



INTERNATIONAL ATOMIC ENERGY AGENCY



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IAEA-CPS-93/19
17 November 1993
Original: ENGLISH

COUNTRY PROGRAMME SUMMARY

THE AGENCY'S TECHNICAL CO-OPERATION

PROGRAMME WITH

GREECE

1983 - 1993

COUNTRY PROGRAMME SUMMARIES

DEPARTMENT OF TECHNICAL CO-OPERATION

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COUNTRY PROGRAMME SUMMARIES

EVALUATION SECTION

DEPARTMENT OF TECHNICAL CO-OPERATION

**THE AGENCY'S TECHNICAL CO-OPERATION
PROGRAMME WITH
GREECE
1983 - 1993
COUNTRY PROGRAMME SUMMARIES**

This report contains a review of the Agency's technical co-operation activities in Greece carried out during 1983 - 1993. In terms of coverage and analytical depth, country programme summaries stand somewhere midway between in-depth country programme evaluations and individual project evaluations. They attempt to provide a comprehensive, descriptive picture of the Agency's co-operation with a Member State in a manner that will be particularly useful for programming decisions. The attempt is very much to describe -- largely through statistical data -- not to provide independent analysis and evaluation.

GREECE

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INTRODUCTION

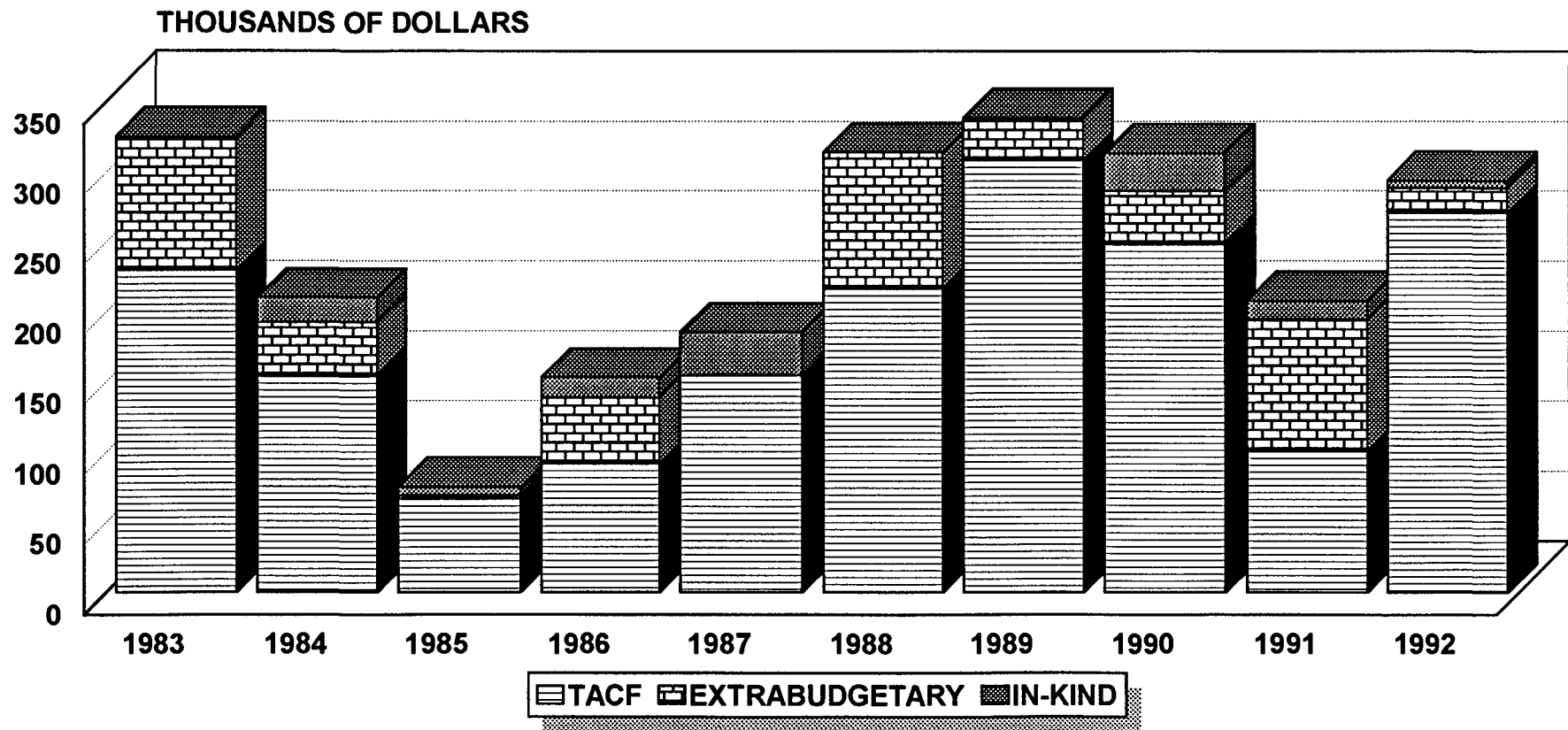
The country programme summary reported on here is one in the series of such studies being undertaken of the Agency's TC programme with Member States. With \$6 million of Agency support received, Greece ranks 32nd among all recipients of technical assistance during the period 1958 through 1992.

Three quarters of the assistance received during the past ten years has been provided in the form of equipment (75%), accompanied by expert services (8%) and training (17%). Seventy-six per cent of the resources were made available through the TACF, while extrabudgetary and in-kind contributions accounted for 19% and 5% of total resources, respectively.

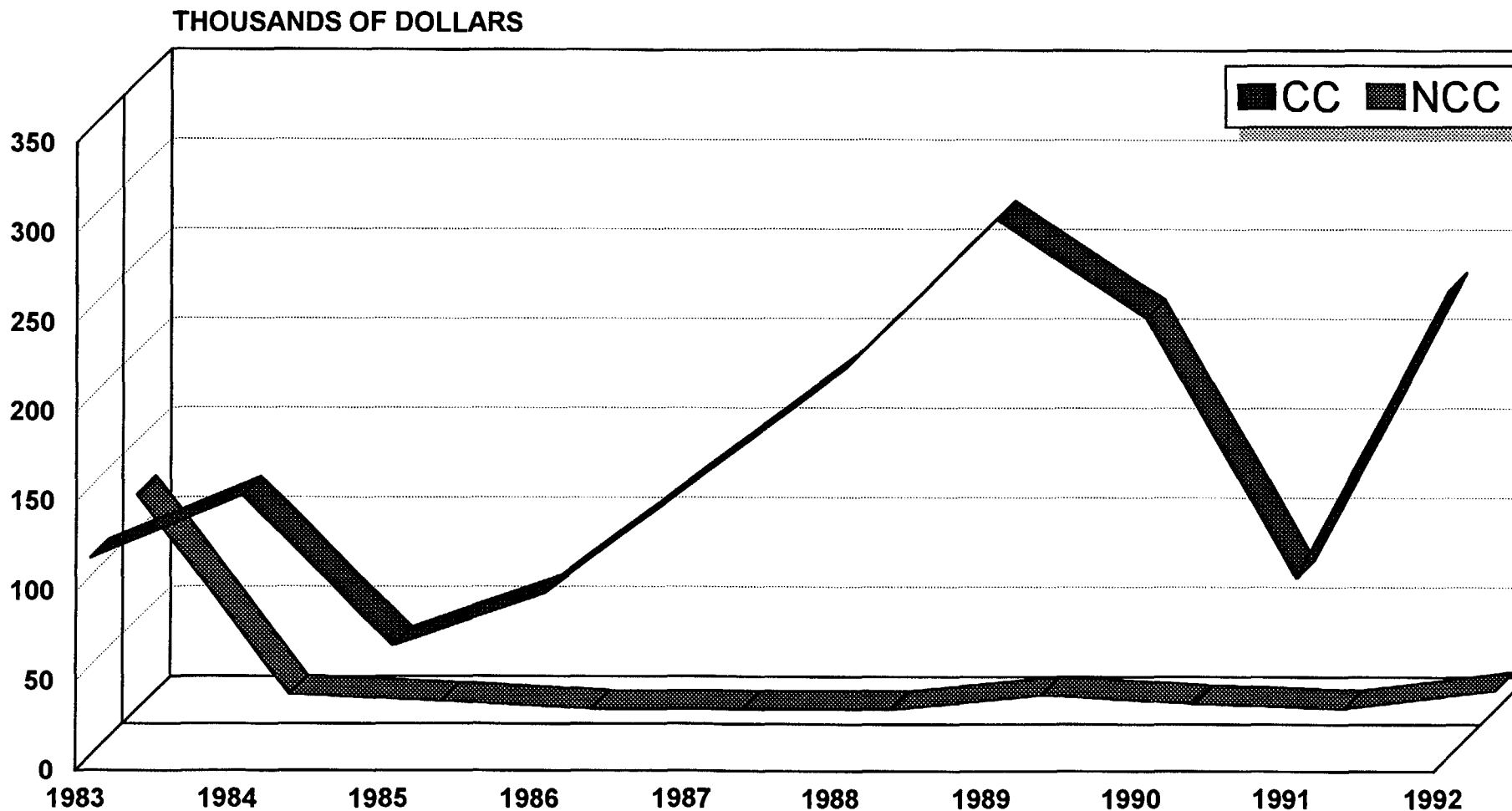
With regard to total disbursements, by sector, under all projects that were operational during the period 1983 through mid-November 1993, the four major areas have been nuclear physics and chemistry (33%), nuclear medicine (16%), nuclear raw materials (15%) and industry and hydrology (13%).

During the past ten years, Greece has provided experts and training course lecturers for a total of 43 assignments and has hosted 31 fellowships and scientific visits as well as one regional and one interregional training course with a total of 39 participants.

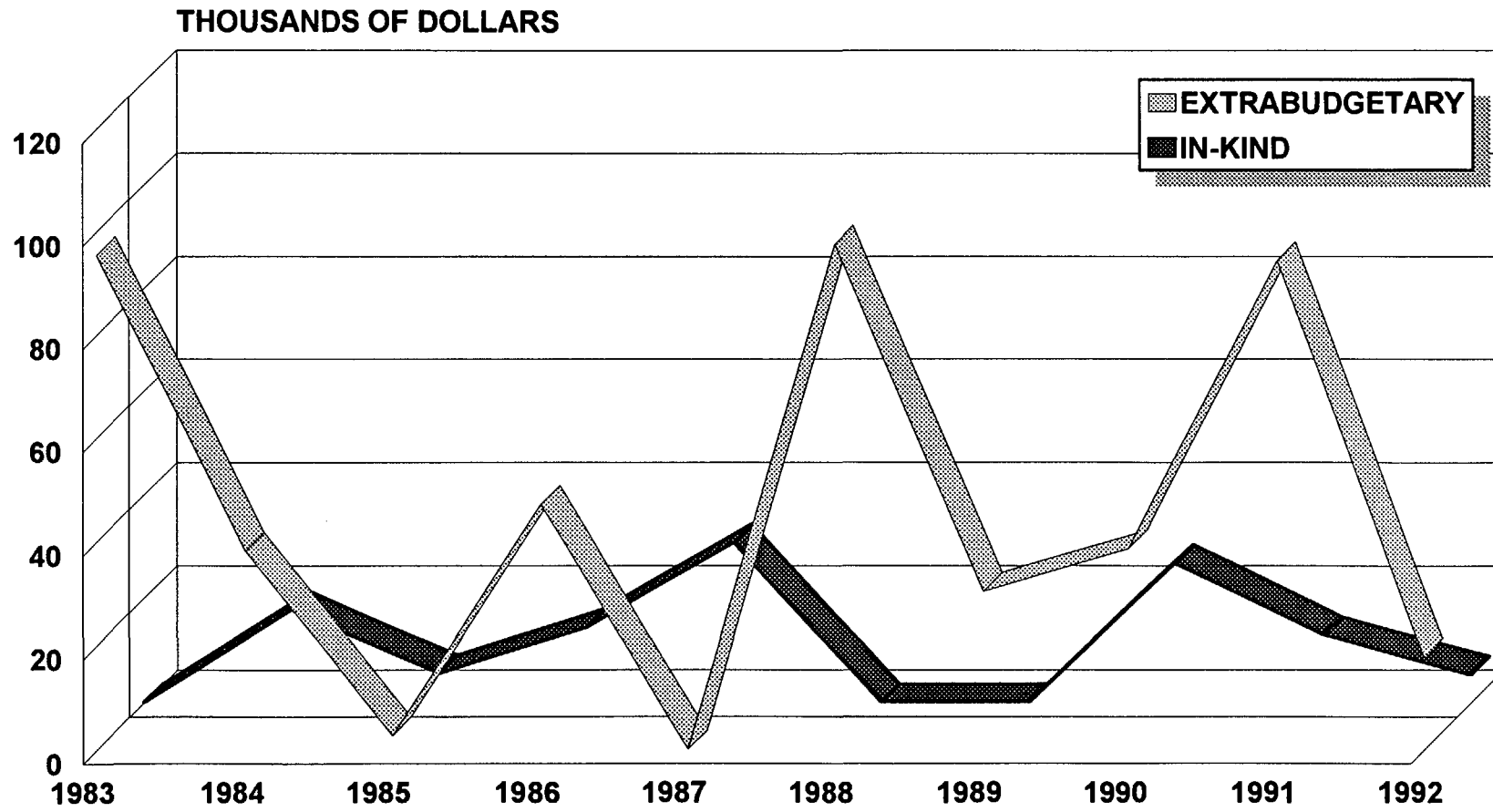
ASSISTANCE PROVIDED BY THE AGENCY TO GREECE BY SOURCE (1983 - 1992)



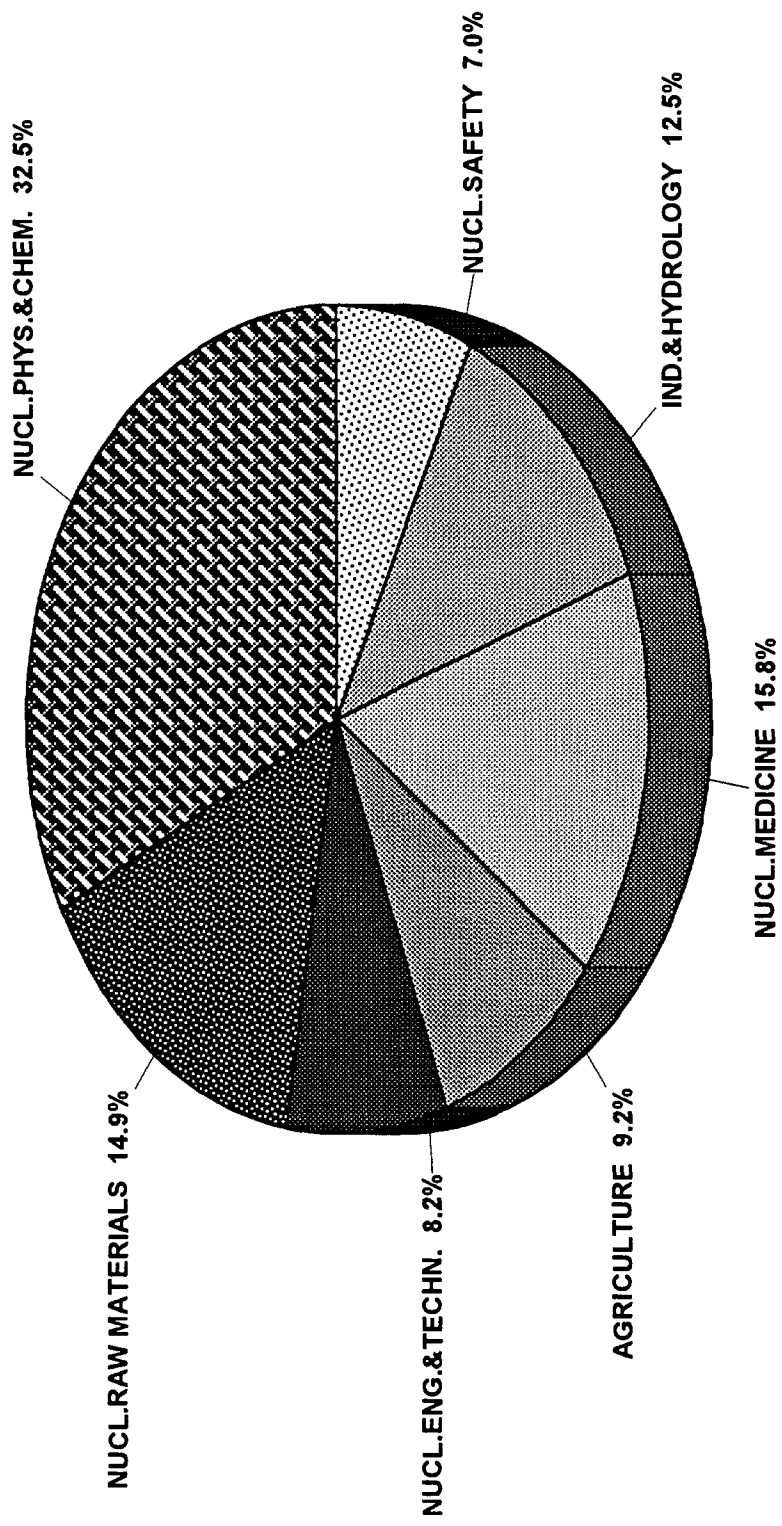
TACF ASSISTANCE PROVIDED TO GREECE (1983 - 1992) BY CC AND NCC



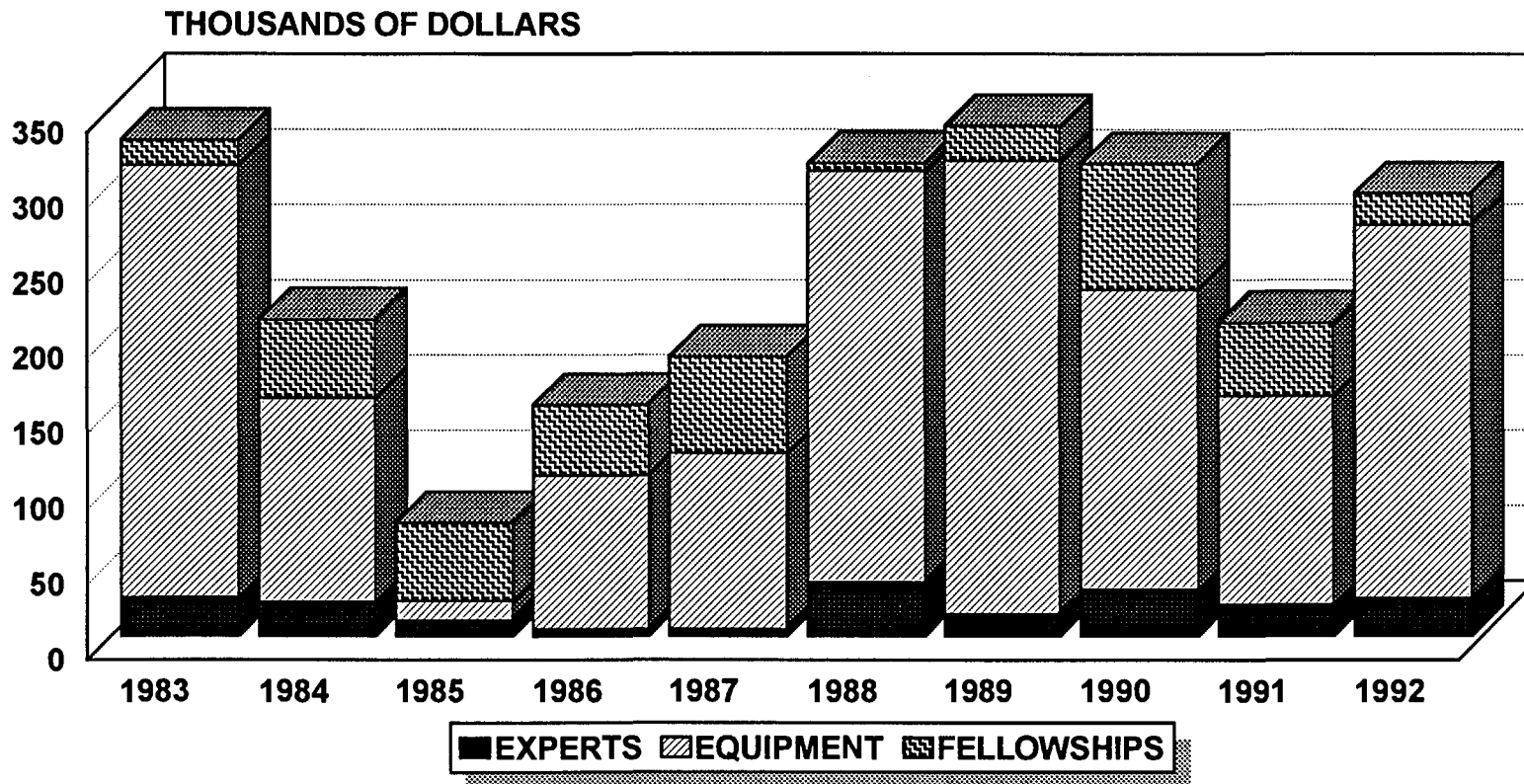
EXTRABUDGETARY AND IN-KIND ASSISTANCE PROVIDED TO GREECE (1983 - 1992)



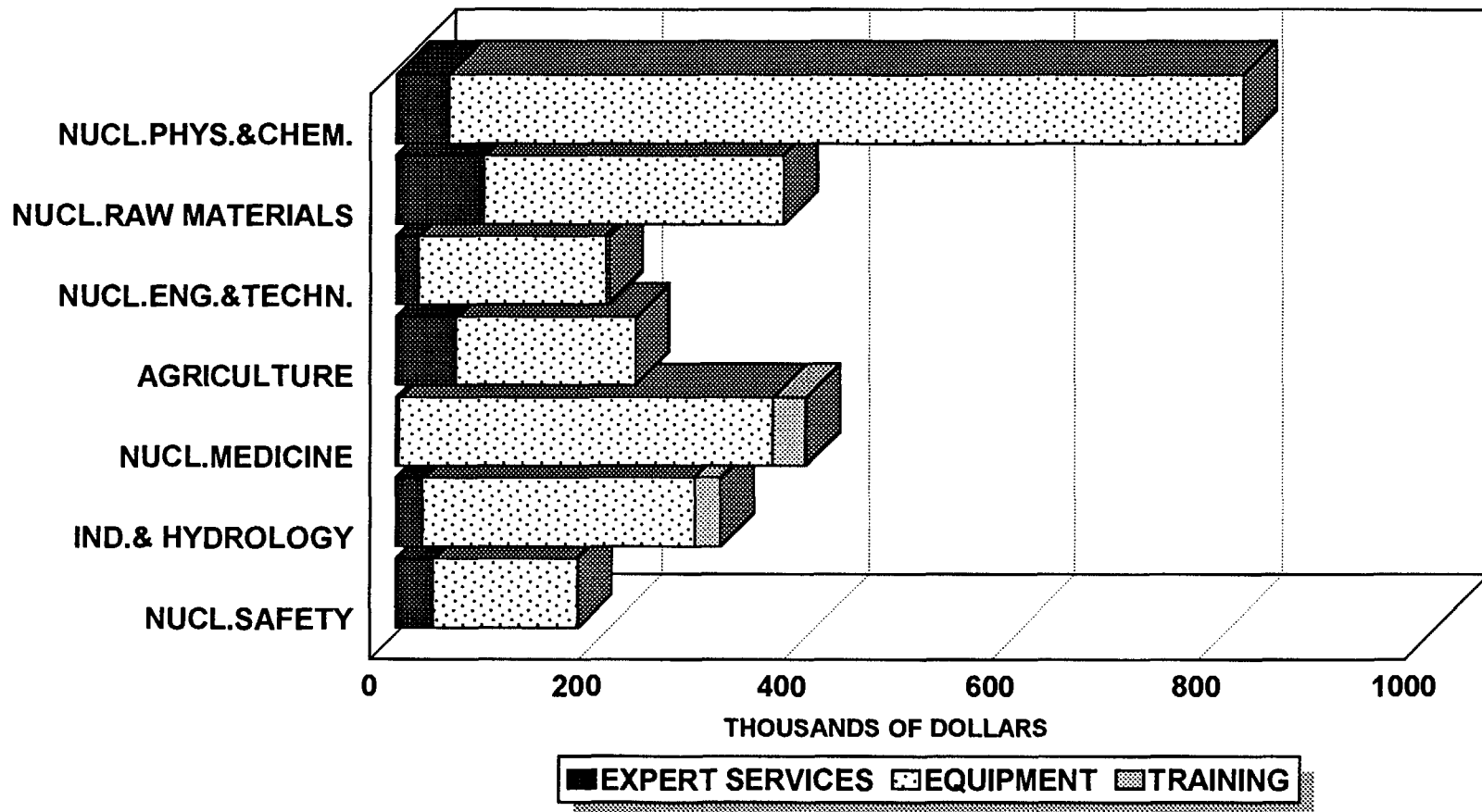
TC PROJECT DISBURSEMENTS IN GREECE BY SECTOR (1983 - 1993)



ASSISTANCE PROVIDED BY THE AGENCY TO GREECE BY TYPE (1983 - 1992)



EXPERT SERVICES, EQUIPMENT AND PROJECT-FUNDED TRAINING PROVIDED TO GREECE BY SECTOR (1983 - 1993)



THE AGENCY'S TECHNICAL CO-OPERATION PROGRAMME WITH GREECE

ALL SOURCES

GREECE'S RANKING AS A TC RECIPIENT
1958 - 1992
(in \$1000)

YEAR	RANKING	AMOUNT
1958-82	15 th	3586.1
1983	24 th	329.5
1984	40 th	210.1
1985	64 th	74.8
1986	52 nd	153.0
1987	52 nd	185.2
1988	32 nd	314.2
1989	33 rd	338.9
1990	42 nd	313.5
1991	54 th	207.9
1992	42 nd	294.0
1958-92	32 nd	6007.2

***TOP FIVE* RECIPIENTS OF AGENCY ASSISTANCE
1958 - 1992 (in \$1000)**

ALL SOURCES

Year	I	II	III	IV	V	GREECE
1958-82	BRA 8507.3	IND 6849.4	ARG 5528.2	PAK 5492.7	CHI 5240.1	15 th - 3586.1
1983	EGY 2077.9	PER 1116.8	VIE 948.1	PHI 778.6	IRA 722.1	24 th - 329.5
1984	EGY 3625.9	PER 1750.4	THA 1094.6	CUB 1028.7	PHI 881.2	40 th - 210.1
1985	EGY 2494.8	PER 1120.7	THA 1117.4	BGD 1068.2	PHI 963.7	64 th - 74.8
1986	EGY 2317.0	BRA 1452.9	THA 1169.4	POL 1050.3	BGD 896.4	52 nd - 153.0
1987	HUN 3452.6	EGY 1775.4	THA 1742.4	INS 1312.5	YUG 1223.2	52 nd - 185.2
1988	EGY 1486.9	BUL 1361.6	CPR 1278.5	THA 1158.7	BRA 1096.7	32 nd - 314.2
1989	CPR 1542.3	EGY 1505.1	THA 1205.3	BRA 1096.5	INS 999.1	33 rd - 338.9
1990	POL 2308.1	CPR 2005.0	VIE 1589.2	INS 1412.6	BRA 1229.1	42 nd - 313.5
1991	INS 1305.2	CPR 975.0	EGY 959.8	BRA 951.2	BUL 934.7	54 th - 207.9
1992	EGY 1586.3	INS 1342.1	CPR 1328.8	MEX 1127.8	POL 1036.4	42 nd - 294.0
1958-92	EGY 23808.6	BRA 17736.8	THA 15332.0	INS 13725.9	PER 13129.6	32 nd - 6007.2

**"TOP FIVE" RECIPIENTS OF AGENCY ASSISTANCE
1958 - 1992 (in \$1000)**

TECHNICAL ASSISTANCE AND CO-OPERATION FUND

Year	I	II	III	IV	V	GREECE
1958-82	HUN 2971.7	EGY 2405.8	PAK 2340.5	THA 2000.3	BRA 1983.5	18 th - 1290.8
1983	EGY 1049.4	VIE 897.4	POL 667.8	PAK 498.5	PHI 430.0	22 nd - 229.8
1984	EGY 1197.2	CUB 655.6	ECU 565.6	BGD 506.3	BUL 472.4	42 nd - 154.0
1985	BGD 991.8	VIE 745.0	THA 708.7	BRA 571.8	POR 538.7	64 th - 66.5
1986	BRA 1381.8	THA 871.9	POL 833.5	BGD 823.9	SYR 751.8	57 th - 91.3
1987	HUN 3305.2	DRK 986.8	BUL 888.5	INS 885.8	EGY 878.9	53 rd - 154.4
1988	BUL 1195.6	PER 856.5	EGY 768.6	INS 751.7	MAL 656.0	34 th - 216.5
1989	EGY 990.9	CPR 868.2	POR 769.6	CHI 756.9	MAL 619.4	28 th - 308.4
1990	POL 1562.3	VIE 1518.8	DRK 1156.2	IRA 958.0	YUG 933.4	40 th - 248.1
1991	BUL 893.1	PAK 868.8	INS 855.1	VIE 817.6	CPR 814.5	64 th - 100.4
1992	EGY 1255.7	CPR 1009.0	VIE 872.8	INS 826.6	IRA 795.5	40 th - 270.9
1958-92	EGY 10847.0	HUN 8743.7	POL 8486.4	VIE 8199.9	PAK 8115.6	39 th - 3131.1

ASSISTANCE PROVIDED BY THE AGENCY TO GREECE

Financial Summary 1983 - 1992
(In thousands of dollars)

Year	ASSISTANCE PROVIDED, BY TYPE						ASSISTANCE PROVIDED, BY SOURCE					
	Experts	Equipment	Fellowships	Group training	Sub-contracts	Total	UNDP	TACF CC	TACF NCC	Extra-budgetary	In-kind	Total
1983	25.8	286.8	16.9	-	-	329.5	4.2	110.4	119.4	95.5	-	329.5
1984	23.0	135.0	52.1	-	-	210.1	-	145.4	8.6	38.2	17.9	210.1
1985	10.6	12.8	51.4	-	-	74.8	-	61.9	4.6	2.7	5.6	74.8
1986	4.4	102.0	46.6	-	-	153.0	-	90.8	0.5	47.2	14.5	153.0
1987	4.5	116.7	64.0	-	-	185.2	-	154.4	-	-	30.8	185.2
1988	35.6	273.2	5.4	-	-	314.2	-	216.5	-	97.7	-	314.2
1989	14.6	301.1	23.2	-	-	338.9	-	300.1	8.3	30.5	-	338.9
1990	31.0	199.0	83.5	-	-	313.5	-	244.8	3.3	38.6	26.8	313.5
1991	20.9	138.1	48.9	-	-	207.9	-	99.6	0.8	94.5	13.0	207.9
1992	25.4	247.5	21.1	-	-	294.0	-	259.9	11.0	17.8	5.3	294.0
1983-92	195.8	1 812.2	413.1	-	-	2 421.1	4.2	1 683.8	156.5	462.7	113.9	2 421.1

TECHNICAL CO-OPERATION PROJECTS IN GREECE
BY SECTOR

PROJECTS COMPLETED AND OPERATIONAL 1983 - 1993

TOTAL PROJECT ALLOTMENTS AND DISBURSEMENTS
(as of mid-November 1993)

SECTOR	NO. OF PROJECTS	ALLOTMENTS \$	% OF TOTAL	DISBURSEMENTS \$	% OF TOTAL
General atomic energy development	-	-	-	-	-
Nuclear physics and chemistry	14	1 103 621	33.8	819 419	32.5
Nuclear raw materials	2	361 428	11.1	375 658	14.9
Nuclear engineering and technology	3	313 665	9.6	205 743	8.2
Nuclear techniques in agriculture	5	237 778	7.3	231 522	9.2
Nuclear medicine	3	497 494	15.2	396 904	15.7
Nuclear techniques in biology	-	-	-	-	-
Nuclear techniques in industry and hydrology	4	398 156	12.2	314 389	12.5
Nuclear safety	6	352 196	10.8	175 637	7.0
TOTAL	37	3 264 338	100.0	2 519 272	100.0

TECHNICAL CO-OPERATION PROJECTS IN GREECE
 COMPLETED AND OPERATIONAL, BY SECTOR, 1983 - 1993
 (As of mid-November 1993)

Sector	No. of projects	Total project allotments \$	Total project disbursements \$
<u>Completed projects</u>			
General atomic energy development	-	-	-
Nuclear physics and chemistry	8	495 635	472 956
Nuclear raw materials	2	361 428	375 658
Nuclear engineering and technology	2	138 668	130 880
Nuclear techniques in agriculture	5	237 778	231 522
Nuclear medicine	2	388 644	384 261
Nuclear techniques in biology	-	-	-
Nuclear techniques in industry & hydrology	1	167 746	168 911
Nuclear safety	3	142 325	141 794
TOTAL	23	1 932 224	1 905 982
<u>Operational projects</u>			
General atomic energy development	-	-	-
Nuclear physics and chemistry	6	607 986	346 463
Nuclear raw materials	-	-	-
Nuclear engineering and technology	1	174 997	74 863
Nuclear techniques in agriculture	-	-	-
Nuclear medicine	1	108 850	12 643
Nuclear techniques in biology	-	-	-
Nuclear techniques in industry & hydrology	3	230 410	145 478
Nuclear safety	3	209 871	33 843
TOTAL	14	1 332 114	613 290

**EXPERT SERVICES, EQUIPMENT AND PROJECT-FUNDED TRAINING PROVIDED TO GREECE, BY SECTOR
PROJECTS COMPLETED AND OPERATIONAL 1983 - 1993
(As of mid-November 1993)**

FIELD	TOTAL PROJECT ALLOTMENTS				TOTAL PROJECT DISBURSEMENTS			
	EXPERT SERVICES		EQUIPMENT	TRAINING	EXPERT SERVICES		EQUIPMENT	TRAINING
	M/M	\$	\$	\$	M/M	\$	\$	\$
General atomic energy development	-	-	-	-	-	-	-	-
Nuclear physics and chemistry	11/10	101 225	968 646	33 750	5/04	50 754	768 665	-
Nuclear raw materials	12/25	69 700	291 728	-	12/23	84 424	291 234	-
Nuclear engineering and technology	9/03	79 245	231 420	3 000	2/23	21 457	181 107	3 179
Nuclear techniques in agriculture	8/25	61 290	176 488	-	9/01	57 442	174 080	-
Nuclear medicine	3/15	36 150	410 939	50 405	0/08	2 669	362 700	31 535
Nuclear techniques in biology	-	-	-	-	-	-	-	-
Nuclear techniques in industry & hydrology	4/11	39 945	333 092	25 119	2/28	25 700	263 967	24 722
Nuclear safety	8/16	84 333	239 963	27 900	4/01	35 720	139 917	-
TOTAL	58/15	471 888	2 652 276	140 174	36/28	278 166	2 181 670	59 436

AGENCY FELLOWS FROM GREECE

1983 - 1993¹
(As of mid-November 1993)

Sector	No. of fellowships	No. of months/days	Host countries
General atomic energy development	-	-	-
Nuclear physics	2	2/26	USA, CAN
Nuclear chemistry	9	29/29	USA, ITA, CZE, NET, FRA
Nuclear raw materials	2	2/20	USA, CAN
Nuclear engineering and technology	8	26/19	GER, CZE, HUN, RUS, UK, IAEA
Nuclear techniques in agriculture	8	34/15	BEL, USA, HUN, UK, IAEA
Nuclear medicine	13	112/29	USA, CAN, FRA, UK
Nuclear techniques in biology	-	-	-
Nuclear techniques in industry and hydrology	5	10/23	ITA, IAEA
Nuclear safety	1	0/26	ITA, BEL, FRA
TOTAL	48	221/07	

¹/ Only includes fellows who have completed or at least started training.

GREECE
LONG-TERM FELLOWSHIPS
1983 - 1993
(As of mid-November 1993)

Name	Field of study	Host country	Date	Duration	Project
MAINA	Production & control of radiopharmaceuticals	USA	Nov.89 - Oct.90	12/00	GRE/6/007
TSAMBOURAKIS	Computer in reactor control	UK	Feb.84 - Feb.86	24/00	-
PAPASAVVAS	Food irradiation	HUN	Feb.85 - Feb.86	12/00	-
BALOMENOS	Nuclear medicine	USA	Jul.86 - Aug.87	13/02	-
KOLINDO	Nuclear medicine	USA	Started: Nov.92	12/00	RER/0/005
SIFAKIS	Nuclear medicine	UK	Aug.83 - Apr.85	19/09	-
STATHAKI	Medical research	CAN	Aug.85 - Sep.87	24/01	-
TSAKANIKAS	Nuclear medicine	CAN	Feb.85 - Feb.86	12/00	-
TSELFES	Nuclear medicine	USA	Oct.90 - Nov.91	12/02	RER/0/003

**GREEK NATIONALS WHO WERE AWARDED MORE THAN ONE
FELLOWSHIP OR SCIENTIFIC VISIT
1983 - 1993
(As of mid-November 1993)**

NONE

AGENCY TRAINING COURSES WITH GREEK PARTICIPATION

1983 - 1993
(As of mid-November 1993)

Field	Number of participants	Number of courses
General atomic energy development	2	1
Nuclear physics	2	2
Nuclear chemistry	1	1
Nuclear raw materials	1	1
Nuclear engineering and technology	5	4
Nuclear techniques in agriculture	4	4
Nuclear medicine	13	10
Nuclear techniques in biology	-	-
Nuclear techniques in industry & hydrology	3	3
Nuclear safety	10	8
TOTAL	41	34

**MULTIPLE PARTICIPATION IN AGENCY TRAINING COURSES
BY GREEK NATIONALS
1983 - 1993
(As of mid-November 1993)**

Name	Course No.	Course title	Year	Location
KAMENOPOULOU	INT/9/129 (001)	ITC on planning, organization and implementation of radiation protection on a national level	1992	USA
	INT/9/135 (001)	ITC on physical protection of nuclear facilities and materials	1993	USA
STAKAKIS	INT/9/104 (001)	ITC on safety in the operation of reasearch reactors	1990	USA
	INT/9/135 (001)	ITC on physical proteciton of nuclear facilities and materials	1993	USA

PROJECTS COMPLETED IN GREECE SINCE 1983
(As of mid-November 1993)

STARTED	PROJECT NO.	TITLE	ALLOTMENTS				DISBURSEMENTS				COMPLETED
			EXPERTS		EQUIPMENT	TRAINING	EXPERTS		EQUIPMENT	TRAINING	
			M/M	\$	\$	\$	M/M	\$	\$	\$	
1983	GRE/1/031	Neutron activation in multi-element analysis	-	-	30 786	-	-	-	30 779	-	1985
1984	GRE/1/032	Neutron activation analysis	-	-	27 388	-	-	-	27 388	-	1986
1980	GRE/2/015	Radiopharmaceuticals	0/10	1 600	237 840	-	0/10	1 581	224 569	-	1987
1983	GRE/2/016	Production of labelled organic compounds	1/00	6 200	30 000	-	1/00	5 123	28 684	-	1985
1984	GRE/2/017	Radiopharmacology	-	-	14 800	-	-	-	13 212	-	1987
1985	GRE/2/018	Cyclotron facility	1/00	6 900	-	-	1/05	8 007	-	-	1985
1986	GRE/2/019	Radioimmunochemistry	-	-	35 200	-	-	-	28 692	-	1987
1987	GRE/2/020	Radiopharmaceuticals	-	-	104 921	-	-	-	104 921	-	1989
1981	GRE/3/006	Nuclear raw materials	11/20	60 400	126 000	-	11/14	72 456	125 665	-	1984
1988	GRE/3/007	Uranium exploration and evaluation	1/05	9 300	165 728	-	1/09	11 968	165 569	-	1991

PROJECTS COMPLETED IN GREECE SINCE 1983
(As of mid-November 1993)

STARTED	PROJECT NO.	TITLE	ALLOTMENTS				DISBURSEMENTS				COMPLETED
			EXPERTS		EQUIPMENT	TRAINING	EXPERTS		EQUIPMENT	TRAINING	
			M/M	\$	\$	\$	M/M	\$	\$	\$	
1982	GRE/4/007	Research reactor utilization	2/00	10 800	-	-	0/14	2 807	-	-	1984
1985	GRE/4/008	Research reactor modernization	0/27	6 885	117 983	3 000	0/26	6 884	118 010	3 179	1992
1983	GRE/5/013	Studies of plant water use efficiency	2/00	12 400	15 000	-	2/01	9 555	14 726	-	1984
1984	GRE/5/014	Isotope-aided crop studies	1/00	6 600	86 988	-	0/27	3 673	86 770	-	1989
1985	GRE/5/015	Nuclear techniques in agriculture	2/00	13 950	12 000	-	2/03	15 566	9 858	-	1989
1986	GRE/5/016	Nitrogen-15 fertilizer studies	-	-	15 000	-	-	-	14 781	-	1987
1986	GRE/5/017	Nuclear technology in animal science	3/25	28 340	47 500	-	4/00	28 648	47 945	-	1989
1982	GRE/6/006	Nuclear medicine	-	-	23 309	-	-	-	23 309	-	1987
1989	GRE/6/007	Radiopharmaceutical quality control	0/15	4 200	329 630	31 505	0/04	1 226	328 191	31 535	1993
1987	GRE/8/006	Isotopes in hydrology	0/28	6 620	159 876	1 250	0/27	7 703	159 937	1 271	1991

**PROJECTS COMPLETED IN GREECE SINCE 1983
(As of mid-November 1993)**

STARTED	PROJECT NO.	TITLE	ALLOTMENTS				DISBURSEMENTS				COMPLETED
			EXPERTS		EQUIPMENT	TRAINING	EXPERTS		EQUIPMENT	TRAINING	
			M/M	\$	\$	\$	M/M	\$	\$	\$	
1982	GRE/9/011	Environmental radioactivity	0/12	2 243	83 242	-	0/12	2 243	83 242	-	1987
1987	GRE/9/012	Monitoring background radiation levels	0/04	940	27 500	-	0/04	1 057	27 308	-	1988
1989	GRE/9/013	Environmental radioactivity	1/00	8 400	20 000	-	1/03	7 798	20 146	-	1991
	TOTAL	23 projects	29/26	185 778	1 710 691	35 755	28/09	186 295	1 683 702	35 985	

OPERATIONAL PROJECTS IN GREECE
(As of mid-November 1993)

STARTED	PROJECT NO.	TITLE	ALLOTMENTS				DISBURSEMENTS			
			EXPERTS		EQUIPMENT	TRAINING	EXPERTS		EQUIPMENT	TRAINING
			M/M	\$	\$	\$	M/M	\$	\$	\$
1988	GRE/1/033	Upgrading of neutron spectrometer	2/00	18 300	30 711	-	0/17	6 940	10 418	-
1989	GRE/1/034	Ion implantation using a tandem accelerator	3/00	25 700	250 000	-	1/08	21 077	240 713	-
1993	GRE/1/035	INAA of trace elements in atmosphere of Athens	2/00	21 375	45 000	21 600	0/17	7 010	-	-
1993	GRE/2/022	Establishment of a XRF laboratory	1/00	10 350	37 000	9 000	0/07	1 016	28 171	-
1993	GRE/2/023	Chemiluminescence induced by internal radiation	-	-	70 000	-	-	-	31 118	-
1993	GRE/2/024	Advanced nuclear analytical techniques	1/00	10 800	55 000	3 150	-	-	-	-
1989	GRE/4/009	Research reactor upgrading	6/06	61 560	113 437	-	1/13	11 766	63 097	-
1993	GRE/6/008	Development of new techniques with radio-isotopes in-vitro	3/00	31 950	58 000	18 900	0/04	1 443	11 200	-
1991	GRE/8/007	Recharging GAMMACELL 200 irradiator	0/21	6 795	53 105	-	0/09	2 910	48 500	-
1991	GRE/8/008	Isotopes in geothermal studies	1/22	15 730	60 111	23 869	1/22	15 087	55 530	23 451

OPERATIONAL PROJECTS IN GREECE
(As of mid-November 1993)

STARTED	PROJECT NO.	TITLE	ALLOTMENTS				DISBURSEMENTS			
			EXPERTS		EQUIPMENT	TRAINING	EXPERTS		EQUIPMENT	TRAINING
			M/M	\$	\$	\$	M/M	\$	\$	\$
1993	GRE/8/009	Natural C-14 measurement by liquid scintillation	1/00	10 800	60 000	-	-	-	-	-
1991	GRE/9/014	Whole body counter commissioning	2/00	19 650	9 221	-	1/25	18 667	9 221	-
1993	GRE/9/015	Modernization of personnel dosimetry	3/00	31 950	-	18 450	0/09	2 980	-	-
1993	GRE/9/018	Establishment of whole body counter	2/00	21 150	100 000	9 450	0/08	2 975	-	-
	TOTAL	14 projects	28/19	286 110	941 585	104 419	8/19	91 871	497 968	23 451

Footnote-a/ projects not yet upgraded:

GRE/2/021 Nuclear techniques in analytical chemistry
 GRE/9/016 Radionuclide measurement of air samples
 GRE/9/017 Upgrading of whole body counter

COUNTERPART INSTITUTIONS IN GREECE (I)
(By Project)

<u>Project No.</u>	<u>Institute</u>	<u>Counterpart(s)</u>
<u>NUCLEAR PHYSICS AND CHEMISTRY</u>		
GRE/1/031	Atomic Energy Commission, National Centre for Scientific Research "Demokritos", Nuclear Technology Division, Athens	PAPADOPOULOS
GRE/1/032	Atomic Energy Commission, National Centre for Scientific Research "Demokritos", Nuclear Technology Division, Athens	PAPADOPOULOS
GRE/1/033	Atomic Energy Commission, National Centre for Scientific Research "Demokritos", Athens	GAMARI-SEALE
GRE/1/034	1. Atomic Energy Commission, National Centre for Scientific Research "Demokritos", Institute of Nuclear Physics, Athens 2. Atomic Energy Commission, National Centre for Scientific Research "Demokritos", Institute of Telecommunication and Informatics, Athens 3. Atomic Energy Commission, National Centre for Scientific Research "Demokritos", Electronics Department, Athens	PARADELLIS MANTAKAS PAPADOPOULOS
GRE/1/035	Atomic Energy Commission, National Centre for Scientific Research "Demokritos", Chemistry Department, Radioanalytical Laboratory, Athens	GRIMANIS
GRE/2/015	Atomic Energy Commission, National Centre for Scientific Research "Demokritos", Isotope Department, Athens	BELKAS
GRE/2/016	Atomic Energy Commission, National Centre for Scientific Research "Demokritos", Radioimmunochemistry Laboratory, Athens	EVANGELATOS

COUNTERPART INSTITUTIONS IN GREECE (I)
(By Project)

<u>Project No.</u>	<u>Institute</u>	<u>Counterpart(s)</u>
<u>NUCLEAR PHYSICS AND CHEMISTRY (cont'd)</u>		
GRE/2/017	Atomic Energy Commission, National Centre for Scientific Research "Demokritos", Isotope Department, Radiopharmacology Laboratory, Athens	SAWAS-DIMOPOULOU
GRE/2/018	Atomic Energy Commission, National Centre for Scientific Research "Demokritos", Athens	YAMAKOPOULOS
GRE/2/019	Atomic Energy Commission, National Centre for Scientific Research "Demokritos", Radioimmunochemistry Laboratory, Athens	EVANGELATOS HADZISTELIOS
GRE/2/020	Atomic Energy Commission, National Centre for Scientific Research "Demokritos", Radiopharmaceuticals Laboratory, Athens	CHIOTELLIS
GRE/2/022	Aristotelian University of Thessaloniki, Department of Chemistry, Thessaloniki	MISAELIDES
GRE/2/023	Atomic Energy Commission, National Centre for Scientific Research "Demokritos", Institute of Physical Chemistry, Athens	NIKOKAVOURAS
GRE/2/024	Atomic Energy Commission, National Centre for Scientific Research "Demokritos", Nuclear Technology Division, Athens	PAPADOPOULOS
<u>NUCLEAR MATERIALS</u>		
GRE/3/006	Atomic Energy Commission, Uranium Exploration Department, Athens	VRAHAMIS
GRE/3/007	Institute of Geology and Mineral Exploration, Department of Energy Resources, Athens	HATZIYANNIS

COUNTERPART INSTITUTIONS IN GREECE (I)
(By Project)

<u>Project No.</u>	<u>Institute</u>	<u>Counterpart(s)</u>
<u>NUCLEAR ENGINEERING AND TECHNOLOGY</u>		
GRE/4/007	Atomic Energy Commission, National Centre for Scientific Research "Demokritos", Reactor Department, Athens	ANTONIOU
GRE/4/008	Atomic Energy Commission, National Centre for Scientific Research "Demokritos", Athens	BARTZIS
GRE/4/009	Atomic Energy Commission, National Centre for Scientific Research "Demokritos", Athens	PAPASTERGIOU
<u>AGRICULTURE</u>		
GRE/5/013	Institute of Land Reclamation, Thessaloniki	HADZIYIANNAKIS
GRE/5/014	Atomic Energy Commission, National Centre for Scientific Research "Demokritos", Department of Biology, Laboratory of Soil Science and Plant Nutrition, Athens	PAPANICOLAOU
GRE/5/015	Subtropical Plants and Olive Trees Institute, Chania, Crete	MICHELAKIS
GRE/5/016	1. Cotton and Industrial Plants Institute, Thessaloniki 2. Atomic Energy Commission, National Centre for Scientific Research "Demokritos", Athens 3. Institute of Land Reclamation, Thessaloniki	SETATOU KATSIKAS PAPANICOLAOU HAFZIYANNAKIS
GRE/5/017	Aristotelian University of Thessaloniki, Veterinary School, Department of Helminthology, Thessaloniki	HIMONAS

COUNTERPART INSTITUTIONS IN GREECE (I)

(By Project)

<u>Project No.</u>	<u>Institute</u>	<u>Counterpart(s)</u>
<u>NUCLEAR MEDICINE</u>		
GRE/6/006	Metaxas Memorial Cancer Hospital, Nuclear Medicine Department, Piræus	PATENIOTIS
GRE/6/007	1. Atomic Energy Commission, National Centre for Scientific Research "Demokritos" Athens 2. Atomic Energy Commission, National Centre for Scientific Research "Demokritos" Radiopharmaceuticals Laboratory, Athens	BELKAS CONSTANTINIDES CHIOTELLIS EVANGELATOS
GRE/6/008	Aristotelian University of Thessaloniki, Department of Internal Medicine, Thessaloniki	YYZANTIADIS
<u>NUCLEAR TECHNIQUES IN INDUSTRY AND HYDROLOGY</u>		
GRE/8/006	Atomic Energy Commission, National Centre for Scientific Research "Demokritos", Laboratory of Isotope Hydrology Studies, Athens	LEONTIADIS
GRE/8/007	Atomic Energy Commission, National Centre for Scientific Research "Demokritos", Institute of Physical Chemistry, Athens	MARKETOU-MANTAKA
GRE/8/008	1. Institute of Geology and Mineral Exploration, Department of Energy Resources, Athens 2. Atomic Energy Commission, National Centre for Scientific Research "Demokritos", Institute of Physical Chemistry, Athens	FYTIKAS LEONTIADIS
GRE/8/009	Atomic Energy Commission, National Centre for Scientific Research "Demokritos", Laboratory of Isotope Hydrology Studies, Athens	ZOURIDAKIS

COUNTERPART INSTITUTIONS IN GREECE (I)
(By Project)

<u>Project No.</u>	<u>Institute</u>	<u>Counterpart(s)</u>
<u>NUCLEAR SAFETY</u>		
GRE/9/011	Atomic Energy Commission, Environmental Radioactivity Laboratory, Athens	DANALI
GRE/9/012	1. National Centre for Marine Research, Athens 2. Atomic Energy Commission, National Centre for Scientific Research "Demokritos", Athens	FLOROU-GAZI -
GRE/9/013	Atomic Energy Commission, National Centre for Scientific Research "Demokritos", Athens	KRITIDIS
GRE/9/014	University of Athens, School of Medicine, Laboratory of Medical Physics, Athens	PROUKAKIS
GRE/9/015	Atomic Energy Commission, Athens	MANDOLIDIS KAMENOPOULOU
GRE/9/018	Atomic Energy Commission, Athens	HADJANTONIOU MANOLIDIS

COUNTERPART INSTITUTIONS IN GREECE (II)

(By Institute)

ATHENS

Atomic Energy Commission

Athens

GRE/9/015 Modernization of Personnel Dosimetry
GRE/9/018 Establishment of Whole Body Counter

Atomic Energy Commission

National Centre for Scientific Research "Demokritos"

Athens

GRE/1/033 Upgrading of Neutron Spectrometer
GRE/2/018 Cyclotron Facility
GRE/4/008 Research Reactor Modernization
GRE/4/009 Research Reactor Upgrading
GRE/5/016 Nitrogen-15 Fertilizer Studies
GRE/6/007 Radiopharmaceutical Quality Control
GRE/9/012 Monitoring Background Radiation Levels
GRE/9/013 Environmental Radioactivity

Atomic Energy Commission

National Centre for Scientific Research "Demokritos"

Nuclear Technology Division

Athens

GRE/1/031 Neutron Activation in Multi-Element Analysis
GRE/1/032 Neutron Activation Analysis
GRE/2/024 Advanced Nuclear Analytical Techniques

Atomic Energy Commission

National Centre for Scientific Research "Demokritos"

Institute of Nuclear Physics

Athens

GRE/1/034 Ion Implantation Using a Tandem Accelerator

Atomic Energy Commission

National Centre for Scientific Research "Demokritos"

Institute of Telecommunication and Informatics

Athens

GRE/1/034 Ion Implantation Using a Tandem Accelerator

COUNTERPART INSTITUTIONS IN GREECE (II)
(By Institute)

ATHENS (cont'd)

Atomic Energy Commission
National Centre for Scientific Research "Demokritos"
Electronics Department
Athens

GRE/1/034 Ion Implantation Using a Tandem Accelerator

Atomic Energy Commission
National Centre for Scientific Research "Demokritos"
Chemistry Department
Radioanalytical Laboratory
Athens

GRE/1/035 INAA of Trace Elements in Atmosphere of Athens

Atomic Energy Commission
National Centre for Scientific Research "Demokritos"
Isotope Department
Athens

GRE/2/015 Radiopharmaceuticals

Atomic Energy Commission
National Centre for Scientific Research "Demokritos"
Isotope Department
Radiopharmacology Laboratory
Athens

GRE/2/017 Radiopharmacology

Atomic Energy Commission
National Centre for Scientific Research "Demokritos"
Radioimmunochemistry Laboratory
Athens

GRE/2/016 Production of Labelled Organic Compounds
GRE/2/019 Radioimmunochemistry

COUNTERPART INSTITUTIONS IN GREECE (II)

(By Institute)

ATHENS (cont'd)

**Atomic Energy Commission
National Centre for Scientific Research "Demokritos"
Radiopharmaceuticals Laboratory
Athens**

GRE/2/020 Radiopharmaceuticals
GRE/6/007 Radiopharmaceutical Quality Control

**Atomic Energy Commission
National Centre for Scientific Research "Demokritos"
Institute of Physical Chemistry
Athens**

GRE/2/023 Chemiluminescence Induced by Internal Radiation
GRE/8/007 Recharging GAMMACELL 200 Irradiator
GRE/8/008 Isotopes in Geothermal Studies

**Atomic Energy Commission
National Centre for Scientific Research "Demokritos"
Reactor Department
Athens**

GRE/4/007 Research Reactor Utilization

**Atomic Energy Commission
National Centre for Scientific Research "Demokritos"
Department of Biology
Laboratory of Soil Science and Plant Nutrition
Athens**

GRE/5/014 Isotope-Aided Crop Studies

**Atomic Energy Commission
National Centre for Scientific Research "Demokritos"
Laboratory of Isotope Hydrology Studies
Athens**

GRE/8/006 Isotopes in Hydrology
GRE/8/009 Natural C-14 Measurement by Liquid Scintillation

COUNTERPART INSTITUTIONS IN GREECE (II)
(By Institute)

ATHENS (cont'd)

Atomic Energy Commission
Uranium Exploration Department
Athens

GRE/3/006 Nuclear Raw Materials

Atomic Energy Commission
Environmental Radioactivity Laboratory
Athens

GRE/9/011 Environmental Radioactivity

Institute of Geology and Mineral Exploration
Department of Energy Resources
Athens

GRE/3/007 Uranium Exploration and Evaluation
GRE/8/008 Isotopes in Geothermal Studies

National Centre for Marine Research
Athens

GRE/9/012 Monitoring Background Radiation Levels

University of Athens
School of Medicine
Laboratory for Medical Physics
Athens

GRE/9/014 Whole Body Counter Commissioning

PIRAEUS

Metaxas Memorial Cancer Hospital
Nuclear Medicine Department
Piraeus

GRE/6/006 Nuclear Medicine

COUNTERPART INSTITUTIONS IN GREECE (II)

(By Institute)

THESSALONIKI

**Aristotelian University of Thessaloniki
Department of Chemistry
Thessaloniki**

GRE/2/022 Establishment of an XRF Laboratory

**Aristotelian University of Thessaloniki
Veterinary School
Department of Helminthology
Thessaloniki**

GRE/5/017 Nuclear Technology in Animal Science

**Aristotelian University of Thessaloniki
Department of Internal Medicine
Thessaloniki**

GRE/6/008 Development of New Techniques with Radioisotopes In-Vitro

**Institute of Land Reclamation
Thessaloniki**

GRE/5/013 Studies of Plant Water Use Efficiency
GRE/5/016 Nitrogen-15 Fertilizer Studies

**Cotton and Industrial Plants Institute
Thessaloniki**

GRE/5/016 Nitrogen-15 Fertilizer Studies

CHANIA, CRETE

**Subtropical Plants and Olive Trees Institute
Chania, Crete**

GRE/5/015 Nuclear Techniques in Agriculture

**THE AGENCY'S TECHNICAL CO-OPERATION PROGRAMME WITH
GREECE
SINCE 1983**

LONG-TERM EXPERT ASSIGNMENTS

NONE

RESEARCH CONTRACTS/AGREEMENTS IN GREECE SINCE 1983 ¹
(As of mid-November 1993)

Field of activity	No. of contracts/ agreements	Amount allocated \$
Nuclear physics	4	7 000
Nuclear chemistry	4	23 000
Nuclear techniques in agriculture	13	115 700
Nuclear medicine	4	25 000
Nuclear techniques in biology	12	73 000
Nuclear techniques in industry & hydrology	1	14 000
Safety in nuclear energy	6	35 400
TOTAL	44	293 100

¹/ New awards since 1983

**SCIENTISTS FROM GREECE SERVING AS AGENCY
TECHNICAL CO-OPERATION EXPERTS AND
TRAINING COURSE LECTURERS
OR
PARTICIPATING IN CO-ORDINATION MEETINGS
1983 - 1993
(As of mid-November 1993)**

Name	No. of assignments	Project(s)
ASTHENOPOULOS	1	SIN/1/006
BELKAS	3	ALG/6/003, THA/2/010
CHIOTELLIS	10	ALG/6/003, CUB/2/006, PAK/6/012, SYR/6/008, THA/2/010, THA/4/008, RAS/6/020, RER/6/005, RLA/2/007
CHRISTOFIDES	2	INT/1/014, RER/9/007
CHRYSOCHOIDES	3	COL/9/003, INT/9/065
CONSTANTINIDES	1	MAL/2/002
DANIEL	1	GRE/5/014
ECONOMOPOULOS	3	RAF/5/013
KATSANOS	4	POR/1/003, SIN/1/004, INT/8/002
PAPAZOGLU	7	BRA/9/016, MEX/9/031, INT/9/063
PARADELLIS	2	RAF/8/015, RER/4/008
PRIMOS	1	INT/0/053
ROBINSON	1	RAF/5/025
TERVISIDES	1	RER/8/003
TRIANTAFLYLLOU	3	SRL/7/002, THA/8/009
TSAGAS	1	RER/8/003
TSITSIPIS	1	LIB/5/003
TOTAL	45	

**AGENCY FELLOWSHIPS AND SCIENTIFIC VISITS
HOSTED BY GREECE
1983 - 1993
(As of mid-November 1993)**

Recipient country	No. of fellowships	No. of scientific visits	TOTAL ¹
ALGERIA	3	2	5
BANGLADESH	1	-	1
CUBA	2	-	2
GHANA	1	1	2
GUATEMALA	1	-	1
IRAN	5	-	5
MALAYSIA	3	-	3
MOROCCO	1	-	1
NIGERIA	1	-	1
PAKISTAN	3	1	4
THAILAND	4	-	4
ZAIRE	2	-	2
TOTAL	27	4	31

1./ Includes trainees who have completed or at least started their studies.

**REGIONAL AND INTERREGIONAL TRAINING EVENTS
HOSTED BY GREECE
1983 - 1993
(As of mid-November 1993)**

Course No.	Course Title	Partici- pants	Year
INT/1/047 (001)	ITC on experimental nuclear spectroscopy	20	1990
RER/9/017 (001)	RTC on management of spent radiation sources	19	1993
	TOTAL	39	