	LOCATION	FAC TYPE	CAPACITY	STATUS	YR	FAC CODE
ATHENE	Eindhoven	ARGO	10KW max	Inactv	69	RNAC

See remarks
LATITUDE- 51 DEG 26 MIN N LONGITUDE- 5 DEG 30 MIN E

TECHNOLOGY SOURCE-Bldg.: Neratoom NV; Design: Reac Centrum Neder.
OWNER/OPERATOR-Technical University Eindhoven
SUPPLY SOURCE-
SAFEGUARDS-

PRODUCT/USE-Neutron physics, medicine, chemistry, reactor coupling

FUEL STORAGE CAPACITY-Irradiated fuel: In the floor of the SW corner in the reactor hall, providing space for max 3.6 Kg fuel
PROCESS-Argonaut-type, highly enriched (93.27%) uranium, light water moderated & cooled, graphite & light water reflected
SCHEDULE-start of construction: 1966; construction finished: March 1968; reactor critical: Feb. 1969; shutdown: 1973
REMARKS-ATHENE=Atoomreactor Technische Hogeschool Eindhoven Nederland
Reactor decommissioned
Critical mass: 1.845 Kg U-235
Core loading at rated power: 1.872 Kg U-235
Av. specific power in fuel: 5.43 KW/Kg
Av. power density in core: 5.2 W/litre
Fuel loading and unloading: By means of a container, procedure is dependent on experiments.

REFERENCES-
1-Directory of Nuclear Reactors, Vol VIII, IAEA, 1970, p. 103
2-Intl Data Collection and Analysis, Vol IV, NAC, June 1978

ACTIVITY--NETHERLANDS RSCH & TEST REACTOR NUCLEAR FACILITY PROFILE
CATEGORY-RESEARCH AND TEST REACTORS DMK 30 SEP 78

FACILITY NAME	LOCATION	FAC TYPE	CAPACITY	STATUS	YR	FAC CODE
High Flux Reactor	Petten Reactor Center	TK-L	45 MWt	Oper	61	RNAJ

LATITUDE- 52 DEG 46 MIN N LONGITUDE- 4 DEG 39 MIN E

TECHNOLOGY SOURCE-Design & Bldr: Allis-Chalmers Manufacturing Co.
SUPPLY SOURCE-
OWNER/OPERATOR-Reactor Centrum Nederland
SAFEGUARDS-

PRODUCT/USE-Research and materials testing

FUEL STORAGE CAPACITY-Irradiated: in special racks in 2 storage pools next to the reac pool with max capacity of 80-100 fuel elements
PROCESS-Tank-type, highly enriched (90%) uranium, light water moderated and cooled, beryllium reflected (eventually D-20 in addition)
SCHEDULE-Start of construction: Aug 1957; Reactor critical: early 1961 Full power operation: mid 1961
REMARKS-Fuel loading and unloading: By long handling tools from a bridge movable over the reactor pool

REFERENCES-
1-Directory of Nuclear Reactors, Vol III, IAEA, 1960, p. 173
2-Intl Data Collection and Analysis, Vol V, NAC, June 1978

ACTIVITY--NETHERLANDS RSCH & TEST REACTOR NUCLEAR FACILITY PROFILE
CATEGORY-RESEARCH AND TEST REACTORS DMK 30 SEP 78

FACILITY NAME	LOCATION	FAC TYPE	CAPACITY	STATUS	YR	FAC CODE
Hoger Onderwits Reactor	Delft	POOL	2 MWt	Oper	63	RNAL

LATITUDE- 52 DEG 01 MIN N LONGITUDE- 4 DEG 21 MIN E

TECHNOLOGY SOURCE-AMF Atomics & Reactor Inst; Delft & Comprimo
SUPPLY SOURCE-

OWNER/OPERATOR-Delft Technical University
SAFEGUARDS-

PRODUCT/USE-Research and training

FUEL STORAGE CAPACITY-

PROCESS-Pool-type highly (90%) enriched uranium, light water moderated, cooled and reflected
SCHEDULE-Start of construction: Nov 1958;
Reactor critical: Oct 1961
REMARKS-

REFERENCES-
1-Directory of Nuclear Reactors, Vol III, IAEA, 1960, p. 89
2-Intl Data Collection and Analysis, Vol IV, NAC, June 1978

ACTIVITY--NETHERLANDS RSCH AND TEST REACTOR NUCLEAR FACILITY PROFILE
CATEGORY-RESEARCH AND TEST REACTORS DMK 30 SEP 78

FACILITY NAME	LOCATION	FAC TYPE	CAPACITY	STATUS	YR	FAC CODE
Kirto Drito Crit Assembly	Petten Reac Cent Nederland	POOL	Max 100W	Inactv	63	RNAN

LATITUDE- 52 DEG 46 MIN N LONGITUDE- 4 DEG 39 MIN E

TECHNOLOGY SOURCE-RCN and various Dutch industries
OWNER/OPERATOR-Reactor Centrum Nederland
SUPPLY SOURCE-
SAFEGUARDS-

PRODUCT/USE-Neutron physics, critical experiments

FUEL STORAGE CAPACITY-

PROCESS-Pool-type, slightly enriched (3.1 to 3.8%) uranium, light water moderated, cooled and reflected
SCHEDULE-Reactor critical: March 1963; Shutdown: 1969

REMARKS-

REFERENCES-
1-Directory of Nuclear Reactors, Vol VI, IAEA, 1966, p. 57
2-Intl Data Collection and Analysis, Vol IV, NAC, June 1978

ACTIVITY--NETHERLANDS RSCH AND TEST REACTOR NUCLEAR FACILITY PROFILE
CATEGORY-RESEARCH AND TEST REACTORS DMK 30 SEP 78

FACILITY NAME	LOCATION	FAC TYPE	CAPACITY	STATUS	YR	FAC CODE
Low Flux Reactor LFR	Petten Reactor Center	ARGO	.01 MWt	Oper	60	RNAP

LATITUDE- 52 DEG 46 MIN N LONGITUDE- 4 DEG 39 MIN E

TECHNOLOGY SOURCE-Hawker Siddeley Nucl Power Co Ltd Slough, Eng.
SUPPLY SOURCE-

OWNER/OPERATOR-Reactor Centrum Nederland (RCN)
SAFEGUARDS-

PRODUCT/USE-Reactor physics experiments, training, isotope production

FUEL STORAGE CAPACITY-

PROCESS-Argonaut (Jason) type, highly enriched (90%) uranium, light water moderated and cooled, graphite reflected
SCHEDULE-In operation; start of construction: Oct. 1959; critical: Sept. 1960; full power operation: March 1961
REMARKS-Jason is the trademark of the Argonaut-type reactor produced by Hawker Siddeley Nucl Power Co Ltd; it is similar to the original Argonaut reactor at Argonne Natl Lab.
Neutron flux: Thermal, in core center= One slab core .99 x (10 E 11) n/(cm E 2)sec; two slab core 1.12 x (10 E 11)n/(cm E 2)sec; Annular core 1.29 x (10 E 11)n/(cm E 2)sec
Core loading at rated power: (same as crit. mass) One slab core= 2015 g U-235, two slab core= 3708 Kg U-235, Annular core= 4362 g U-235

REFERENCES-
1-Directory of Nuclear Reactors, Vol V, IAEA, 1964, p. 127
2-Intl Data Collection and Analysis, Vol IV, NAC, June 1978

ACTIVITY--NETHERLANDS RSCH & TEST REACTOR NUCLEAR FACILITY PROFILE
CATEGORY-RESEARCH AND TEST REACTORS DMK 30 SEP 78

FACILITY NAME	LOCATION	FAC TYPE	CAPACITY	STATUS	YR	FAC CODE
Subscript Suspension	N V Kema, Arnhem	LHRR	Remarks	Oper	59	RNAS
SUSOP						

LATITUDE- 52 DEG 00 MIN N LONGITUDE- 5 DEG 53 MIN E

TECHNOLOGY SOURCE-Design & Bldr: KEMA-REN
SUPPLY SOURCE-
OWNER/OPERATOR-Reac Centrum Nederland/N V Kema, Arnhem
SAFEGUARDS-

PRODUCT/USE-Investigation of the flow behavior & of the neutron kinetic behavior of a circulating suspension reactor system
FUEL STORAGE CAPACITY-

PROCESS-Aqueous homogeneous, suspension type, highly (20%) enriched uranium, light water moderated, BeO and graphite reflected
SCHEDULE-In operation; Start of experiment: late 1955

REMARKS-Nominal reactor power: Subcritical, later if possible. The reactor is located at Rsch lab., N V Kema

REFERENCES-
1-Directory of Nuclear Reactors, Vol III, IAEA, p. 191
2-Intl Data Collection and Analysis, Vol IV, NAC, June 1978

ACTIVITY--NETHERLANDS ENRICHMENT PLANTS
CATEGORY-ENRICHMENT PLANTS

NUCLEAR FACILITY PROFILE
SRM 30 AUG 78

FACILITY NAME	LOCATION	FAC TYPE	CAPACITY	STATUS	YR	FAC CODE
Pilot Plant SP1	Almelo	CENT	25 KSWU	Oper	72	RNAT

LATITUDE- 52 DEG 21 MIN N

LONGITUDE- 6 DEG 40 MIN E

TECHNOLOGY SOURCE-Netherlands-UCN

OWNER/OPERATOR-Urenco Limited/Ultra Centrifuge Nederland NV (UCN)

SUPPLY SOURCE-

SAFEGUARDS-NPT Safeguards Agreement

PRODUCT/USE-U235 enriched uranium/Reactor fuel fabrication

FUEL STORAGE CAPACITY-

PROCESS-Gaseous Centrifuge

SCHEDULE-Currently in operation as pilot facility-used for testing improving technologies

REMARKS-Urenco Limited-British Nuclear Fuels Limited (BNFL), UCN, Uranit (Hoechst AG, Gelsenberg AG, NUKEM GmbH) are equal shareholders

PRODUCTION HISTORY-Urenco (combined pilot plants) started delivery to member nations in September, 1975. Exact production unknown-estimate 50.0-100.0 KSWU produced by pilot plants up to 1978.

CAPACITY LIMITATIONS-Limited to present size

REFERENCES-

1-Nucl Eng Intl; Vol XXII, No 265; 12/77
2-Nucl Eng Intl; Vol XXI, No 250; 11/76
3-IAEA Bulletin; Vol XIX, No 5; 10/77
4-NAC; Intl Data Collection and Analysis; Task 1, Vols IV, V; 6/78
5-Levin, S. A. and S. Blumkin; Enrichment Supply and Technology Outside the United States; 1/13/77
6-Benedict, M.; Enrichment: A Critical Status Report; American Nuclear Society Transactions; Vol XXV; 1977

ACTIVITY--NETHERLANDS ENRICHMENT PLANTS NUCLEAR FACILITY PROFILE
CATEGORY-ENRICHMENT PLANTS SRM 30 AUG 78

FACILITY NAME	LOCATION	FAC TYPE	CAPACITY	STATUS	YR	FAC CODE
Pilot Plant SP2	Almelo	CENT	25 KSWU	Oper	72	RNAX

LATITUDE- 52 DEG 21 MIN N LONGITUDE- 6 DEG 40 MIN E

TECHNOLOGY SOURCE-Germany (FRG)-MAN AG
SUPPLY SOURCE-

OWNER/OPERATOR-Urenco Limited/Uranit
SAFEGUARDS-NPT Safeguards Agreement

PRODUCT/USE-U235 enriched uranium/Reactor fuel fabrication

FUEL STORAGE CAPACITY-

PROCESS-Gaseous Centrifuge

SCHEDULE-Currently in operation as pilot facility-used for testing improving technologies

REMARKS-Urenco Limited-British Nuclear Fuels Limited (BNFL), Ultra Centrifuge Nederland NV (UCN), Uranit (Hoechst AG, Gelsenberg AG, NUKEM GmbH) are equal shareholders
PRODUCTION HISTORY-Urenco (combined pilot plants) started delivery to member nations in September, 1975. Exact production unknown-estimate 50.0-100.0 KSWU produced by pilot plants up to 1978.
CAPACITY LIMITATIONS-Limited to present size
NEW FACILITY PLANS-None

REFERENCES-

1-Nucl Eng Intl; Vol XXII, No 265; 12/77
2-Nucl Eng Intl; Vol XXI, No 250; 11/76
3-IAEA Bulletin; Vol XIX, No 5; 10/77
4-NAC; Intl Data Collection and Analysis; Task 1, Vols IV, V; 6/78
5-Levin, S. A. and S. Blumkin; Enrichment Supply and Technology Outside the United States; 1/13/77
6-Benedict, M.; Enrichment: A Critical Status Report; American Nuclear Society Transactions; Vol XXV; 1977

ACTIVITY--NETHERLANDS ENRICHMENT PLANTS NUCLEAR FACILITY PROFILE
CATEGORY-ENRICHMENT PLANTS SRM 30 AUG 78

FACILITY NAME	LOCATION	FAC TYPE	CAPACITY	STATUS	YR	FAC CODE
Production Plant SP3	Almelo	CENT	60 KSWU	Oper	77	RNAY

LATITUDE- 52 DEG 21 MIN N LONGITUDE- 6 DEG 40 MIN E

TECHNOLOGY SOURCE-Centec GmbH OWNER/OPERATOR-Urenco Limited/UCN, Uranit

SUPPLY SOURCE- SAFEGUARDS-NPT Safeguards Agreement

PRODUCT/USE-U235 enriched uranium (2.8%)/Reactor fuel fabrication

FUEL STORAGE CAPACITY-

PROCESS-Gaseous Centrifuge

SCHEDULE-Currently in operation (10/77); Increase in capacity to 200.0 KSWU/yr expected in 1978

REMARKS-Urenco Limited-British Nuclear Fuels Limited (BNFL), Ultra Centrifuge Nederland NV (UCN), Uranit (Hoechst AG, Gelsenberg AG, NUKEM GmbH) are equal shareholders. Centec GmbH- BNFL, UCN, GnV (Interatom GmbH, MAN AG) are equal shareholders.
PRODUCTION HISTORY-None
MARKET STRATEGY-Urenco (combined operations) has orders for over 2000.0 KSWU for delivery by 1992; German (FRG) orders total 50%
CAPACITY LIMITATIONS-No near-term space limitations
NEW FACILITY PLANS-Expansion to 1400 KSWU/yr planned for completion by 1984 in 200.0 KSWU increments. Total Urenco expansion plans call for capacity of 10000.0 KSWU/yr by 1988 or to coincide with demand.

REFERENCES-

1-Nucl Eng Intl; Vol XXII, No 265; 12/77
2-IAEA; Bulletin; Vol XIX, No 5; 10/77
3-Levin, S. A. and S. Blumkin; Enrichment Supply and Technology Outside the United States; 1/13/77
4-NAC; Intl Data Collection and Analysis; Task 1, Vol IV, V, 5; 6/78

ACTIVITY--NETHERLANDS RSCH & TEST REACTOR NUCLEAR FACILITY PROFILE
CATEGORY-RESEARCH AND TEST REACTORS DMK 05 SEP 78

FACILITY NAME	LOCATION	FAC TYPE	CAPACITY	STATUS	YR	FAC CODE
BARN	Wageningen	POOL	.1 MWt	Oper	63	RNAZ

LATITUDE- 51 DEG 58 MIN N

LONGITUDE- 5 DEG 40 MIN E

TECHNOLOGY SOURCE-

OWNER/OPERATOR-Owner: Inst. for Atomic Science in Agriculture

SUPPLY SOURCE-

SAFEGUARDS-

PRODUCT/USE-

FUEL STORAGE CAPACITY-

PROCESS-

SCHEDULE-In operation

REMARKS-

REFERENCES-
1-Intl Data Collection and Analysis, Vol IV, NAC, June 1978

ACTIVITY--NETHERLANDS RSCH & TEST REACTOR NUCLEAR FACILITY PROFILE
CATEGORY-RESEARCH AND TEST REACTORS DMK 05 SEP 78

FACILITY NAME	LOCATION	FAC TYPE	CAPACITY	STATUS	YR	FAC CODE
SIEK	Petten	POOL	(small)		69	RNEA

LATITUDE- 52 DEG 46 MIN N LONGITUDE- 4 DEG 39 MIN E

TECHNOLOGY SOURCE-Bldr.: RCN & various Dutch Industries
OWNER/OPERATOR-Owner: RCN
SUPPLY SOURCE-
SAFEGUARDS-

PRODUCT/USE-

FUEL STORAGE CAPACITY-

PROCESS-

SCHEDULE-

REMARKS-

REFERENCES-
1-Intl Data Collection and Analysis, Vol IV, NAC, June 1978

ACTIVITY--NIGER RESOURCE RECOVERY
CATEGORY-MINES (URANIUM & THORIUM)

NUCLEAR FACILITY PROFILE
PSM 30 AUG 78

FACILITY NAME	LOCATION	FAC TYPE	CAPACITY	STATUS	YR	FAC CODE
	Djado	URAN		Explor		RMGA

LATITUDE- 22 DEG MIN N

LONGITUDE- 14 DEG MIN E

TECHNOLOGY SOURCE-

OWNER/OPERATOR-Uranger, COGEMA, PNC Urangesellschaft (each 25%)

SUPPLY SOURCE-

SAFEGUARDS-

PRODUCT/USE-Uranium

FUEL STORAGE CAPACITY-

PROCESS-

SCHEDULE-

REMARKS-Djado is an area encompassing 100,000 km sq in NE Niger
On the Plateau du Djado
Urangesellschaft- German uranium interest
PNC- Power Reactor and Nuclear Fuel Development Corporation (Japan)
Uranger- Niger's uranium management corporation
COGEMA- Compagnie Generale des Matieres Nucleaires (France)

REFERENCES-

1-Uranium Resources, Production and Demand, IAEA, Dec. 1977, pp. 87-90
2-Foreign Uranium Supply, EPRI EA-725, 4/78, pp. 5-9 to 5-11

ACTIVITY--NIGER RESOURCE RECOVERY
CATEGORY-MINES (URANIUM & THORIUM)

NUCLEAR FACILITY PROFILE
PSM 30 AUG 78

FACILITY NAME	LOCATION	FAC TYPE	CAPACITY	STATUS	YR	FAC CODE
SOMAIR	Arlit	URAN	1000te/y	Oper	71	RMGB

LATITUDE- 19 DEG 10 MIN N

LONGITUDE- 07 DEG 30 MIN E

TECHNOLOGY SOURCE-

OWNER/OPERATOR-SOMAIR

SUPPLY SOURCE-

SAFEGUARDS-

PRODUCT/USE-Uranium

FUEL STORAGE CAPACITY-

PROCESS-Open pit mining

SCHEDULE-Capacity to double by 1979

REMARKS-Exploitable reserves: 30000 te
Average ore grade: 0.25% Depth: 35-40 m
SOMAIR- Societe des Mines de l'Air
Ownership as follows:
Uranger- Niger Government (33%)
COGEMA- Compagnie Generale des Matieres Nucleaires (France) (27%)
CFMU- Compagnie Francaise des Minerais d'Uranium (11.8%)
Mokta- (7.6%)
Minatome- (7.6%)
Urangesellschaft- German uranium mining concern (6.5%)
Agip Nucleare- Azienda Generale Italiani Petroli (6.5%)

REFERENCES-

1-Uranium Resources, Production and Demand, IAEA, Dec. 1977, pp. 87-90
2-Foreign Uranium Supply, EPRI EA-725, 4/78, pp. 5-9 to 5-11
3-Mining Magazine, March 1978, p. 235
4-Mineral Industries of Africa, US Bureau of Mines, 1976, p. 71

ACTIVITY--NIGER RESOURCE RECOVERY
CATEGORY-MILLS

NUCLEAR FACILITY PROFILE
PSM 30 AUG 78

FACILITY NAME	LOCATION	FAC TYPE	CAPACITY	STATUS	FAC YR	FAC CODE
SOMAIR	Arlit	URAN	1000te/y	Oper	71	RMGC

LATITUDE- 19 DEG 10 MIN N

LONGITUDE- 07 DEG 30 MIN E

TECHNOLOGY SOURCE-

OWNER/OPERATOR-SOMAIR

SUPPLY SOURCE-

SAFEGUARDS-

PRODUCT/USE-Uranium

FUEL STORAGE CAPACITY-

PROCESS-Sulphuric acid leach

SCHEDULE-Doubled capacity expected by 1978

REMARKS-Average ore grade: 0.25%
SOMAIR-Societe des Mines de l'Air
Ownership as follows:

Agip Nucleare		(6.5%)
Uraniger- Niger Government	(33%)	
COGEMA- Compagnie Generale des Matieres Nucleaires	(France)	(27%)
CFMU- Compagnie Francaise des Minerais d'Uranium	(France)	(11.8%)
Mokta		(7.6%)
Minatome		(7.6%)
Urangesellschaft- German uranium mining concern	(6.5%)	

REFERENCES-
1-Uranium Resources, Production and Demand, IAEA, Dec. 1977, pp. 87-90
2-Foreign Uranium Supply, EPRI EA-725, 4/78, pp. 5-9 to 5-11
3-Mining Magazine, March 1978, p. 235
4-Mineral Industries of Africa, US Bureau of Mines, 1976, p. 71

ACTIVITY--NIGER RESOURCE RECOVERY
CATEGORY-MINES (URANIUM & THORIUM)

NUCLEAR FACILITY PROFILE
PSM 05 SEP 78

FACILITY NAME	LOCATION	FAC TYPE	CAPACITY	STATUS	YR	FAC CODE
COMINAK	Akouta	URAN	2600te/y	Oper	78	RMGD

LATITUDE- 18 DEG 40 MIN N

LONGITUDE- 07 DEG 15 MIN E

TECHNOLOGY SOURCE-

OWNER/OPERATOR-COMINAK- Compagnie Mineire d'Akouta

SUPPLY SOURCE-

SAFEGUARDS-

PRODUCT/USE-Uranium

FUEL STORAGE CAPACITY-

PROCESS-Underground mining

SCHEDULE-Start-up: July 1978; 1979: 1500 te/y; 1980: 2000 te/y expected. Eventual production: 2600 te/y

REMARKS-COMINAK- is a joint venture by the following:

ENUSA- Empresa Nacional del Uranio, S.A.	Spain 10%
Uraniger-	Niger 31%
COGEMA- Compagnie Generale des Matieres Nucleaires	France 34%
Ourd- Overseas Uranium Research and Development Corp.	Japan 25%

Reserves- 45000 te
Average grade of ore: 0.45%

REFERENCES-

1-Uranium Resources, Production and Demand, IAEA, Dec. 1977, pp. 87-90
2-Foreign Uranium Supply, EPRI EA-725, 4/78, pp. 5-9 to 5-11
3-Mining Magazine, March 1978, p. 253
4-Mineral Industries of Africa, US Bureau of Mines, 1976, p. 71
5-Engineering and Mining Journal, July 1978

ACTIVITY--NIGER RESOURCE RECOVERY
CATEGORY-MILLS

NUCLEAR FACILITY PROFILE
PSM 05 SEP 78

FACILITY NAME	LOCATION	FAC TYPE	CAPACITY	STATUS	YR	FAC CODE
COMINAK	Akouta	URAN	2600te/y	Oper	78	RMGE

LATITUDE- 18 DEG 48 MIN N

LONGITUDE- 07 DEG 15 MIN E

TECHNOLOGY SOURCE-STEC

OWNER/OPERATOR-COMINAK- Compagnie Mineire d'Akouta

SUPPLY SOURCE-

SAFEGUARDS-

PRODUCT/USE-Uranium

FUEL STORAGE CAPACITY-

PROCESS-

SCHEDULE-Production began July 1978 with the following itinerary to be followed: 1979- 1500 te/y, 1980-2000 te/y and full production by '81

REMARKS-STEC- Societe Technique d'Enterprises Chimiques

REFERENCES-

1-Uranium Resources, Production and Demand, IAEA, Dec. 1977, pp. 87-90
2-Foreign Uranium Supply, EPRI EA-725, 4/78, pp. 5-9 to 5-11
3-Mining Magazine, March 1978, p. 253
4-Mineral Industries of Africa, US Bureau of Mines, 1976, p. 71
5-Engineering and Mining Journal, June 1978
6-Nucleonics Week, 05 AUG 1978, p. 9

ACTIVITY--NIGER RESOURCE RECOVERY
CATEGORY-MINES (URANIUM & THORIUM)

NUCLEAR FACILITY PROFILE
PSM 05 SEP 78

FACILITY NAME	LOCATION	FAC TYPE	CAPACITY	STATUS	YR	FAC CODE
	Madaouela	URAN		Explor		RMGG

LATITUDE- 14 DEG 02 MIN N

LONGITUDE- 05 DEG 59 MIN E

TECHNOLOGY SOURCE-

OWNER/OPERATOR-Uraniger- 25%, COGEMA- 37.5%, BNFL- 37.5%

SUPPLY SOURCE-

SAFEGUARDS-

PRODUCT/USE-Uranium

FUEL STORAGE CAPACITY-

PROCESS-

SCHEDULE-

REMARKS-Reserves: 7000 te
COGEMA- Cie. Generale des Matieres Nucleaires (France)
BNFL- British Nuclear Fuels Limited (U.K.)
The Madaouela deposit is part of the East Afasto exploration venture

REFERENCES-
1-Uranium Resources, Production and Demand, IAEA, Dec. 1977, pp. 87-90
2-Foreign Uranium Supply, EPRI EA-725, 4/78, pp. 5-9 to 5-11

ACTIVITY--NIGER RESOURCE RECOVERY
CATEGORY-MINES (URANIUM & THORIUM)

NUCLEAR FACILITY PROFILE
PSM 05 SEP 78

FACILITY NAME	LOCATION	FAC TYPE	CAPACITY	STATUS	YR	FAC CODE
	Azelik	URAN		Explor		RMGH

LATITUDE- 16 DEG 05 MIN N

LONGITUDE- 05 DEG 59 MIN E

TECHNOLOGY SOURCE-

OWNER/OPERATOR-Uraniger and Japan Petroleum Trading Corp (both 50%)

SUPPLY SOURCE-

SAFEGUARDS-

PRODUCT/USE-Uranium

FUEL STORAGE CAPACITY-

PROCESS-

SCHEDULE-

REMARKS-Deposit contains: 4500 te
Part of the I-n-Gall exploration

REFERENCES-
1-Uranium Resources, Production and Demand, IAEA, Dec. 1977, pp. 87-90
2-Foreign Uranium Supply, EPRI EA-725, 4/78, pp. 5-9 to 5-11

ACTIVITY--NIGER RESOURCE RECOVERY
CATEGORY-MINES (URANIUM & THORIUM)

NUCLEAR FACILITY PROFILE
PSM 05 SEP 78

FACILITY NAME	LOCATION	FAC TYPE	CAPACITY	STATUS	YR	FAC CODE
	Imouraren	URAN		Explor		RMGJ

LATITUDE- 18 DEG MIN N

LONGITUDE- 07 DEG 30 MIN E

TECHNOLOGY SOURCE-

OWNER/OPERATOR-Uraniger- 30%, COGEMA- 35%, Conoco- 35%

SUPPLY SOURCE-

SAFEGUARDS-

PRODUCT/USE-Uranium

FUEL STORAGE CAPACITY-

PROCESS-Underground mining

SCHEDULE-Production of 1800 te/y expected by 1983

REMARKS-COGEMA- Cie. Generale des Matieres Nucleaires
Exploitable Reserves: 66000 te
Average Depth: 140 m

REFERENCES-

1-Uranium Resources, Production and Demand, IAEA, Dec. 1977, pp. 87-90
2-Foreign Uranium Supply, EPRI EA-725, 4/78, pp. 5-9 to 5-11
3-Mining Magazine, March 1978, p. 253
4-Mineral Industries of Africa, US Bureau of Mines, 1976, p. 71

ACTIVITY--NIGER RESOURCE RECOVERY
CATEGORY-MINES (URANIUM & THORIUM)

NUCLEAR FACILITY PROFILE
PSM 05 SEP 78

FACILITY NAME	LOCATION	FAC TYPE	CAPACITY	STATUS	YR	FAC CODE
	Techili	URAN		Explor		RMGK

LATITUDE- 18 DEG 30 MIN N

LONGITUDE- 08 DEG MIN E

TECHNOLOGY SOURCE-

OWNER/OPERATOR-Uraniger and CEA

SUPPLY SOURCE-

SAFEGUARDS-

PRODUCT/USE-Uranium

FUEL STORAGE CAPACITY-

PROCESS-

SCHEDULE-Exploration of 2000 kg sq underway

REMARKS-CEA- Commissariat a l'Energie Atomique (France)

REFERENCES-
1-Uranium Resources, Production and Demand, IAEA, Dec 1977, pp. 87-90
2-Foreign Uranium Supply, EPRI EA-725, 4/78, pp. 5-9 to 5-11
3-Mining Magazine, March 1978
4-Mineral Industries of Africa, US Bureau of Mines, 1976, p. 71

ACTIVITY--NIGER RESOURCE RECOVERY . NUCLEAR FACILITY PROFILE
CATEGORY-MINES (URANIUM & THORIUM) PSM 05 SEP 78

FACILITY NAME	LOCATION	FAC TYPE	CAPACITY	STATUS	YR	FAC CODE
	Arni	URAN		Explor		RMGL

LATITUDE- DEG MIN LONGITUDE- DEG MIN

TECHNOLOGY SOURCE- OWNER/OPERATOR-

SUPPLY SOURCE- SAFEGUARDS-

PRODUCT/USE-Uranium

FUEL STORAGE CAPACITY-

PROCESS-

SCHEDULE-

REMARKS-Exploitable resources= 20000 te

REFERENCES-
1-Uranium Resources, Production and Demand, IAEA, Dec 1977, pp. 87-90

NG 11

ACTIVITY--NIGER RESOURCE RECOVERY
CATEGORY-MINES (URANIUM & THORIUM)

NUCLEAR FACILITY PROFILE
PSM 05 SEP 78

FACILITY NAME	LOCATION	FAC TYPE	CAPACITY	STATUS	YR	FAC CODE
	I-n-Adrar	URAN				RMGM

LATITUDE- DEG MIN

LONGITUDE- DEG MIN

TECHNOLOGY SOURCE-

OWNER/OPERATOR-Uraniger 33%, COGEMA 26%, OEA 26%, AGIP Nucleare 15%

SUPPLY SOURCE-

SAFEGUARDS-

PRODUCT/USE-Uranium

FUEL STORAGE CAPACITY-

PROCESS-

SCHEDULE-

REMARKS-COGEMA- Cie. Generale des Matieres Nucleaires (France)
AGIP- Azienda Generale Italiani Petroli (Italy)
OEA- Iranium exploration firm (Iran)

REFERENCES-
1-Uranium Resources, Production and Demand, IAEA, Dec 1977, pp. 87-90
2-Foreign Uranium Supply, EPRI EA-725, 4/78, pp. 5-9 to 5-11

ACTIVITY--NIGER RESOURCE RECOVERY
CATEGORY-MINES (URANIUM & THORIUM)

NUCLEAR FACILITY PROFILE
PSM 05 SEP 78

FACILITY NAME	LOCATION	FAC TYPE	CAPACITY	STATUS	YR	FAC CODE
	West Afasto	URAN		Explor		RMGN

LATITUDE- 18 DEG 30 MIN N

LONGITUDE- 07 DEG MIN E

TECHNOLOGY SOURCE-

OWNER/OPERATOR-Uraniger, COGEMA and OURD, all have equal (33-1/3%)bit

SUPPLY SOURCE-

SAFEGUARDS-

PRODUCT/USE-Uranium

FUEL STORAGE CAPACITY-

PROCESS-

SCHEDULE-

REMARKS-COGEMA- Cie. Generale des Matieres Nucleaires (France)
OURD- Overseas Uranium Research and Development Corporation (Japan)

REFERENCES-

1-Uranium Resources, Production and Demand, IAEA, Dec 1977, pp. 87-90
2-Foreign Uranium Supply, EPRI EA-725, 4/78, pp. 5-9 to 5-11

ACTIVITY--NIGER RESOURCE RECOVERY
CATEGORY-MINES (URANIUM & THORIUM)

NUCLEAR FACILITY PROFILE
PSM 27 SEP 78

FACILITY NAME	LOCATION	FAC TYPE	CAPACITY	STATUS YR	FAC CODE
	Tegidda-in-Tessoum			Explor	RMGP

LATITUDE- 17 DEG 26 MIN N

LONGITUDE- 01 DEG 37 MIN E

TECHNOLOGY SOURCE-

OWNER/OPERATOR-International Resources Co. Ltd.

SUPPLY SOURCE-

SAFEGUARDS-

PRODUCT/USE-Uranium

FUEL STORAGE CAPACITY-

PROCESS-

SCHEDULE-

REMARKS-Alternate spelling- Tegguidda In Tessoum

REFERENCES-

1-Nuclear Fuel,
2-Mining Magazine, April 1977, p. 301

NO 1

ACTIVITY--NORWAY RSCH AND TEST REACTORS NUCLEAR FACILITY PROFILE
CATEGORY-RESEARCH AND TEST REACTORS DMK 30 SEP 78

FACILITY NAME	LOCATION	FAC TYPE	CAPACITY	STATUS	YR	FAC CODE
Halden	Halden, Norway	TK-H	20 MWt	Oper	59	RMOD

LATITUDE- 59 DEG 08 MIN N LONGITUDE- 11 DEG 13 MIN E

TECHNOLOGY SOURCE-Designer/Builder:OWNER/OPERATOR-Institutt For Atomenergi, Norway
NIA
SUPPLY SOURCE- SAFEGUARDS-NPT safeguards agreement ENEA OF OECD
PRODUCT/USE-Steady state and dynamic studies of heavy boiling water reactors
FUEL STORAGE CAPACITY-Short: Pit in reactor hall for 144 elements; Long: Bunker outside reactor hall 133 elements
PROCESS-Tank type, slightly enriched (1.5%) uranium, boiling heavy water moderated and cooled
SCHEDULE-Start of Construction: Oct 1955; Reactor critical: June 1959; Full power operation: Oct 1962
REMARKS-Capacity: 25 MWe
Fuel loading and unloading: Inactive fuel-manually; Active fuel-transfer coffin with an electromagnetic lifting

REFERENCES-
1-Directory of Nuclear Reactors, Vol V, 1964, p. 211
2-The Annual Report for 1976, IAEA, p. 54
3-The Times Atlas of the World Comprehensive ed., Nuclear Law for a Developing World, IAEA, p. 288

NO 2

ACTIVITY--NORWAY RESEARCH AND TEST REACTOR NUCLEAR FACILITY PROFILE
CATEGORY-RESEARCH AND TEST REACTORS DMK 30 SEP 78

FACILITY NAME	LOCATION	FAC TYPE	CAPACITY	STATUS	FAC YR	FAC CODE
JEEP	Kjeller	TK-H	450 KWt	Oper	51	RMOF

See remarks
LATITUDE- 60 DEG 00 MIN N LONGITUDE- 11 DEG 00 MIN E

TECHNOLOGY SOURCE-Institutt For Atomenergi, Kjeller
OWNER/OPERATOR-Institutt For Atomenergi, Kjeller
SUPPLY SOURCE-
SAFEGUARDS-

PRODUCT/USE-Experiments in neutron and solid state physics, isotope production measurement reactivity effect
FUEL STORAGE CAPACITY-Irradiated fuel: Cooling well

PROCESS-Tank type, natural uranium, heavy water moderated and cooled graphite reflected
SCHEDULE-Start of construction: 1948; Reactor critical: June 1951; 100 KW Operation: Aug. 1951; 450 KW Operation: March 1956
REMARKS-Fuel loading and unloading: After shutdown, from top hoisting into lead coffin for transport
JEEP-Joint Establishment Experimental Pile

REFERENCES-
1-Directory of Nuclear Reactors, Vol II, 1959, p. 263

NO 3

ACTIVITY--NORWAY RSCH AND TEST REACTORS
CATEGORY-RESEARCH AND TEST REACTORS

NUCLEAR FACILITY PROFILE
DMK 30 SEP 78

FACILITY NAME	LOCATION	FAC TYPE	CAPACITY	STATUS	YR	FAC CODE
JEEP No. 2	Kjeller	TK-H	2 MWt	Oper	65	RMOH

LATITUDE- 60 DEG 00 MIN N

LONGITUDE- 11 DEG 00 MIN E

TECHNOLOGY SOURCE-Institutt For Atomenergi & Noratom AS
SUPPLY SOURCE-

OWNER/OPERATOR-Institutt For Atomenergi, Kjeller
SAFEGUARDS-NPT safeguards agreement

PRODUCT/USE-Solid state & neutron physics, materials irradiation and shielding experiments, isotope production
FUEL STORAGE CAPACITY-Storage pits for 21 fuel elements; possibility of using a water tank in basement
PROCESS-Tank type, slightly enriched (3.5%) UO-2, heavy water moderated, cooled and reflected
SCHEDULE-Under construction
Start of construction: July 1961; Date critical: 1965
REMARKS-Fuel loading and unloading: Done by means of a vertical flask moving on rails at the reactor top

REFERENCES-
1-Directory of Nuclear Reactors, Vol VI, 1966, p. 183
2-The Annual Report For 1976, p. 54
3-Reactor Technology-1965, USAEC p. 9

NO 4

ACTIVITY--NORWAY RESEARCH AND TEST REACTOR NUCLEAR FACILITY PROFILE
CATEGORY-RESEARCH AND TEST REACTORS DMK 30 SEP 78

FACILITY NAME	LOCATION	FAC TYPE	CAPACITY	STATUS	YR	FAC CODE
Nora Reactor	Kjeller	TK-H	100 Wt	Oper	61	RMOJ

LATITUDE- 60 DEG 00 MIN N LONGITUDE- 11 DEG 00 MIN E

TECHNOLOGY SOURCE-Noratom AIS OWNER/OPERATOR-Institutt For Atomenergi

SUPPLY SOURCE- SAFEGUARDS-

PRODUCT/USE-Research in reactor physics, lattice experiments

FUEL STORAGE CAPACITY-

PROCESS-Tank-type, natural or slightly enriched uranium, heavy water moderated and cooled, graphite reflected
SCHEDULE-Reactor critical: June 1961

REMARKS-Capacity: Max 100 Wt

REFERENCES-
1-Directory of Nuclear Reactors, Vol V, 1964, p. 225

NO 5

ACTIVITY--NORWAY SPENT FUEL PROCESSING
CATEGORY-FUEL REPROCESSING FACILITIES

NUCLEAR FACILITY PROFILE
SRM 31 JUL 78

FACILITY NAME	LOCATION	FAC TYPE	CAPACITY	STATUS	YR	FAC CODE
IFA	Kjeller	UM	(small)	Inactv	61	RMOM

LATITUDE- 60 DEG 00 MIN N

LONGITUDE- 11 DEG 00 MIN E

TECHNOLOGY SOURCE-

OWNER/OPERATOR-

SUPPLY SOURCE-

SAFEGUARDS-

PRODUCT/USE-

FUEL STORAGE CAPACITY-

PROCESS-U-metal fuel reprocessing

SCHEDULE-Lab-scale facility operated from 1961-1968

REMARKS-IFA-Institutt for Atomenergi

REFERENCES-
1-Nuclear Proliferation Factbook; Congressional Research Service, Library of Congress; 9/23/77
2-EPRI-NP-44-SR; Status of Commercial Nuclear High Level Waste Disposal; 9/76

NO 6

ACTIVITY--NORWAY FUEL FABRICATION
CATEGORY-HEAVY WATER PRODUCTION

NUCLEAR FACILITY PROFILE
PSM 26 SEP 78

FACILITY NAME	LOCATION	FAC TYPE	CAPACITY	STATUS	YR	FAC CODE
	Rjukan		20 te/y	Oper	34	RMON

LATITUDE- 59 DEG 54 MIN N

LONGITUDE- 08 DEG 33 MIN E

TECHNOLOGY SOURCE-

OWNER/OPERATOR-Norsk Hydro

SUPPLY SOURCE-

SAFEGUARDS-

PRODUCT/USE-Heavy Water

FUEL STORAGE CAPACITY-

PROCESS-Water Electrolysis initially, Gas phase heterogeneous catalyst and water distillation added

SCHEDULE-

REMARKS-

REFERENCES-

1-Nuclear Engineering International, September 1976, p. 63

NO 7

ACTIVITY--NORWAY FUEL FABRICATION
CATEGORY-FUEL FABRICATION PLANTS

NUCLEAR FACILITY PROFILE
SRM 09 AUG 78

FACILITY NAME	LOCATION	FAC TYPE	CAPACITY	STATUS YR	FAC CODE
Fuel Element Pilot Production Plant	Kjeller			Oper	RMOP

LATITUDE- 60 DEG 00 MIN N

LONGITUDE- 11 DEG 00 MIN E

TECHNOLOGY SOURCE-

OWNER/OPERATOR-Institutt For Atomenergi

SUPPLY SOURCE-

SAFEGUARDS-NPT Safeguards Agreement

PRODUCT/USE-

FUEL STORAGE CAPACITY-

PROCESS-Unspecified fuel fabrication

SCHEDULE-Pilot plant currently in operation

REMARKS-

REFERENCES-
1-IAEA; The Annual Report for 1976; 7/77

ACTIVITY--PAKISTAN RESEARCH & TEST REACTOR NUCLEAR FACILITY PROFILE
CATEGORY-RESEARCH AND TEST REACTORS DMK 30 SEP 78

FACILITY NAME	LOCATION	FAC TYPE	CAPACITY	STATUS	YR	FAC CODE
PARR	Islamabad	POOL	5 MWt	Oper	65	RPAD

LATITUDE- 33 DEG 40 MIN N LONGITUDE- 73 DEG 08 MIN E

TECHNOLOGY SOURCE-Bldg.: AMF Atomics
OWNER/OPERATOR-Owner: PAEC

SUPPLY SOURCE-
SAFEGUARDS-IAEA (non-NPT)

PRODUCT/USE-

FUEL STORAGE CAPACITY-

PROCESS-

SCHEDULE-In operation

REMARKS-

REFERENCES-
1-Intl Data Collection and Analysis, Vol IV, NAC, June 1978
2-Intl Atomic Energy Agency Bulletin, Vol XIX, No 5, Oct. 1977

ACTIVITY--PAKISTAN RESEARCH AND TEST REACTOR NUCLEAR FACILITY PROFILE
CATEGORY-RESEARCH AND TEST REACTORS DMK 30 SEP 78

FACILITY NAME	LOCATION	FAC TYPE	CAPACITY	STATUS	YR	FAC CODE
Pak. Atomic Rsch Reac PARR	Islamabad	POOL	5 MWt	Oper	65	RPAE

LATITUDE- 33 DEG 40 MIN N LONGITUDE- 73 DEG 08 MIN E

TECHNOLOGY SOURCE-AMF Atomics, Div of American Mach. & Found.
SUPPLY SOURCE-

OWNER/OPERATOR-Pakistan Atomic Energy Commission, Karachi
SAFEGUARDS-IAEA (Non-NPT)

PRODUCT/USE-Research, training, isotope production

FUEL STORAGE CAPACITY-

PROCESS-Pool type, highly (90%) enriched uranium, light water moderated, cooled and reflected
SCHEDULE-Start of construction: March 1960;
Reactor critical: Dec 1961
REMARKS-Reactor is very similar to other AMF 1 MW open pool type reactors. Most of construction details, physical data, etc. are identical or of the same order of magnitude as for the Battelle Rsch Reactor. Nominal reac power: 1 MWt to be raised to 5 MWt.

REFERENCES-
1-Directory of Nuclear Reactors, Vol III, IAEA, 1960, p. 91
2-Intl. Data Collection and Analysis, Vol IV, NAC, June 1978
3-Intl. Atomic Energy Agency Bulletin, Vol XIX, No 5, Oct. 1977

ACTIVITY--PAKISTAN SPENT FUEL PROCESSING NUCLEAR FACILITY PROFILE
CATEGORY-FUEL REPROCESSING FACILITIES SRM 31 JUL 78

FACILITY NAME	LOCATION	FAC TYPE	CAPACITY	STATUS	YR	FAC CODE
	Chasma	UO	100 te (te/yr)	Plan		RPAF

LATITUDE- DEG MIN LONGITUDE- DEG MIN

TECHNOLOGY SOURCE-France

OWNER/OPERATOR-PAEC (Pakistan Atomic Energy Commission)

SUPPLY SOURCE-Karachi Nuclear Power Plant (Candu-type)

SAFEGUARDS-Pakistan-France-IAEA Safeguards Agreement

PRODUCT/USE-

FUEL STORAGE CAPACITY-

PROCESS-U-oxide fuel reprocessing

SCHEDULE-Under consideration-plans have been purchased from France

REMARKS-Pakistan has received 95% of the plans for the plant. Financing and technical manpower must be arranged before construction can begin.

REFERENCES-

1-Chayes, Abram and W. Bennett Lewis; International Arrangements for Nuclear Fuel Reprocessing; 1977
2-NAC: Intl Data Collection and Analysis; Task 1, Vol IV; 6/78

ACTIVITY--PAKISTAN RESOURCE RECOVERY NUCLEAR FACILITY PROFILE
CATEGORY-MINES (URANIUM & THORIUM) PSM 06 SEP 78

FACILITY NAME	LOCATION	FAC TYPE	CAPACITY	STATUS	YR	FAC CODE
	Dera Ghazi Khan Punjab			Constr		RPAJ

LATITUDE- 30 DEG 05 MIN N LONGITUDE- 70 DEG 44 MIN E

TECHNOLOGY SOURCE- OWNER/OPERATOR-Pakistan's Atomic Energy Commission

SUPPLY SOURCE- SAFEGUARDS-

PRODUCT/USE-

FUEL STORAGE CAPACITY-

PROCESS-

SCHEDULE-A pilot concentration plant is in operation

REMARKS-

REFERENCES-
1-Minerals Yearbook, 1974, US Bureau of Mines, Vol III, p. 715
2-International Data Collection and Analysis, NAC, Task 1, Vol IV, 6/78, Pakistan, p. 11

ACTIVITY--PERU RESOURCE RECOVERY
CATEGORY-MINES (URANIUM & THORIUM)

NUCLEAR FACILITY PROFILE
PSM 19 JUL 78

FACILITY NAME	LOCATION	FAC TYPE	CAPACITY	STATUS	YR	FAC CODE
Vilcabamba	Cuzco	URAN	2.5 te/y	Oper	75	RPED

LATITUDE- 13 DEG 32 MIN S

LONGITUDE- 71 DEG 57 MIN W

TECHNOLOGY SOURCE-

OWNER/OPERATOR-

SUPPLY SOURCE-

SAFEGUARDS-

PRODUCT/USE-Uranium

FUEL STORAGE CAPACITY-

PROCESS-Underground Mining

SCHEDULE-

REMARKS-Average grade of ore (% U) 0.127. Reference (below) gives amounts in tonnes U, we use tonnes U3O8.

REFERENCES-
1-World Energy Conference, Survey of Energy Resources 1976, p. 343

ACTIVITY--PERU RESOURCE RECOVERY
CATEGORY-MINES (URANIUM & THORIUM)

NUCLEAR FACILITY PROFILE
PSM 19 JUL 78

FACILITY NAME	LOCATION	FAC TYPE	CAPACITY	STATUS	YR	FAC CODE
Restauradora	Huancavelica	URAN		Plan	75	RPEE

LATITUDE- 12 DEG 45 MIN S

LONGITUDE- 75 DEG 03 MIN W

TECHNOLOGY SOURCE-

OWNER/OPERATOR-

SUPPLY SOURCE-

SAFEGUARDS-

PRODUCT/USE-Uranium

FUEL STORAGE CAPACITY-

PROCESS-Underground Mining

SCHEDULE-

REMARKS-Average grade of ore (% U) 0.051. Reference (below) gives amounts in tonnes U.

REFERENCES-

1-World Energy Conference, Survey of Energy Resources 1976, p. 343

ACTIVITY--PERU RESOURCE RECOVERY
CATEGORY-MINES (URANIUM & THORIUM)

NUCLEAR FACILITY PROFILE
PSM 19 JUL 78

FACILITY NAME	LOCATION	FAC TYPE	CAPACITY	STATUS	YR	FAC CODE
Area Ica	Ica	URAN		Plan		RPEF

LATITUDE- 14 DEG 05 MIN S

LONGITUDE- 75 DEG 43 MIN W

TECHNOLOGY SOURCE-

OWNER/OPERATOR-

SUPPLY SOURCE-

SAFEGUARDS-

PRODUCT/USE-Uranium

FUEL STORAGE CAPACITY-

PROCESS-Underground Mining

SCHEDULE-

REMARKS-Average grade of ore (% U) 0.255. Reference (below) gives amounts in tonnes U.

REFERENCES-

1-World Energy Conference, Survey of Energy Resources 1976, p. 343

ACTIVITY--PERU RESOURCE RECOVERY
CATEGORY-MINES (URANIUM & THORIUM)

NUCLEAR FACILITY PROFILE
PSM 19 JUL 78

FACILITY NAME	LOCATION	FAC TYPE	CAPACITY	STATUS	YR	FAC CODE
Churin	Lima	URAN		Plan		RPEG

LATITUDE- 12 DEG 06 MIN S

LONGITUDE- 77 DEG 03 MIN W

TECHNOLOGY SOURCE-

OWNER/OPERATOR-

SUPPLY SOURCE-

SAFEGUARDS-

PRODUCT/USE-Uranium

FUEL STORAGE CAPACITY-

PROCESS-Surface Mining

SCHEDULE-

REMARKS-Average grade of ore (% U) 0.017. Reference (below) gives amounts in tonnes U.

REFERENCES-

1-World Energy Conference, Survey of Energy Resources 1976, p. 343

ACTIVITY--PERU RESOURCE RECOVERY NUCLEAR FACILITY PROFILE
CATEGORY-MINES (URANIUM & THORIUM) PSM 19 JUL 78

FACILITY NAME	LOCATION	FAC TYPE	CAPACITY	STATUS	YR	FAC CODE
Jesus Maria	Moguegua	URAN		Plan		RPEH

LATITUDE- DEG MIN LONGITUDE- DEG MIN

TECHNOLOGY SOURCE- OWNER/OPERATOR-

SUPPLY SOURCE- SAFEGUARDS-

PRODUCT/USE-Uranium

FUEL STORAGE CAPACITY-

PROCESS-Underground Mining

SCHEDULE-

REMARKS-Average grade of ore (% U) 0.170. Reference (below) gives amounts in tonnes U.

REFERENCES-
1-World Energy Conference, Survey of Energy Resources 1976, p. 343

ACTIVITY--PERU RESOURCE RECOVERY
CATEGORY-MINES (URANIUM & THORIUM)

NUCLEAR FACILITY PROFILE
PSM 19 JUL 78

FACILITY NAME	LOCATION	FAC TYPE	CAPACITY	STATUS	YR	FAC CODE
Colquijirca	Pasco	URAN	2.5 te/y	Oper	75	RPEJ

LATITUDE- 10 DEG 43 MIN S

LONGITUDE- 76 DEG 15 MIN W

TECHNOLOGY SOURCE-

OWNER/OPERATOR-

SUPPLY SOURCE-

SAFEGUARDS-

PRODUCT/USE-Uranium

FUEL STORAGE CAPACITY-

PROCESS-Underground Mining

SCHEDULE-

REMARKS-Average grade of ore (% U) 0.255. Reference (below) gives amounts in tonnes U.

REFERENCES-

1-World Energy Conference, Survey of Energy Resources 1976, p. 343

ACTIVITY--PERU RESOURCE RECOVERY
CATEGORY-MINES (URANIUM & THORIUM)

NUCLEAR FACILITY PROFILE
PSM 19 JUL 78

FACILITY NAME	LOCATION	FAC TYPE	CAPACITY	STATUS	YR	FAC CODE
Bayovar	Piura	URAN		Plan		RPEK

LATITUDE- 05 DEG 15 MIN S

LONGITUDE- 80 DEG 38 MIN W

TECHNOLOGY SOURCE-

OWNER/OPERATOR-

SUPPLY SOURCE-

SAFEGUARDS-

PRODUCT/USE-Uranium

FUEL STORAGE CAPACITY-

PROCESS-Surface Mining

SCHEDULE-

REMARKS-Average grade of ore (% U) 0.004. Reference (below) gives amounts in tonnes U.

REFERENCES-

1-World Energy Conference, Survey of Energy Resources, 1976, p. 343

ACTIVITY--PHILIPPINES RSCH & TEST REACTOR NUCLEAR FACILITY PROFILE
CATEGORY-RESEARCH AND TEST REACTORS DMK 30 SEP 78

FACILITY NAME	LOCATION	FAC TYPE	CAPACITY	STATUS	YR	FAC CODE
Phil Rsch Reac. 1 PRR-1	Quezon City, Phil.	POOL	1 MWt	Oper	63	RPHG

LATITUDE- 14 DEG 39 MIN N LONGITUDE-121 DEG 01 MIN E

TECHNOLOGY SOURCE-Design & Bldr: General Electric Co.
SUPPLY SOURCE-

OWNER/OPERATOR-Philippine Atomic Energy Commission
SAFEGUARDS-

PRODUCT/USE-All-purpose research and training

FUEL STORAGE CAPACITY-

PROCESS-Pool type, enriched (20%) uranium, light water moderated and cooled, graphite reflected
SCHEDULE-Start of construction: 1959;
Reactor critical: 1961
REMARKS-Reactor is very similar to the Spanish reactor JEN-1.
Nominal reactor power: initial design to 1 MWt convertible to 3 MWt.

REFERENCES-
1-Directory of Nuclear Reactors, Vol III, IAEA, 1960, p. 95
2-Intl. Data Collection and Analysis, Vol IV, NAC, June 1978

ACTIVITY--PHILIPPINES RESOURCE RECOVERY NUCLEAR FACILITY PROFILE
CATEGORY-MINES (URANIUM & THORIUM) PSM 28 SEP 78

FACILITY NAME	LOCATION	FAC TYPE	CAPACITY	STATUS	YR	FAC CODE
Larap	Camarines Norte	URAN		Explor		RPHQ

LATITUDE- DEG MIN LONGITUDE- DEG MIN

TECHNOLOGY SOURCE- OWNER/OPERATOR-

SUPPLY SOURCE- SAFEGUARDS-

PRODUCT/USE-Uranium

FUEL STORAGE CAPACITY-

PROCESS-

SCHEDULE-

REMARKS-Possible uranium recovery from Antimony mine

REFERENCES-
1-International Data Collection and Analysis, NAC, Task 1, Vol IV, Philippines, p. 3
2-Mining Journal, 21 April 1978, p. 294

ACTIVITY--PHILIPPINES RESOURCE RECOVERY NUCLEAR FACILITY PROFILE
CATEGORY-MINES (URANIUM & THORIUM) PSM 28 SEP 78

FACILITY NAME	LOCATION	FAC TYPE	CAPACITY	STATUS	YR	FAC CODE
Bagacay	Sama-Island	URAN		Explor		RPHR

LATITUDE- 12 DEG MIN N LONGITUDE-125 DEG MIN E

TECHNOLOGY SOURCE- OWNER/OPERATOR-

SUPPLY SOURCE- SAFEGUARDS-

PRODUCT/USE-Uranium

FUEL STORAGE CAPACITY-

PROCESS-

SCHEDULE-

REMARKS-

REFERENCES-
1-International Data Collection and Analysis, NAC, Task 1, Vol IV, Philippines, p. 3
2-Mining Journal, 21 April 1978, p. 294

ACTIVITY--PHILIPPINE RESOURCE RECOVERY NUCLEAR FACILITY PROFILE
CATEGORY-MINES (URANIUM & THORIUM) PSM 28 SEP 78

FACILITY NAME	LOCATION	FAC TYPE	CAPACITY	STATUS	YR	FAC CODE
Magna Rosa	Caramoan Peninsula Luzon	URAN		Explor		RPHS

LATITUDE- 13 DEG 45 MIN N LONGITUDE-123 DEG 30 MIN E

TECHNOLOGY SOURCE- OWNER/OPERATOR-

SUPPLY SOURCE- SAFEGUARDS-

PRODUCT/USE-Uranium

FUEL STORAGE CAPACITY-

PROCESS-

SCHEDULE-

REMARKS-Uranium recovery from Antimony mining

REFERENCES-
1-International Data Collection and Analysis, NAC, Task 1, Vol IV, Philippines, p. 3
2-Mining Journal, 21 April 1978, p. 294

ACTIVITY--POLAND RESEARCH AND TEST REACTOR NUCLEAR FACILITY PROFILE
CATEGORY-RESEARCH AND TEST REACTORS DMK 30 SEP 78

FACILITY NAME	LOCATION	FAC TYPE	CAPACITY	STATUS	YR	FAC CODE
ZERA	Swierk	GMRR	100 Wt	Oper	63	RPDB
See remarks	Inst. of Nucl Rsch					

LATITUDE- DEG MIN LONGITUDE- DEG MIN

TECHNOLOGY SOURCE-See remarks
OWNER/OPERATOR-Inst of Nuclear Research, Swierk
SUPPLY SOURCE-
SAFEGUARDS-

PRODUCT/USE-Determination of reactor core parameters and investigation in reactor physics
FUEL STORAGE CAPACITY-

PROCESS-Enriched (21%) uranium, graphite and light water moderated, graphite reflected
SCHEDULE-Start of construction: Sept. 1961; reactor critical: June 1963
REMARKS-ZERA=Zero Energy Reactor Anna
Design & bldr.: Institute of Nuclear Research, Swierk & Polish Nuclear Design
Fuel loading and unloading: Transfer of fuel elements by crane from storage to core and vice versa
Neutron flux: Thermal max approx 2 x (10 E 9)n/(cm E 2)sec
Critical mass: 2.875 Kg U-235, water-graphite moderated, pitch 14.0 cm; 3.500 Kg U-235, water-graphite moderated, pitch 19.8 cm; 6.0 Kg U-235, graphite moderated, pitch 19.8 cm.

REFERENCES-
1-Directory of Nuclear Reactors, Vol VIII, IAEA, 1970, p. 179
2-The Annual Report For 1976, IAEA, p. 54

ACTIVITY--POLAND RESEARCH AND TEST REACTOR NUCLEAR FACILITY PROFILE
CATEGORY-RESEARCH AND TEST REACTORS DMK 30 SF? 78

FACILITY NAME	LOCATION	FAC TYPE	CAPACITY	STATUS	YR	FAC CODE
EWA Reactor WWR-C Warsaw	Swierk	TK-L	2 MWt	Oper	58	RPDD

LATITUDE- DEG MIN LONGITUDE- DEG MIN

TECHNOLOGY SOURCE-Design & fab of reactor components: USSR
SUPPLY SOURCE-

OWNER/OPERATOR-Institut Badan Jadrowych (IRJ)
SAFEGUARDS-

PRODUCT/USE-

FUEL STORAGE CAPACITY-

PROCESS-Tank-type, enriched (>10%) uranium, light water moderated and cooled
SCHEDULE-Start of construction: 1956; reactor critical: Jan. 1958; full power operation: April 1958

REMARKS-Reactor is identical with the WWR-C Reactor of the Academy of Sciences, Moscow

REFERENCES-
1-Directory of Nuclear Reactors, Vol III, IAEA, 1960, p. 137

ACTIVITY--POLAND RESEARCH AND TEST REACTOR NUCLEAR FACILITY PROFILE
CATEGORY-RESEARCH AND TEST REACTORS DMK 30 SEP 78

FACILITY NAME	LOCATION	FAC TYPE	CAPACITY	STATUS	YR	FAC CODE
Maryla Reactor	Inst. of Nuclear Research	POOL	10 KWt	Oper	67	RPDG

LATITUDE- DEG MIN LONGITUDE- DEG MIN

TECHNOLOGY SOURCE-Inst of Nuclear Research Reactor Exp. Div.
OWNER/OPERATOR-See remarks
SUPPLY SOURCE-
SAFEGUARDS-

PRODUCT/USE-Critical experiments, reactor kinetics & statics, educational purposes
FUEL STORAGE CAPACITY-

PROCESS-Pool type, enriched (10% or 36%) uranium, light-water moderated and cooled, beryllium, graphite or light-water reflected
SCHEDULE-Reactor critical: Feb 1967

REMARKS-Used as a flexible facility for reactor physics and technology
Reactor owned by Polish Govt Commissioner for use of nuclear energy
Operated by Inst of Nuclear Rsch, Reactor Exploitation Division
Capacity: Max 10 KWt

REFERENCES-
1-Directory of Nuclear Reactors, Vol VIII, IAEA, 1970, p. 61

ACTIVITY--POLAND WASTE MANAGEMENT NUCLEAR FACILITY PROFILE
CATEGORY-WASTE DISPOSAL FACILITIES SRM 28 AUG 78

FACILITY NAME	LOCATION	FAC TYPE	CAPACITY	STATUS	YR	FAC CODE
Rad Waste Storage Site	Rozan	DISP	2870 m3	Oper		RPDK

LATITUDE- 52 DEG 54 MIN N LONGITUDE- 21 DEG 21 MIN E

TECHNOLOGY SOURCE-

OWNER/OPERATOR-Institute of Nuclear Research, Swierk

SUPPLY SOURCE-All radioactive waste in Poland

SAFEGUARDS-

PRODUCT/USE-

FUEL STORAGE CAPACITY-Total capacity of 2870 cubic meters

PROCESS-Shallow burial of radioactive wastes in concrete cells of an old fort

SCHEDULE-Currently in operation

REMARKS-Before disposal, wastes are packed and sealed at Waste Treatment Station at Institute of Nuclear Research, Swierk. In the future, a solid waste compactor and an incinerator may be installed there for further treatment of wastes

REFERENCES-

1-IAEA; Waste Management Techniques and Programmes in Czechoslovakia, Poland, and the USSR; 1971