WORLD ENERGY DATA SYSTEM

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VOLUME VIII NUCLEAR FACILITY PROFILES CO—HU

OFFICE OF PROGRAM MANAGEMENT SUPPORT

ARGONNE NATIONAL LABORATORY

ARGONNE, ILLINOIS 60439

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WENDS

VOLUME VIII
NUCLEAR FACILITY PROFILES
CO—HU

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June 1979

OFFICE OF PROGRAM MANAGEMENT SUPPORT
Argonne National Laboratory
Argonne, Illinois 60439

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VOLUME VIII
WENDS NUCLEAR FACILITY PROFILES
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Czechoslovakia	CZ
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Greenland	GL
Hungary	HU

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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Office of Program Management Support
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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:

<u>Volume</u>	<u>Title</u>	<u>Contents</u>
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 background 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), Mada-
gascar, 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 Hexafluoride
UF4 - Conversion to Uranium Tetrafluoride

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)
m ³ /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

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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

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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 LASR		Oper R&D	65	RASE 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		RATP
		Tweng	URAN		Explor		RATQ
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

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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

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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	RBRV
CATEGORY-FUEL REPROCESSING FACILITIES							
		Sepetiba	UO	5 kg/day	Plan	86	RBRB
BULGARIA							
CATEGORY-MINES (URANIUM & THORIUM)							
	Buhovo	Sofia			Oper		RBLI
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	RDCI
	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	RDDC
	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

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NFP INDEX BY COUNTRY

COUNTRY	FACILITY NAME	LOCATION	FAC TYPE	CAPACITY	STATUS	YR	NFP CODE
CANADA (CONT.)							
CATEGORY-MINES (URANIUM & THORIUM) (CONT.)							
		Mazenod Lake					RDKD
		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
		Cobeguid 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	RDC T
	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
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	Varenes	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

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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	Ottawa, 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 LASR	180 KSWU	Oper R&D	63	RPCB RPCH

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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)						
	Pribram	Jachymov Pribram	URAN URAN		Oper	54	RCKE RCZN
	CATEGORY-FUEL FABRICATION PLANTS						
	Nuclear Fuel Inst.	Prague			Ope.		RCKF
	CATEGORY-RESEARCH AND TEST REACTORS						
	HWGCR (KS-150)	Bohunice, Slovakia		590 MWt	Oper	65	RCKD
	WWR-C Prague	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 Elsinore			Oper Oper		REN REN
	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

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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	RFGQ
		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	RFBQ
	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	Saclay, 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

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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	RFCQ
	Isis Reactor	Saclay	POOL	.08 Kw	Oper	66	RFCR
	Reactor Marius	Cadarache	GMRR	(small)	Oper	60	RFCW
	MASURCA	Cadarache	FNRR	1 Kw	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 Kw	Oper	61	RFDJ
	Proserpine	Saclay	LHRR	1 Wt	Oper	58	RFDN
	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	RFGI
	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

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COUNTRY	FACILITY NAME	LOCATION	FAC TYPE	CAPACITY	STATUS	YR	NFP CODE
GABON (CONT.)							
CATEGORY-MILLS		Mounana	URAN		Inactv		RHBD
GERMANY (EAST)							
CATEGORY-MINES (URANIUM & THORIUM)		Weringerode	URAN		Oper	50	REGU
Sorgesettendorf		Thuringia	URAN		Oper		REGV
			URAN				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
Fobeg		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

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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	RGBP
	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	RGFQ
	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)	Rosendorf	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

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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		RHEH
	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	D2O	14 te/y	Oper	62	RHNC
	Baroda Plant	Baroda	D2O	67.2te/y	Oper	76	RHNL
	Kota Plant	Kota	D2O	100 te/y	Constr	80	RHNM
	Tuticorin Plant	Tuticorin	D2O	71.3te/y	Constr	78	RHNN
	Talcher Plant	Talcher	D2O	62.7te/y	Constr	80	RHNP
	Nuclear Fuels	Hyderabad	UO	124 te	Oper	71	RHNQ

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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							
	PREFRE	Kalpakkam	UO	50 te/yr	Plan	82	RHED
		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		RHKF
ISRAEL							
CATEGORY-ENRICHMENT PLANTS							
	Weizmann Institute	Rehovot	LASR		R&D		RTSK

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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)							
	Novazza	Val Rendena	URAN		Explor		RICP
		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							
	Fabricazioni 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

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COUNTRY	FACILITY NAME	LOCATION	FAC TYPE	CAPACITY	STATUS	YR	NFP CODE
ITALY (CONT.)							
CATEGORY-FUEL REPROCESSING FACILITIES							
	Eurex-1	Saluggia	UO	500 te	Plan	85	RIAA
	ITREC Pilot Plant	Rotondella	UOUM	10 te/yr	Inactv	69	RIBL
			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		RJFR
		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	RJAO
	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

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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 Kyoto 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	RJAP
	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	RKOF
MADAGASCAR							
CATEGORY-MINES (URANIUM & THORIUM)							
		Fort Dauphin	URAN	450 te/y	Inactv	63	RMDZ

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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

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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

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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		RMOP
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

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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		RPHQ
	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

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COUNTRY	FACILITY NAME	LOCATION	FAC TYPE	CAPACITY	STATUS	YR	NFP CODE
PORTUGAL (CONT.)							
CATEGORY-MILLS							
	Alto Alentejo	Urgeirica Nisa	URAN URAN	150 te/y	Oper Plan	85	RPOL 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
		Karoo	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
		Parameitkuil	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

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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

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COUNTRY	FACILITY NAME	LOCATION	FAC TYPE	CAPACITY	STATUS	YR	NFP CODE
SPAIN							
CATEGORY-MINES (URANIUM & THORIUM)							
		Soria	URAN		Explor		RSCQ
		Cuidad Rodrigo	URAN	118te/y	Oper	75	RSCS
	El Pedregal	Don Benito	URAN	60 te/y	Oper		RSCU
		Andujar	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	RSAX
	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	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

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COUNTRY	FACILITY NAME	LOCATION	FAC TYPE	CAPACITY	STATUS	YR	NFP CODE
SWEDEN (CONT.)							
CATEGORY-RESEARCH AND TEST REACTORS							
	FR-O	Studsvik	FNRR	10 Wt	Inactv	64	RWAP
	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	RWBB
	R2-O	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

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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)							
	Stromness	Caithness	URAN		Explor		RUEC
		Orkney	URAN		Explor		RUEZ
		Cornwall	URAN		Explor		RUFA
CATEGORY-CONVERSION PLANTS							
	Springfields	Preston	UF6	8000 te	Oper	68	RUEG
CATEGORY-ENRICHMENT PLANTS							
	Diffusion Enr. Plant	Capenhurst	LASR		R&D	75	RUAB
	Production Plant	Capenhurst	DIFF	400 KSWU	Oper	75	RUAU
	Pilot Plant	Capenhurst	CENT	50 KSWU	Oper	77	RUDL
			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	RUAЕ
	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	.91 MWt	Oper	62	RUCK
	Juno Reactor	Winfrith, Dorset	TANK	100 Wt	Oper	64	RUCL

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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	UO	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	RUEQ
		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	RUBF
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

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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	RYUP
	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

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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
		Wiluna			Explor		RASK
	Lake Way		URAN		Explor		RASL
	Olympic Dam						
	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
AUSTRIA		Forstau	URAN		Explor		RATP
		Tweng	URAN		Explor		RATQ

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NFP INDEX BY CATEGORY-MINES (URANIUM & THORIUM)

COUNTRY	FACILITY NAME	LOCATION	FAC TYPE	CAPACITY	STATUS	YR	NFP CODE
BOLIVIA		Cotaje	URAN		Plan	80	RBOC
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		RBLI
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

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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	Weiuyan	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	RFRG
		St. Pierre du Cantal	URAN	100 te/y	Oper	78	RFGU

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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

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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		RJFR
		Ningyo Toge	URAN		Oper	64	RJFV
KOREA (SOUTH)		Taeduck	URAN		Explor		RKOV
MADAGASCAR		Fort Dauphin	URAN	450 te/y	Inactiv	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-Puerto III	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

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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	Camoan 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
		Karoo	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	1200 te/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

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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	
	El Pedregal	Cuidad Rodrigo	URAN	118te/y	Oper	75	RSCS	
		Don Benito	URAN	60 te/y	Oper		RSCU	
		Andvjar	URAN	65 te/y	Oper	59	RSCV	
SWEDEN	Pleutajokk	Arjeplog-Arvidsjaur	URAN		Explor		RWBP	
	Ranstað	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	

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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	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	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	RIDG
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

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NFP INDEX BY CATEGORY-MILLS

COUNTRY	FACILITY NAME	LOCATION	FAC TYPE	CAPACITY	STATUS	YR	NFP CODE
PORTUGAL							
	Alto Alentejo	Urgeirica	URAN	150 te/y	Oper		RPOL
		Nisa	URAN		Plan	85	RPOP
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

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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

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NFP INDEX BY CATEGORY-ENRICHMENT PLANTS

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

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NFP INDEX BY CATEGORY-ENRICHMENT PLANTS

COUNTRY	FACILITY NAME	LOCATION	FAC TYPE	CAPACITY	STATUS	YR	NFP CODE
SOVIET UNION		Siberia	DIFF LASR	10000 K	Oper		RRAA 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	RU DL
	Pilot Plant	Capenhurst	CENT	15 KSWU	Oper	72	RUEK

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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
	Glance Bay	Glance 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	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	RHNL
	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

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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		RBRB
		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	Varenes	UO		Oper		RDHX
CZECHOSLOVAKIA	Nuclear Fuel Inst.	Prague			Oper		RCKF
DENMARK	Riso Research Est.	Roskilde			Oper		RENK
		Elsinore	UOUM		Oper		RENK
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	Grosswelsheim	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

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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		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
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		RMOP
SPAIN	Juan Vigon Nuclear	Madrid			R&D		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

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NFP INDEX BY CATEGORY-RESEARCH AND TEST REACTORS

COUNTRY	FACILITY NAME	LOCATION	FAC TYPE	CAPACITY	STATUS	YR	NFP CODE
ARGENTINA							
	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
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 Kw	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	Ottawa, 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

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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 Prague	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	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
	Eole Reactor	Cadarache	TK-H	10KW max	Oper	65	RFBN
	Harmonie Reactor	Bouches-du-Rhone	FNRR	.002 MWt	Oper	65	RFCQ
	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

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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	RGBP
	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	RGFQ
	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)	Rosendorf	TANK	6 MWt			RGGG
GREECE							
	GRR	Athens		POOL 1 MWt		59	RHCE

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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		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
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		RORQ
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	Ispira (Varese)	TK-H	1KWt max	Inactv	65	RIAK
	Essor reactor	Ispira (Varese)	TK-H	36.6 MWt	Oper	67	RIBK
	RTS-1	San Piero a Grado	POOL	5 MWt	Oper	65	RIBN
	Reactor Ispira-1	Ispira, 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 Brasimoro	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

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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	RJAJ
	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 Kyoto 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

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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	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
PAKISTAN							
	PARR	Islamabad	POOL	5 MWt	Oper	65	RPAD
	Pak. Atomic Rsch	Islamabad	POOL	5 MWt	Oper	65	RPAE
PHILIPPINES							
	Phil Rsch React. 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	RPDD
	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	RRBN
	BR-1 Soviet Breeder	Obninsk	FNRR	50 Wt	Inactv	55	RRBP
	BR-2	Obninsk	FNRR	.2 MWt	Inactv	57	RRBQ

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NFP INDEX BY CATEGORY-RESEARCH AND TEST REACTORS

COUNTRY	FACILITY NAME	LOCATION	FAC TYPE	CAPACITY	STATUS	YR	NFP CODE
SOVIET UNION (CONT.)							
	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
SPAIN							
	Arbi Reactor	Bilbao	ARGO	.01 MWt	Oper	62	RSAH
	Argos Reactor	Barcelona	ARGO	.01 MWt	Oper	61	RSAX
	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	RSBL
SWEDEN							
	FR-O	Studsvik	FNRR	10 Wt	Inactv	64	RWAP
	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 Kw	Oper	54	RWAZ
	R-2 Rsch Reactor	Studsvik	TK-L	50 MWt	Oper	60	RWBB
	R2-O	Studsvik	POOL	1 MWt	Oper	64	RWBH
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

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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	RUAЕ
	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
	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	RUEH
	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

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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		Segetiba	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

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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		RSBP
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

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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

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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 Mbb1	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	RF GK
	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	RG GK
	FIPS-I	Julich	PREP	1 kg/hr	Inactv	72	RGGL
	VERA	Karlsruhe	PREP		Inactv	70	RGGM
		Karlsruhe	PREP	30 l/hr	Oper	76	RGGN

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NFP INDEX BY CATEGORY-WASTE DISPOSAL FACILITIES

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

CO 1

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

FACILITY NAME	LOCATION	FAC	FAC
		TYPE CAPACITY	STATUS YR CODE
Instituto De Asuntos Bogota		POOL 20 KWt	Oper 65 RCOB
Nucleares - R1			
LATITUDE- 4 DEG 37 MIN N		LONGITUDE- 74 DEG 15 MIN W	

TECHNOLOGY SOURCE-Design & bldr:	OWNER/OPERATOR-Instituto De Asuntos
Lockhead Nuc Prod Marietta, Ga	Nucleares
SUPPLY SOURCE-	SAFEGUARDS-IAEA (Non-NPT)

PRODUCT/USE-Production of radioisotopes; research in agriculture, bio,
genetic effects (See remarks)

FUEL STORAGE CAPACITY-Racks, providing space for 16 elements

PROCESS-Pool type, highly enriched (90%) uranium, light-water
moderated and cooled, graphite reflected

SCHEDULE-Start of construction: Sept 1964; Reactor critical: Jan 1965;
Full power operation: Feb 1965

REMARKS-Research is also carried on in reactor core physics,
activation analysis, training. The reactor is located at the Inst.
De Asuntos Nucleares, Bogota.
Fuel loading and unloading is done manually by means of handling
tools.

REFERENCES-

- 1-Directory of Nuclear Reactors, Vol VIII, IAEA, 1970, p. 43
- 2-Intl. Atomic Energy Agency Bulletin, Vol XIX, No 5, Oct 1977

CZ 1

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

FACILITY NAME	LOCATION	FAC TYPE	CAPACITY	STATUS	YR CODE
HWGCR (KS-150)	Bohunice, Slovakia		590 MWt	Oper	65 RCKD

LATITUDE-	DEG	MIN	LONGITUDE-	DEG	MIN
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TECHNOLOGY SOURCE-Joint design of USSR and CSSR	OWNER/OPERATOR-Ministry of Power and Water Economy
SUPPLY SOURCE-	SAFEGUARDS-

PRODUCT/USE-Power production

FUEL STORAGE CAPACITY-

PROCESS-Natural uranium, heavy water moderated, CO-2 cooled

SCHEDULE-Start of construction: Aug 1958

Reactor critical: 1965

REMARKS-Gross heat 590 MWt; Gross elec. 150 MWe

Spent fuel elements are first lifted to cooling zone above the core inside the reactor vessel before they are removed by a loading-unloading machine operating vertically through vessel head.

Refueling under pressure

REFERENCES-

1-Directory of Nuclear Reactors, Vol IV, IAEA, 1962, p. 279

CZ 2

ACTIVITY--CZECHOSLOVAKIA RESOURCE RECOVERY NUCLEAR FACILITY PROFILE
CATEGORY-MINES (URANIUM & THORIUM) PSM 10 AUG 78

FACILITY NAME	LOCATION	FAC TYPE	CAPACITY	STATUS	YR	FAC CODE
	Jachymov	URAN				RCKE

LATITUDE- 50 DEG 22 MIN N

LONGITUDE- 12 DEG 55 MIN E

TECHNOLOGY SOURCE-

OWNER/OPERATOR-

SUPPLY SOURCE-

SAFEGUARDS-

PRODUCT/USE-Uranium

FUEL STORAGE CAPACITY-

PROCESS-

SCHEDULE-

REMARKS-Known to be operating in mid 1960's

The area has been mined since the 12th Century (mostly for silver)

REFERENCES-

- 1-McKinney, Robert, International Atomic Policies and Programs of the United States, Report to the Joint Committee on Atomic Energy, 1960, Vol IV, pp. 1613-1618

CZ 3

ACTIVITY--CZECHOSLOVAKIA FUEL FABRICATION NUCLEAR FACILITY PROFILE
CATEGORY-FUEL FABRICATION PLANTS SRM 09 AUG 78

FACILITY NAME	LOCATION	FAC	FAC
		TYPE CAPACITY	STATUS YR CODE
Nuclear Fuel Inst.	Prague		Oper RCKF

LATITUDE- 50 DEG 05 MIN N

LONGITUDE- 14 DEG 25 MIN E

TECHNOLOGY SOURCE-

OWNER/OPERATOR-Nuclear Fuel
Institute

SUPPLY SOURCE-

SAFEGUARDS-NPT Safeguards Agreement

PRODUCT/USE-

FUEL STORAGE CAPACITY-

PROCESS-Unspecified fuel fabrication

SCHEDULE-Pilot plant currently in operation

REMARKS-Probably for fabrication of U-metal fuel for domestic research
reactors

REFERENCES-

1-IAEA; The Annual Report for 1976; 7/77

ACTIVITY--CZECHOSLOVAKIA WASTE MANAGEMENT NUCLEAR FACILITY PROFILE
 CATEGORY-WASTE DISPOSAL FACILITIES SRM 30 AUG 78

FACILITY NAME	LOCATION	FAC	FAC
NRI-Rez	Prague	PREP 3.6 m3/h Oper	61 RCKG
		(m3/hr)	

LATITUDE- 50 DEG 05 MIN N LONGITUDE- 14 DEG 25 MIN E

TECHNOLOGY SOURCE-Czechoslovakia, OWNER/OPERATOR-NRI-Rez (Nuclear
 NRI-Rez Research Institute-Rez)

SUPPLY SOURCE-Rez Nuclear SAFEGUARDS-
 Research Institute

PRODUCT/USE-Various waste treatments/storage and disposal

FUEL STORAGE CAPACITY-6 storage tanks for liquid waste- 5 of capacity
 10 cubic meters, 1 of capacity 63 cubic meters

PROCESS-Chemical precipitation of liquid waste and incorporation into
 concrete; solidified in metal containers

SCHEDULE-Currently in operation

REMARKS-A film evaporator was operated from 1961-1964 to concentrate
 waste solutions. Its capacity was 1 cubic meter per day. The current
 waste treatment facility was designed to decontaminate wastes at
 full operating capacity of the lab at Rez.

REFERENCES-

- 1-IAEA; Waste Management Techniques and Programmes in
 Czechoslovakia, Poland, and the USSR; 1971

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

FACILITY NAME	LOCATION	FAC TYPE	CAPACITY	STATUS	FAC YR CODE
WWR-C Prague	Rez	TK-L	2 MWt	Oper	57 RCZL

LATITUDE- DEG MIN LONGITUDE- DEG MIN

TECHNOLOGY SOURCE-USSR OWNER/OPERATOR-Nuclear Rsch Inst.,
 Czechoslovak Academy of Sciences
 SUPPLY SOURCE- SAFEGUARDS-

PRODUCT/USE-

FUEL STORAGE CAPACITY-

PROCESS-Tank-type, enriched (>10%) uranium, light water moderated
 and cooled

SCHEDULE-In operation; reactor critical: Sept. 1957

REMARKS-Reactor is identical with the WWR-C Reactor of the Academy of
 Sciences, Moscow. The power level may be raised from 2 MW to 3 MW
 by intensification of the cooling circuit.

REFERENCES-

1-Directory of Nuclear Reactors, Vol III, IAEA, 1960, p. 135

CZ 6

ACTIVITY--CZECHOSLOVAKIA RESOURCE RECOVERY NUCLEAR FACILITY PROFILE
CATEGORY-MINES (URANIUM & THORIUM) PSM 20 SEP 78

FACILITY NAME	LOCATION	FAC TYPE	CAPACITY	STATUS	FAC YR CODE
Pribram	Pribram	URAN		Oper	54 RCZN

LATITUDE- 49 DEG 42 MIN N

LONGITUDE- 14 DEG 00 MIN E

TECHNOLOGY SOURCE-

OWNER/OPERATOR-Government
controlled

SUPPLY SOURCE-

SAFEGUARDS-

PRODUCT/USE-Uranium

FUEL STORAGE CAPACITY-

PROCESS-

SCHEDULE-Operation began Dec. 1954. Believed to be mineable until mid
1980's.

REMARKS-

REFERENCES-

1-Minerals Yearbook, US Bureau of Mines, 1955, pp. 1228-1242

DA 1

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

FACILITY NAME	LOCATION	FAC	TYPE	CAPACITY	STATUS	YR	CODE
DR-1	Roskilde	LHRR	500Wt			57	RENG

Danish Reactor Riso Rsch Establ

LATITUDE- 55 DEG 39 MIN N LONGITUDE- 12 DEG 07 MIN E

TECHNOLOGY SOURCE-Design: Atomics OWNER/OPERATOR-Danish Atomic Energy
Intl. See remarks Commission

SUPPLY SOURCE- SAFEGUARDS-

PRODUCT/USE-Neutron source for an exponential experiment and for
training

FUEL STORAGE CAPACITY-

PROCESS-Aqueous homogeneous, L-55 type, enriched (20%) uranium, light
water moderated and cooled, graphite reflected

SCHEDULE-Start of construction: Aug. 1956; reactor critical: Aug. 1957
full power operation: Sept. 1957

REMARKS-BLDG.: Danish subcontractors

Critical mass: .983 Kg U-235 in 13.0l solution.

Av. specific power in fuel: At .5 KW operation- .5 KW/Kg U-235

Av. power density in core: .035 KW/l

REFERENCES-

- 1-Directory of Nuclear Reactors, Vol II, IAEA, 1959, p. 187
- 2-Programming & Utilization of Rsch Reactors, Vol I, AP, p. 289

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

FACILITY NAME	LOCATION	FAC TYPE	CAPACITY	STATUS	YR CODE
DR-2	Roskilde	POOL	5 MWt	Oper	58 RENJ
Danish Reactor-2 Riso Rsch Establ					
LATITUDE- 55 DEG 39 MIN N		LONGITUDE- 12 DEG 07 MIN E			

TECHNOLOGY SOURCE-Designer & bldr: OWNER/OPERATOR-Danish Atomic Energy
 Foster Wheeler Corp. Commission
 SUPPLY SOURCE- SAFEGUARDS-

PRODUCT/USE-Research in neutron physics, reactor technology, isotope
 production
 FUEL STORAGE CAPACITY-

PROCESS-Pool-type, highly enriched (90%) uranium, light water
 moderated and cooled, graphite reflected

SCHEDULE-Start of construction: Dec. 1956;
 reactor critical: Dec. 1958

REMARKS-Neutron flux: Thermal av $4.0 \times (10 \text{ E } 13) \text{ n}/(\text{cm E } 2) \text{ sec}$; Thermal
 max $8.0 \times (10 \text{ E } 13) \text{ n}/(\text{cm E } 2) \text{ sec}$; Fast av $.8 \times (10 \text{ E } 14) \text{ n}/(\text{cm E } 2) \text{ sec}$;
 Fast max $1.5 \times (10 \text{ E } 14) \text{ n}/(\text{cm E } 2) \text{ sec}$
 Critical mass: Water reflected 3275 g U-235
 Core loading at rated power: Graphite reflected 4 to 5 Kg U-235

REFERENCES-

1-Directory of Nuclear Reactors, IAEA, Vol III, p. 53, 1960

ACTIVITY--DENMARK RSCH AND TEST REACTORS
 CATEGORY-RESEARCH AND TEST REACTORS

NUCLEAR FACILITY PROFILE
 DMK 18 NOV 77

FACILITY NAME	LOCATION	FAC TYPE	CAPACITY	STATUS	FAC YR CODE
DR-3	Copenhagen	TK-H	10 MWt	Oper	59 RENL
Danish Reactor-3		Riso Research Estab.			
LATITUDE- 55 DEG 43 MIN N		LONGITUDE- 12 DEG 34 MIN E			

TECHNOLOGY SOURCE-UKAEA

OWNER/OPERATOR-Danish AEC

SUPPLY SOURCE-Head Wrightson
 Processes Ltd.

SAFEGUARDS-IAEA

PRODUCT/USE-Isotope production/Materials testing and isotope
 production in large loops

FUEL STORAGE CAPACITY-

PROCESS-Tank type fully enriched (93%) uranium, heavy water
 moderated and cooled, graphite and heavy water reflected

SCHEDULE-Currently in operation. Reactor critical: Aug 1959

REMARKS-Construction: Head Wrightson Processes, Ltd., and Danish Sub-
 contractors. This reactor is similar to the "PLUTO" Reactor at
 Harwell, U.K.

Normal fresh fuel loading: 2.6 kg. U-235; total fuel inventory: 15 kg
 U-235 (est.); Expected avg. burnup before reprocessing: approx. 15%;
 method of refueling: A lead-shielded flask with He cooling moves one
 subassembly to a cooling bay

REFERENCES-

- 1-Directory of Nuclear Reactors, Vol II, 1959, p. 293
- 2-The Annual Report for 1976, IAEA, p. 46
- 3-The Times Atlas of the World, Comprehensive Ed.
- 4-Nuclear Reactor Plant Data, Vol II, The Amer. Soc. of Mech.
 Engineers, pp. 203, 1959

DA 4

ACTIVITY--DENMARK FUEL FABRICATION
CATEGORY-FUEL FABRICATION PLANTS

NUCLEAR FACILITY PROFILE
SRM 09 AUG 78

FACILITY NAME LOCATION
Riso Research Est. Roskilde

FAC FAC
TYPE CAPACITY STATUS YR CODE
Oper RENP

LATITUDE- 55 DEG 39 MIN N

LONGITUDE- 12 DEG 07 MIN E

TECHNOLOGY SOURCE-

OWNER/OPERATOR-Danish Atomic Energy
Commission/Riso Research Est.

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

DA 5

ACTIVITY--DENMARK FUEL FABRICATION
CATEGORY-FUEL FABRICATION PLANTS

NUCLEAR FACILITY PROFILE
SRM 09 AUG 78

FACILITY NAME LOCATION
Elsinore

FAC FAC
TYPE CAPACITY STATUS YR CODE
UOUM Oper RENR

LATITUDE- 57 DEG 03 MIN N

LONGITUDE- 12 DEG 38 MIN E

TECHNOLOGY SOURCE-

OWNER/OPERATOR-

SUPPLY SOURCE-

SAFEGUARDS-NPT Safeguards
Agreement

PRODUCT/USE-U-metal and U-oxide fuel

FUEL STORAGE CAPACITY-

PROCESS-

SCHEDULE-Currently in operation

REMARKS-

REFERENCES-

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

EG 1

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

FACILITY NAME	LOCATION	FAC	FAC
UAR WWR-C Reactor	Inshas	TK-L 2 MWt	Oper 61 RVAE

LATITUDE- 30 DEG 23 MIN N LONGITUDE- 31 DEG 28 MIN E

TECHNOLOGY SOURCE-Dsgn & Fabrica- OWNER/OPERATOR-United Arab Republic
tion of Reac. Components by USSR Atomic Energy Commission
SUPPLY SOURCE- SAFEGUARDS-

PRODUCT/USE-Research

FUEL STORAGE CAPACITY-

PROCESS-Tank type, enriched (>10%) uranium, light water moderated and cooled

SCHEDULE-Reactor critical early 1961

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. 143

FI 1

ACTIVITY--FINLAND 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
FIR-1	Helsinki		250 MWt	Oper	62	REFA

LATITUDE- 60 DEG 08 MIN N

LONGITUDE- 25 DEG 00 MIN E

TECHNOLOGY SOURCE-Constructor: GA OWNER/OPERATOR-Owner: Ministry of
Commerce and Industry

SUPPLY SOURCE-

SAFEGUARDS-

PRODUCT/USE-

FUEL STORAGE CAPACITY-

PROCESS-

SCHEDULE-In operation

REMARKS-

REFERENCES-

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

ACTIVITY--FINLAND 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
Fir-1	Otaniemi	SHRR	Remarks	Oper	62	REFB
Finnish React. 1		Inst. of Technology				
LATITUDE-	DEG	MIN	LONGITUDE-	DEG	MIN	

TECHNOLOGY SOURCE-Designed: Gen. Atomic Div. of Gen. Dynamics
 OWNER/OPERATOR-Ministry of Commerce & Industry/Inst. of Technology
 SUPPLY SOURCE- SAFEGUARDS-

PRODUCT/USE-Neutron and solid state physics, engineering tests, medicine, chemistry, isotope prod., cold neutron rsch, education
 FUEL STORAGE CAPACITY-

PROCESS-Solid homogeneous, enriched (20%) uranium, zirconium hydride & light water moderated, LW cooled, graphite refl., pulsing ability
 SCHEDULE-In operation; start of construction: Nov. 1960;
 reactor critical: March 1962

REMARKS-Nominal reactor power: 100 Kw steady state operation, 250 Mw peak power during pulse. Reactor was built by General Atomic and A. Ahlstrom Org., Varkaus, Finland
 This reactor is of the Triga Mark II type with pulsing abilities
 Core loading: Approx. 2.3 Kg U-235

REFERENCES-

1-Directory of Nuclear Reactors, Vol V, IAEA, 1964, p. 173

FI 3

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

NUCLEAR FACILITY PROFILE
PSM 14 AUG 78

FACILITY NAME

LOCATION

FAC

FAC

TYPE CAPACITY STATUS YR CODE

Joensuu

URAN

Inactv 61 REFF

North Carelia

LATITUDE- 62 DEG 36 MIN N

LONGITUDE- 29 DEG 45 MIN E

TECHNOLOGY SOURCE-

OWNER/OPERATOR-Atomenergias Oy

SUPPLY SOURCE-

SAFEGUARDS-

PRODUCT/USE-Uranium

FUEL STORAGE CAPACITY-

PROCESS-

SCHEDULE-Pilot scale operation from 1958 to 1961. Mining and milling

REMARKS-

REFERENCES-

1-Uranium Resources, Production and Demand, IAEA, Dec 1977, p. 67-68

FR 1

ACTIVITY--FRANCE ENRICHMENT PLANTS
CATEGORY-ENRICHMENT PLANTS

NUCLEAR FACILITY PROFILE
SRM 19 JUL 78

FACILITY NAME	LOCATION	FAC TYPE	CAPACITY	STATUS	YR CODE
Enrichment Facility	Pierrelatte	DIFF	500 KSWU	Oper	67 RFAA

LATITUDE- 44 DEG 22 MIN N

LONGITUDE- 4 DEG 41 MIN E

TECHNOLOGY SOURCE-Commissariat a
l'Energie Atomique (CEA)-France
SUPPLY SOURCE-

OWNER/OPERATOR-CEA/Compagnie
Gen des Matieres Nucl (Cogema)
SAFEGUARDS-No safeguards

PRODUCT/USE-U235 highly enriched uranium/Military Purposes, U235 low
enriched uranium/Reactor fuel fabrication
FUEL STORAGE CAPACITY-

PROCESS-Gaseous Diffusion

SCHEDULE-Currently in operation (low enrichment since 1967)

REMARKS-

PRODUCTION HISTORY-Constructed from 1960-1967 primarily for military
purposes. Low enrichment stages added during construction

MARKET STRATEGY-Only 3 commercial reactor contracts-2 Belgian, 1
Swiss. No plans to expand market share

NEW FACILITY PLANS-Technology tested at Pierrelatte is being used to
build Eurodif enrichment plant at Tricastin

REFERENCES-

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

2-NAC; Intl Data Collection and Analysis; Task 1, Vol II; 6/78

3-IAEA Bulletin; Vol XIX, No 5; 10/77

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

FACILITY NAME		LOCATION	FAC	FAC	
Reactor Alecto		Saclay	TYPE CAPACITY	STATUS	YR CODE
		Gif-sur-Yvette	LHRR 1 Wt	Inactv	64 RFAD
LATITUDE-	DEG	MIN	LONGITUDE-	DEG	MIN

TECHNOLOGY SOURCE-Design & bldr: OWNER/OPERATOR-Commissariat a
 CEA l'Energie Atomique (CEA)

SUPPLY SOURCE- SAFEGUARDS-

PRODUCT/USE-Homogeneous reactor physics and criticality studies

FUEL STORAGE CAPACITY-

PROCESS-Zero energy, aqueous homogeneous, plutonium, U-233, or U-235
 fueled, light water moderated and reflected

SCHEDULE-Shutdown: 1965; Alecto I (Pu) Critical: Dec. 1961; Alecto II
 (U-235) Critic.: Dec. 1962; Alecto III (U-233) Critical: April 1964

REMARKS-Neutron flux: Thermal (10 E 8)n/(cm E 2) sec

REFERENCES-

1-Directory of Nuclear Reactors, Vol VI, IAEA, 1966, p. 121

FR 3

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

FACILITY NAME	LOCATION	FAC	TYPE	CAPACITY	STATUS	YR	CODE
Reactor Alize	Saclay	TK-L	1	Wt	Inactv	59	RFAE

Seine-et-oise

LATITUDE- 49 DEG 00 MIN N LONGITUDE- 2 DEG 05 MIN E

TECHNOLOGY SOURCE-Builder:	OWNER/OPERATOR-Commissariat A
Caratom (See remarks)	L'energie Atomique
SUPPLY SOURCE-	SAFEGUARDS-

PRODUCT/USE-Lattice studies, measuring critical masses and bucklings,
temperature coefficients between 5 and 95 C
FUEL STORAGE CAPACITY-

PROCESS-Variable fuel, light water moderated, cooled and reflected,
other reflectors possible

SCHEDULE-Start of Construction: July 1958
Reactor critical: June 1959 Shutdown: 1967

REMARKS-Designed by CEA and Compagnie D'Applications et De Recherches
Atomiques. Nominal reactor power: 1 Wt up to 100 Wt for short
periods

REFERENCES-

- 1-Directory of Nuclear Reactors, Vol III, IAEA, 1959, p. 163
- 2-Intl Data Collection and Analysis, Vol II, NAC, June 1978

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

FACILITY NAME	LOCATION	FAC	TYPE	CAPACITY	STATUS	YR	CODE
Aquilon	Sarclay, near Paris	TK-H	Remarks	Inactv	56	RFAH	

LATITUDE- 49 DEG 00 MIN N LONGITUDE- 2 DEG 05 MIN E

TECHNOLOGY SOURCE-Commissariat a l'Energie Atomique	OWNER/OPERATOR-Commissariat a l'Energie Atomique
SUPPLY SOURCE-	SAFEGUARDS-

PRODUCT/USE-Lattice studies, measurements of criticalities, temperature coefficients, etc.
 FUEL STORAGE CAPACITY-

PROCESS-Tank-type, natural uranium, heavy water moderated and cooled, graphite reflected

SCHEDULE-In operation; Start of construction: July 1955;
 Reactor critical: Aug. 1956; Shutdown: 1967

REMARKS-CAPACITY: 10 E (-6) MWt. France, through CEA, has complete indigenous capability to design, provide U-30-8, convert to UF-6, enrich, convert to metal or oxide as required, fabricate, and manage fuel for research reactors.
 Neutron flux: Thermal max. for very short periods:
 10 E 8 n/(cm E 2)sec

REFERENCES-

- 1-Directory of Nuclear Reactors, Vol III, IAEA, 1960, p. 63
- 2-Intl Data Collection and Analysis, Vol II, NAC, June 1978

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

FACILITY NAME	LOCATION	FAC	FAC
		TYPE CAPACITY STATUS YR CODE	
Azur	Cadarache	POOL (small) Oper	62 RFAK

Azur Reactor
 LATITUDE- 43 DEG 41 MIN N LONGITUDE- 5 DEG 42 MIN E

TECHNOLOGY SOURCE-Design: DPN-CEA; OWNER/OPERATOR-Dept de propulsion
 Bldr: Trefimetaux-OTER-CETH nucl, Com a l'Energie Atomique
 SUPPLY SOURCE-See remarks SAFEGUARDS-

PRODUCT/USE-Neutron physics and engineering tests

FUEL STORAGE CAPACITY-

PROCESS-Pool type, variable enrichment, light water moderated, no
 coolant

SCHEDULE-In operation; Reactor critical: April 1962

REMARKS-This reactor is a critical experiment for submarine reactors,
 and is loaded with various fuels.
 France, through CEA, has the complete indigenous capability to
 manage fuel for research reactors.

REFERENCES-

- 1-Directory of Nuclear Reactors, Vol VI, IAEA, 1966, p. 63
- 2-Intl Data Collection and Analysis, Vol II, NAC, June 1978

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

FACILITY NAME	LOCATION	FAC TYPE	CAPACITY	STATUS	YR CODE
Cabri	Cadarache	POOL	Remarks	Oper	63 RFAR

Cabri Reactor
 LATITUDE- 43 DEG 41 MIN N LONGITUDE- 5 DEG 42 MIN E

TECHNOLOGY SOURCE-Designer & builder: CEA and GAAA	OWNER/OPERATOR-CEA/Centre d'Etudes Nucleaires de Cadarache
SUPPLY SOURCE-See remarks	SAFEGUARDS-

PRODUCT/USE-Safety and kinetic studies of pool-type reactors

FUEL STORAGE CAPACITY-

PROCESS-Pool-type, highly enriched (90%) uranium, light water
 moderated and cooled, light water and graphite reflected

SCHEDULE-In operation; Start of construction: Jan 1963;
 Reactor critical: Dec 1963

REMARKS-CAPACITY: Up to 3000 MW for very short power excursions.
 Reactor is located at Bouches-du-Rhone Nuclear Studies Center.
 France, through CEA, has the complete indigenous capability to
 manage fuel for research reactors

REFERENCES-

- 1-Directory of Nuclear Reactors, Vol VI, IAEA, 1966, p. 61
- 2-Intl Data Collection and Analysis, Vol II, NAC, June 1978

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

NUCLEAR FACILITY PROFILE
SRM 27 JUL 78

FACILITY NAME	LOCATION	FAC TYPE	CAPACITY	STATUS	YR CODE
UP-2	Cap de La Hague (Cherbourg)	UMUO	800 te	Oper	66 RFAU

LATITUDE- 49 DEG 38 MIN N LONGITUDE- 1 DEG 37 MIN W

TECHNOLOGY SOURCE-Commissariat a l'Energie Atomique (CEA) OWNER/OPERATOR-United Reprocessors GmbH/Cogema
SUPPLY SOURCE- SAFEGUARDS-No safeguards

PRODUCT/USE-

FUEL STORAGE CAPACITY-Total fuel storage pond capacity at Cap de La Hague will be 1250 te by 1981

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

SCHEDULE-Since 1966 for U-metal fuel, conversion to accept U-oxide fuel underway-400 te/yr in 1977, full capacity 800 te/yr in 1982

REMARKS-United Reprocessors GmbH is an organization of France, UK, and West Germany involved in the reprocessing of nuclear fuel. Cogema (Compagnie Generale des Matieres Nucleaire) operates UP-2 for United Reprocessors GmbH. Originally built to process spent metal fuel, a head-end facility has been added to enable UP-2 to reprocess low-enriched oxide fuel-to be completed in 1982. UP-2 will handle 100% of French LWR spent fuel and some foreign contracts until the early 1980's when French requirements will exceed its capacity-a new plant, UP-3, is planned for operation after 1985 to meet future reprocessing needs. Concentrated high-level waste is stored in tanks of capacity 60 cubic meters and 90 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 I; 1/78
- 3-General Acctg Office; Overview of Nuclear Export Policies of Major foreign supplier Nations; 10/21/77

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

NUCLEAR FACILITY PROFILE
SRM 27 JUL 78

FACILITY NAME	LOCATION	FAC TYPE	CAPACITY	STATUS	YR CODE
UP-3	Cap de La Hague (Cherbourg)	UO	1600 te (te/yr)	Plan	87 RFAV

LATITUDE- 49 DEG 38 MIN N LONGITUDE- 1 DEG 37 MIN W

TECHNOLOGY SOURCE-United
Reprocessors GmbH (URG)

OWNER/OPERATOR-URG/Compagnie Gen.
des Matieres Nucleaire (Cogema)

SUPPLY SOURCE-800 te/yr French
reactors, 800 te/yr foreign

SAFEGUARDS-No safeguards

PRODUCT/USE-

FUEL STORAGE CAPACITY-Total fuel storage pond capacity at Cap de La
Hague will be 1250 te by 1981

PROCESS-U-oxide reprocessing using Purex process

SCHEDULE-Two lines of capacity 800 te/yr each-one to begin operation
in 1985, one to begin in 1987

REMARKS-UP-3 is under consideration by Cogema depending on interest
of countries such as Japan, Sweden, West Germany, Finland, and
others in building and use of the plant.

REFERENCES-

- 1-Nuclear Proliferation Factbook; Congressional Research Service,
Library of Congress; 9/23/77
- 2-Harmon, K. M.; International Source Book: A Compendium of
Worldwide Programs in Nuclear Energy Supply and Radioactive
Waste Management Research and Development; Vol I; 1/78
- 3-General Acctg Office; Overview of Nuclear Export Policies of
Major Foreign Supplier Nations; 10/21/77

ACTIVITY--FRANCE 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 Cesar	Cadarache	GMRR	10 Kwt	Oper	64	RFBA

Centre d'Etudes Nucl

LATITUDE- 43 DEG 41 MIN N LONGITUDE- 5 DEG 42 MIN E

TECHNOLOGY SOURCE-Design & bldr.: OWNER/OPERATOR-Owner: CEA
 Commissariat a l'Energie Atom. (See remarks)

SUPPLY SOURCE- SAFEGUARDS-

PRODUCT/USE-Neutron physics research

FUEL STORAGE CAPACITY-

PROCESS-Natural and slightly enriched (.96%) uranium, graphite
 moderated and reflected, CO-2 cooled

SCHEDULE-In operation; Start of construction: Dec. 1962,
 Reactor critical: Dec. 1964

REMARKS-Owned by Electricite de France. Operater: CEA
 Neutron flux: Thermal max(10 E 9) n/(cm E 2)sec
 Critical mass: 15t natural uranium, 2t enriched uranium (.96%)

REFERENCES-

1-Directory of Nuclear Reactors, Vol VI, IAEA, 1966, p. 221

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ACTIVITY--FRANCE 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 CODE
Reactor Zoe	Fontenay-Aux-Roses	TK-H	150 Kwt	Oper	48 RFBK

EL-1 Reactor

LATITUDE- 48 DEG 47 MIN N

LONGITUDE- 2 DEG 18 MIN E

TECHNOLOGY SOURCE-Commissariat a l'Energie Atomique
OWNER/OPERATOR-Commissariat a l'Energie Atomique

SUPPLY SOURCE-

SAFEGUARDS-

PRODUCT/USE-Experimental, isotope production

FUEL STORAGE CAPACITY-1 pit with 64 holes

PROCESS-Tank type, nat uranium, heavy water moderated and cooled,
graphite reflected

SCHEDULE-Reactor critical: Dec 1948

REMARKS-Fuel loading and unloading from above, with lead cylinder

REFERENCES-

1-Directory of Nuclear Reactors Vol II, IAEA, 1960, p. 257

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

FACILITY NAME	LOCATION	FAC	TYPE	CAPACITY	STATUS	YR	CODE
Reactor EL-2	Saclay	TK-H	2 MWt	Inactv	52	RFBL	
	Seire-et-oise						

LATITUDE- 49 DEG 00 MIN N LONGITUDE- 2 DEG 05 MIN E

TECHNOLOGY SOURCE-Design/Bldr: OWNER/OPERATOR-Commissariat a
Commissariat a l'Energie Atomique l'Energie Atomique
SUPPLY SOURCE- SAFEGUARDS-

PRODUCT/USE-Fundamental and technological research, isotope production

FUEL STORAGE CAPACITY-Uncooled pit; storage capacity 4300 kg U

PROCESS-Tank type, nat uranium, heavy water moderated, CO-2 cooled,
graphite reflected

SCHEDULE-First studies: 1949

Reactor critical: Oct 1952; Shutdown: 1965

REMARKS-Nominal reactor power: 2 MWt; 2.8 MW max; 15 MW design
Fuel loading and unloading: Uncooled special adapter

REFERENCES-

- 1-Directory of Nuclear Reactors, Vol II, IAEA, 1959, p. 269
- 2-Intl Data Collection and Analysis, Vol II, NAC, June 1978

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

		FAC		FAC
FACILITY NAME	LOCATION	TYPE	CAPACITY	STATUS YR CODE
Reactor EL-3	Saclay	TK-H	20 MWt	Oper 57 RFBM

LATITUDE- 49 DEG 00 MIN N LONGITUDE- 2 DEG 05 MIN E

TECHNOLOGY SOURCE-Cala And	OWNER/OPERATOR-Commissariat a
Chantiers de l'Atlantique	l'Energie Atomique (CALA)
SUPPLY SOURCE-	SAFEGUARDS-

PRODUCT/USE-Fundamental research, structural materials testing,
 isotope production

FUEL STORAGE CAPACITY-Interconnected shell bldg., contains 1 deactivation cell, 2 storage rooms, a hot & cold cell for gamma irradiation

PROCESS-Tank-type, enriched (1.35%) uranium, heavy water cooled and moderated, graphite and heavy water reflected

SCHEDULE-Start of construction: May 1955; Date of criticality:
 July 1957; Full power operation: April 1958

REMARKS-Fuel loading and unloading: Element lifted in He-cooled transfer flask in D-20 atmosphere-transferred to a second, air-cooled flask, with an H-20 atmosphere, through a lock chamber

REFERENCES-

- 1-Directory of Nuclear Reactors, Vol II, IAEA, 1959, p. 295
- 2-Intl Data Collection and Analysis, Vol II, NAC, June 1978

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

FACILITY NAME	LOCATION	FAC TYPE	CAPACITY	STATUS	YR CODE
Eole Reactor	Cadarache	TK-H	10KW max	Oper	65 RFBN

LATITUDE- 43 DEG 41 MIN N

LONGITUDE- 5 DEG 42 MIN E

TECHNOLOGY SOURCE-Design: Commiss- OWNER/OPERATOR-CEA,
ariat a l'Energie Atomique Direction des piles atomique
SUPPLY SOURCE- SAFEGUARDS-

PRODUCT/USE-Neutron studies on heavy water reactors

FUEL STORAGE CAPACITY-

PROCESS-Tank-type, natural or enriched uranium, heavy water moderated,
reflected and cooled

SCHEDULE-In operation; Reactor critical: Dec. 1965

REMARKS-Built by Groupement atomique alsacienne atlantique
This reactor is used for integral measurements on heavy water
lattices.

REFERENCES-

1-Directory of Nuclear Reactors, Vol VIII, IAEA, 1970, p. 173

ACTIVITY--FRANCE ENRICHMENT PLANTS
 CATEGORY-ENRICHMENT PLANTS

NUCLEAR FACILITY PROFILE
 SRM 19 JUL 78

FACILITY NAME	LOCATION	FAC	FAC
Eurodif 1	Tricastin	TYPE CAPACITY STATUS YR CODE	
	(Pierrelatte)	DIFF 10800 K Constr 81 RFBQ	
		(KSWU)	
LATITUDE- 44 DEG 22 MIN N		LONGITUDE- 4 DEG 41 MIN E	

TECHNOLOGY SOURCE-Commissariat a l'Energie Atomique (CEA)-France
 OWNER/OPERATOR-Eurodif
 SUPPLY SOURCE- SAFEGUARDS-IAEA Safeguards Agreement
 PRODUCT/USE-U235 enriched uranium/Reactor fuel fabrication
 FUEL STORAGE CAPACITY-

PROCESS-Gaseous Diffusion

SCHEDULE-Currently under construction: Startup-12/78; 1979- 2600.0 KSWU; 1980- 6300.0 KSWU, 1981- 8400.0 KSWU, 1982- full capacity
 REMARKS-Eurodif: France (Cogema)-43%, Italy (AGIP Nucleare, CNEN)-25%, Belgium(SOPEN)-11%, Spain (ENUSA)-11%, Iran (AEOI)-10%
 MARKET STRATEGY-90% of capacity committed to Eurodif members, 10% goes to Japan, Switzerland, and Federal Republic of Germany

REFERENCES-

- 1-Nucl Eng Intl; Vol XXI, No 250; 11/76
- 2-IAEA Bulletin; Vol XIX, No 5; 10/77
- 3-General Acctg Office; Overview of Nuclear Export Policies of Major Foreign Supplier Nations; 10/21/77

ACTIVITY--FRANCE ENRICHMENT PLANTS
 CATEGORY-ENRICHMENT PLANTS

NUCLEAR FACILITY PROFILE
 SRM 19 JUL 78

FACILITY NAME	LOCATION	FAC TYPE	CAPACITY	STATUS	YR	FAC CODE
Eurodif 2 (Coredif)		DIFF	5000 K	Plan	85	RFBR
			(KSWU)			
LATITUDE-	DEG MIN	LONGITUDE-	DEG	MIN		

TECHNOLOGY SOURCE-Commissariat a OWNER/OPERATOR-Coredif

1'Energie Atomique (CEA), Eurodif

SUPPLY SOURCE- SAFEGUARDS-

PRODUCT/USE-U235 enriched uranium/Reactor fuel fabrication

FUEL STORAGE CAPACITY-

PROCESS-Gaseous Diffusion

SCHEDULE-Planned-5000 KSWU/yr; operational in 1985

REMARKS-Eurodif: France (Cogema)-43%, Italy (AGIP Nucleare, CNEN)-25%,
 Belgium (SOPEN)-11%, Spain (ENUSA)-11%, Iran (AEOI)-10%

Coredif: Eurodif-51%, France (Cogema)-29%, Iran (AEOI)-20%

Location not decided-may be France, Belgium, or Italy

MARKET STRATEGY-Coredif will attempt to increase Eurodif's market
 share by supplying enrichment services to non-partner nations-

Japan and US are potential customers

CAPACITY LIMITATIONS-Final capacity will be 10000.0 KSWU/yr due to
 incremental expansion after 1985.

REFERENCES-

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

2-NAC; Intl Data Collection and Analysis; Task 1, Vol II; 6/78

3-General Acctg Office; Overview of Nuclear Export Policies of Major
 Foreign Supplier Nations; 10/21/77

4-Benedict, M; Enrichment: A Critical Status Report; American
 Nuclear Society Transactions; Vol XXV; 1977

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

FACILITY NAME	LOCATION	FAC TYPE	CAPACITY	STATUS	YR CODE
Harmonie Reactor	Bouches-du-Rhone	FNRR	.002 Mwt	Oper	65 RFCQ
	Centre d'Edutes Nucl				

LATITUDE- DEG MIN LONGITUDE- DEG MIN

TECHNOLOGY SOURCE-Design & bldr: OWNER/OPERATOR-Fast neutrons
 Belgo Nucleaire, SA, Brussels EURATOM- CEA (See remarks)
 SUPPLY SOURCE- SAFEGUARDS-

PRODUCT/USE-Fast neutron physics and instrumentation

FUEL STORAGE CAPACITY-

PROCESS-Fast, highly enriched (93%) uranium, depleted uranium
 reflected, air cooled

SCHEDULE-In operation; Start of construction: Dec. 1963;
 Reactor critical: Aug. 1965

REMARKS-Harmonie is used as a tool for the experimental investigation
 of fast reactor systems.

Critical mass: 23.5 Kg U-235

Fuel loading and unloading: Manual

Owner: Centre d'Etudes Nucleaires

REFERENCES-

1-Directory of Nuclear Reactors, Vol VI, IAEA, 1966, p. 231

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

FACILITY NAME	LOCATION	FAC	FAC
Isis Reactor	Saclay	TYPE CAPACITY STATUS YR CODE	
		POOL .08 Kwt Oper 66 RFCR	

LATITUDE- 49 DEG 00 MIN N

LONGITUDE- 2 DEG 05 MIN E

TECHNOLOGY SOURCE-CEA and PROSIR OWNER/OPERATOR-Commissariat a
 l'Energie Atomique (CEA)

SUPPLY SOURCE- SAFEGUARDS-

PRODUCT/USE-Neutron physics and reactor physics

FUEL STORAGE CAPACITY-Irradiated fuel stored on racks in special
 channel connected with reactor pool.

PROCESS-Pool-type enriched (93%) uranium, light water moderated and
 cooled, light water and beryllium reflected.

SCHEDULE-In operation; Start of construction: 1964; Reactor critical:
 April 1966; Full power operation: March 1967

REMARKS-Fuel loading and unloading: Underwater, by means of special
 long handling tools.

Neutron flux: (For standard and control elements) Thermal av
 $1.78 \times (10 \text{ E } 12) \text{ n}/(\text{cm E } 2) \text{ sec}$; Thermal max $4.16 \times (10 \text{ E } 12) \text{ n}/$
 $(\text{cm E } 2) \text{ sec}$; Fast av ($E > 820 \text{ KeV}$) $2.95 \times (10 \text{ E } 12) \text{ n}/(\text{cm E } 2) \text{ sec}$;
 Fast max ($E > 820 \text{ KeV}$) $6.5 \times (10 \text{ E } 12) \text{ n}/(\text{cm E } 2) \text{ sec}$

Critical mass: 6.4 Kg U-235

Core loading at rated power: 11 Kg U-235

Av specific power in fuel: 73 KW/Kg

Av power density in core: Approx 5 KW/litre

REFERENCES-

- 1-Directory of Nuclear Reactors, Vol VIII, IAEA, 1970, p. 55
- 2-Intl Data Collection and Analysis, Vol II, NAC; June 1978

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

FACILITY NAME	LOCATION	FAC TYPE	CAPACITY	STATUS	YR	CODE
Reactor Marius	Cadarache	GMRR (small)		Oper	60	RFCW

See remarks

LATITUDE- 43 DEG 41 MIN N LONGITUDE- 5 DEG 42 MIN E

TECHNOLOGY SOURCE-Commissariat a OWNER/OPERATOR-CEA

l'Energie Atomique (design, bldr)

SUPPLY SOURCE- SAFEGUARDS-

PRODUCT/USE-Physics measurements of graphite moderated lattices

FUEL STORAGE CAPACITY-

PROCESS-Natural uranium, graphite moderated and reflected, uncooled

SCHEDULE-In operation; start of construction: June 1959;

reactor critical: Jan. 1960; critical at Cadarache: 1965

REMARKS-Reactor was first located at Marcoule (crit. 1960), and now
is located at Cadarache (crit. 1965)

Neutron flux: Thermal max for short periods (10 E 9)n/(cm E 2)sec

REFERENCES-

1-Directory of Nuclear Reactors, Vol V, IAEA, 1964, p. 267

2-Intl Data Collection and Analysis, Vol II, NAC; June 1978

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ACTIVITY--FRANCE RESEARCH & TEST REACTOR
CATEGORY-RESEARCH AND TEST REACTORS

NUCLEAR FACILITY PROFILE
DMK 30 SEP 78

FACILITY NAME	LOCATION	FAC TYPE	CAPACITY	STATUS	YR	CODE
MASURCA	Cadarache	FNRR	1 Kwt	Oper	66	RFCX
See remarks	Bouches du Rhone					
LATITUDE-	43 DEG 41 MIN N	LONGITUDE-	5	DEG 42 MIN E		

TECHNOLOGY SOURCE-Designed by
Belgonucleaire S.A., Brussels
SUPPLY SOURCE-

OWNER/OPERATOR-EURATOM & CEA/CEN
Cadarache
SAFEGUARDS-

PRODUCT/USE-Neutron physics

FUEL STORAGE CAPACITY-Irradiated fuel: 100 positions (30 for core, 70 for blanket elements)

PROCESS-Fast, enriched (30%) uranium, plutonium, depleted uranium reflected, air cooled

SCHEDULE-In operation; start of construction: Feb. 1964;
reactor critical: 1966

REMARKS-MASURCA=Maquette Surgeneratrice Cadarache Reactor

This reactor is a tool for the investigation of fast breeder reactors. The design of Masurca allows the study of different fast critical assemblies having variable specific composition and enrichment.

Neutron flux: $(10 \text{ E } 9) \text{ n}/(\text{cm E } 2) \text{ sec}$

REFERENCES-

- 1-Directory of Nuclear Reactors, Vol V, IAEA, 1964, p. 325
- 2-Intl Data Collection and Analysis, Vol II, NAC; June 1978

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ACTIVITY--FRANCE 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 Melusine	Grenoble, Isere	POOL	8.0 MWt	Oper	58	RFCY

LATITUDE- 45 DEG 11 MIN N LONGITUDE- 5 DEG 43 MIN E

TECHNOLOGY SOURCE-Designer & Builder: Indatom Paris	OWNER/OPERATOR-Commissariat a l'Energie Atomique
SUPPLY SOURCE-	SAFEGUARDS-

PRODUCT/USE-Research in neutron physics, solid state physics,
chemistry, medicine, biology, isotope production, training

FUEL STORAGE CAPACITY-Spent elements stored in Al baskets in central
compartments; 5 baskets, 9 pos. for elements; 5 for gamma irradi.

PROCESS-Pool type, enriched (20%) uranium, light water moderated and
cooled

SCHEDULE-Start of construction: May 1957; reactor critical: July 1958;
full power operation: March 1959

REMARKS-

REFERENCES-

- 1-Directory of Nuclear Reactors, Vol II, IAEA, 1958, p. 41
- 2-Intl Data Collection and Analysis, Vol II, NAC, June 1978

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

FACILITY NAME	LOCATION	FAC	TYPE	CAPACITY	STATUS	YR	CODE
Reactor Minerve	Fontenay-Aux-Roses	POOL	100 MWt	Oper	59	RFCZ	

LATITUDE- 48 DEG 47 MIN N

LONGITUDE- 2 DEG 18 MIN E

TECHNOLOGY SOURCE-Indatom

OWNER/OPERATOR-Commissariat a
l'Energie Atomique

SUPPLY SOURCE-

SAFEGUARDS-

PRODUCT/USE-Cross section measurements of active or inactive samples,
study of light water as moderater

FUEL STORAGE CAPACITY-Irradiated fuel: 6 storage baskets in the pool,
each for 8 elements

PROCESS-Pool-type,enriched (20%)uranium, light water moderated, cooled
or heated, variable reflector in 2 zones

SCHEDULE-Reactor critical: Sept 1959

REMARKS-Fuel loading and unloading: Manually with handling rod. A
rotating arm (approx. 80 cm) allows easier handling of elements
between core and storage baskets

REFERENCES-

1-Directory of Nuclear Reactors, Vol III, IAEA, 1960, p. 71

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

		FAC		FAC
FACILITY NAME	LOCATION	TYPE	CAPACITY	STATUS YR CODE
Nereide Reactor	Fontenay-aux-Roses	POOL	.6 MWt	Oper 60 RFDB

LATITUDE- 48 DEG 47 MIN N

LONGITUDE- 2 DEG 18 MIN E

TECHNOLOGY SOURCE-Design & bldr:	OWNER/OPERATOR-Commissariat a
Commissariat a l'Energie Atom.	l'Energie Atomique
SUPPLY SOURCE-	SAFEGUARDS-

PRODUCT/USE-Shielding studies

FUEL STORAGE CAPACITY-Vertical racks in pool, 8 elements each

PROCESS-Pool-type, enriched (20%) uranium, light-water moderated and cooled, graphite and light water reflected

SCHEDULE-In operation;

reactor critical: Sept. 1960

REMARKS-Nereide is a mobile, variable core reactor, built in the storage pool of Triton Reactor.

Neutron flux: Thermal av per KW: $7.8 \times (10^9) \text{ n}/(\text{cm}^2 \text{ sec})$;

Fast av per KW: $6.5 \times (10^9) \text{ n}/(\text{cm}^2 \text{ sec})$

Critical mass: Approx 3.20 Kg U-235

Core loading: Approx 3.23 Kg U-235

Specific power in fuel: 4.3 KW/Kg at 500 KW

Power density of core: 6.5 KW/l at 500 KW

Fuel handling system: Underwater long handling tools

REFERENCES-

- 1-Directory of Nuclear Reactors, Vol VIII, IAEA, 1970, p. 9
- 2-Intl Data Cclection and Analysis, Vol II, NAC, June 1978

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

FACILITY NAME	LOCATION	FAC	FAC
Osiris Reactor	Saclay, Seine-et-Ois	TK-L 50 MWt	Oper 66 RFDC
	Centre d'Etudes Nucl		
LATITUDE- 49 DEG 00 MIN N	LONGITUDE- 2 DEG 05 MIN E		

TECHNOLOGY SOURCE-Commissariat a	OWNER/OPERATOR-Commissariat a
1'Energie Atomique	1'Energie Atomique
SUPPLY SOURCE-	SAFEGUARDS-

PRODUCT/USE-Material testing, isotope production

FUEL STORAGE CAPACITY-Storage racks in special channel connected to reactor pool; storage room for 1.5 yr of reac oper (350 fuel ele.)

PROCESS-Tank-type, highly enriched (90%) uranium, light water moderated and cooled, light water and beryllium reflected

SCHEDULE-Start of construction: 1964; reactor critical: 1966

REMARKS-Fuel loading and unloading by means of special long handled tools.

Neutron flux: Thermal av $1.68 \times (10 \text{ E } 14) \text{ n}/(\text{cm E } 2) \text{ sec}$; Thermal max $3.7 \times (10 \text{ E } 14) \text{ n}/(\text{cm E } 2) \text{ sec}$; Fast max $2.58 \times (10 \text{ E } 14) \text{ n}/(\text{cm E } 2) \text{ sec}$
 Fast av: $1.43 \times (10 \text{ E } 14) \text{ n}/(\text{cm E } 2) \text{ sec}$

Av. power density of core: 283 KW/litre of core, 588 KW/litre of water

Core loading at rated power: 9.93 Kg U-235 for 28 standard fuel ele.

Av. specific power in fuel: 5.04 MW/Kg U-235

REFERENCES-

- 1-Directory of Nuclear Reactors, Vol VI, IAEA, 1966, p. 97
- 2-Intl Data Collection and Analysis, Vol II, NAC; June 1978

ACTIVITY--FRANCE 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 Pegase	Cadarache Bouches-du-Rhone	TK-L	30 MWt	Oper	63	RFDH
LATITUDE-	DEG	MIN	LONGITUDE-	DEG	MIN	

TECHNOLOGY SOURCE-Design & bldr: OWNER/OPERATOR-Commissariat a
 CEA l'Energie Atomique (CEA)
 SUPPLY SOURCE- SAFEGUARDS-

PRODUCT/USE-Testing of fuel elements

FUEL STORAGE CAPACITY-Irrad. fuel: Room for 4 complete cores in pool;
 8 elements stored in Al baskets in two rows of four

PROCESS-Tank-type, highly enriched (90%) uranium, light water cooled
 and moderated, beryllium reflected

SCHEDULE-In operation; start of construction: March 1961,
 reactor critical: April 1963

REMARKS-Fuel loading and unloading: Opening of tank lid, loading and
 unloading elements by means of special tools.

Neutron flux: Thermal av $1.0 \times (10 \text{ E } 14) \text{ n}/(\text{cm E } 2) \text{ sec}$; Thermal max
 $1.6 \times (10 \text{ E } 14) \text{ n}/(\text{cm E } 2) \text{ sec}$; Fast av $1.5 \times (10 \text{ E } 14) \text{ n}/(\text{cm E } 2) \text{ sec}$

Core loading at rated power: 8.934 Kg U-235

Av. specific power in fuel: Approx 3500 KW/Kg U-235

Av. power density in core: Approx 160 KW/liter of core, approx
 302 KW/liter of water

REFERENCES-

1-Directory of Nuclear Reactors, Vol V, IAEA, 1964

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

FACILITY NAME	LOCATION	FAC TYPE	CAPACITY	STATUS	YR CODE
Peggy	Cadarache	TK-L	1 Kw	Oper	61 RFDJ
	Bouches du Rhone				

LATITUDE-	DEG	MIN	LONGITUDE-	DEG	MIN
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TECHNOLOGY SOURCE-Design & bldr: OWNER/OPERATOR-Commissariat a
CEA l'Energie Atomique (CEA)

SUPPLY SOURCE- SAFEGUARDS-

PRODUCT/USE-Critical experiments for Pegase

FUEL STORAGE CAPACITY-

PROCESS-Highly enriched (90%) uranium, light water moderated and
cooled, beryllium reflected

SCHEDULE-In operation; start of construction: July 1960; critical in
Saclay: Feb. 1961; critical in Cadarache: Dec. 1961

REMARKS-Neutron flux: Thermal av 3×10^8 n/(cm E 2)sec

REFERENCES-

1-Directory of Nuclear Reactors, Vol V, IAEA, 1964, p. 87

ACTIVITY--FRANCE 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
Proserpine	Saclay	LHRR	1 Wt	Oper	58	RFDM

LATITUDE- 49 DEG 00 MIN N

LONGITUDE- 2 DEG 05 MIN E

TECHNOLOGY SOURCE-Commissariat a l'Energie Atomique	OWNER/OPERATOR-Commissariat a l'Energie Atomique
SUPPLY SOURCE-	SAFEGUARDS-

PRODUCT/USE-Study of pile statics & kinetics for highly concentrated fuels; experimental determination of critical masses (See remarks)

FUEL STORAGE CAPACITY-Irradiated fuel: Stainless steel reservoir for core tK, fill & drain, glass-plexiglass stor. bottles in glove box

PROCESS-Aqueous homogeneous, plutonium-239, light water moderated, beryllium oxide and graphite reflected, uncooled

SCHEDULE-In operation; critical with stainless steel core tank: March 1958; critical with Zircaloy 2 core tank: May 1958

REMARKS-Purpose: Experimental determination of neutron life time and energy distribution, temperature coefficients, absolute reactivity calibration. Fuel storage: Bottles for outside storage

Neutron flux: Thermal av= $(10 \text{ E } 7) \text{ n}/(\text{cm E } 2) \text{ sec}$; Thermal max = $(10 \text{ E } 8) \text{ n}/(\text{cm E } 2) \text{ sec}$; Fast av.= $(10 \text{ E } 8) \text{ n}/(\text{cm E } 2) \text{ sec}$; Fast max= $2 \times (10 \text{ E } 8) \text{ n}/(\text{cm E } 2) \text{ sec}$

Critical mass: Stainless steel tank= 291g observed, 273g corrected, zircaloy-2 tank=257g observed, 242g corrected

Fuel loading and unloading charge by differential pressure (closed system)

REFERENCES-

- 1-Directory of Nuclear Reactors, Vol III, 1960, IAEA, p. 197
- 2-Intl Data Collection and Analysis, Vol II, NAC; June 1978

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

FACILITY NAME	LOCATION	FAC TYPE	CAPACITY	STATUS	YR CODE
Rapsodie Reactor	Bouches-du Rhone	FNRR	41 MWt	Oper	67 RFDR
	Centre d'etudes nucl				
LATITUDE-	DEG	MIN	LONGITUDE-	DEG	MIN

TECHNOLOGY SOURCE-See remarks OWNER/OPERATOR-See remarks

SUPPLY SOURCE- SAFEGUARDS-

PRODUCT/USE-Engineering test, operation experiment, fast reactor physics, fast reactor fuel irradiation

FUEL STORAGE CAPACITY-Irradiated fuel: Pool outside reac bldg, room for 189 core and 756 blanket sub-assembly cannisters

PROCESS-Fast breeder type, enriched (60%) uranium and plutonium, depleted uranium blanket, sodium cooled

SCHEDULE-Start of construction: July 1961;
 reactor critical: 1966

REMARKS-Owner & operator: EURATOM-CEA Fast Neutrons Association, Project neutrons rapides, Section de conduite de Rapsodie. Designer and builder: EURATOM-CEA Fast Neutrons Association Groupement Atomique Alsacienne Atlantique & various firms of the European Community.

Neutron flux: At 20 MW-Fast max $2 \times (10 \text{ E } 15) \text{ n}/(\text{cm E } 2) \text{ sec}$; Fast av $1.25 \times (10 \text{ E } 15) \text{ n}/(\text{cm E } 2) \text{ sec}$. Critical mass: 35.7 Kg Pu-239, 3.9 Kg Pu-240, 67.3 Kg U-235, 45.4 Kg U-238. Core loading at rated power: Fissionable material-173 Kg UO-2 + PuO-2; Fertile blanket-8370 Kg UO-2 Av power density in core: 420 KW/litre

Nominal reactor power: 17 MWt in core, 3 MWt in blanket

REFERENCES-

- 1-Directory of Nuclear Reactors, Vol VI, IAEA, 1966, p. 233
- 2-Intl Data Collection and Analysis, Vol II, NAC, June 1978

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

FACILITY NAME	LOCATION	FAC TYPE	CAPACITY	STATUS	YR CODE
Reactor Siloe	Grenoble	POOL	Remarks	Oper	63 RFDV
Centre d'Etudes Nucl					
LATITUDE- 45 DEG 11 MIN N		LONGITUDE- 5 DEG 43 MIN E			

TECHNOLOGY SOURCE-Design & bldr: OWNER/OPERATOR-CEA & Centre
 CEA and Indatom d'Etudes Nucleaires de Grenoble
 SUPPLY SOURCE- SAFEGUARDS-

PRODUCT/USE-Neutron diffraction and solid state physics, isotope production, chemistry, reactor technology

FUEL STORAGE CAPACITY-Irradiated fuel: 36 subassemblies in the main pool, 72 subassemblies in the working pool

PROCESS-Pool-type, highly enriched (90%) uranium, light water cooled and moderated, light water and beryllium reflected

SCHEDULE-In operation; start of construction: Summer 1961; critical: March 1963; 10 MW operation: May 1963; 15 MW operation: Dec. 1963

REMARKS-Nominal reactor power: 10 MWt (design), 15 MWt (actual).

Reference 2: 30 MWt

Critical mass: Approx 3 Kg U-235

Core loading at rated power: Approx 5 Kg U-235

Av. specific power in fuel: 2.35 MW/Kg U-235 at 10 MW

Av. power density in core: 91.5 KW/litre at 10 MW

Neutron flux at 10 MW: Thermal av $6 \times (10 \text{ E } 13) \text{ n}/(\text{cm E } 2) \text{ sec}$;

Thermal max $9.5 \times (10 \text{ E } 13) \text{ n}/(\text{cm E } 2) \text{ sec}$; Fast ($>1 \text{ MeV}$) max $1.4 \times (10 \text{ E } 14) \text{ n}/(\text{cm E } 2) \text{ sec}$

REFERENCES-

- 1-Directory of Nuclear Reactors, Vol V, IAEA, 1964, p. 45
- 2-Intl Data Collection and Analysis, Vol II, NAC, June 1978

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

FACILITY NAME	LOCATION	FAC	TYPE	CAPACITY	STATUS	YR	CODE
Reactor Siloette	Grenoble	POOL	.1 MWt	Oper	64	RFDW	
Centre d'Etudes Nucl							

LATITUDE- 45 DEG 11 MIN N LONGITUDE- 5 DEG 43 MIN E

TECHNOLOGY SOURCE-Design & bldr: OWNER/OPERATOR-CEA & Centre
 CEA & Indatom d'Etudes Nucleaires de Grenoble
 SUPPLY SOURCE- SAFEGUARDS-

PRODUCT/USE-Mock-up of Siloe and Melusine cores

FUEL STORAGE CAPACITY-Irradiated fuel: Capacity for 144 fuel elements including those of Melusine and Siloe reactors

PROCESS-Pool-type, highly enriched (90%) uranium, light water cooled and moderated, light water and beryllium reflected

SCHEDULE-In operation; start of construction: 1961; critical as Melusine-2: May 1962; start of reconstruction: July 1962 (See remarks)

REMARKS-Reactor critical as Siloette: May 1964

Critical mass: Core without beryllium reflector 2880 g U-235, core with beryllium reflector one face 2430 g U-235

Core loading at rated power: Variable from 2430 to 4600 g U-235

This reactor was originally located in a side pool of Melusine and was consequently called Melusine-2. It was used to study the core of Siloe. After the operation of Siloe, the mock-up core was moved to a separate building adjacent to Siloe to be used as a critical experiment; it is now called Siloette

REFERENCES-

1-Directory of Nuclear Reactors, Vol V, IAEA, 1964, p. 51

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

FACILITY NAME	LOCATION	FAC	FAC
Strasbourg-Cronenbg.	Strasbourg	ARGO .1 Mwt	Oper 66 RFED
See remarks	Near CNRS Centre		
LATITUDE- 48 DEG 35 MIN N		LONGITUDE- 7 DEG 45 MIN E	

TECHNOLOGY SOURCE-Bldr: Auxiatome OWNER/OPERATOR-University of
 Design: Com a l'Energie Atomique Strasbourg
 SUPPLY SOURCE- SAFEGUARDS-

PRODUCT/USE-Research and training

FUEL STORAGE CAPACITY-

PROCESS-Argonaut-type, highly enriched (90%) uranium, light water
 cooled and moderated, graphite reflected

SCHEDULE-In operation; start of construction: Aug. 1965;
 reactor critical: Nov. 1966

REMARKS-Reactor name: Strasbourg-Cronenbourg

REFERENCES-

1-Directory of Nuclear Reactors, Vol VIII, IAEA, 1970, p. 101

ACTIVITY--FRANCE 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 Triton	Fontenay-Aux-Roses	POOL	100 Wt	Oper	59	RFEM

LATITUDE- 48 DEG 47 MIN N

LONGITUDE- 2 DEG 18 MIN E

TECHNOLOGY SOURCE-Designer and
 Builder: Indatom, Paris

OWNER/OPERATOR-Commissariat a
 l'Energie Atomique

SUPPLY SOURCE-

SAFEGUARDS-

PRODUCT/USE-Research in physics, study of shielding

FUEL STORAGE CAPACITY-

PROCESS-Pool type, enriched (20%) uranium, light water moderated and
 cooled

SCHEDULE-Reactor critical: 1959

REMARKS-Reactor is very similar to the other Indatom pool type reactor
 Melusine

REFERENCES-

- 1-Directory of Nuclear Reactors, Vol II, IAEA, 1959, p. 47
- 2-Intl Data Collection and Analysis, Vol II, NAC, June 1978

ACTIVITY--FRANCE 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 CODE
Ulysse Reactor	Saclay Seine-et-Oise	ARGO	.1 MWt	Oper	61 RFEN

LATITUDE- 49 DEG 00 MIN N LONGITUDE- 2 DEG 05 MIN E

TECHNOLOGY SOURCE-Built by Auxi OWNER/OPERATOR-See remarks
 Atome. Designed by CEA

SUPPLY SOURCE- SAFEGUARDS-

PRODUCT/USE-Research and training

FUEL STORAGE CAPACITY-

PROCESS-Argonaut-type, highly (90%) enriched uranium, light water
 moderated and cooled, graphite reflected

SCHEDULE-In operation; start of construction: Jan. 1961;
 reactor critical: July 1961; full power operation: June 1962

REMARKS-This reactor is very similar to the Argonne Nuclear Assembly
 for University Training (ARGONAUT)

Reference 2: Owner CEA

Neutron flux: Thermal max $1.4 \times (10 \text{ E } 12) \text{ n}/(\text{cm E } 2) \text{ sec}$

Critical mass: 5.6 Kg U-235

OWNER/OPERATOR-Institut National des Sciences et Techniques
 Nucleaires

REFERENCES-

- 1-Directory of Nuclear Reactors, Vol V, IAEA, 1964, p. 131
- 2-Intl Data Collection and Analysis, Vol II, NAC; June 1978

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

NUCLEAR FACILITY PROFILE
SRM 26 JUL 78

FACILITY NAME	LOCATION	FAC TYPE	CAPACITY	STATUS	FAC YR CODE
AT-1	Cap de La Hague (Cherbourg)	FB	200 kg (kg/yr)	Oper	66 RFER

LATITUDE- 49 DEG 38 MIN N LONGITUDE- 1 DEG 37 MIN W

TECHNOLOGY SOURCE-Commissariat a l'Energie Atomique (CEA) OWNER/OPERATOR-Compagnie Generale des Matieres Nucleaire (Cogema)
SUPPLY SOURCE-Rhapsodie fast reactor SAFEGUARDS-No safeguards
PRODUCT/USE-Mixed oxide (UO₂-PuO₂) for recycle in fast reactors

FUEL STORAGE CAPACITY-Total fuel storage pond capacity at Cap de La Hague will be 1250 te by 1981

PROCESS-Fast Breeder fuel reprocessing using Purex process

SCHEDULE-Pilot plant operation since 1966

REMARKS-AT-1 has reprocessed 500 kg of mixed oxide (UO₂-PuO₂) fuel since it has started operation

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 I; 1/78
- 3-General Acctg Office; Overview of Nuclear Export Policies of Major Foreign Supplier Nations; 10/21/77

ACTIVITY--FRANCE RESOURCE RECOVERY
CATEGORY-MILLS

NUCLEAR FACILITY PROFILE
PSM 14 SEP 78

FACILITY NAME

LOCATION
L'Ecarpier
Loire

FAC

FAC

TYPE CAPACITY STATUS YR CODE
URAN 700 te/y Oper 77 RFEV

LATITUDE- 46 DEG

MIN N

LONGITUDE- 04 DEG MIN E

TECHNOLOGY SOURCE-

OWNER/OPERATOR-PUK-9%, COGEMA-51%,
CDC-40%

SUPPLY SOURCE-

SAFEGUARDS-

PRODUCT/USE-Uranium

FUEL STORAGE CAPACITY-

PROCESS-

SCHEDULE-

REMARKS-COGEMA- Compagnie Generale des Matieres Nucleaires
Minatome- Pechinery-Ugine Kuhlmann & Compagnie Francaise de Petrole

REFERENCES-

- 1-Foreign Uranium Supply, EPRI EA-725, 4/78, pp. 5-1 to 5-6
- 2-International Data Collection and Analysis, NAC; 6/78, Task 1,
Vol II, France
- 3-Uranium Resources, Production and Demand, IAEA, 12/77, pp. 68-71

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

NUCLEAR FACILITY PROFILE
PSM 14 SEP 78

FACILITY NAME	LOCATION	FAC TYPE	CAPACITY	STATUS	YR	FAC CODE
	Vendee	URAN		Oper		RFEW

LATITUDE- 46 DEG 45 MIN N

LONGITUDE- 01 DEG 20 MIN W

TECHNOLOGY SOURCE-

OWNER/OPERATOR-

SUPPLY SOURCE-

SAFEGUARDS-

PRODUCT/USE-Uranium

FUEL STORAGE CAPACITY-

PROCESS-Underground shaft mining

SCHEDULE-

REMARKS-CFMU- Compagnie Francaise des Minerais d' Uranium

COGEMA- Compagnie Generale des Matieres Nucleaires

Minatome- Pechinery-Ugine Kuhlmann & Compagnie Francaise de Petrole

REFERENCES-

- 1-Foreign Uranium Supply, EPRI EA-725, 4/78, pp. 5-1 to 5-6
- 2-Uranium Resources, Production and Demand, IAEA, 12/77, pp. 68-71
- 3-Mining Magazine, March 1978, pp. 233 & 249

ACTIVITY--FRANCE RESOURCE RECOVERY
CATEGORY-MILLS

NUCLEAR FACILITY PROFILE
PSM 14 SEP 78

FACILITY NAME	LOCATION	FAC	FAC
	Bessines-sur-Gartemp	TYPE CAPACITY STATUS	YR CODE
	Haute-Vienne	URAN 1500te/y Oper	77 RFEY

LATITUDE- 46 DEG 07 MIN N

LONGITUDE- 01 DEG 22 MIN E

TECHNOLOGY SOURCE-

OWNER/OPERATOR-PUK-9%, COGEMA-51%,
CDC-40%

SUPPLY SOURCE-

SAFEGUARDS-

PRODUCT/USE-Uranium

FUEL STORAGE CAPACITY-

PROCESS-

SCHEDULE-

REMARKS-CFMU- Compagnie Francaise des Minerais d' Uranium
COGEMA- Compagnie Generale des Matieres Nucleaires
Minatome- Pechiney-Ugine Kuhlmann & Compagnie Francaise de Petrole

REFERENCES-

- 1-Foreign Uranium Supply, EPRI EA-725, 4/78, pp. 5-1 to 5-6
- 2-International Data Collection and Analysis, NAC, 6/78, Task 1,
Vol II, France
- 3-Uranium Resources, Production and Demand, IAEA, 12/77, pp. 68-71

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

NUCLEAR FACILITY PROFILE
PSM 14 SEP 78

FACILITY NAME	LOCATION	FAC TYPE	CAPACITY	STATUS	FAC YR CODE
	La Crouzille	URAN	200 te/y	Oper	50 RFEZ
	Haute-Vienne				
LATITUDE- 46 DEG	MIN N	LONGITUDE-	01 DEG	MIN E	

TECHNOLOGY SOURCE-

OWNER/OPERATOR-Dong-Trieu

SUPPLY SOURCE-

SAFEGUARDS-

PRODUCT/USE-Uranium

FUEL STORAGE CAPACITY-

PROCESS-Underground mine/mill

SCHEDULE-Expansion to 500 te/y by 1982

REMARKS-First shaft in operation July 10, 1950

REFERENCES-

- 1-Foreign Uranium Supply, EPRI EA-725, 4/78, pp. 5-1 to 5-6
- 2-International Data Collection and Analysis, NAC, 6/78, Task 1, Vol II, France
- 3-Uranium Resources, Production and Demand, IAEA, 12/77, pp. 68-71
- 4-Minerals Yearbook, US Bureau of Mines, 1950, p. 1269

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

NUCLEAR FACILITY PROFILE
PSM 15 SEP 78

FACILITY NAME	LOCATION	FAC TYPE	CAPACITY	STATUS	YR	FAC CODE
	St. Priest Loire	URAN				RFFA

LATITUDE- 45 DEG 57 MIN N

LONGITUDE- 03 DEG 45 MIN E

TECHNOLOGY SOURCE-

OWNER/OPERATOR-COHEMA

SUPPLY SOURCE-

SAFEGUARDS-

PRODUCT/USE-Uranium

FUEL STORAGE CAPACITY-

PROCESS-

SCHEDULE-

REMARKS-COHEMA- Compagnie Generale des Matieres Nucleaires
In Furez area

REFERENCES-

- 1-Foreign Uranium Supply, EPRI EA-725, 4/78, pp. 5-1 to 5-6
- 2-International Data Collection and Analysis, NAC, 6/78, Task 1,
Vol II, France
- 3-Uranium Resources Production and Demand, IAEA, 12/77, pp. 68-71

ACTIVITY--FRANCE RESOURCE RECOVERY
CATEGORY-MILLS

NUCLEAR FACILITY PROFILE
PSM 14 SEP 78

FACILITY NAME	LOCATION	FAC TYPE	CAPACITY	STATUS	FAC YR CODE
	St. Priest Loire	URAN	500 te/y	Oper	77 RFFB

LATITUDE- 45 DEG 57 MIN N

LONGITUDE- 03 DEG 45 MIN E

TECHNOLOGY SOURCE-

OWNER/OPERATOR-COGEMA

SUPPLY SOURCE-

SAFEGUARDS-

PRODUCT/USE-Uranium

FUEL STORAGE CAPACITY-

PROCESS-

SCHEDULE-Expected to be worked out by 1980

REMARKS-COGEMA- Compagnie Generale des Matieres Nucleaires
In Furez area

REFERENCES-

- 1-Foreign Uranium Supply, EPRI EA-725, 4/78, pp. 5-1 to 5-6
- 2-International Data Collection and Analysis, NAC, 6/78, Task 1, Vol II, France
- 3-Uranium Resources Production and Demand, IAEA, 12/77, pp. 68-71

ACTIVITY--FRANCE RESOURCE RECOVERY
CATEGORY-CONVERSION PLANTS

NUCLEAR FACILITY PROFILE
SRM 03 AUG 78

FACILITY NAME	LOCATION	FAC TYPE	CAPACITY	STATUS	YR	FAC CODE
Conversion Facility, Pierrelatte		UF6	8000 te	Oper	77	RFFC
Pierrelatte			(te/yr)			
LATITUDE- 44 DEG 22 MIN N		LONGITUDE-	4 DEG 41 MIN E			

TECHNOLOGY SOURCE-

OWNER/OPERATOR-Comurhex

SUPPLY SOURCE-UF4 from Malvesi
Refining Facility

SAFEGUARDS-

PRODUCT/USE-UF6/feed for Pierrelatte Enrichment Facility

FUEL STORAGE CAPACITY-

PROCESS-UF4 to UF6 conversion by combining with Flourine in flame-
type reactors

SCHEDULE-Currently in operation since 1977

REMARKS-

MARKET STRATEGY-Comurhex controls 100% of domestic market for UF6
production. Will control increasing share of international market
as capacity is increased.

NEW FACILITY PLANS-Capacity will be increased to 12000 te/yr in
1980 and to 15000 te/yr in 1982

REFERENCES-

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

ACTIVITY--FRANCE FUEL FABRICATION
 CATEGORY--FUEL FABRICATION PLANTS

NUCLEAR FACILITY PROFILE
 SRM 08 AUG 78

FACILITY NAME LOCATION
 FBFC Romans

FAC FAC
 TYPE CAPACITY STATUS YR CODE
 UO 300 te Constr 78 RFFE
 (te/yr)

LATITUDE- 45 DEG 03 MIN N

LONGITUDE- 5 DEG 03 MIN E

TECHNOLOGY SOURCE-Westinghouse
 Electric Corporation- US

OWNER/OPERATOR-Eurofuel (80%), MMN
 (12%), Westinghouse (8%)

SUPPLY SOURCE-UO2 powder from
 BNFL (UK)

SAFEGUARDS-

PRODUCT/USE-U-oxide fuel assemblies/power reactor fuel

FUEL STORAGE CAPACITY-

PROCESS-Converts enriched UF6 to UO2 powder, pelletizes, loads fuel
 rods, and completes assembly

SCHEDULE-Operated from late 1960's to 1977 at 80 te/yr by CERCA;
 capacity increased to 200 te/yr in 1977 and to 300 te/yr in 1978

REMARKS-MARKET STRATEGY- Both FBFC-Belgium and FBFC-France will
 attempt to control 100% of domestic markets in the future.

NEW FACILITY PLANS- Depending on development of market, tentative
 expansion plans include an increase in total FBFC capacity to
 1000 te/yr in 1981/82 and 1400 te/yr in 1983 probably by expanding
 the FBFC-France Fomans site

REFERENCES-

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

ACTIVITY--FRANCE FUEL FABRICATION
CATEGORY-FUEL FABRICATION PLANTS

NUCLEAR FACILITY PROFILE
SRM 08 AUG 78

FACILITY NAME	LOCATION	FAC TYPE	CAPACITY	STATUS	YR	FAC CODE
Pu Workshops ATPu, Cadarache Res Cen	St-Paul-les-Durance	UPuO	10 te/yr	Oper		RFFF
LATITUDE- 43 DEG 41 MIN N		LONGITUDE- 5 DEG 42 MIN E				

TECHNOLOGY SOURCE-

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

SUPPLY SOURCE-PuO2 from Marcoule
or La Hague reprocessing plants

SAFEGUARDS-

PRODUCT/USE-U-Pu mixed-oxide fuel assemblies/Rhapsodie and Phenix
reactors

FUEL STORAGE CAPACITY-

PROCESS-UO2 blended with PuO2 to produce mixed-oxide powder, then
pelletized, loaded into rods, and assembled

SCHEDULE-Currently in operation

REMARKS-

REFERENCES-

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

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

NUCLEAR FACILITY PROFILE
SRM 26 JUL 78

FACILITY NAME	LOCATION	FAC TYPE	CAPACITY	STATUS	YR CODE
UP-1	Marcoule (Bangols-sur-Ceze)	UM	1000 te (te/yr)	Oper	58 RFFJ
LATITUDE- 44 DEG 10 MIN N		LONGITUDE- 4 DEG 36 MIN E			

TECHNOLOGY SOURCE-Commissariat a l'Energie Atomique (CEA)	OWNER/OPERATOR-CEA/Compagnie Gen. des Matieres Nucleare (Cogema)
SUPPLY SOURCE-Spent fuel from domestic gas-graphite reactors	SAFEGUARDS-No safeguards
PRODUCT/USE-Pu/Military use	

FUEL STORAGE CAPACITY-

PROCESS-Natural U-metal reprocessing using Purex process

SCHEDULE-Began operation in 1958 for military purposes

REMARKS-Originally used to process spent fuel from reactors G1, G2, and G3 at Marcoule for use in nuclear weapons. Now, UP-1 processes most of the Magnox fuel from French power reactors. After 1981, UP-1 will be used solely for the reprocessing of Magnox fuel from all French reactors. The present capacity seems to be sufficient to meet all domestic Magnox fuel demands in the future, therefore there are no expansion plans at this time. Concentrated high-level liquid waste is stored in two tanks of capacity 60 cubic meters and 90 cubic meters.

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 II; 6/78

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

NUCLEAR FACILITY PROFILE
PSM 14 SEP 78

FACILITY NAME	LOCATION	FAC TYPE	CAPACITY	STATUS	YR	FAC CODE
	Lodeve Herault	URAN	500 te/y	Oper	78	RFFK

LATITUDE- 43 DEG 44 MIN N

LONGITUDE- 03 DEG 19 MIN E

TECHNOLOGY SOURCE-

OWNER/OPERATOR-COGEA

SUPPLY SOURCE-

SAFEGUARDS-

PRODUCT/USE-Uranium

FUEL STORAGE CAPACITY-

PROCESS-Underground mining

SCHEDULE-

REMARKS-COGEA- Compagnie Generale des Matieres Nucleaires

REFERENCES-

- 1-Foreign Uranium Supply, EPRI EA-725, 4/78, pp. 5-1 to 5-6
- 2-International Data Collection and Analysis, NAC, 6/78, Task 1, Vol II, France
- 3-Uranium Resources, Production and Demand, IAEA, 12/77, pp. 68-71
- 4-Mining Magazine, March 1978, pp. 233 & 249

ACTIVITY--FRANCE RESOURCE RECOVERY
CATEGORY-CONVERSION PLANTS

NUCLEAR FACILITY PROFILE
SRM 02 AUG 78

FACILITY NAME	LOCATION	FAC TYPE	CAPACITY	STATUS	YR	FAC CODE
Malvesi Refining Fac	Malvesi	UF4		Oper		RFFL

LATITUDE- 43 DEG MIN N

LONGITUDE- 3 DEG MIN E

TECHNOLOGY SOURCE-

OWNER/OPERATOR-Comurhex

SUPPLY SOURCE-

SAFEGUARDS-

PRODUCT/USE-UF4/reduced to U-metal for fabrication or sent to
conversion plant at Pierrelatte for conversion to UF6
FUEL STORAGE CAPACITY-

PROCESS-U308 to UO3 to UO2 to UF4 using ADU (ammonium diuranate)
process

SCHEDULE-Currently in operation since early 1950's

REMARKS-Capacity must be at least 10000 te/yr since amount shipped
to Pierrelatte is 8000 te/yr and U-metal production was 1750 te/yr
in 1972. Since no increase in gas-graphite reactors is planned,
production of UF4 for metal fuel will not be increased from its
present 600-700 te/yr requirement.

MARKET STRATEGY- Comurhex controls 100% of domestic market for UF4
production and will continue to do so in the future

REFERENCES-

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

ACTIVITY--FRANCE FUEL FABRICATION
CATEGORY-FUEL FABRICATION PLANTS

NUCLEAR FACILITY PROFILE
SRM 08 AUG 78

FACILITY NAME
SICN

LOCATION
Veurey

FAC TYPE	CAPACITY	STATUS	YR	FAC CODE
FB		Oper		RFFM

LATITUDE- 45 DEG 16 MIN N

LONGITUDE- 05 DEG 36 MIN E

TECHNOLOGY SOURCE-

OWNER/OPERATOR-ALSPI (75%), SGPM
(25%)

SUPPLY SOURCE-UO2 rods from
Cadarache Research Center

SAFEGUARDS-

PRODUCT/USE-Fertile fast breeder reactor UO2 fuel rods/Rhapsodie and
Phenix reactors

FUEL STORAGE CAPACITY-

PROCESS-

SCHEDULE-Currently in operation

REMARKS-

REFERENCES-

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

ACTIVITY--FRANCE ENRICHMENT PLANTS
 CATEGORY-ENRICHMENT PLANTS

NUCLEAR FACILITY PROFILE
 SRM 24 JUL 78

FACILITY NAME	LOCATION	FAC TYPE	CAPACITY	STATUS	YR	FAC CODE
		CHEM	50-100 K	Plan	85	RFFZ
			(KSWU)			
LATITUDE-	DEG MIN	LONGITUDE-	DEG MIN			

TECHNOLOGY SOURCE-France

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

SUPPLY SOURCE-

SAFEGUARDS-

PRODUCT/USE-

FUEL STORAGE CAPACITY-

PROCESS-Chemical Exchange

SCHEDULE-Decision to build in 1978; start of construction 1979; full operation and report on commercial feasibility in 1985

REMARKS-Already operating are a small-size pilot plant, and a larger pilot plant. This demonstration plant will determine commercial feasibility of new process.

REFERENCES-

1-Nucleonics Week; Vol XVIII, No 49; 12/8/77

ACTIVITY--FRANCE ENRICHMENT PLANTS
CATEGORY-ENRICHMENT PLANTS

NUCLEAR FACILITY PROFILE
SRM 24 JUL 78

FACILITY NAME	LOCATION	FAC	CAPACITY	STATUS	FAC
		TYPE			YR CODE
		LASR		R&D	60 RFGA

LATITUDE-	DEG	MIN	LONGITUDE-	DEG	MIN
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TECHNOLOGY SOURCE- OWNER/OPERATOR-

SUPPLY SOURCE- SAFEGUARDS-

PRODUCT/USE-Small quantities of highly enriched uranium

FUEL STORAGE CAPACITY-

PROCESS-Laser isotope separation

SCHEDULE-Research and development in progress since 1960

REMARKS-

REFERENCES-

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

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

NUCLEAR FACILITY PROFILE
SRM 26 JUL 78

FACILITY NAME	LOCATION	FAC TYPE	CAPACITY	STATUS	YR	FAC CODE
SAP	Marcoule (Bagnols-sur-Ceze)	FB	5 te/yr	Oper		RFGB

LATITUDE- 44 DEG 10 MIN N LONGITUDE- 4 DEG 36 MIN E

TECHNOLOGY SOURCE-CEA Chemical
Div, Fontenay-aux-Roses
SUPPLY SOURCE-

OWNER/OPERATOR-Pilot Plant Services
Section (SAP)
SAFEGUARDS-No safeguards

PRODUCT/USE-Plutonium

FUEL STORAGE CAPACITY-

PROCESS-Fast breeder fuel reprocessing using Purex process

SCHEDULE-Pilot plant used for testing new equipment- currently in
operation

REMARKS-CEA Chemical Division at Fontenay-aux-Roses Nuclear Research
Centre has its Pilot Plant Services Section (SAP) located at
Marcoule

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 I; 1/78

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ACTIVITY--FRANCE 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
Chaudiere	Cadarache		190 MWt	Oper	75	RFGC

LATITUDE- 43 DEG 41 MIN N

LONGITUDE- 5 DEG 42 MIN E

TECHNOLOGY SOURCE-Constructor:
CEA

OWNER/OPERATOR-Owner: CEA

SUPPLY SOURCE-

SAFEGUARDS-

PRODUCT/USE-

FUEL STORAGE CAPACITY-

PROCESS-

SCHEDULE-In operation

REMARKS-

REFERENCES-

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

ACTIVITY--FRANCE 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
High-Flux Reactor	Grenoble	TK-H	60 MWt	Oper	71	RFGD

LATITUDE- 45 DEG 11 MIN N

LONGITUDE- 5 DEG 43 MIN E

TECHNOLOGY SOURCE-Design & bldr: OWNER/OPERATOR-Max von Laue-Paul
 Max von Laue-Paul Langevin Inst. Langevin Institute
 SUPPLY SOURCE- SAFEGUARDS-

PRODUCT/USE-Nuclear physics, solid state physics

FUEL STORAGE CAPACITY-1st storage stage (2 positions) in submerged
 hood with closed circuit cooling by natural convection (See remarks)

PROCESS-Tank in swimming pool, highly enriched (93%) uranium, heavy
 water moderated and cooled

SCHEDULE-Start of construction: Dec. 1968;
 reactor critical: July 1971

REMARKS-Second storage stage in swimming pool.

Neutron flux: Thermal av in fuel: $2.2 \times (10 \text{ E } 14) \text{ n}/(\text{cm E } 2) \text{ sec}$

Thermal max in reflector $1.5 \times (10 \text{ E } 15) \text{ n}/(\text{cm E } 2) \text{ sec}$; Thermal max
 in fuel: $5 \times (10 \text{ E } 14) \text{ n}/(\text{cm E } 2) \text{ sec}$

Core loading at rated power: 8.57 Kg U-235

Av. specific power in fuel: 7 MW/Kg U-235

Av. power density in core: 1140 KW/litre

REFERENCES-

- 1-Directory of Nuclear Reactors, Vol X, IAEA, 1976, p. 335
- 2-Intl Data Collection and Analysis, Vol II, NAC, June 1978

ACTIVITY--FR WASTE MANAGEMENT
 CATEGORY-WASTE DISPOSAL FACILITIES

NUCLEAR FACILITY PROFILE
 SRM 18 APR 79

FACILITY NAME	LOCATION	FAC		FAC
Saclay Nucl Res Cen	Seine-et-Oise	PREP	OPER	RFGE

LATITUDE- 49 DEG 00 MIN N

LONGITUDE- 2 DEG 05 MIN E

TECHNOLOGY SOURCE-France, CEA

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

SUPPLY SOURCE-

SAFEGUARDS-

PRODUCT/USE-Treated waste/disposal

FUEL STORAGE CAPACITY-

PROCESS-Bitumenization or incorporation into concrete of non-high-level wastes

SCHEDULE-Currently in operation

REMARKS-

Bitumenization process- turbulent-film evaporator continuous process; offered commercially by Saint-Gobain Techniques Nouvelles
 Concretion process- hot cell operation; solid wastes placed in aluminum drums and compacted, 8 smashed drums are stacked in 2 ft high fiberglass container which is placed in an iron drum, then removed from hot cell and encased in concrete; the concrete blocks are stored on site or shipped to La Hague for disposal by Infracome

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 I; 1/78
- 2-ERDA; Alternatives for Managing Wastes from Reactors and Post-Fission Operations of the LWR Fuel Cycle; Vol II; 5/76

ACTIVITY--FRANCE WASTE MANAGEMENT
CATEGORY-WASTE DISPOSAL FACILITIES

NUCLEAR FACILITY PROFILE
SRM 25 AUG 78

FACILITY NAME	LOCATION	FAC TYPE	CAPACITY	STATUS	YR	FAC CODE
	Cap de La Hague (Cherbourg)	DISP	1.3 Mbbl	Oper		RFGF

LATITUDE- 49 DEG 38 MIN N LONGITUDE- 1 DEG 37 MIN W

TECHNOLOGY SOURCE- OWNER/OPERATOR-PEC-Infratome

SUPPLY SOURCE-CEA installations SAFEGUARDS-

EdF Power Stations, hospitals

PRODUCT/USE-Non-high-level wastes in 200 liter barrels or concrete
blocks/ retrievable disposal

FUEL STORAGE CAPACITY-Capacity of storage depot is rated at 1.2-1.3
million barrels of waste

PROCESS-Underground burial in earth, encased in concrete, in concrete
trenches, or in special shafts for decay to lower-level activity

SCHEDULE-Currently in operation

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 I; 1/78

ACTIVITY--FRANCE WASTE MANAGEMENT
CATEGORY-WASTE DISPOSAL FACILITIES

NUCLEAR FACILITY PROFILE
SRM 25 AUG 78

FACILITY NAME	LOCATION	FAC TYPE	CAPACITY	STATUS	YR	FAC CODE
VULCAIN	Marcoule (Bagnols-sur-Ceze)	PREP		Oper		RFGG

LATITUDE- 44 DEG 10 MIN N LONGITUDE- 4 DEG 36 MIN E

TECHNOLOGY SOURCE-France, CEA

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

SUPPLY SOURCE-

SAFEGUARDS-

PRODUCT/USE-

FUEL STORAGE CAPACITY-

PROCESS-Hot cell facilities used to make (small-scale PIVER process)
and characterize waste glass specimens

SCHEDULE-Currently in operation

REMARKS-VULCAIN hot cells can produce 2 kg blocks of high-level waste
glass to be used for calorimetry, radiation effects, and leach-rate
measurements

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 I; 1/78

ACTIVITY--FRANCE WASTE MANAGEMENT
CATEGORY-WASTE DISPOSAL FACILITIES

NUCLEAR FACILITY PROFILE
SRM 25 AUG 78

FACILITY NAME	LOCATION	FAC TYPE	CAPACITY	STATUS	YR	CODE
PIVER	Marcoule (Bagnols-sur-Ceze)	PREP		Inactv	69	RFGH

LATITUDE- 44 DEG 10 MIN N

LONGITUDE- 4 DEG 36 MIN E

TECHNOLOGY SOURCE-France, CEA

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

SUPPLY SOURCE-

SAFEGUARDS-

PRODUCT/USE-Glass blocks/storage and ultimate disposal

FUEL STORAGE CAPACITY-Underground storage in 32 pits enclosed in
concrete with forced-air cooling

PROCESS-Pot vitrification batch process using Inconel pot heated by
induction

SCHEDULE-Currently inactive; operated from 1969-1973

REMARKS-In each PIVER run, 200 liters of waste solution were
vitrified, producing 90 kg of glass.

The PIVER plant was operated again in 1977 to produce glass blocks
of specific activity about 20,000 curies/liter. The supply source
was Phenix LMFBR fuel elements that were reprocessed in SAP pilot
reprocessing plant at Marcoule

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 I; 1/78

ACTIVITY--FRANCE WASTE MANAGEMENT		NUCLEAR FACILITY PROFILE	
CATEGORY-WASTE DISPOSAL FACILITIES		SRM 25 AUG 78	
		FAC	FAC
FACILITY NAME	LOCATION	TYPE	CAPACITY STATUS YR CODE
GULLIVER	Fontenay-aux-Roses	PREP	Inactv 63 RFGJ
LATITUDE- 48 DEG 47 MIN N		LONGITUDE- 2 DEG 18 MIN E	
TECHNOLOGY SOURCE-France, CEA		OWNER/OPERATOR-CEA (Commissariat a l'Energie Atomique)	
SUPPLY SOURCE-		SAFEGUARDS-	
PRODUCT/USE-Glass blocks/stored and retrieved in 1978 for examination			
FUEL STORAGE CAPACITY-Stored in soil for 7 years, then in air			
PROCESS-Vitrification of liquid wastes using gel technique in a graphite crucible			
SCHEDULE-Currently inactive; operated in 1963 to produce glass blocks for study at later date			
REMARKS-GULLIVER technique was used in 1963 to make glass blocks of 5-15 kg weight and having specific activities of about 1000 curies per liter			

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 I; 1/78

ACTIVITY--FRANCE WASTE MANAGEMENT
CATEGORY-WASTE DISPOSAL FACILITIES

NUCLEAR FACILITY PROFILE
SRM 25 AUG 78

FACILITY NAME	LOCATION	FAC	FAC
AVM	Marcoule	TYPE CAPACITY STATUS	YR CODE
	(Bagnols-sur-Ceze)	PREP 30 l/hr Oper	78 RFGK
LATITUDE- 44 DEG 10 MIN N		LONGITUDE- 4 DEG 36 MIN E	

TECHNOLOGY SOURCE-France, CEA OWNER/OPERATOR-CEA, St. Gobain
(Commissariat a l'Energie Atom) Techniques Nouvelles

SUPPLY SOURCE-Stored high-level waste- reprocessed U-metal fuels SAFEGUARDS-

PRODUCT/USE-Vitrified high-level wastes in stainless steel storage containers/storage and ultimate disposal

FUEL STORAGE CAPACITY-Containers of vitrified waste stored underground in 220 pits with forced-air cooling

PROCESS-Vitrification of high-level wastes from the reprocessing of natural U-metal fuels

SCHEDULE-Startup in 1978

REMARKS-AVM (Atelier de Vitrification de Marcoule) has a 30 liter/hr calciner and a 9 kg/hr (calcined waste) melting furnace. Every 8 hours, 140-200 kg glass are poured into stainless steel container with 50 cm diameter and 1 m height. Lids are fitted and welded and containers proceed through decontamination area to storage cells. The Marcoule Center of Pu Production also performs incineration of plutonium-contaminated waste (1 kg/hr since 1970) and bituminization of non-high-level waste. 5000 drums have been produced and are stored on concrete slabs in this commercial, screw-extruder continuous process.

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 I; 1/78
- 2-Proceedings of Intl Symp on the Management of Wastes from the LWR Fuel Cycle; Denver, Col; 7/11-16/76

ACTIVITY--FRANCE WASTE MANAGEMENT
 CATEGORY--WASTE DISPOSAL FACILITIES

NUCLEAR FACILITY PROFILE
 SRM 24 AUG 78

FACILITY NAME	LOCATION	FAC	FAC
AVH	Cap de La Hague (Cherbourg)	TYPE CAPACITY STATUS	YR CODE
		PREP 100 1/hr Plan	82 RFGL

LATITUDE- 49 DEG 38 MIN N

LONGITUDE- 1 DEG 37 MIN W

TECHNOLOGY SOURCE-France, CEA
 (Commissariat a l'Energie Atom.)

OWNER/OPERATOR-CEA, St. Gobain
 Techniques Nouvelles

SUPPLY SOURCE-UP2 Reprocessing
 Plant

SAFEGUARDS-

PRODUCT/USE-Vitrified high-level wastes in stainless steel storage
 containers/storage and ultimate disposal

FUEL STORAGE CAPACITY-Containers of vitrified waste stored in water
 pool for 4 years, then transferred to air-cooled storage

PROCESS-Vitrification of high-level waste from the reprocessing of
 enriched oxide fuels

SCHEDULE-Planned for operation in 1982

REMARKS-AVH (Atelier de Vitrification de La Hague) will have two
 production lines, each with a 50 liter/hr calciner and a 25 kg/hr
 melting furnace. A third line is planned for standby. The glass
 product will have a fission-product decay-heat content of 100 watts
 per liter.

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 I; 1/78
- 2-Proceedings of Intl Symp on the Management of Wastes from the
 LWR Fuel Cycle; Denver, Col; 7/11-16/76

ACTIVITY--FRANCE WASTE MANAGEMENT
CATEGORY-WASTE DISPOSAL FACILITIES

NUCLEAR FACILITY PROFILE
SRM 24 AUG 78

FACILITY NAME LOCATION
Center of Nucl Study Grenoble

FAC	FAC
TYPE	CAPACITY
PREP	STATUS YR CODE
	Constr RFGM

LATITUDE- 45 DEG 11 MIN N

LONGITUDE- 5 DEG 43 MIN E

TECHNOLOGY SOURCE-France, CEA

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

SUPPLY SOURCE-

SAFEGUARDS-

PRODUCT/USE-Drums containing waste embedded in resin/disposal

FUEL STORAGE CAPACITY-

PROCESS-Embedding of non-high-level waste in thermosetting resins

SCHEDULE-Construction of demonstration plant started in 1977

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 I; 1/78

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ACTIVITY--FRANCE WASTE MANAGEMENT
CATEGORY-WASTE DISPOSAL FACILITIES

NUCLEAR FACILITY PROFILE
SRM 22 AUG 78

FACILITY NAME LOCATION
Center of Nucl Study Grenoble

FAC FAC
TYPE CAPACITY STATUS YR CODE
PREP 30 kg/hr Oper 61 RFGN

LATITUDE- 45 DEG 11 MIN N

LONGITUDE- 5 DEG 43 MIN E

TECHNOLOGY SOURCE-France, CEA

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

SUPPLY SOURCE-

SAFEGUARDS-

PRODUCT/USE-

FUEL STORAGE CAPACITY-

PROCESS-Incineration of uranium-contaminated wastes; dual chamber,
1000-1100 degrees C

SCHEDULE-Currently in operation since 1961

REMARKS-A pilot plant for embedding of non-high-level wastes in
thermosetting resins has been in operation since 1971.

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 I; 1/78

ACTIVITY--FRANCE WASTE MANAGEMENT
CATEGORY--WASTE DISPOSAL FACILITIES

NUCLEAR FACILITY PROFILE
SRM 18 APR 79

FACILITY NAME	LOCATION	FAC TYPE	CAPACITY	STATUS	YR CODE
Cadarache Nuclear Research Center	St. Paul-les-Durance	PREP		Oper	77 RFGP
LATITUDE- 43 DEG 41 MIN N		LONGITUDE- 5 DEG 42 MIN E			

TECHNOLOGY SOURCE-France, CEA

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

SUPPLY SOURCE-

SAFEGUARDS-

PRODUCT/USE-Treated waste/disposal; Pu-oxide and Pu ions are extracted
for re-use

FUEL STORAGE CAPACITY-

PROCESS-Incineration of low-level waste, bitumenization of non-high-
level waste, and cryogenic crushing of solid waste

SCHEDULE-Incineration at 30 kg/hr in operation; bitumenization at 60
l/hr and 260 kl/yr since 1977; cryogenic crushing, 8 dr/hr, 1977

REMARKS-

Incineration process- dual chamber, 1000-1100 degrees C

Bitumenization process- thin-film vertical evaporator (LUWA L150);
pilot plant experience (60 l/hr) at Cadarache has provided basis
for design and operation of bitumenization plants at the Barsback
Power Station, Malmo, Sweden, and at the Mihama Power Station in
Japan

Bitumenization process- twin screw-extruder continuous process at
260 kl/yr

Cryogenic Crushing process- 200 liter drums plunged into liquid
nitrogen at -140 degrees C for 10 minutes, then mechanically crushed

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 I; 1/78

FR 62

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

NUCLEAR FACILITY PROFILE
PSM 15 AUG 78

FACILITY NAME	LOCATION	FAC TYPE	CAPACITY	STATUS	YR	FAC CODE
	Roven	URAN	100 te/y	Plan	81	RFGQ

LATITUDE- 49 DEG 26 MIN N

LONGITUDE- 01 DEG 05 MIN E

TECHNOLOGY SOURCE-

OWNER/OPERATOR-APC & CGMN

SUPPLY SOURCE-

SAFEGUARDS-

PRODUCT/USE-Uranium

FUEL STORAGE CAPACITY-

PROCESS-Extract uranium from phosphoric acid

SCHEDULE-

REMARKS-APC- Azote et Produits Chimiques

CGMN- Cie. Generale des Matieres Nucleares

REFERENCES-

1-Mining Journal, Vol 290, #7453, 23 June 1978, p. 478

FR 63

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

NUCLEAR FACILITY PROFILE
PSM 14 SEP 78

FACILITY NAME LOCATION
Langogne
Lozere

FAC FAC
TYPE CAPACITY STATUS YR CODE
URAN 135 te/y Oper 77 RFGR

LATITUDE- 44 DEG 43 MIN N

LONGITUDE- 03 DEG 51 MIN E

TECHNOLOGY SOURCE-

OWNER/OPERATOR-CFMU

SUPPLY SOURCE-

SAFEGUARDS-

PRODUCT/USE-Uranium

FUEL STORAGE CAPACITY-

PROCESS-Mine/mill

SCHEDULE-

REMARKS-CFMU- Compagnie Francaise des Minerais d' Uranium

REFERENCES-

- 1-Foreign Uranium Supply, EPRI EA-725, 4/78, pp. 5-1 to 5-6
- 2-International Data Collection and Analysis, NAC, 6/78, Task 1, Vol II, France
- 3-Uranium Resources, Production and Demand, IAEA, 12/77, pp. 68-71

FR 64

ACTIVITY--FRANCE RESOURCE RECOVERY
CATEGORY-MILLS

NUCLEAR FACILITY PROFILE
PSM 14 SEP 78

FACILITY NAME	LOCATION	FAC TYPE	CAPACITY	STATUS	YR	FAC CODE
	Langogne Lozere	URAN	135 te/y	Oper	77	RFGS

LATITUDE- 44 DEG 43 MIN N

LONGITUDE- 03 DEG 51 MIN E

TECHNOLOGY SOURCE-

OWNER/OPERATOR-CFMU

SUPPLY SOURCE-

SAFEGUARDS-

PRODUCT/USE-Uranium

FUEL STORAGE CAPACITY-

PROCESS-Mine/mill

SCHEDULE-

REMARKS-CFMU- Compagnie Francaise des Minerais d'Uranium

REFERENCES-

- 1-Foreign Uranium Supply, EPRI EA-725, 4/78, pp. 5-1 to 5-6
- 2-International Data Collection and Analysis, NAC, 6/78, Task 1, Vol II, France
- 3-Uranium Resources, Production and Demand, IAEA, 12/77, pp. 68-71

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ACTIVITY--FRANCE RESOURCE RECOVERY
CATEGORY-MILLS

NUCLEAR FACILITY PROFILE
PSM 14 SEP 78

FACILITY NAME	LOCATION	FAC	TYPE	CAPACITY	STATUS	YR	CODE
	Lodeve		URAN	1000te/y	Constr	80	RFGT
	Herault						

LATITUDE- 43 DEG 44 MIN N

LONGITUDE- 03 DEG 19 MIN E

TECHNOLOGY SOURCE-

OWNER/OPERATOR-COGEA

SUPPLY SOURCE-

SAFEGUARDS-

PRODUCT/USE-Uranium

FUEL STORAGE CAPACITY-

PROCESS-

SCHEDULE-

REMARKS-COGEA- Compagnie Generale des Matieres Nucleaires

REFERENCES-

- 1-Foreign Uranium Supply, EPRI EA-725, 4/78, pp. 5-1 to 5-6
- 2-International Data Collection and Analysis, NAC, 6/78, Task 1, Vol II, France
- 3-Uranium Resources, Production and Demand, IAEA, 12/77, pp. 68-71

FR 66

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

NUCLEAR FACILITY PROFILE
PSM 14 SEP 78

FACILITY NAME	LOCATION	FAC TYPE	CAPACITY	STATUS	YR	FAC CODE
	St. Pierre du Cantal Correze	URAN	100 te/y	Oper	78	RFGU

LATITUDE- 45 DEG 30 MIN N LONGITUDE- 02 DEG MIN E

TECHNOLOGY SOURCE-

OWNER/OPERATOR-SCUMRA

SUPPLY SOURCE-

SAFEGUARDS-

PRODUCT/USE-Uranium

FUEL STORAGE CAPACITY-

PROCESS-Mine/mill

SCHEDULE-Expansion to 250 tonnes by 1982

REMARKS-SCUMRA- Societe Centrale de l'Uranium et des Minerais et
Metaux

REFERENCES-

- 1-Foreign Uranium Supply, EPRI EA-725, 4/78, pp. 5-1 to 5-6
- 2-International Data Collection and Analysis, NAC, 6/78, Task 1,
Vol II, France
- 3-Uranium Resources, Production and Demand, IAEA, 12/77, pp. 68-71

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ACTIVITY--FRANCE FUEL FABRICATION
CATEGORY--HEAVY WATER PRODUCTION

NUCLEAR FACILITY PROFILE
PSM 26 SEP 78

FACILITY NAME LOCATION
Toulouse

FAC	FAC
TYPE	CAPACITY
D20	2 te/y
Inactv	RFGW

LATITUDE- 43 DEG 33 MIN N

LONGITUDE- 01 DEG 24 MIN E

TECHNOLOGY SOURCE-

OWNER/OPERATOR-CEA, Air Liquide,
ONIA

SUPPLY SOURCE-

SAFEGUARDS-

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

FUEL STORAGE CAPACITY-

PROCESS-Hydrogen Distillation

SCHEDULE-Start up-1959; currently inactive

REMARKS-CEA- Commissariat a l'Energie Atomique

REFERENCES-

- 1-Nuclear Engineering International, Vol XXI, No 248, September 1976, pp. 61-68

FR 68

ACTIVITY--FRANCE FUEL FABRICATION
CATEGORY--HEAVY WATER PRODUCTION

NUCLEAR FACILITY PROFILE
PSM 26 SEP 78

FACILITY NAME	LOCATION	FAC TYPE	CAPACITY	STATUS	YR	FAC CODE
	Mazingarbe	D20	26 te/y	Inactv		RFGX

LATITUDE- DEG MIN

LONGITUDE- DEG MIN

TECHNOLOGY SOURCE-

OWNER/OPERATOR-CEA, SCC, CCM, SAL

SUPPLY SOURCE-

SAFEGUARDS-

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

FUEL STORAGE CAPACITY-

PROCESS-Ammonia-Hydrogen exchange

SCHEDULE-Start up- 1968; currently inactive

REMARKS-CEA- Commissariat a l'Energie Atomique
SCC- Societe Chimique de Charbonnages
CCM- Companie de Construction Mecanique Sulzer
SAL- Societe a l'Air Liquide

REFERENCES-

1-Nuclear Engineering International, Vol XXI, No 248, September
1976, pp. 61-68

FR 69

ACTIVITY--FRANCE WASTE MANAGEMENT
CATEGORY-WASTE DISPOSAL FACILITIES

NUCLEAR FACILITY PROFILE
SRM 22 AUG 78

FACILITY NAME	LOCATION	FAC TYPE	CAPACITY	STATUS	YR	FAC CODE
Fontenay-aux-Roses Nucl Research Cen.	Fontenay-aux-Roses	PREP	50 kg/hr	Oper	67	RFGY

LATITUDE- 48 DEG 47 MIN N

LONGITUDE- 2 DEG 18 MIN E

TECHNOLOGY SOURCE-France, CEA

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

SUPPLY SOURCE-

SAFEGUARDS-

PRODUCT/USE-

FUEL STORAGE CAPACITY-

PROCESS-Incineration of low-level wastes; dual chamber, 800-1000
degrees C, oil or propane fired

SCHEDULE-Currently in operation since 1967

REMARKS-

REFERENCES-

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

ACTIVITY--FRANCE FUEL FABRICATION
CATEGORY-FUEL FABRICATION PLANTS

NUCLEAR FACILITY PROFILE
SRM 08 AUG 78

FACILITY NAME	LOCATION	FAC TYPE	CAPACITY	STATUS	YR	FAC CODE
CERCA	Romans	UM	900 te (te/yr)	Oper		RFGZ

LATITUDE- 45 DEG 03 MIN N LONGITUDE- 5 DEG 03 MIN E

TECHNOLOGY SOURCE-

OWNER/OPERATOR-Creusot Loire (50%),
Pechiney-Ugine Kuhlmann (50%)

SUPPLY SOURCE-UO2 rods from
Cadarache Research Center

SAFEGUARDS-

PRODUCT/USE-Gas-graphite reactor fuel (900 te/yr), heavy water
reactor fuel (20 te/yr), fertile fast breeder reactor UO2 fuel rods
FUEL STORAGE CAPACITY-

PROCESS-U-metal fuel fabrication

SCHEDULE-Currently in operation since 1960's

REMARKS-PRODUCTION HISTORY- Has met all domestic requirements for
special fuels.

NEW FACILITY PLANS- No increase in capacity is planned since demand
is stable.

REFERENCES-

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

FR 71

ACTIVITY--FRANCE FUEL FABRICATION
CATEGORY-FUEL FABRICATION PLANTS

NUCLEAR FACILITY PROFILE
SRM 08 AUG 78

FACILITY NAME	LOCATION	FAC TYPE	CAPACITY	STATUS	YR CODE
SICN	Annecy	UM	1200 te	Oper	RFHA

LATITUDE- 45 DEG 54 MIN N

LONGITUDE- 6 DEG 07 MIN E

TECHNOLOGY SOURCE-

OWNER/OPERATOR-ALSPI (75%), SGPM
(25%)

SUPPLY SOURCE-

SAFEGUARDS-

PRODUCT/USE-U-metal fuel/Gas-graphite reactors

FUEL STORAGE CAPACITY-

PROCESS-

SCHEDULE-Currently in operation

REMARKS-CAPACITY LIMITATIONS- Limited by small demand for fuel

REFERENCES-

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

FR 72

ACTIVITY--FRANCE WASTE MANAGEMENT
CATEGORY-WASTE DISPOSAL FACILITIES

NUCLEAR FACILITY PROFILE
SRM 22 AUG 78

FACILITY NAME	LOCATION	FAC TYPE	CAPACITY	STATUS	YR	CODE
	Strasbourg	PREP	15 kg/hr	Oper	70	RFHB

LATITUDE- 48 DEG 35 MIN N

LONGITUDE- 7 DEG 45 MIN E

TECHNOLOGY SOURCE-

OWNER/OPERATOR-National Center of
Scientific Research- Strasbourg

SUPPLY SOURCE-

SAFEGUARDS-

PRODUCT/USE-

FUEL STORAGE CAPACITY-

PROCESS-Incineration of low-level wastes; dual chamber, 700-800
degrees C, moving grate, gas fired

SCHEDULE-Currently in operation since 1970

REMARKS-

REFERENCES-

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

GB 1

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

NUCLEAR FACILITY PROFILE
PSM 01 AUG 78

FACILITY NAME	LOCATION	FAC TYPE	CAPACITY	STATUS	YR	FAC CODE
	Mikouloungou	URAN		Explor		RHBA

LATITUDE- DEG MIN

LONGITUDE- DEG MIN

TECHNOLOGY SOURCE-

OWNER/OPERATOR-CUMUF

SUPPLY SOURCE-

SAFEGUARDS-

PRODUCT/USE-Uranium

FUEL STORAGE CAPACITY-

PROCESS-

SCHEDULE-

REMARKS-Reserves: 12,000 te U3O8

Average ore grade 0.3%.

COMUF-Compagnie des Mines d'Uranium de Franceville

REFERENCES-

1-Foreign Uranium Supply, EPRI EA-725, pp. 5-7

GB 2

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

NUCLEAR FACILITY PROFILE
PSM 01 AUG 78

FACILITY NAME LOCATION
OKlo

FAC FAC
TYPE CAPACITY STATUS YR CODE
URAN Oper 70 RHBB

LATITUDE- 01 DEG 18 MIN S

LONGITUDE- 13 DEG 17 MIN E

TECHNOLOGY SOURCE-

OWNER/OPERATOR-CUMUF

SUPPLY SOURCE-

SAFEGUARDS-

PRODUCT/USE-Uranium

FUEL STORAGE CAPACITY-

PROCESS-Open-pit

SCHEDULE-

REMARKS-Site of natural fission reactor 1.9 billion years ago.
Average ore grade 0.5%.

REFERENCES-

- 1-Scientific American, July 1976, pp. 36-47
- 2-Nuclear Engineering International, Nov. 1976, (map pp. 57-58)
- 3-Foreign Uranium Supply, EPRI EA-725, pp. 5-7

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

NUCLEAR FACILITY PROFILE
PSM 27 JUL 78

FACILITY NAME LOCATION
Mounana

FAC	FAC
TYPE CAPACITY	STATUS YR CODE
URAN	Inactiv RHBC

LATITUDE- 01 DEG 18 MIN S

LONGITUDE- 13 DEG 13 MIN E

TECHNOLOGY SOURCE-

OWNER/OPERATOR-COMUF (See remarks)

SUPPLY SOURCE-

SAFEGUARDS-

PRODUCT/USE-Uranium

FUEL STORAGE CAPACITY-

PROCESS-Pit mining

SCHEDULE-Production ceased 1975; to be reactivated 1982 at 1500 te/yr;
operation started 1961 with average output 500-600 te/y

REMARKS-Average ore grade 0.6%

Compagnie des Mines d'Uranium de Franceville (COMUF); 25% controlled
by Gabon gov't remainder by Compagnie de Mokta, the French
Commissariat a l'Energie Atomique (CEA) and Societe Miniere
Pechiney-Mokta

REFERENCES-

- 1-Mining Magazine, March 1978, p. 252
- 2-Mineral Industries of Africa, U.S. Bureau of Mines, 1976, p. 33
- 3-Minerals Yearbook, 1974, Vol III, pp. 343-349
- 4-Foreign Uranium Supply, EPRI EA-725, pp. 5-6 to 5-9

ACTIVITY--GABON RESOURCE RECOVERY
CATEGORY-MILLS

NUCLEAR FACILITY PROFILE
PSM 27 JUL 78

FACILITY NAME	LOCATION	FAC TYPE	CAPACITY	STATUS	YR	FAC CODE
	Mounana	URAN		Inactv		RHBD

LATITUDE- 01 DEG 18 MIN S

LONGITUDE- 13 DEG 13 MIN E

TECHNOLOGY SOURCE-

OWNER/OPERATOR-COMUF (See remarks)

SUPPLY SOURCE-

SAFEGUARDS-

PRODUCT/USE-Uranium

FUEL STORAGE CAPACITY-

PROCESS-Pit mining

SCHEDULE-Production ceased 1975; to be reactivated 1982 at 1500 te/yr;
operation started 1961 with average output 500-600 te/y

REMARKS-Average ore grade 0.6%

Compagnie des Mines d'Uranium de Franceville (COMUF); 25% controlled
by Gabon gov't remainder by Compagnie de Mokta, the French
Commissariat a l'Energie Atomique (CEA) and Societe Miniere
Pechiney-Mokta

REFERENCES-

- 1-Mining Magazine, March 1978, p. 252
- 2-Mineral Industries of Africa, U.S. Bureau of Mines, 1976, p. 33
- 3-Minerals Yearbook, 1974, Vol III, pp. 343-349
- 4-Foreign Uranium Supply, EPRI EA-725, pp. 5-6 to 5-9

GB 5

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

NUCLEAR FACILITY PROFILE
PSM 31 JUL 78

FACILITY NAME	LOCATION	FAC TYPE	CAPACITY	STATUS	YR	FAC CODE
	Boyindzi	URAN		Explor		RHBE

LATITUDE-	DEG	MIN	LONGITUDE-	DEG	MIN
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TECHNOLOGY SOURCE- OWNER/OPERATOR-COMUF

SUPPLY SOURCE- SAFEGUARDS-

PRODUCT/USE-Uranium

FUEL STORAGE CAPACITY-

PROCESS-

SCHEDULE-

REMARKS-Reserves: 3600 te U308

Average ore grade: 0.4%

COMUF-Compagnie des Mines d'Uranium de Franceville

REFERENCES-

1-Foreign Uranium Supply, EPRI EA-725, pp. 5-7

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

NUCLEAR FACILITY PROFILE
PSM 31 JUL 78

FACILITY NAME	LOCATION	FAC TYPE	CAPACITY	STATUS	YR	FAC CODE
	Okelobondo	URAN		Explor		RHBF

LATITUDE- DEG MIN

LONGITUDE- DEG MIN

TECHNOLOGY SOURCE-

OWNER/OPERATOR-COMUF

SUPPLY SOURCE-

SAFEGUARDS-

PRODUCT/USE-Uranium

FUEL STORAGE CAPACITY-

PROCESS-

SCHEDULE-

REMARKS-Reserves: 4500 te U308

Average ore grade: 0.5%

COMFU-Compagnie des Mines d'Uranium de Franceville

REFERENCES-

1-Foreign Uranium Supply, EPRI EA-725, pp. 5-7

GE 1

ACTIVITY--GERMANY (EAST) WASTE MANAGEMENT
CATEGORY-WASTE DISPOSAL FACILITIES

NUCLEAR FACILITY PROFILE
SRM 28 AUG 78

FACILITY NAME	LOCATION	FAC TYPE	CAPACITY	STATUS	YR	FAC CODE
	Bartensleben (Morsleben)	DISP		Plan		REGT

LATITUDE- 52 DEG 13 MIN N

LONGITUDE- 11 DEG 07 MIN E

TECHNOLOGY SOURCE-

OWNER/OPERATOR-

SUPPLY SOURCE-

SAFEGUARDS-

PRODUCT/USE-

FUEL STORAGE CAPACITY-

PROCESS-Underground radioactive waste disposal in abandoned salt mine

SCHEDULE-Currently in planning stage

REMARKS-

REFERENCES-

1-Nucl Eng Intl; Vol XXII, No 252; 1/77

GE 2

ACTIVITY--GERMANY (EAST) RESOURCE RECOVERY NUCLEAR FACILITY PROFILE
CATEGORY-MINES (URANIUM & THORIUM) PSM 20 SEP 78

FACILITY NAME	LOCATION	FAC TYPE	CAPACITY	STATUS	YR	FAC CODE
	Weringerode	URAN		Oper	50	REGU

LATITUDE- DEG MIN LONGITUDE- DEG MIN

TECHNOLOGY SOURCE- OWNER/OPERATOR-Government

SUPPLY SOURCE- SAFEGUARDS-

PRODUCT/USE-Uranium

FUEL STORAGE CAPACITY-

PROCESS-

SCHEDULE-Opened 1950

REMARKS-In the Harz mountains

REFERENCES-

1-Minerals Yearbook, US Bureau of Mines, 1950, p. 1270

ACTIVITY--GERMANY (EAST) RESOURCE RECOVERY NUCLEAR FACILITY PROFILE
 CATEGORY-MINES (URANIUM & THORIUM) PSM 20 SEP 78

FACILITY NAME	LOCATION	FAC TYPE	CAPACITY	STATUS	YR	FAC CODE
Sorgesettendorf		URAN				REGV

LATITUDE-	DEG	MIN	LONGITUDE-	DEG	MIN
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TECHNOLOGY SOURCE-	OWNER/OPERATOR-Government controlled
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SUPPLY SOURCE-	SAFEGUARDS-
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PRODUCT/USE-Uranium

FUEL STORAGE CAPACITY-

PROCESS-

SCHEDULE-

REMARKS-Low grade ore- 1800 tonnes of ore produced per day

REFERENCES-

1-Minerals Yearbook, US Bureau of Mines, 1955, pp. 1228-1242

GE 4

ACTIVITY--GERMANY (EAST) RESOURCE RECOVERY NUCLEAR FACILITY PROFILE
CATEGORY-MINES (URANIUM & THORIUM) PSM 20 SEP 78

FACILITY NAME	LOCATION	FAC TYPE	CAPACITY	STATUS	YR	FAC CODE
	Thuringia	URAN		Oper		REGW

LATITUDE- 50 DEG 30 MIN S LONGITUDE- 11 DEG MIN E

TECHNOLOGY SOURCE- OWNER/OPERATOR-Government

SUPPLY SOURCE- SAFEGUARDS-

PRODUCT/USE-Uranium

FUEL STORAGE CAPACITY-

PROCESS-

SCHEDULE-Area will be mined through the 1980's

REMARKS-

REFERENCES-

- 1-McKinney, Robert, International Atomic Policies and Programs of the United States, Report to the Joint Committee on Atomic Energy, 1960, Vol IV, pp. 1613-1618

GW 1

ACTIVITY--GERMANY (WEST) 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
Adibka-1 Reactor	Julich	LHRR	10 Wt	Oper	67	RGAC

Fed Rep of Germany

LATITUDE- 50 DEG 55 MIN N LONGITUDE- 6 DEG 21 MIN E

TECHNOLOGY SOURCE-See remarks OWNER/OPERATOR-See remarks

SUPPLY SOURCE- SAFEGUARDS-

PRODUCT/USE-Development of methods for non-destructive testing of fuel elements & other nucl materials, esp. measurement of burn-up

FUEL STORAGE CAPACITY-Under normal conditions there is no necessity for removal or storage of irradiated solution

PROCESS-Aqueous homogeneous, highly enriched (93%) uranium, light water moderated, graphite reflected, uncooled

SCHEDULE-In operation; start of construction: Jan. 1966; reactor critical: March 1967; full power operation: March 1967

REMARKS-Owner & operator: THTR Assoc., Partners: European Atomic Energy Community, Kernforschungsanlage Julich GmbH, Brown Boveri/Krupp Reaktorbau GmbH. Designer & builder: Interatom, Bensberg, in co-operation with Atomics Intl (a division of N. American Aviation Inc)

Neutron flux: Thermal av $1.94 \times (10^8) \text{ n}/(\text{cm}^2 \text{ sec})$; Thermal max $2.8 \times (10^8) \text{ n}/(\text{cm}^2 \text{ sec})$; Fast av $1.14 \times (10^8) \text{ n}/(\text{cm}^2 \text{ sec})$; Fast max $1.7 \times (10^8) \text{ n}/(\text{cm}^2 \text{ sec})$

Critical mass: 1131 g U-235. Av specific power in fuel: .0087 KW/Kg U-235. Core loading at rated power: To give .5% excess reactivity at 22 C: 1150g U-235 Av power density in core: 37 KW/litre

REFERENCES-

1-Directory of Nuclear Reactors, Vol VIII, IAEA, 1970, p. 113

ACTIVITY--GERMANY (WEST) RSCH & TEST REACTOR NUCLEAR FACILITY PROFILE
 CATEGORY-RESEARCH AND TEST REACTORS DMK 30 SEP 78

FACILITY NAME	LOCATION	FAC	FAC
AEG Nullenergie	Grosswelzheim	TK-L 100 Wt	Oper 67 RGAD

LATITUDE-	DEG	MIN	LONGITUDE-	DEG	MIN
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TECHNOLOGY SOURCE-Design & bldr: OWNER/OPERATOR-AEG-Telefunken
 AEG-Telefunken (See remarks)

SUPPLY SOURCE- SAFEGUARDS-

PRODUCT/USE-Test of fuel elements of power reactors (See remarks)

FUEL STORAGE CAPACITY-

PROCESS-Tank-type, variable enrichment, light water moderated, cooled and reflected

SCHEDULE-In operation; start of Construction: Jan. 1967;
 reactor critical: June 1967

REMARKS-Product/Use: Measurement of critical mass at different core geometries with & without control rods, water-height reac. coefficient, temp coefficient, neutron flux distribution, effects of poison rods, homogeneity of fuel elements
 Neutron flux: Thermal max (10 E 8)n/(cm E 2)sec
 Reference 2: Owner- Max Plank Inst. fur Kernenergetik

REFERENCES-

- 1-Directory of Nuclear Reactors, Vol VIII, IAEA, 1970, p. 81
- 2-Intl Data Collection and Analysis, Vol II, NAC, June 1978

GW 3

ACTIVITY--GERMANY (WEST) RSCH & TEST REACTOR NUCLEAR FACILITY PROFILE
CATEGORY-RESEARCH AND TEST REACTORS DMK 30 SEP 78

FACILITY NAME	LOCATION	FAC TYPE	CAPACITY	STATUS	YR	CODE
ANEX	Geesthacht		0 MWt	Oper	64	RGAE

LATITUDE- 53 DEG 36 MIN N

LONGITUDE- 10 DEG 23 MIN E

TECHNOLOGY SOURCE-Constructors:

OWNER/OPERATOR-Owner: GKSS

GKSS & Interatom

SUPPLY SOURCE-

SAFEGUARDS-

PRODUCT/USE-

FUEL STORAGE CAPACITY-

PROCESS-

SCHEDULE-In operation

REMARKS-

REFERENCES-

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

GW 4

ACTIVITY--GERMANY (WEST) RSCH & TEST REACTOR NUCLEAR FACILITY PROFILE
CATEGORY-RESEARCH AND TEST REACTORS DMK 05 SEP 78

FACILITY NAME	LOCATION	FAC TYPE	CAPACITY	STATUS	YR	CODE
AVR	KFA, Julich	GMRR	46 MWt	Oper	67	RGAF

See remarks

LATITUDE- 50 DEG 55 MIN N

LONGITUDE- 6 DEG 21 MIN E

TECHNOLOGY SOURCE-Constructor:
Arbeitsgemeinschaft, BCC-Krupp
SUPPLY SOURCE-

OWNER/OPERATOR-Owner: KFA & N Rhein
Westfalen
SAFEGUARDS-

PRODUCT/USE-

FUEL STORAGE CAPACITY-

PROCESS-Helium-cooled pebble bed reactor, graphite moderated

SCHEDULE-In operation

REMARKS-AVR=Arbeitsgemeinschaft Versuchsreaktor

REFERENCES-

- 1-Intl Data Collection and Analysis, Vol II, NAC, June 1978
- 2-Nuclear Energy Conversion, M.M. El-Wakil, 1971, p. 264

ACTIVITY--GERMANY (WEST) RSCH & TEST REACTOR NUCLEAR FACILITY PROFILE
 CATEGORY-RESEARCH AND TEST REACTORS DMK 30 SEP 78

FACILITY NAME	LOCATION	FAC	FAC
BER	Berlin-Wannsee	TYPE CAPACITY	STATUS YR CODE
		LHRR 50 Kwt	Oper 58 RGAH

LATITUDE- 52 DEG 32 MIN N LONGITUDE- 13 DEG 25 MIN E

TECHNOLOGY SOURCE-Designer/Bldr: OWNER/OPERATOR-Land Berlin/Hahn Mei
 Atomics International -tner Institut fuer Kernforschung
 SUPPLY SOURCE- SAFEGUARDS-

PRODUCT/USE-Chemical research including nuclear, radiation, reactor
 chemistry, production of nuclides (See remarks)
 FUEL STORAGE CAPACITY-

PROCESS-Aqueous Homogeneous, L-54 type enriched (20%) uranium, light
 water moderated and cooled, graphite reflected

SCHEDULE-Start of construction: Nov 1957

Reactor critical: July 1958

REMARKS-Rsch on diffusion mechanism with model system (e.g., argon
 diffusion in potassium salts) Study of fission gas release in
 various fuel materials such as UO-2, monocarbide, graphite uranium
 carbide refractories and thoria

REFERENCES-

- 1-Directory of Nuclear Reactors, Vol II, IAEA, p. 173
- 2-Programming and Utilization of Research Reactors, Vol III,
 AP p. 277

ACTIVITY--GERMANY (WEST) RSCH & TEST REACTOR NUCLEAR FACILITY PROFILE
 CATEGORY-RESEARCH AND TEST REACTORS DMK 30 SEP 78

FACILITY NAME	LOCATION	FAC	FAC
FMRB	Braunschweig	TYPE CAPACITY	STATUS YR CODE
		POOL 1 MWt	Oper 67 RGAV

See remarks

LATITUDE- 52 DEG 15 MIN N

LONGITUDE- 10 DEG 30 MIN E

TECHNOLOGY SOURCE-Deutsche Babcock OWNER/OPERATOR-Physikalisch-
 & Wilcox-Dampfkesselwerke Technische Bundesanstalt
 SUPPLY SOURCE- SAFEGUARDS-

PRODUCT/USE-Development, investigation and standardization of
 measurement techniques for reactor radiations (See remarks)

FUEL STORAGE CAPACITY-Storage racks for 45 elements, in reactor pool;
 reserve storage positions in a pool in an experimental hall

PROCESS-Pool-type, highly enriched (90%) uranium, light water
 moderated, cooled and reflected

SCHEDULE-Start of construction: Nov 1963;

Reactor critical: 1966

REMARKS-Purpose: Calibration of reactor instruments; research in
 neutron and solid state physics; production of radioactive samples
 Name: FMRB=Forschungs- und Messreaktor Braunschweig

Neutron flux: Thermal av $7 \times (10 \text{ E } 12) \text{ n}/(\text{cm E } 2) \text{ sec}$; Thermal max
 $1 \times (10 \text{ E } 13) \text{ n}/(\text{cm E } 2) \text{ sec}$; Epithermal av $5 \times (10 \text{ E } 12) \text{ n}/(\text{cm E } 2) \text{ sec}$;
 Fast max $1.5 \times (10 \text{ E } 13) \text{ n}/(\text{cm E } 2) \text{ sec}$

Critical mass: 2.8 Kg U-235; Core loading at rated power: 3.22 Kg
 U-235; Av. specific power in fuel: 310 KW/Kg U-235

REFERENCES-

1-Directory of Nuclear Reactors Vol VI, IAEA, 1966, p. 77

2-Intl Data Collection and Analysis, Vol II, NAC, June 1978

ACTIVITY--GERMANY (WEST) 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
FR-2	Karlsruhe	ARGO	12 MWt	Oper	61	RGAW
See remarks		Reactor Station				
LATITUDE- 49 DEG 00 MIN N		LONGITUDE- 8 DEG 24 MIN E				

TECHNOLOGY SOURCE-Kernreaktor	OWNER/OPERATOR-Kernreaktor Bau- und
Bau- und Betriebs-GmbH	Betriebs-GmbH (See remarks)
SUPPLY SOURCE-	SAFEGUARDS-

PRODUCT/USE-Engineering tests, mainly of fuel elements, isotope
 production, nuclear physics reasearch

FUEL STORAGE CAPACITY-Irradiated fuel stored in concrete, connected
 by water channel with basin outside reac bldg filled with 450 H-20

PROCESS-Argonaut-type, natural uranium, heavy water moderated and
 cooled

SCHEDULE-Start of construction: 1957;

Reactor critical: Dec 1959

REMARKS-Reference 2: Owner-GFK

Fuel loading and unloading: Vertical flask moving on rails from
 reactor to concrete storage inside pressure tight reactor bldg.

FR-2: Karlsruhe Research Reactor

REFERENCES-

1-Directory of Nuclear Reactors, Vol II, 1959, IAEA, p. 307

2-Intl Data Collection and Analysis, Vol II, NAC, June 1978

ACTIVITY--GERMANY (WEST) RSCH & TEST REACTOR NUCLEAR FACILITY PROFILE
 CATEGORY-RESEARCH AND TEST REACTORS DMK 30 SEP 78

		FAC	FAC
FACILITY NAME	LOCATION	TYPE CAPACITY	STATUS YR CODE
Rschr Reactor	Frankfurt/Main	LHRR 50 Kw	58 RGAX
Frankfurt			
LATITUDE-	50 DEG 06 MIN N	LONGITUDE-	8 DEG 41 MIN E

TECHNOLOGY SOURCE-Designer & Bldr: OWNER/OPERATOR-Johann Wolfgang
 Atom Intl Div of N Amer Aviation Goethe University
 SUPPLY SOURCE- SAFEGUARDS-

PRODUCT/USE-Research in neutron physics, education, isotope production

FUEL STORAGE CAPACITY-

PROCESS-Aqueous homogeneous, L-54 type, enriched (20%) uranium, light
 water moderated and cooled, graphite reflected

SCHEDULE-Start of Construction: Jan. 1957; Reactor critical: Jan 1958;
 Full power operation: Dec 1958

REMARKS-Most of construction details and physical data are identical
 or of the same order of magnitude as for the Armour Research Reactor
 (ARR), JRR-1, BER, MILAN

REFERENCES-

- 1-Directory of Nuclear Reactors, Vol II, IAEA, 1959, p. 171
- 2-The Times Atlas of The World, Comprehensive Ed., 1974

ACTIVITY--GERMANY (WEST) RSCH & TEST REACTORS NUCLEAR FACILITY PROFILE
 CATEGORY-RESEARCH AND TEST REACTORS DMK 30 SEP 78

FACILITY NAME	LOCATION	FAC TYPE	CAPACITY	STATUS	YR	FAC CODE
Rsch Reac Geesthacht Reactor FRG-1	Geesthacht/Elbe	POOL	5 MWt	Oper	58	RGAY
LATITUDE- 53 DEG 26 MIN N		LONGITUDE- 10 DEG 23 MIN E				

TECHNOLOGY SOURCE-Babcock & Wilcox OWNER/OPERATOR-See Remarks
 Company

SUPPLY SOURCE-

SAFEGUARDS-

PRODUCT/USE-Research in neutron & solid state phy., engineering tests,
 educational purposes, specialized for maritime propulsion
 FUEL STORAGE CAPACITY-

PROCESS-Pool type, enriched (20%) uranium, light water moderated and
 cooled

SCHEDULE-Start of construction: July 1957

Reactor critical: Oct 1958

REMARKS-Owner & Operator: Gesellschaft fuer Kernenergieverwertung in
 Schiffbau und Schiffahrt m.b.h., Tesperhude. Reactor is very similar
 to the Ford Nucl. Reac. & the Brazilian Reactor IEAR-1

REFERENCES-

1-Directory of Nuclear Reactors, Vol III, IAEA, 1960, p. 27

GW 10

ACTIVITY--GERMANY (WEST) RSCH & TEST REACTOR NUCLEAR FACILITY PROFILE
CATEGORY-RESEARCH AND TEST REACTORS DMK 30 SEP 78

FACILITY NAME	LOCATION	FAC TYPE	CAPACITY	STATUS	YR	CODE
FRG-2	Geesthacht/Elbe	POOL	15 MWt	Oper	68	RGAZ

See remarks

LATITUDE- 53 DEG 26 MIN N

LONGITUDE- 10 DEG 23 MIN E

TECHNOLOGY SOURCE-See remarks

OWNER/OPERATOR-See remarks

SUPPLY SOURCE-

SAFEGUARDS-

PRODUCT/USE-Irradiation of materials, engineering tests, isotope production

FUEL STORAGE CAPACITY-Irradiated fuel stored in pool

PROCESS- Pool-type, highly enriched (90%) uranium, light water moderated and cooled, graphite reflected

SCHEDULE-In operation; start of construction: 1962; 5 MW oper.: Jan. 1965; 15 MW operation: Feb. 1968

REMARKS-FRG-2=Forschungsreaktor Geesthacht-2 Owner, operator, designer and builder: Gesellschaft fuer Kernenergieverwertung in Schiffbau und Schifffahrt mbH

Neutron flux: Thermal av $1.5 \times (10 \text{ E } 14) \text{ n}/(\text{cm E } 2) \text{ sec}$; Thermal max $3.0 \times (10 \text{ E } 14) \text{ n}/(\text{cm E } 2) \text{ sec}$; Fast av $1.5 \times (10 \text{ E } 14) \text{ n}/(\text{cm E } 2) \text{ sec}$; Fast max $3.0 \times (10 \text{ E } 14) \text{ n}/(\text{cm E } 2) \text{ sec}$

Critical mass: 3.5-4.0 Kg U-235, depending on core configuration

Burn-up: 30% of fissionable material

REFERENCES-

1-Directory of Nuclear Reactors, Vol VIII, IAEA, 1970, p. 21

GW 11

ACTIVITY--GERMANY (WEST) RSCH & TEST REACTOR NUCLEAR FACILITY PROFILE
CATEGORY-RESEARCH AND TEST REACTORS DMK 30 SEP 78

FACILITY NAME	LOCATION	FAC TYPE	CAPACITY	STATUS	YR CODE
Dido-Julich	Julich	TK-H	10 MWt	Oper	61 RGBB

LATITUDE- 50 DEG 55 MIN N

LONGITUDE- 6 DEG 21 MIN E

TECHNOLOGY SOURCE-Head Wrightson OWNER/OPERATOR-Land Nordrhein-
Process Ltd & AEG-Ruhrstahl A.G. Westfahlen Reference 2: KFA
SUPPLY SOURCE- SAFEGUARDS-

PRODUCT/USE-Isotope production, materials testing, research in neutron
physics, radiochemistry, engineering tests
FUEL STORAGE CAPACITY-

PROCESS-Tank-type, highly enriched (93 & 80%) uranium, heavy water
moderated and cooled, graphite and heavy water reflected

SCHEDULE-Start of construction: June 1958; reactor critical: 1961

REMARKS-This reactor is identical with the Dido Reactor located at
Harwell
Reference 2: Capacity-23 MWt

REFERENCES-

- 1-Directory of Nuclear Reactors, Vol III, 1960, IAEA, p. 301
- 2-Intl Data Collection and Analysis, Vol II, NAC, June 1978

ACTIVITY--GERMANY (WEST) RSCH & TEST REACTOR NUCLEAR FACILITY PROFILE
 CATEGORY--RESEARCH AND TEST REACTORS DMK 30 SEP 78

FACILITY NAME	LOCATION	FAC	FAC
RsSch Reactor MuenchenGarching		TYPE CAPACITY	STATUS YR CODE
RFM Reactor		POOL 4 MWt	Oper 57 RGEC
LATITUDE- 48 DEG 14 MIN N	LONGITUDE- 11 DEG 40 MIN E		

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

PRODUCT/USE-

FUEL STORAGE CAPACITY-

PROCESS-Pool type, highly enriched (20%) uranium, light water
 moderated, cooled and reflected

SCHEDULE-Start of Construction: 1956; Reactor critical: Oct. 1957;
 Full power operation: July 1959

REMARKS-This 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
 Research Reactor, GK, Italian, Iranian, Israeli, and Portuguese
 reactors.

Normal fresh fuel loading: 4.2 kg U-235. Total fuel inventory:
 Approx 6.0 kg. Expected average burnup before reprocessing: 20%

REFERENCES-

- 1-Directory of Nuclear Reactors, Vol II, IAEA, 1959, p. 23
- 2-Intl Data Collection and Analysis, Vol II, NAC, June 1978
- 3-Nuclear Reactor Plant Data, Vol II, Amer. Soc. of Mech. Engineers,
 1959, p. 225, 1959

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ACTIVITY--GERMANY (WEST) RSCH & TEST REACTOR NUCLEAR FACILITY PROFILE
CATEGORY-RESEARCH AND TEST REACTORS DMK 30 SEP 78

FACILITY NAME	LOCATION	FAC TYPE	CAPACITY	STATUS	FAC YR CODE
Triga-I-Hannover	Hannover		.25 MWt	Oper	72 RGBP

LATITUDE- 52 DEG 23 MIN N

LONGITUDE- 9 DEG 44 MIN E

TECHNOLOGY SOURCE-Constructor:

OWNER/OPERATOR-Owner: Technische

Gen. Atomic

Univ. Hannover

SUPPLY SOURCE-

SAFEGUARDS-

PRODUCT/USE-

FUEL STORAGE CAPACITY-

PROCESS-

SCHEDULE-In operation

REMARKS-

REFERENCES-

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

ACTIVITY--GERMANY(WEST) SPENT FUEL PROCESSING NUCLEAR FACILITY PROFILE
 CATEGORY-FUEL REPROCESSING FACILITIES SRM 28 JUL 78

FACILITY NAME	LOCATION	FAC TYPE	CAPACITY	STATUS	FAC YR CODE
URG/KEWA		UO	1500 te (te/yr)	Plan	86 RGCC

LATITUDE- DEG MIN LONGITUDE- DEG MIN

TECHNOLOGY SOURCE-GWK(Hoechst AG, NUKEM, Gelsenberg AG, Bayer AG) OWNER/OPERATOR-United Reprocessors GmbH (URG)/KEWA
 SUPPLY SOURCE- SAFEGUARDS-NPT Safeguards Agreement
 PRODUCT/USE-

FUEL STORAGE CAPACITY-4000 te capacity storage pond to be in operation 1981

PROCESS-U-oxide low-enriched fuel reprocessing

SCHEDULE-Planning stage-operation in 1986 or later

REMARKS-URG is a partnership of British Nuclear Fuels Limited (BNFL), UK; Cogema, France; and KEWA (KEWA Nuclear Fuel Reprocessing Company), West Germany. A site for the plant has not yet been located and construction plans will most likely be delayed.

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 Radiactive Waste Management Research and Development; Vol II; 1/78
- 3-Proceedings, Intl Symp on Management of Wastes from the LWR Fuel Cycle; Denver, Col; 7/11-16/78

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ACTIVITY--GERMANY(WEST) SPENT FUEL PROCESSING NUCLEAR FACILITY PROFILE
CATEGORY-FUEL REPROCESSING FACILITIES SRM 28 JUL 78

FACILITY NAME	LOCATION	FAC TYPE	CAPACITY	STATUS	FAC YR CODE
JUPITER	Julich	HTGR	2 kg/day	Oper	77 RGCF

LATITUDE- 50 DEG 55 MIN N LONGITUDE- 6 DEG 21 MIN E

TECHNOLOGY SOURCE-KFA/Julich OWNER/OPERATOR-KFA/Julich

SUPPLY SOURCE- SAFEGUARDS-NPT Safeguards
Agreement

PRODUCT/USE-

FUEL STORAGE CAPACITY-

PROCESS-High Temperature Graphite Reactor (HTGR) fuel reprocessing

SCHEDULE-Currently in operation as pilot plant

REMARKS-JUPITER stands for Julich Pilot Plant for Thorium Element
Reprocessing

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 II; 1/78

ACTIVITY--GERMANY (WEST) RSCH & TEST REACTOR NUCLEAR FACILITY PROFILE
CATEGORY-RESEARCH AND TEST REACTORS DMK 30 SEP 78

FACILITY NAME	LOCATION	FAC TYPE	CAPACITY	STATUS	FAC YR CODE
React. Merlin-Julich	Julich, W. Germany	POOL	5 MWt	Oper	61 RGCP

LATITUDE- 50 DEG 55 MIN N

LONGITUDE- 6 DEG 21 MIN E

TECHNOLOGY SOURCE-A.E.I.-John
Thompson Nuc Energy Co
SUPPLY SOURCE-

OWNER/OPERATOR-Owned by: Land
Nordrhein-Westfalen (See remarks)
SAFEGUARDS-

PRODUCT/USE-Research in neutron & solid state physics, chemistry,
biology, medicine
FUEL STORAGE CAPACITY-

PROCESS-Pool-type, fully enriched (80%) uranium, light water moderated
and cooled, water or BeO reflected

SCHEDULE-Start of construction: May 1958
Reactor critical: Jan 1961

REMARKS-Operated by: Gesellschaft zur Forderung der kernphysikalischen
Forschung. Reactor is identical to the Merlin Reactor located at
Aldermaston

REFERENCES-

1-Directory of Nuclear Reactors, Vol III, IAEA, 1960, p. 93

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ACTIVITY--GERMANY (WEST) RSCH & TEST REACTOR NUCLEAR FACILITY PROFILE
CATEGORY-RESEARCH AND TEST REACTORS DMK 30 SEP 78

FACILITY NAME	LOCATION	FAC	TYPE	CAPACITY	STATUS	YR	CODE
PR-10	Grosswelzheim						RGDD

LATITUDE-	DEG	MIN	LONGITUDE-	DEG	MIN
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TECHNOLOGY SOURCE-Constructor: AEG OWNER/OPERATOR-Owner: Max Planck
Inst. fuer Kernenergie

SUPPLY SOURCE- SAFEGUARDS-

PRODUCT/USE-

FUEL STORAGE CAPACITY-

PROCESS-

SCHEDULE-

REMARKS-

REFERENCES-

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

ACTIVITY--GERMANY (WEST) RESOURCE RECOVERY NUCLEAR FACILITY PROFILE
 CATEGORY-CONVERSION PLANTS SRM 30 AUG 78

FACILITY NAME	LOCATION	FAC	FAC
RBU-1	Hanau	UO2	1000 te Oper 64 RGDF
		(te/yr)	
LATITUDE- 50 DEG 08 MIN N		LONGITUDE- 8 DEG 56 MIN E	

TECHNOLOGY SOURCE- OWNER/OPERATOR-RBU (Reaktor-
 Brennelement Union GmbH)

SUPPLY SOURCE- SAFEGUARDS-NPT Safeguards
 Agreement

PRODUCT/USE-UO2 powder/pelletized and sent to RBU-2 fabrication plant
 at Grosswelzheim

FUEL STORAGE CAPACITY-

PROCESS-Conversion to UO2 using AUC (ammonium uranyl carbonate)
 process

SCHEDULE-Currently in operation since 1964

REMARKS-RBU is owned by: KWU (50%), Nukem (30%), GE (20%)

REFERENCES-

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

ACTIVITY--GERMANY (WEST) FUEL FABRICATION NUCLEAR FACILITY PROFILE
CATEGORY-FUEL FABRICATION PLANTS SRM 07 AUG 78

FACILITY NAME	LOCATION	FAC TYPE	CAPACITY	STATUS	YR CODE
RBU-II	Grosswelzheim (Welzheim)	UO	150 te (te/y)	Oper	66 RGDG
LATITUDE- 48 DEG 53 MIN N		LONGITUDE- 9 DEG 38 MIN E			

TECHNOLOGY SOURCE-US OWNER/OPERATOR-Kraftwerk Union AG
(50%), Nukem GmbH (30%), GE (20%)
SUPPLY SOURCE-Pellets from RBU-I SAFEGUARDS-NPT Safeguards
Conversion Facility Agreement
PRODUCT/USE-U-oxide fuel assemblies/Boiling Water Reactors

FUEL STORAGE CAPACITY-

PROCESS-Final assembly of fuel elements

SCHEDULE-Currently in operation since 1966

REMARKS-PRODUCTION HISTORY- RBU (combined operations) has produced over 1200 te of completed fuel assemblies since 1967
MARKET STRATEGY- Controls majority of domestic market, and projected international (non-US) market share is estimated to be over 30% through the 1980's.
CAPACITY LIMITATIONS AND NEW FACILITY PLANS- No expansion plans at this time but as demand requires increased capacity, the facilities can expand with a one year lead time.

REFERENCES-

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

ACTIVITY--GERMANY (WEST) FUEL FABRICATION
CATEGORY-FUEL FABRICATION PLANTS

NUCLEAR FACILITY PROFILE
SRM 07 AUG 78

FACILITY NAME	LOCATION	FAC TYPE	CAPACITY	STATUS	YR	FAC CODE
RBU-I	Hanau	UO	600 te (te/yr)	Oper	64	RGDH

LATITUDE- 50 DEG 08 MIN N

LONGITUDE- 8 DEG 56 MIN E

TECHNOLOGY SOURCE-US

OWNER/OPERATOR-Kraftwerk Union AG
(50%), Nukem GmbH (30%), GE (20%)

SUPPLY SOURCE-RBU-I Conversion
Facility, Hanau

SAFEGUARDS-NPT Safeguards
Agreement

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

FUEL STORAGE CAPACITY-

PROCESS-Pellet production and final assembly

SCHEDULE-Currently in operation since 1964

REMARKS-PRODUCTION HISTORY- RBU (combined operations) has produced over 1200 te of completed fuel assemblies since 1967.

MARKET STRATEGY- Controls majority of domestic market and projected international (non-US) market share is estimated to be over 30% through the 1980's

CAPACITY LIMITATIONS AND NEW FACILITY PLANS- No expansion plans at this time but as demand requires increased capacity, the facilities can expand with a one year lead time.

REFERENCES-

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

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ACTIVITY--GERMANY (WEST) 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
SAR-1	Garching	ARGO		Oper	59	RGDQ

LATITUDE- 48 DEG 14 MIN N LONGITUDE- 11 DEG 40 MIN E

TECHNOLOGY SOURCE-Constructor: OWNER/OPERATOR-Owner: Siemens
Siemens-Schuckirtwerke

SUPPLY SOURCE- SAFEGUARDS-

PRODUCT/USE-

FUEL STORAGE CAPACITY-

PROCESS-

SCHEDULE-In operation

REMARKS-

REFERENCES-

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

ACTIVITY--GERMANY (WEST) RSCH & TEST REACTOR NUCLEAR FACILITY PROFILE
 CATEGORY-RESEARCH AND TEST REACTORS DMK 30 SEP 78

FACILITY NAME	LOCATION	FAC	FAC
SNEAK	Leopoldshafen	TYPE CAPACITY STATUS	YR CODE
See remarks		FNRR 1KWt max Oper	66 RGDR
LATITUDE-	DEG MIN	LONGITUDE-	DEG MIN
TECHNOLOGY SOURCE-	See remarks	OWNER/OPERATOR-	Gesellschaft fuer Kernforschung mbH
SUPPLY SOURCE-		SAFEGUARDS-	

PRODUCT/USE-Investigation of the neutron physics of large fast breeder reactors

FUEL STORAGE CAPACITY-Irrad. fuel: 200 core elements and 60 blanket elements may be stored behind concrete shields in air

PROCESS-Zero energy, fast, enriched (20%, 35% and 93%) uranium, and/or plutonium (PuO-2), depleted uranium reflected, air cooled

SCHEDULE-In operation; start of construction: Late 1963; reactor critical: Dec 1966

REMARKS-SNEAK=Schnelle Null-Energie Anordnung Karlsruhe
 Basic design by Gesellschaft fuer Kernforschung mbH
 Architect, engineer & main contractor: Siemens A.G.
 Neutron flux: Fast av (10 E 6 to 10 E 10)n/(cm E 2)sec
 Av power density in core: Max 3W/litre
 Critical mass: Variable, depending on assembly
 Fuel loading and unloading: The core and blanket elements are transported by the lower loading machine and hoisted into the reactor by the upper loading machine

REFERENCES-

1-Directory of Nuclear Reactors, Vol VIII, IAEA, 1970, p. 191

GW 23

ACTIVITY--GERMANY (WEST) 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
Stark	Karlsruhe	ARGO		Oper	64	RGDU

LATITUDE- 49 DEG 00 MIN N LONGITUDE- 8 DEG 24 MIN E

TECHNOLOGY SOURCE-Constructor: OWNER/OPERATOR-Owner: GFK
Siemens

SUPPLY SOURCE- SAFEGUARDS-

PRODUCT/USE-

FUEL STORAGE CAPACITY-

PROCESS-

SCHEDULE-In operation

REMARKS-

REFERENCES-

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

ACTIVITY--GERMANY (WEST) RSCH & TEST REACTOR NUCLEAR FACILITY PROFILE
 CATEGORY-RESEARCH AND TEST REACTORS DMK 30 SEP 78

FACILITY NAME	LOCATION	FAC	FAC
SUR-Aachen	Aachen	SHRR .1 Wt	Oper 66 RGDW
See remarks	Tech. Hochschule		
LATITUDE- 50 DEG 46 MIN N	LONGITUDE- 6 DEG 06 MIN e		

TECHNOLOGY SOURCE-Siemens-Schuck- OWNER/OPERATOR-See remarks
 ertwerke A. G. (design & bldr)

SUPPLY SOURCE- SAFEGUARDS-

PRODUCT/USE-Education, reactor physics

FUEL STORAGE CAPACITY-

PROCESS-Solid homogeneous, enriched (20%) uranium, polyethylene
 moderated, graphite reflected, uncooled
 SCHEDULE-

REMARKS-SUR-Aachen=Siemens Unterrichtsreaktor-Aachen
 Owner and operator: Technische Hochschule Aachen, Lehrauftrag
 Reaktortechnik am Institut fuer elektrische Anlagen und
 Energiewirtschaft.
 This reactor is identical to the SUR-Munich Reactor.

REFERENCES-

- 1-Directory of Nuclear Reactors, Vol VI, IAEA, 1966, p. 147
- 2-Intl. Data Collection and Analysis, Vol II, NAC, June 1978

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ACTIVITY--GERMANY (WEST) RSCH & TEST REACTOR NUCLEAR FACILITY PROFILE
CATEGORY-RESEARCH AND TEST REACTORS DMK 30 SEP 78

FACILITY NAME	LOCATION	FAC	TYPE	CAPACITY	STATUS	YR	CODE
SUR-Berlin	Berlin	SHRR	.1 Wt	Oper	63	RGDX	

See remarks

LATITUDE- 52 DEG 32 MIN N

LONGITUDE- 13 DEG 25 MIN E

TECHNOLOGY SOURCE-Design & Bldr:
Siemens-Schuckertwerke A.G.

OWNER/OPERATOR-Technische
Universitaet Berlin (See remarks)

SUPPLY SOURCE-

SAFEGUARDS-

PRODUCT/USE-Educational purposes

FUEL STORAGE CAPACITY-

PROCESS-Solid homogeneous, enriched (20%) uranium, polyethylene
moderated, graphite reflected, uncooled

SCHEDULE-Reactor critical: July 1963

REMARKS-Reactor is identical with the Sur-Munich Reactor
Reference 2: Owner- HMI

REFERENCES-

- 1-Directory of Nuclear Reactors, Vol V, IAEA, 1964, p. 189
- 2-Intl Data Collection and Analysis, Vol II, NAC; June 1978

ACTIVITY--GERMANY (WEST) RSCH & TEST REACTOR NUCLEAR FACILITY PROFILE
 CATEGORY-RESEARCH AND TEST REACTORS DMK 30 SEP 78

FACILITY NAME	LOCATION	FAC	FAC
SUR-Bremen	Bremen	TYPE CAPACITY STATUS YR CODE	
See remarks		SHRR .1 Wt Oper 67	RGDY

LATITUDE- 53 DEG 05 MIN N LONGITUDE- 8 DEG 48 MIN E

TECHNOLOGY SOURCE-Design & bldr: OWNER/OPERATOR-Ingenieurschule der
 Siemens Aktiengesellschaft freien Hansestadt Bremen
 SUPPLY SOURCE- SAFEGUARDS-

PRODUCT/USE-Educational purposes

FUEL STORAGE CAPACITY-

PROCESS-Solid homogeneous, enriched (20%) uranium, polyethylene
 moderated, graphite reflected, uncooled

SCHEDULE-In operation; reactor critical: Oct. 1967

REMARKS-SUR-Bremen=Siemens Unterrichtsreaktor Bremen
 The reactor is identical to the SUR-Hamburg reactor

REFERENCES-

1-Directory of Nuclear Reactors, Vol VIII, IAEA, 1970, p. 163

ACTIVITY--GERMANY (WEST) RSCH & TEST REACTOR NUCLEAR FACILITY PROFILE
 CATEGORY-RESEARCH AND TEST REACTORS DMK 30 SEP 78

FACILITY NAME	LOCATION	FAC	FAC
SUR-Darmstadt	Darmstadt	TYPE CAPACITY	STATUS YR CODE
See remarks		SHRR .1 Wt	Oper 63 RGDZ
LATITUDE- 49 DEG 52 MIN N		LONGITUDE- 8 DEG 39 MIN E	

TECHNOLOGY SOURCE-Siemens-	OWNER/OPERATOR-Inst fuer Reaktorte-
Schuckertwerke A.G.	chnik, Tech Hochschule, Darmstadt
SUPPLY SOURCE-	SAFEGUARDS-

PRODUCT/USE-Educational purposes

FUEL STORAGE CAPACITY-

PROCESS-Solid homogeneous, highly enriched (20%) uranium, polyethylene moderated, graphite reflected, uncooled
 SCHEDULE-Reactor critical: Sept 1963

REMARKS-Reactor is identical with the Sur-Munich Reactor
 SUR-Darmstadt=Siemens Unterrichtsreaktor Darmstadt

REFERENCES-

1-Directory of Nuclear Reactors, Vol V, IAEA, p. 191

ACTIVITY--GERMANY (WEST) RSCH & TEST REACTOR NUCLEAR FACILITY PROFILE
 CATEGORY-RESEARCH AND TEST REACTORS DMK 30 SEP 78

FACILITY NAME	LOCATION	FAC TYPE	CAPACITY	STATUS	FAC YR CODE
SUR-Hamburg	Hamburg	SHRR	.1 Wt	Oper	65 RGEA

See remarks

LATITUDE- 53 DEG 33 MIN N

LONGITUDE- 10 DEG 00 MIN E

TECHNOLOGY SOURCE-Design & bldr:
 Siemens Aktiengesellschaft

OWNER/OPERATOR-Ingenieurschule der
 freien Hansestadt Hamburg

SUPPLY SOURCE-

SAFEGUARDS-

PRODUCT/USE-Educational purposes

FUEL STORAGE CAPACITY-

PROCESS-Solid homogeneous, enriched (20%) uranium, polyethylene
 moderated, graphite reflected, uncooled

SCHEDULE-In operation; reactor critical: Jan. 1965

REMARKS-SUR-Hamburg=Siemens Unterrichtsreaktor Hamburg

Reference 2: Owner-GKSS

Neutron flux: Thermal max $5 \times (10 \text{ E } 6) \text{ n}/(\text{cm E } 2) \text{ sec}$

Critical mass: Approx 700 g U-235

Core loading at rated power: Approx 700 g U-235

Fuel loading and unloading: Manual

REFERENCES-

- 1-Directory of Nuclear Reactors, Vol VIII, IAEA, 1960, p. 127
- 2-Intl Data Collection and Analysis, Vol II, NAC, June 1978

ACTIVITY--GERMANY (WEST) RSCH & TEST REACTOR NUCLEAR FACILITY PROFILE
 CATEGORY-RESEARCH AND TEST REACTORS DMK 30 SEP 78

FACILITY NAME	LOCATION	FAC TYPE	CAPACITY	STATUS	YR	CODE
SUR-Karlsruhe	Karlsruhe	SHRR	.1 Wt	Oper	66	RGB

See remarks

LATITUDE- 49 DEG 00 MIN N

LONGITUDE- 8 DEG 24 MIN E

TECHNOLOGY SOURCE-Design & bldr:
 Siemens Aktiengesellschaft

OWNER/OPERATOR-Owner: Gesellschaft
 fuer Kernforschung (See remarks)

SUPPLY SOURCE-

SAFEGUARDS-

PRODUCT/USE-Educational purposes

FUEL STORAGE CAPACITY-

PROCESS-Solid homogeneous, enriched (20%) uranium, polyethylene
 moderated, graphite reflected, uncooled

SCHEDULE-In operation; reactor critical: March 1966

REMARKS-Operated by Schule fuer Kerntechnik

The reactor is identical to the SUR-Hamburg Reactor

SUR-Karlsruhe-Siemens Unterrichtsreaktor Karlsruhe

REFERENCES-

1-Directory of Nuclear Reactors, Vol VIII, IAEA, 1970, p. 143

ACTIVITY--GERMANY (WEST) RSCH & TEST REACTOR NUCLEAR FACILITY PROFILE
 CATEGORY-RESEARCH AND TEST REACTORS DMK 30 SEP 78

FACILITY NAME	LOCATION	FAC TYPE	CAPACITY	STATUS	FAC YR CODE
SUR-Kiel	Kiel	SHRR	.1 Wt	Oper	66 RGEC

See remarks

LATITUDE- 54 DEG 20 MIN N

LONGITUDE- 10 DEG 08 MIN E

TECHNOLOGY SOURCE-Design & bldr: OWNER/OPERATOR-Staatliche
 Siemens Aktiengesellschaft Ingenieurschule Kiel

SUPPLY SOURCE-

SAFEGUARDS-

PRODUCT/USE-Educational purposes

FUEL STORAGE CAPACITY-

PROCESS-Solid homogeneous, enriched (20%) uranium, polyethylene
 moderated, graphite reflected, uncooled

SCHEDULE-In operation; reactor critical: March 1966

REMARKS-SUR-Kiel = Siemens Unterrichtsreaktor Kiel
 The reactor is identical to the SUR-Hamburg Reactor

REFERENCES-

1-Directory of Nuclear Reactors, Vol VIII, IAEA, 1970, p. 145

ACTIVITY--GERMANY (WEST) RSCH & TEST REACTOR NUCLEAR FACILITY PROFILE
 CATEGORY-RESEARCH AND TEST REACTORS DMK 30 SEP 78

FACILITY NAME	LOCATION	FAC TYPE	CAPACITY	STATUS	FAC YR CODE
SUR-Stuttgart	Stuttgart	SHRR	.1 Wt	Oper	64 RGEF

See remarks

LATITUDE- 48 DEG 47 MIN N

LONGITUDE- 9 DEG 12 MIN E

TECHNOLOGY SOURCE-Siemens-
 Schuckertwerke A.G.

OWNER/OPERATOR-

SUPPLY SOURCE-

SAFEGUARDS-

PRODUCT/USE-Educational purposes

FUEL STORAGE CAPACITY-

PROCESS-Solid homogeneous, highly enriched (20%) uranium, polyethylene
 moderated, graphite reflected, uncooled

SCHEDULE-Reactor critical: 1964

REMARKS-Reactor is identical with the Sur-Munich Reactor
 SUR-Stuttgart=Siemens Unterrichtsreaktor Stuttgart

REFERENCES-

1-Directory of Nuclear Reactors, Vol V, IAEA, p. 193

ACTIVITY--GERMANY (WEST) RSCH & TEST REACTOR NUCLEAR FACILITY PROFILE
CATEGORY-RESEARCH AND TEST REACTORS DMK 30 SEP 78

FACILITY NAME	LOCATION	FAC TYPE	CAPACITY	STATUS	YR CODE
SUR-Ulm	Ulm	SHRR	.1 Wt	Oper	65 RGE

See remarks

LATITUDE- 48 DEG 24 MIN N

LONGITUDE- 10 DEG 00 MIN E

TECHNOLOGY SOURCE-Design & bldr:
Siemens AktiengesellschaftOWNER/OPERATOR-Staatliche
Ingenieurschule Ulm (See remarks)

SUPPLY SOURCE-

SAFEGUARDS-

PRODUCT/USE-Educational purposes

FUEL STORAGE CAPACITY-

PROCESS-Solid homogeneous, enriched (20%) uranium, polyethylene
moderated, graphite reflected, uncooled

SCHEDULE-In operation; reactor critical: Dec 1965

REMARKS-SUR-Ulm=Siemens Unterrichtsreaktor Ulm

This reactor is identical to the SUR-Hamburg Reactor

Reference 2: Owner-Universitat Ulm

REFERENCES-

- 1-Directory of Nuclear Reactors, Vol VIII, IAEA, 1970, p. 139
- 2-Intl Data Collection and Analysis, Vol II, NAC, June 1978

ACTIVITY--GERMANY (WEST) RSCH & TEST REACTORS NUCLEAR FACILITY PROFILE
 CATEGORY-RESEARCH AND TEST REACTORS DMK 30 SEP 78

FACILITY NAME	LOCATION	FAC	FAC
Triga-I-Heidelberg	Heidelberg	TYPE CAPACITY STATUS	YR CODE
See remarks		SHRR .25 Mwt Oper	66 RGEM
LATITUDE- 49 DEG 25 MIN N		LONGITUDE-	8 DEG 42 MIN E

TECHNOLOGY SOURCE-Design: Gulf OWNER/OPERATOR-Owner: Deutsches
 General Atomic Co (See remarks) Krebsforschungszentrum
 SUPPLY SOURCE- SAFEGUARDS-

PRODUCT/USE-Research in nuclear medicine and nuclear biology

FUEL STORAGE CAPACITY-Irradiated fuel: 6 racks, each having space for
 11 fuel ele., placed in rack space within concrete & water shielded
 PROCESS-Solid homogeneous, enriched (20%) uranium, zirconium hydride
 and light water moderated, light water cooled, graphite reflected
 SCHEDULE-In operation; start of construction: Dec. 1965;
 reactor critical: Aug. 1966

REMARKS-Reactor name: Triga-Mark-I-DKFZ Heidelberg
 Built by: Guthoffnungschutte Sterkrade AG. Operated by Institut fuer
 Nuklearmedizin
 Critical mass: 1.95 Kg U-235 in 54 fuel elements. Core loading at
 rated power: 2.1 Kg U-235 in 58 fuel elements
 The following has been accomplished: Production of short-lived
 isotopes, activation analysis of trace elements in biological tests,
 activation analysis of stable traces of material, activation auto-
 radiography, research in dosimetry, research in radiobiology.

REFERENCES-

- 1-Directory of Nuclear Reactors, Vol VIII, IAEA, 1970, p. 147
- 2-Intl Data Collection and Analysis, Vol II, NAC, June 1978

ACTIVITY--GERMANY (WEST) 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
German Triga Mark II Reactor	Mainz, West Germany	SHRR	10 KWt	Oper	65	RGEN
LATITUDE- 50 DEG 00 MIN N		LONGITUDE- 8 DEG 16 MIN E				

TECHNOLOGY SOURCE-Atomic Div of Dynamics Corp. OWNER/OPERATOR-Johannes Gutenberg
Universitaet
SUPPLY SOURCE- SAFEGUARDS-

PRODUCT/USE-Neutron phy., solid state phy., chem., isotope production,
educational purposes
FUEL STORAGE CAPACITY-

PROCESS-Solid homogeneous, highly enriched (20%) uranium, zirconium
hydride and light water moderated, light water cooled, graphite refl.
SCHEDULE-

REMARKS-

REFERENCES-

1-Directory of Nuclear Reactors, Vol V, IAEA, p. 175, 1964

ACTIVITY--GERMANY(WEST) SPENT FUEL PROCESSING NUCLEAR FACILITY PROFILE
CATEGORY-FUEL REPROCESSING FACILITIES SRM 28 JUL 78

FACILITY NAME	LOCATION	FAC TYPE	CAPACITY	STATUS	YR CODE
WAK	Karlsruhe	UOFB	40 te/yr	Oper	71 RGEW

LATITUDE- 49 DEG 00 MIN N LONGITUDE- 8 DEG 24 MIN E

TECHNOLOGY SOURCE-GWK(Hoechst AG, OWNER/OPERATOR-GWK
NUKEM, Gelsenberg AG, Bayer AG)

SUPPLY SOURCE- SAFEGUARDS-NPT Safeguards Agreement

PRODUCT/USE-Pu from ion exchange process

FUEL STORAGE CAPACITY-Water basin (unknown capacity) storage for
4-5 years before reprocessing

PROCESS-U-oxide mixed oxide (UO₂-PuO₂) spent fuel processing using
Purex process

SCHEDULE-Currently in operation as pilot plant-since 1971

REMARKS-Concentrated high-level liquid waste from WAK is stored in two
75 cubic meter stainless steel, cooled tanks. Also available are two
150 cubic meter tanks for low-level wastes and 3 tanks for medium
level waste. Two 65 cubic meter tanks are under construction-one for
emergency use.

REFERENCES-

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

ACTIVITY--GERMANY (WEST) FUEL FABRICATION NUCLEAR FACILITY PROFILE
 CATEGORY-FUEL FABRICATION PLANTS SRM 08 AUG 78

FACILITY NAME	LOCATION	FAC TYPE	CAPACITY	STATUS	YR	CODE
	Lingen	UO		Constr	77	RGFB

LATITUDE- 52 DEG 32 MIN N LONGITUDE- 7 DEG 19 MIN E

TECHNOLOGY SOURCE- OWNER/OPERATOR-Exxon Nuclear
 Company

SUPPLY SOURCE- SAFEGUARDS-NPT Safeguards
 Agreement

PRODUCT/USE-U-oxide fuel assemblies/power reactors

FUEL STORAGE CAPACITY-

PROCESS-

SCHEDULE-Under construction for operation in late 1977 or early 1978

REMARKS-Initial contracts for fuel elements are for 5 German and one
 Swedish power reactors. UO2 conversion and pelletizing units are
 planned to follow by 1979-80.

REFERENCES-

- 1-Nucl Eng Intl; Vol XXII, No 250; 11/76
- 2-IAEA Bulletin; Vol XIX, No 5; 10/77
- 3-Nucleonics Week; Vol XVII, No 244; 6/10/76

ACTIVITY--GERMANY (WEST) ENRICHMENT PLANTS NUCLEAR FACILITY PROFILE
 CATEGORY-ENRICHMENT PLANTS SRM 20 JUL 78

FACILITY NAME	LOCATION	FAC TYPE	CAPACITY	STATUS	YR	FAC CODE
	Julich	CENT		Oper		RGFC

LATITUDE- 50 DEG 55 MIN N LONGITUDE- 6 DEG 21 MIN E

TECHNOLOGY SOURCE-Germany (West) OWNER/OPERATOR-

SUPPLY SOURCE- SAFEGUARDS-

PRODUCT/USE-No significant enriched uranium output

FUEL STORAGE CAPACITY-

PROCESS-Gaseous Centrifuge

SCHEDULE-Pilot facility used to test centrifuge design

REMARKS-Data scarce on this facility. Might be operated now by Uranit, German corporation consisting of Hoechst AG, Gelsenberg Ag, and NUKEM GmbH, presumably for design and testing of advanced centrifuge models

REFERENCES-

- 1-Nucl Eng Intl; Vol XXI, No 250; 11/76
- 2-Wilcox, Wm. J., Jr; Uranium Enrichment-A Review of the Present World Status: Capacity, Technology, and Plans; 5/6/77

ACTIVITY--GERMANY (WEST) FUEL FABRICATION NUCLEAR FACILITY PROFILE
CATEGORY-FUEL FABRICATION PLANTS SRM 04 AUG 78

FACILITY NAME	LOCATION	FAC TYPE	CAPACITY	STATUS	YR	FAC CODE
Alkem GmbH	Hanau	UPuO	50 te/yr	Oper	66	RGFE

LATITUDE- 50 DEG 08 MIN N LONGITUDE- 8 DEG 56 MIN E

TECHNOLOGY SOURCE- OWNER/OPERATOR-KWU (Kraftwerk Union
AG) (60%), Nukem GmbH (40%)

SUPPLY SOURCE- SAFEGUARDS-NPT Safeguards
Agreement

PRODUCT/USE-U-Pu mixed oxide fuel/domestic use (SNR-300)

FUEL STORAGE CAPACITY-

PROCESS-Computer controlled process

SCHEDULE-Currently in operation since 1966

REMARKS-Two fabrication lines; one of capacity 10 te/yr for fast
reactor fuels, and one of capacity 40 te/yr for light water
reactor fuels.

MARKET STRATEGY- Controls small domestic market and has exported
small amount of fuel to Italy.

CAPACITY LIMITATIONS- Limited by small conversion capability.

REFERENCES-

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

ACTIVITY--GERMANY (WEST) ENRICHMENT PLANTS NUCLEAR FACILITY PROFILE
 CATEGORY-ENRICHMENT PLANTS SRM 21 JUL 78

FACILITY NAME	LOCATION	FAC TYPE	CAPACITY	STATUS	FAC YR CODE
Karlsruhe Nuclear Center	Karlsruhe	JET	2 KSWU	Oper	67 RGFH

LATITUDE- 49 DEG 00 MIN N LONGITUDE- 8 DEG 24 MIN E

TECHNOLOGY SOURCE-West Germany-
 E. W. Becker, STEAG AG

OWNER/OPERATOR-STEAG AG

SUPPLY SOURCE-

SAFEGUARDS-NPT Safeguards Agreement

PRODUCT/USE-Enriched uranium (percent U235 enrichment unknown)

FUEL STORAGE CAPACITY-

PROCESS-Becker Jet Nozzle

SCHEDULE-Currently in operation as pilot plant

REMARKS-Becker Jet Nozzle separation process was developed by E. W. Becker of Karlsruhe Nuclear Center in the early 1960's. This process has been demonstrated at Karlsruhe by STEAG AG as a 10 stage pilot plant of unknown capacity, a 0.6 KSWU/yr single stage module, and a 2 KSWU/yr single stage module

REFERENCES-

- 1-Benedict, M.; Enrichment: A Critical Status Report; American Nuclear Society Transactions; Vol XXV; 1977
- 2-Nonproliferation Issues; Hearings before the Subcommittee on Arms Control, Committee on Foreign Relations; U.S. Senate, 94th Congress; Published 1977
- 3-IAEA Bulletin; Vol XIX, No 5; 10/77

ACTIVITY--GERMANY (WEST) RESOURCE RECOVERY NUCLEAR FACILITY PROFILE
 CATEGORY-MINES (URANIUM & THORIUM) PSM 14 AUG 78

FACILITY NAME	LOCATION	FAC TYPE	CAPACITY	STATUS	YR CODE
	Menzenschwand	URAN		Explor	RGFJ
	Baden-Wurtemberg				
LATITUDE- 48 DEG	MIN N	LONGITUDE- 08 DEG		MIN E	

TECHNOLOGY SOURCE-

OWNER/OPERATOR-

SUPPLY SOURCE-

SAFEGUARDS-

PRODUCT/USE-Uranium

FUEL STORAGE CAPACITY-

PROCESS-

SCHEDULE-

REMARKS-Approximately 2000 te of reserves

REFERENCES-

1-Mining Magazine, January 1978, p. 57

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ACTIVITY--GERMANY (WEST) FUEL FABRICATION NUCLEAR FACILITY PROFILE
CATEGORY-FUEL FABRICATION PLANTS SRM 07 AUG 78

FACILITY NAME	LOCATION	FAC TYPE	CAPACITY	STATUS	YR	FAC CODE
Hobeg	Hanau	UOUC		Oper	72	RGFK

LATITUDE- 50 DEG 08 MIN N LONGITUDE- 8 DEG 56 MIN E

TECHNOLOGY SOURCE- OWNER/OPERATOR-Nukem GmbH

SUPPLY SOURCE- SAFEGUARDS-NPT Safeguards
Agreement

PRODUCT/USE-U-oxide and U-carbide spherical and prismatic fuel/HTGR

FUEL STORAGE CAPACITY-

PROCESS-

SCHEDULE-Currently in operation since 1972

REMARKS-

REFERENCES-

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

ACTIVITY--GERMANY (WEST) RSCH & TEST REACTOR NUCLEAR FACILITY PROFILE
 CATEGORY-RESEARCH AND TEST REACTORS DMK 30 SEP 78

FACILITY NAME	LOCATION	FAC TYPE	CAPACITY	STATUS	FAC YR CODE
HDR	Grosswelzheim/Main		100 MWt		68 RGfQ

See remarks

LATITUDE-	DEG	MIN	LONGITUDE-	DEG	MIN
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TECHNOLOGY SOURCE-See remarks OWNER/OPERATOR-See remarks

SUPPLY SOURCE- SAFEGUARDS-

PRODUCT/USE-

FUEL STORAGE CAPACITY-

PROCESS-Enriched (3%) uranium, light water moderated and cooled,
 boiling water with integral superheat

SCHEDULE-Start of construction: June 1965; reactor critical:

April 1968; full power operation: Late 1968

REMARKS-HDR=Heissdampfreaktoranlage Grosswelzheim. The reactor is
 owned by Gesellschaft fuer Kernforschung Karlsruhe. It is operated
 by Heissdampfreaktor Betriebsgesellschaft mbH. Capacity: Gross heat-
 100 MWt; gross elect.: 25 MWe

REFERENCES-

1-Directory of Nuclear Reactors, Vol VII, IAEA, 1968, p. 157

ACTIVITY--GERMANY (WEST) ENRICHMENT PLANTS NUCLEAR FACILITY PROFILE
CATEGORY-ENRICHMENT PLANTS SRM 20 JUL 78

FACILITY NAME	LOCATION	FAC TYPE	CAPACITY	STATUS	YR	FAC CODE
	Gronau	CENT	1000 K	Plan	85	RGFR
			(KSWU)			

LATITUDE- 52 DEG 13 MIN N LONGITUDE- 7 DEG 02 MIN E

TECHNOLOGY SOURCE-Centec GmbH OWNER/OPERATOR-Urenco Limited/
Uranit

SUPPLY SOURCE- SAFEGUARDS-will be under NPT
Safeguards Agreement

PRODUCT/USE-U235 enriched uranium/Reactor fuel fabrication

FUEL STORAGE CAPACITY-

PROCESS-Gaseous centrifuge

SCHEDULE-Planned for operation in 1985-possible expansion to 5000
KSWU/yr at later date

REMARKS-Urenco Limited-British Nuclear Fuels Limited (BNFL), Ultra
Centrifuge Nederland NV(UCN), Uranit(Hoechst AG, Gelsenberg AG,
NUKEM GmbH) equal shareholders. Centec GmbH-BNFL, UCN, GnV(MAN AG,
Interatom GmbH) are equal shareholders.

REFERENCES-

- 1-Nucleonics Week; Vol XIX, No 11; 3/16/78
- 2-General Acctg Office; Overview of Nuclear Export Policies of
Major Foreign Supplier Nations; 10/21/77
- 3-IAEA Bulletin; Vol XIX, No 5; 10/77
- 4-Nucl Eng Intl; Vol XXII, No 265; 12/77

ACTIVITY--GERMANY (WEST) ENRICHMENT PLANTS NUCLEAR FACILITY PROFILE
 CATEGORY-ENRICHMENT PLANTS SRM 24 JUL 78

FACILITY NAME	LOCATION	FAC TYPE	CAPACITY	STATUS	FAC YR CODE
		LASR		R&D	71 RGFS

LATITUDE-	DEG	MIN	LONGITUDE-	DEG	MIN
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TECHNOLOGY SOURCE-	OWNER/OPERATOR-
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SUPPLY SOURCE-	SAFEGUARDS-NPT Safeguards Agreement
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PRODUCT/USE-

FUEL STORAGE CAPACITY-

PROCESS-Laser isotope separation

SCHEDULE-Small-scale research and development in progress

REMARKS-

REFERENCES-

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

ACTIVITY--GERMANY (WEST) RSCH & TEST REACTOR NUCLEAR FACILITY PROFILE
 CATEGORY-RESEARCH AND TEST REACTORS DMK 05 SEP 78

FACILITY NAME	LOCATION	FAC	FAC
CFG	Karlsruhe	TYPE CAPACITY STATUS	YR CODE
See remarks	GKSS	SHRR Max 100W Oper	64 RGFT
LATITUDE- 49 DEG 00 MIN N		LONGITUDE- 8 DEG 24 MIN E	

TECHNOLOGY SOURCE-Design & bldr: OWNER/OPERATOR-GKSS and Interatom
 GKSS and Interatom
 SUPPLY SOURCE- SAFEGUARDS-

PRODUCT/USE-Critical experiments with solid moderators, possibly to
 test liquid moderated assemblies; first investigated reactor was KNK
 FUEL STORAGE CAPACITY-

PROCESS-Solid homogeneous, enriched (5%) uranium, zirconium hydride
 moderated, steel reflected, uncooled

SCHEDULE-Start of construction: July 1962;
 Reactor critical: May 1964

REMARKS-Reactor is a tool for the investigation of the neutronic
 parameters of the KNK reactor. CFG=Critical Facility Geesthacht
 Critical mass: 400 to 700 Kg UO-2, 5% enriched, for KNK core
 Neutron flux: $2 \times (10^8) \text{ n}/(\text{cm}^2 \text{ sec})$
 Fuel loading and unloading: From middle of separated core-halves
 mounted on fixed and mobile tables

REFERENCES-

1-Directory of Nuclear Reactors, Vol VI, IAEA, p. 145

ACTIVITY--GERMANY(WEST) SPENT FUEL PROCESSING NUCLEAR FACILITY PROFILE
 CATEGORY-FUEL REPROCESSING FACILITIES SRM 27 JUL 78

FACILITY NAME	LOCATION	FAC TYPE	CAPACITY	STATUS	YR	FAC CODE
DWK	Gorleben	UO	1400 te (te/yr)	Plan	88	RGFU

LATITUDE- 53 DEG 03 MIN N LONGITUDE- 11 DEG 21 MIN E

TECHNOLOGY SOURCE-GWK(Hoechst AG, OWNER/OPERATOR-DWK(KEWA, GWK)
 NUKEM, Gelsenberg AG, Bayer AG)

SUPPLY SOURCE- SAFEGUARDS-NPT Safeguards
 Agreement

PRODUCT/USE-

FUEL STORAGE CAPACITY-3000 te pool-type storage

PROCESS-U-oxide low-enriched fuel reprocessing

SCHEDULE-Planned for operation in 1988-1989

REMARKS-DWK (German Company for Reprocessing of Nuclear Fuel) is a
 holding company comprised of GWK and KEWA (same as DWK)

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 II; 1/78
- 2-Nuclear Proliferation Factbook; Congressional Research Service,
 Library of Congress; 9/23/77

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ACTIVITY--GERMANY (WEST) RSCH & TEST REACTOR NUCLEAR FACILITY PROFILE
CATEGORY-RESEARCH AND TEST REACTORS DMK 05 SEP 78

FACILITY NAME	LOCATION	FAC TYPE	CAPACITY	STATUS	YR	CODE
BER-2	Berlin	POOL	5 MWt	Oper	73	RGFX

LATITUDE- 52 DEG 32 MIN N

LONGITUDE- 13 DEC 25 MIN E

TECHNOLOGY SOURCE-Constructor:
Atomic Intl.

OWNER/OPERATOR-Owner: HML

SUPPLY SOURCE-

SAFEGUARDS-

PRODUCT/USE-

FUEL STORAGE CAPACITY-

PROCESS-

SCHEDULE-Reactor was rebuilt from BER-1 (opr. 1958)

REMARKS-

REFERENCES-

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

ACTIVITY--GERMANY (WEST) RSCH & TEST REACTOR NUCLEAR FACILITY PROFILE
 CATEGORY-RESEARCH AND TEST REACTORS DMK 05 SEP 78

FACILITY NAME	LOCATION	FAC	FAC
Kather	Julich	TYPE CAPACITY STATUS	YR CODE
		Oper	73 RGFY

LATITUDE- 50 DEG 55 MIN N LONGITUDE- 6 DEG 21 MIN E

TECHNOLOGY SOURCE- OWNER/OPERATOR-Owner: KFA

SUPPLY SOURCE- SAFEGUARDS-

PRODUCT/USE-

FUEL STORAGE CAPACITY-

PROCESS-

SCHEDULE-In operation

REMARKS-

REFERENCES-

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

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ACTIVITY--GERMANY (WEST) RSCH & TEST REACTOR NUCLEAR FACILITY PROFILE
CATEGORY-RESEARCH AND TEST REACTORS DMK 05 SEP 78

FACILITY NAME	LOCATION	FAC TYPE	CAPACITY	STATUS	FAC YR CODE
SUR-100	Furtwangen	SHRR		Oper	73 RGFZ

LATITUDE- 48 DEG 03 MIN N

LONGITUDE- 8 DEG 14 MIN E

TECHNOLOGY SOURCE-Constructor:

OWNER/OPERATOR-

Siemens

SUPPLY SOURCE-

SAFEGUARDS-

PRODUCT/USE-

FUEL STORAGE CAPACITY-

PROCESS-

SCHEDULE-In operation

REMARKS-

REFERENCES-

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

ACTIVITY--GERMANY (WEST) RSCH & TEST REACTOR NUCLEAR FACILITY PROFILE
 CATEGORY-RESEARCH AND TEST REACTORS DMK 05 SEP 78

FACILITY NAME		LOCATION	FAC TYPE	CAPACITY	STATUS	FAC YR CODE
AEG-PR-10		Unterfranken	ARGO 10 Wt		Oper	61 RGGA
See remarks		Bavaria				
LATITUDE-	DEG	MIN	LONGITUDE-	DEG	MIN	

TECHNOLOGY SOURCE-See remarks OWNER/OPERATOR-See remarks

SUPPLY SOURCE-

SAFEGUARDS-

PRODUCT/USE-Reactor physics for power reactor design

FUEL STORAGE CAPACITY-Irradiated fuel: 36 vertical tubes in floor with concrete plugs

PROCESS-Argonaut-type, enriched (20%) uranium, light water moderated and cooled, graphite reflected

SCHEDULE-In operation; Start of construction: Oct. 1959;

Reactor critical: Jan. 1961; Full power operation: Feb 1961

REMARKS-Reactor name: AEG Pruefreaktor PR-10 Owner, operator, designer and builder: Allgemeine Elektricitaets-Gesellschaft, Frankfurt am Main

Critical mass: 6.4 Kg U-235 for 24 subassembly configuration

Core loading at rated power: 6.4 Kg U-235

Av. specific power in fuel: 1.56 W/Kg U-235

Fuel loading and unloading: Manual transfer using refueling coffin and overhead crane

REFERENCES-

1-Directory of Nuclear Reactors, Vol V, IAEA, 1964, p. 157

ACTIVITY--GERMANY (WEST) SPENT FUEL PROCESSING NUCLEAR FACILITY PROFILE
CATEGORY--SEPARATE FUEL STORAGE FACILITIES SRM 15 AUG 78

FACILITY NAME	LOCATION	FAC	FAC
	Ahaus	POOL 1500 te	Plan 83 RGG

LATITUDE- 52 DEG 04 MIN N LONGITUDE- 7 DEG 01 MIN E

TECHNOLOGY SOURCE-

OWNER/OPERATOR-DWK (German Co. for
Reprocessing of Nuclear Fuel)

SUPPLY SOURCE-

SAFEGUARDS-NPT Safeguards Agreement

PRODUCT/USE-

FUEL STORAGE CAPACITY-

PROCESS-Pool-type storage

SCHEDULE-Planned for operation in 1983, construction to start in 1979

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 II; 1/78
- 2-IAEA Bulletin; Vol XIX, No 5; 10/77

ACTIVITY--GERMANY (WEST) SPENT FUEL PROCESSING NUCLEAR FACILITY PROFILE
 CATEGORY--SEPARATE FUEL STORAGE FACILITIES SRM 15 AUG 78

FACILITY NAME	LOCATION	FAC	FAC
	Gorleben	TYPE CAPACITY STATUS YR	CODE
		POOL 4000 te Plan	RGGC

LATITUDE- 53 DEG 03 MIN N LONGITUDE- 11 DEG 21 MIN E

TECHNOLOGY SOURCE- OWNER/OPERATOR-DWK (German Co. for
 Reprocessing of Nuclear Fuel)
 SUPPLY SOURCE- SAFEGUARDS-NPT Safeguards Agreement

PRODUCT/USE-

FUEL STORAGE CAPACITY-

PROCESS-Pool-type storage

SCHEDULE-Planned for operation in mid-or late 1980's

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 II; 1/78
- 2-IAEA Bulletin; Vol XIX, No 5; 10/77

ACTIVITY--GERMANY (WEST) WASTE MANAGEMENT
CATEGORY-WASTE DISPOSAL FACILITIES

NUCLEAR FACILITY PROFILE
SRM 28 AUG 78

FACILITY NAME	LOCATION	FAC TYPE	CAPACITY	STATUS	YR	FAC CODE
Asse Salt Mine	Remlingen	DISP	4 Mm3	Oper	67	RGGD

LATITUDE- 52 DEG 05 MIN N

LONGITUDE- 10 DEG 43 MIN E

TECHNOLOGY SOURCE-West Germany
KfK (Karlsruhe Nucl Res Center)

OWNER/OPERATOR-KfK-Karlsruhe, GFS-
Wolfenbuttel, KFA-Julich

SUPPLY SOURCE-KfK bitumenized and
concreted waste

SAFEGUARDS-

PRODUCT/USE-

FUEL STORAGE CAPACITY-150 rooms with total volume of 4 million cubic
meters on 13 different levels

PROCESS-Disposal of non-high-level bitumenized and concreted waste
drums underground in abandoned salt mine

SCHEDULE-Currently in operation since 1967

REMARKS-Random stacking is used for low and intermediate level wastes.

Bitumenized and concreted wastes from KfK-Karlsruhe are stored in
the 10000 cubic meter Asse Prototype Cavity designed for these
wastes. Low-level wastes are stored in 8 rooms at the 750 meter
level. A pilot program is also planned for storage of spent High-
Temperature-Gas-cooled Reactor fuels from AVR at KFA-Julich. About
100,000 6 cm diameter balls are loaded into canisters and placed
in boreholes in the mine.

Surface storage of spent Thorium-High-Temp-Reactor fuel is planned.

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 II; 1/78

2-IAEA Bulletin; Vol XIX, No 5; 10/77

ACTIVITY--GERMANY (WEST) RSCH & TEST REACTOR NUCLEAR FACILITY PROFILE
 CATEGORY-RESEARCH AND TEST REACTORS DMK 05 SEP 78

FACILITY NAME	LOCATION	FAC TYPE	CAPACITY	STATUS	YR	CODE
SUR-Hannover	Hannover	SHRR		Oper	61	RGGE

LATITUDE- 52 DEG 23 MIN N LONGITUDE- 9 DEG 44 MIN E

TECHNOLOGY SOURCE-Constructor:	OWNER/OPERATOR-Owner:
Siemens	Univ. Hannover
SUPPLY SOURCE-	SAFEGUARDS-

PRODUCT/USE-

FUEL STORAGE CAPACITY-

PROCESS-

SCHEDULE-In operation

REMARKS-

REFERENCES-

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

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ACTIVITY--GERMANY (WEST) 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
Triga Conversion	Frankfurt	SHRR	1 MWt			RGGF

LATITUDE- 50 DEG 06 MIN N

LONGITUDE- 8 DEG 41 MIN E

TECHNOLOGY SOURCE-Bldr: General
Atomic Co.

OWNER/OPERATOR-Owner: Univ.
Frankfurt

SUPPLY SOURCE-

SAFEGUARDS-

PRODUCT/USE-

FUEL STORAGE CAPACITY-

PROCESS-

SCHEDULE-

REMARKS-

REFERENCES-

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

ACTIVITY--GERMANY (WEST) RSCH & TEST REACTOR NUCLEAR FACILITY PROFILE
 CATEGORY-RESEARCH AND TEST REACTORS DMK 05 SEP 78

FACILITY NAME	LOCATION	FAC		FAC
WWR-5 (m)	Rosendorf	TANK 6 MWt		RGGG

LATITUDE-	DEG	MIN	LONGITUDE-	DEG	MIN
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TECHNOLOGY SOURCE-	OWNER/OPERATOR-
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SUPPLY SOURCE-	SAFEGUARDS-
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PRODUCT/USE-

FUEL STORAGE CAPACITY-

PROCESS-

SCHEDULE-

REMARKS-

REFERENCES-

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

ACTIVITY--GERMANY (WEST) WASTE MANAGEMENT NUCLEAR FACILITY PROFILE
 CATEGORY--WASTE DISPOSAL FACILITIES SRM 28 AUG 78

FACILITY NAME	LOCATION	FAC	FAC
KfK-1	Karlsruhe	TYPE CAPACITY STATUS YR CODE	
		PREP 2.5 te/d Oper 77 RGGH	
		(te/day)	
LATITUDE- 49 DEG 00 MIN N	LONGITUDE- 8 DEG 24 MIN E		

TECHNOLOGY SOURCE-West Germany, KfK OWNER/OPERATOR-KfK (Karlsruhe Nuclear Research Center)

SUPPLY SOURCE-WAK Reprocessing Plant, Karlsruhe SAFEGUARDS-

PRODUCT/USE-Solidified non-high-level waste and concrete mixture/
 disposal in Asse Salt Mine

FUEL STORAGE CAPACITY-

PROCESS-Incorporation of non-high-level waste into concrete and
 solidified in 200 liter drums

SCHEDULE-Currently in operation since 1977

REMARKS-Maximum activity of waste solidified is 1000 curies per cubic
 meter. Solid wastes, including leached hulls from oxide fuel
 reprocessing, are also compacted and cemented in drums for disposal.
 Since 1971 KfK has incinerated low-level wastes (70 kg/hr) and
 packaged them into 200-liter drums. Since 1973 the bitumenization
 process-screw-extruder continuous process has produced 2000 175-
 liter drums of waste.

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 II; 1/78
- 2-ERDA; Alternatives for Managing Wastes from Reactors and Post-
 Fission Operations in the LWR Fuel Cycle; Vol II; 5/76

ACTIVITY--GERMANY (WEST) WASTE MANAGEMENT NUCLEAR FACILITY PROFILE
 CATEGORY-WASTE DISPOSAL FACILITIES SRM 28 AUG 78

FACILITY NAME	LOCATION	FAC	TYPE	CAPACITY	STATUS	YR	CODE
KfK-2	Karlsruhe	PREP	15 kg	Oper	75	GGJ	

LATITUDE- 49 DEG 00 MIN N LONGITUDE- 8 DEG 24 MIN E

TECHNOLOGY SOURCE-West Germany, OWNER/OPERATOR-KfK (Karlsruhe
 KfK Nuclear Research Center)

SUPPLY SOURCE- SAFEGUARDS-

PRODUCT/USE-Solidified ceramic-metal and waste mixture/testing
 purposes

FUEL STORAGE CAPACITY-

PROCESS-Semi-continuous thermite process for non-radioactive
 processing of up to 15 kg per batch

SCHEDULE-Pilot plant in operation since 1975

REMARKS-Pilot plant was preceded by 2 kg lab-scale facility

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 II; 1/78

ACTIVITY--GERMANY (WEST) WASTE MANAGEMENT NUCLEAR FACILITY PROFILE
 CATEGORY-WASTE DISPOSAL FACILITIES SRM 25 AUG 78

FACILITY NAME	LOCATION	FAC TYPE	CAPACITY	STATUS	FAC YR CODE
FIPS-II	Julich	PREP	1 kg/hr	Oper	77 RGGK

LATITUDE- 50 DEG 55 MIN N

LONGITUDE- 6 DEG 21 MIN E

TECHNOLOGY SOURCE-West Germany,
 KFA-Julich

OWNER/OPERATOR-KFA-Julich (Julich
 Nuclear Research Center)

SUPPLY SOURCE-JUPITER
 Reprocessing Plant

SAFEGUARDS-

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

FUEL STORAGE CAPACITY-

PROCESS-Rising level, pot vitrification of high-level waste

SCHEDULE-Currently in operation since 1977; scheduled for shutdown in
 1980

REMARKS-A scale-up pilot plant with throughput of 10 kg glass/hr is
 currently under design for consideration in the future
 The decontamination department also incinerates low-level wastes
 using a pyrolysis chamber at 700-800 degrees C, oxidation chamber
 at high-temperature. Capacity is 90 kg/hr.

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 II; 1/78
- 2-Proceedings of Intl Symp on Management of Wastes from the LWR
 Fuel Cycle, Denver, Col; 7/11-16/76

ACTIVITY--GERMANY (WEST) WASTE MANAGEMENT NUCLEAR FACILITY PROFILE
CATEGORY-WASTE DISPOSAL FACILITIES SRM 25 AUG 78

FACILITY NAME	LOCATION	FAC	FAC
FIPS-I	Julich	TYPE CAPACITY STATUS YR CODE	
		PREP 1 kg/hr Inactv 72 RGGL	

LATITUDE- 50 DEG 55 MIN N LONGITUDE- 6 DEG 21 MIN E

TECHNOLOGY SOURCE-West Germany, OWNER/OPERATOR-KFA-Julich (Julich
KFA-Julich Nuclear Research Center)

SUPPLY SOURCE-Eurochemic SAFEGUARDS-

Reprocessing Plant, Belgium

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

FUEL STORAGE CAPACITY-

PROCESS-Rising level, pot vitrification of high-level waste

SCHEDULE-Cold operations from 1972-1974; hot operation from 1974-1976;
currently inactive

REMARKS-FIPS-I was replaced in 1977 by FIPS-II unit

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 II; 1/78
- 2-Proceedings of Intl Symp on Management of Wastes from the LWR Fuel Cycle; Denver, Col; 7/11-16/76

ACTIVITY--GERMANY (WEST) WASTE MANAGEMENT NUCLEAR FACILITY PROFILE
 CATEGORY-WASTE DISPOSAL FACILITIES SRM 25 AUG 78

FACILITY NAME	LOCATION	FAC TYPE	CAPACITY	STATUS	YR	FAC CODE
VERA	Karlsruhe	PREP		Inactv	70	RGGM

LATITUDE- 49 DEG 00 MIN N LONGITUDE- 8 DEG 24 MIN E

TECHNOLOGY SOURCE-West Germany OWNER/OPERATOR-KfK (Karlsruhe
 KfK Nuclear Research Center)

SUPPLY SOURCE- SAFEGUARDS-

PRODUCT/USE-Kg-scale glass blocks/testing of operations

FUEL STORAGE CAPACITY-

PROCESS-Non-radioactive vitrification of simulated waste using spray
 calciner and metal melting furnace

SCHEDULE-Pilot plant operated from 1970-1977; currently inactive

REMARKS-After 1975, continuous operation for one-week periods yielded
 kg-scale glass blocks containing 10 curies/liter fission products.
 The VERA process has been abandoned in favor of a ceramic melter
 process.

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 II; 1/78

ACTIVITY--GERMANY (WEST) WASTE MANAGEMENT NUCLEAR FACILITY PROFILE
 CATEGORY-WASTE DISPOSAL FACILITIES SRM 25 AUG 78

FACILITY NAME	LOCATION	FAC	FAC
	Karlsruhe	TYPE CAPACITY STATUS YR CODE	
		PREP 30 l/hr Oper 76 RGGN	

LATITUDE- 49 DEG 00 MIN N LONGITUDE- 8 DEG 24 MIN E

TECHNOLOGY SOURCE-West Germany, SORG Engineering Co., KfK
 SUPPLY SOURCE- OWNER/OPERATOR-KfK (Karlsruhe Nuclear Research Center)
 SAFEGUARDS-

PRODUCT/USE-Steel cylinders filled with glass/testing of operations

FUEL STORAGE CAPACITY-

PROCESS-Non-radioactive vitrification of simulated waste using spray calciner and ceramic melter
 SCHEDULE-Currently in operation since 1976; scheduled for shutdown in 1979
 REMARKS-This modification of VERA process could lead to hot pilot plant operation in 1984.

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 II; 1/78
- 2-Proceedings of Intl Symp on Management of Wastes from the LWR Fuel Cycle; Denver, Col; 7/11-16/76

ACTIVITY--GERMANY (WEST) FUEL FABRICATION NUCLEAR FACILITY PROFILE
 CATEGORY-HEAVY WATER PRODUCTION PSM 26 SEP 78

FACILITY NAME	LOCATION	FAC TYPE	CAPACITY	STATUS	YR	FAC CODE
	Frankfurt	D20	6 te/y	Inactv		RGGS

LATITUDE- 50 DEG 06 MIN N LONGITUDE- 08 DEG 41 MIN E

TECHNOLOGY SOURCE- OWNER/OPERATOR-Linde, Hoechst

SUPPLY SOURCE- SAFEGUARDS-

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

FUEL STORAGE CAPACITY-

PROCESS-Hydrogen distillation

SCHEDULE-Initial production-1958; currently inactive

REMARKS-

REFERENCES-

- 1-Nuclear Engineering International, Vol 21, No 248, September 1976,
 pp. 61-68

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ACTIVITY--GERMANY (WEST) RESOURCE RECOVERY NUCLEAR FACILITY PROFILE
CATEGORY-MINES (URANIUM & THORIUM) PSM 14 AUG 78

FACILITY NAME	LOCATION	FAC TYPE	CAPACITY	STATUS	YR	FAC CODE
	Mullenbach	URAN		Explor		RGGT

LATITUDE- 48 DEG 30 MIN N LONGITUDE- 08 DEG MIN E

TECHNOLOGY SOURCE- OWNER/OPERATOR-

SUPPLY SOURCE- SAFEGUARDS-

PRODUCT/USE-Uranium

FUEL STORAGE CAPACITY-

PROCESS-

SCHEDULE-

REMARKS-Reserves: 1500 te

REFERENCES-

1-Mining Magazine, May 1978, p. 523

ACTIVITY--GERMANY (WEST) RESOURCE RECOVERY NUCLEAR FACILITY PROFILE
 CATEGORY-MINES (URANIUM & THORIUM) PSM 14 AUG 78

FACILITY NAME	LOCATION	FAC TYPE	CAPACITY	STATUS	YR	FAC CODE
	Oberpfalzer	URAN		Explor		RGGU

LATITUDE- 49 DEG 30 MIN N LONGITUDE- 12 DEG 30 MIN E

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. 73

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ACTIVITY--GERMANY (WEST) RESOURCE RECOVERY NUCLEAR FACILITY PROFILE
CATEGORY-MINES (URANIUM & THORIUM) PSM 20 SEP 78

FACILITY NAME	LOCATION	FAC TYPE	CAPACITY	STATUS	YR	FAC CODE
	Saxony	URAN		Inactv		RGV

LATITUDE-	DEG	MIN	LONGITUDE-	DEG	MIN
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TECHNOLOGY SOURCE- OWNER/OPERATOR-Government

SUPPLY SOURCE- SAFEGUARDS-

PRODUCT/USE-Uranium

FUEL STORAGE CAPACITY-

PROCESS-

SCHEDULE-Mining began in 1946; operations believed to have ceased in
the mid 1960s

REMARKS-

REFERENCES-

- 1-McKinney, Robert, International Atomic Policies and Programs of
the United States, Report to the Joint Committee on Atomic Energy,
1960, Vol IV, pp. 1613-1618

GR 1

ACTIVITY--GREECE RESEARCH & TEST REACTOR
CATEGORY-RESEARCH AND TEST REACTORS

NUCLEAR FACILITY PROFILE
DMK 30 SEP 78

FACILITY NAME	LOCATION	FAC TYPE	CAPACITY	STATUS	FAC YR CODE
GRR	Athens	POOL 1	MWt		59 RHCE

LATITUDE- 38 DEG 00 MIN N

LONGITUDE- 23 DEG 44 MIN E

TECHNOLOGY SOURCE-AMF Atomics, a
Div of Amer Machine & Found.

OWNER/OPERATOR-GK Atomic Energy Co-
mission/Democritus Nuclear Center

SUPPLY SOURCE-

SAFEGUARDS-

PRODUCT/USE-Research

FUEL STORAGE CAPACITY-Spent fuel elements stored in pool

PROCESS-Pool-type, heterogeneous, H-20 moderated, 20% enriched U-235,
H-20 cooled

SCHEDULE-Reactor critical: 1959

REMARKS-Reactor is very similar to other AFM-1 MW open pool-type reac-
tors. Most of construction details, physical data, etc are identical
or of the same order of magnitude as for the Battelle Rsch Reactor,
Iranian, Israeli, Italian, Munich and Portuguese reactors.
Normal fresh fuel loading: 4.2 Kg Total fuel inventory: Approx 6 Kg
Expected ave burnup before reprocesing: 20%
Method of refueling: Replaced manually with long-handled tools;
Stored in racks in pool

REFERENCES-

1-Directory of Nuclear Reactors, Vol II, IAEA, 1959

GL 1

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

NUCLEAR FACILITY PROFILE
PSM 01 AUG 78

FACILITY NAME	LOCATION	FAC TYPE	CAPACITY	STATUS	YR	FAC CODE
Kvanefjeld	Ilimaussaq	URAN		Explor		RHLA

LATITUDE- 61 DEG 00 MIN N

LONGITUDE- 46 DEG 00 MIN W

TECHNOLOGY SOURCE-

OWNER/OPERATOR-Danish State

SUPPLY SOURCE-

SAFEGUARDS-

PRODUCT/USE-Uranium

FUEL STORAGE CAPACITY-

PROCESS-

SCHEDULE-No production plans are being made

REMARKS-Average grade of ore: 0.02%
Reasonably assured reserves: 6000 te U3O8
Estimated additional: 10000 te

REFERENCES-

- 1-Uranium Resources, Production and Demand, IAEA, Dec 1977, pp. 65-66
- 2-Foreign Uranium Supply, EPRI EA-725, pp. 5-18

HU 1

ACTIVITY--HUNGARY 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
Hungarian WWR-C	Csillererc	TANK 2	MWt	Oper	59	RHUF

LATITUDE- DEG MIN LONGITUDE- DEG MIN

TECHNOLOGY SOURCE-U.S.S.R. OWNER/OPERATOR-Kozponti Fizikai
Kutato-Intezet (KFKI)

SUPPLY SOURCE- SAFEGUARDS-

PRODUCT/USE-Research, isotope production, training

FUEL STORAGE CAPACITY-

PROCESS-Tank type, enriched (>10%) uranium, light water moderated and cooled

SCHEDULE-In operation; Reactor critical: March 1959;
Full power: Sept 1959

REMARKS-Reactor is identical with the WWR-C Reactor of the Academy of Sciences, Moscow

REFERENCES-

1-Directory of Nuclear Reactors, Vol III, IAEA, p. 139

HU 2

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

NUCLEAR FACILITY PROFILE
PSM 20 SEP 78

FACILITY NAME	LOCATION	FAC TYPE	CAPACITY	STATUS	FAC YR CODE
	Pecs	URAN		Oper	55 RHUK

LATITUDE- 46 DEG 04 MIN N

LONGITUDE- 18 DEG 15 MIN E

TECHNOLOGY SOURCE-

OWNER/OPERATOR-Government
controlled

SUPPLY SOURCE-

SAFEGUARDS-

PRODUCT/USE-Uranium

FUEL STORAGE CAPACITY-

PROCESS-

SCHEDULE-

REMARKS-

REFERENCES-

1-McKinney, Robert, International Atomic Policies and Programs of
the United States, Report to the Joint Committee on Atomic Energy,
1960, Vol IV, pp. 1613-1618