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(Information)

COURT OF AUDITORS

SPECIAL REPORT No 25/98

concerning operations undertaken by the European Union in the field of nuclear safety in central and eastern Europe (CEEC) and in the new independent States (NIS) (1990 to 1997 period) together with the Commission's replies

(submitted pursuant to Article 188c(4)(2) of the EC Treaty)

(1999/C 35/01)

FOREWORD

After the completion by late October of the bilateral discussion procedure relating to this report, on 10 November the Court then received new additions to the replies from the Commission, some of which seem to it to be questionable.

However, so that publication of its report is not held up indefinitely, the Court decided to adopt it definitively at its meeting of 12 November 1998, regardless of the differences of opinion that still prevail on certain points.

LIST OF ACRONYMS AND ABBREVIATIONS

ENEA — The European Nuclear Energy Agency belonging to the OECD (Organisation for Economic Cooperation and Development)

IAEA — International Atomic Energy Agency (international organisation under the aegis of the United Nations)

EBRD — European Bank for Reconstruction and Development

DG IA — Commission Directorate-General responsible for external relations with CEECs and the NIS

Euratom — European Atomic Energy Community

ISTC — International Science and Technology Centre. It was established in 1992 and became operational in 1994. Its purpose is to prevent an outflow of engineers previously employed in the military sector

NIS — new independent States of the former Soviet Union

NSA — Nuclear safety account. The EBRD opened the special NSA account in March 1993 for a period of three years. Its operation was subsequently extended for a further three-year period in April 1996

NUSAC — G24 Nuclear Safety Assistance Coordination. Coordination unit set up by the Commission

CEECs — Central and East European countries

PHARE — action plan for coordinated aid to Poland and Hungary (subsequently extended to the remainder of the CEECs). It comprises programmes financed by the EU since 1990 to assist with economic restructuring in the CEECs

RBMKs — Soviet-designed, graphite-moderated boiling-water reactors with no secondary circuit or containment building used to produce plutonium for military purposes. See also paragraph 14 of Annex 1

TACIS — technical assistance to the Commonwealth of Independent States. Programmes financed by the EU since 1991 to assist the NIS with their transition to a market economy

TPEG — Twinning Programme Engineering Group, or the EEIG (European Economic Interest Grouping), established on 24 July 1992 in response to the Commission's desire to rely on a single cooperation structure set up by EU electricity-generating companies responsible for pressurised-water nuclear reactors. The TPEG comprises EDF (France), Tractebel (Belgium), Magnox (United Kingdom), DTN (Spain), VGB (representing the German electricity companies RWE, KKE and GKN Gmbh), ENEL (Italy), GKN (Netherlands) and IVO/TVO (Finland)

EU — European Union

USTC — Ukrainian equivalent of the ISTC

VVERs — Soviet-designed, pressurised-water nuclear reactors with a secondary circuit and containment building (excluding the VVER 440-230 reactor). See also paragraph 14 of Annex 1

WANO — World Association of Nuclear Operators

CONTENTS

1. INTRODUCTION

PHARE and TACIS nuclear-safety programmes

1.1. The accident at unit 4 of the Chernobyl nuclear reactor in 1986 drew attention to the importance of dealing with the safety problems posed by the stock of Soviet-designed nuclear reactors. Since 1990 international aid has been mobilised under the auspices of the G7 ([1]), the United Nations (IAEA), the OECD (ENEA), and the EU, whose Edinburgh (1992) and Corfu (1994) summits confirmed the guidelines to be followed in restructuring the nuclear sector in east European countries and closing the Chernobyl power plant. All of these measures were intended, as stated by the Council in its resolution of 18 June 1992 ([2]), to help the east European countries to render their stock of reactors as safe as western power plants. Throughout this period several initiatives were taken to coordinate international aid, whether by pooling the data available concerning existing aid programmes (creation of NUSAC at the Commission in 1992) or by establishing special multilateral financing instruments (creation of the NSA in 1993, management of which was entrusted to the EBRD). While the Court recognises, as the Commission points out in paragraph 5 of the general comments introducing its replies, that the PHARE and TACIS expenditure could not by itself achieve any more than limited results, the fact is, nevertheless, that the prime responsibility for coordinating the efforts made by the countries of the OECD and the other international organisations to assist the CEECs and the NIS in restructuring their nuclear sector lay with the Commission. This being so, the Court took the view that it was part of its remit to examine how the Commission had discharged this responsibility and to assess the scale of the progress actually made on the ground.

1.2. The first technical studies concerning the nuclear-powered electricity-generating sector revealed that the former Soviet system, driven by the nuclear needs of the military sector, focused on meeting production requirements and that operational-safety and environmental matters were neglected. These design-related and technical problems were compounded by the need to establish powerful safety authorities that would be independent of the operators in these countries. Such authorities, acting as a counterweight to the operators are considered to be an essential precondition for safety in all western countries. Owing to the economic and social impact of the remedies envisaged and, in particular, the decommissioning of the most dangerous power plants (some RBMK and VVER 440-230 reactors), safety improvements had to be incorporated into an overall strategy for the energy sector in east European countries, where waste treatment posed acute difficulties, and the nuclear sector was socially and economically important and had therefore previously been given privileged treatment over other industrial sectors. All of these compelling factors, coupled with western economic interests, made intervention in this sector a particularly delicate matter.

1.3. Against this difficult multilateral and sectoral background, the main features of which are set out in *Annex 1*, since 1990 the EU has allocated almost ECU 850 million ([3]) to improving nuclear security and safety ([4]) in the CEECs and the NIS, and this resulted in payments totalling ECU 355 million by the end of 1997. Most Community aid has been implemented by the Commission through its PHARE and TACIS programmes, under which a total of ECU 786,1 million, or 20 % of TACIS commitments and 2 % of PHARE commitments, have been allocated to nuclear safety. *Table 1* provides a breakdown of these commitments by recipient country and according to the main fields of action covered by the related Commission decisions. According to the recipients, this financing covers only a limited proportion (a few per cent) of the modernisation programmes undertaken. On the basis of the information available, however, it is not possible to quantify the scale of these programmes or how far they have been implemented.

([1]) Canada, France, Germany, Italy, Japan, the United Kingdom and the United States of America.

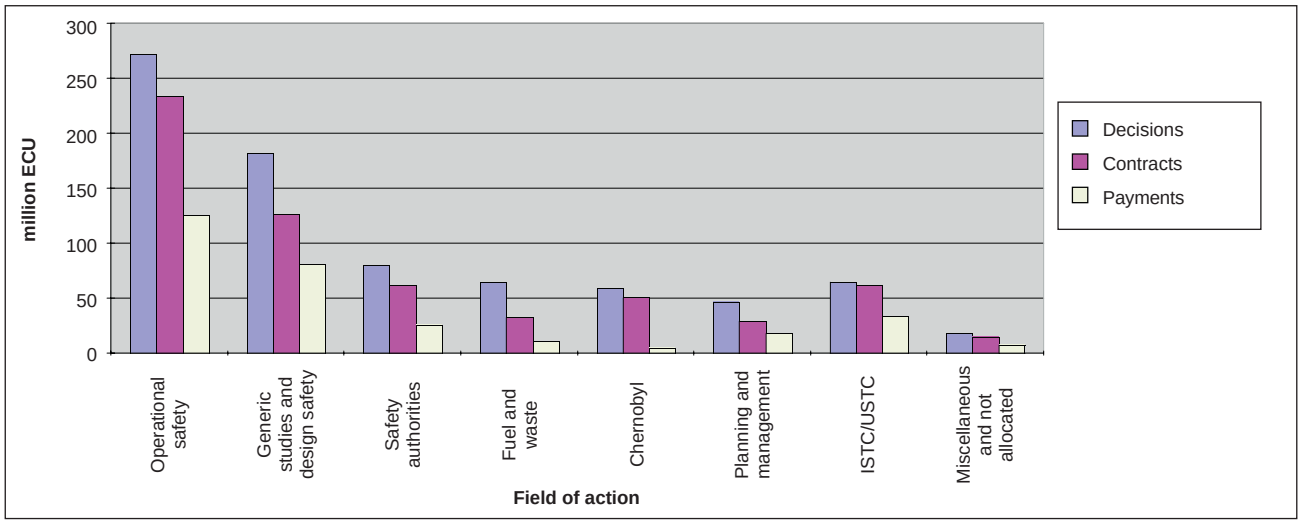
([2]) Council resolution of 18 June 1992 on the technological problems of nuclear safety, paragraph 5 (OJ C 172, 8.7.1992, p. 2).

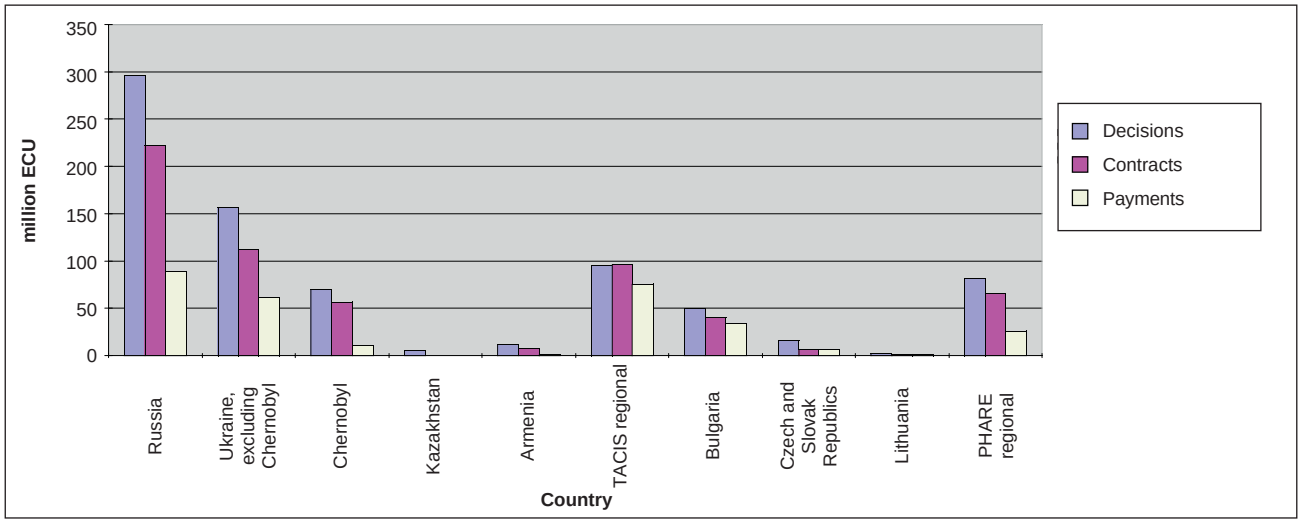
([3]) See Annex 1 — Table 1.1. As a comparison, the cost of constructing a new power plant with four reactors with a total output of 5 000 MW of electricity is of the order of ECU 5 000 million.

([4]) The term 'safety' means all of the security measures strictly relating to the operation of nuclear power plants. The broader term of 'nuclear safety' includes, *inter alia*, the protection of the population and the complete nuclear-fuel cycle.

Table 1

Breakdown of PHARE and TACIS commitments by field of action and country for the years 1990 to the end of 1997





(million ECU)

D = decisions C = contracts P = payments		Operational safety, on-site assistance and associated projects		Generic studies and safety design		Fuel, waste and decommissioning		Assistance to safety authorities		ISTC/USTC		Planning, management and evaluation		Miscellaneous and not allocated		Total		% of the total		% implementation of the decisions	
Russia	D		122,2		48,7		29,0		20,5		62,0		10,1		3,5		296		38		
	C	*89,2*	*28,9*	*36,0*	*15,6*	*14,5*	*4,7*	*14,1*	*4,5*	*61,4*	*33,5*	*4,8*	*1,9*	*2,0*	*0,1*	*222,1*	*89,2*	*36*	*29*	*75*	*30*
Ukraine, excluding Chernobyl	D		89,4		27,8		5,3		21,5		3,0		7,9		2,5		157,4		20		
	C	*72,0*	*45,1*	*17,2*	*9,2*	*3,1*	*0,1*	*15,4*	*4,4*			*4,4*	*2,8*	*0,2*		*112,3*	*61,7*	*18*	*20*	*71*	*39*
Chernobyl	D						59,0		2,5				8,0				69,5		9		
	C	*5,7*	*5,6*			*50,5*	*4,8*	*0,9*	*0,2*							*57,0*	*10,6*	*9*	*3*	*82*	*15*
Kazakhstan	D		1,7				2,0		0,8						0,8		5,3		1		
	C							*0,2*								*0,2*		*0*		*4*	
Armenia	D		9,6		1,4				0,5								11,5		1		
	C	*7,9*	*1,0*	*0,0*	*0,0*											*7,9*	*1,0*	*1*	*0*	*69*	*8*
Regional	D		6,0		54,6		6,5		6,5				13,4		8,7		95,73		12		
	C	*20,1*	*17,7*	*45,5*	*38,5*	*4,0*	*1,0*	*8,5*	*6,5*			*13,2*	*8,7*	*5,0*	*3,4*	*96,4*	*75,9*	*16*	*25*	*101*	*79*
NIS total	D		228,9		132,5		101,8		52,3		65,0		39,4		15,5		635,4		81		
	C	*194,9*	*98,3*	*98,7*	*63,4*	*72,1*	*10,7*	*39,1*	*15,7*	*61,4*	*33,5*	*22,5*	*13,3*	*7,2*	*3,5*	*496,0*	*238,3*	*81*	*78*	*78*	*38*
Bulgaria	D		19,7		11,2		9,2		5,7				4,0		0,4		50,2		6		
	C	*18,9*	*17,7*	*10,1*	*8,4*	*1,8*	*1,5*	*4,0*	*1,9*			*4,7*	*3,9*	*0,4*	*0,4*	*39,9*	*33,8*	*7*	*11*	*80*	*67*
Czech and Slovak Republics	D		5,5		9,1				1,3				0,3				16,2		2		
	C	*1,4*	*1,3*	*4,6*	*4,4*			*0,5*	*0,5*			*0,2*	*0,2*	*0,3*	*0,3*	*6,9*	*6,8*	*1*	*2*	*43*	*42*
Lithuania	D		0,7		1,1				0,6								2,3		0		
	C	*0,5*	*0,5*											*0,9*	*0,9*	*1,4*	*1,4*	*0*	*0*	*62*	*61*
Regional	D		17,1		27,5		12,2		19,9				3,0		2,3		82		10		
	C	*18,3*	*7,9*	*12,8*	*4,2*	*8,8*	*3,2*	*18,4*	*7,5*			*1,8*	*0,8*	*5,9*	*2,7*	*66,0*	*26,2*	*11*	*9*	*82*	*33*
CEEC total	D		43,0		48,9		21,4		27,5				7,3		2,7		150,7		19		
	C	*39,1*	*27,4*	*27,5*	*17,1*	*10,6*	*4,7*	*22,9*	*9,9*			*6,7*	*4,9*	*7,5*	*4,3*	*114,3*	*68,2*	*19*	*22*	*76*	*45*
Total	**D**		**271,9**		**181,4**		**123,2**		**79,8**		**65,0**		**46,7**		**18,2**		**786,1**		**100**		
	C	***234,0***	***125,6***	***126,1***	***80,4***	***82,8***	***15,4***	***62,0***	***25,6***	***61,4***	***33,5***	***29,2***	***18,3***	***14,7***	***7,8***	***610,2***	***306,6***	***100***	***100***	***78***	***39***
% of the total	D		35		23		16		10		8		6		2		100				
	C	*38*	*41*	*21*	*26*	*14*	*5*	*10*	*8*	*10*	*11*	*5*	*6*	*2*	*3*	*100*	*100*				
% of the decisions	C	*86*	*46*	*70*	*44*	*67*	*12*	*78*	*32*	*95*	*52*	*62*	*39*	*81*	*43*	*78*	*39*				

Source: Commission's revenue and expenditure account (Désirée) as at 31 December 1997.

1.4. The measures relating to fuels and radioactive waste include a figure of ECU 20 million allocated to monitoring fissile materials. With regard to decommissioning, the programmes concerned Chernobyl alone and were for a maximum of just ECU 59 million. Various other measures cover safety-related research (ECU 2 million), preparing Euratom loans (ECU 1,5 million), radiation-detection and alert systems (ECU 6,5 million), emergency off-site response (ECU 5 million), a study of electricity distribution (ECU 0,4 million) and various reserves (ECU 2,8 million).

1.5. The programmes' main priority comprises direct aid to nuclear power plants for operational safety, which takes up 35 % of the funds, or ECU 272 million. *Table 2* shows the scheduled budget appropriations by country and type of reactor for power plants in east European countries. *Table 3* shows the geographical location of Soviet-designed power plants operating in these countries.

Table 2

Breakdown of PHARE and TACIS operational-safety programmes by recipient nuclear power plant

(million ECU)

	Total capacity (MW)	Operator responsible for on-site assistance	Total appro-pria-tions allocated	of which					
				RBMK 1 000/1 500	VVER 440-230	VVER 440-213	VVER 1 000-320	BN 350/600, EPG-6	Not allocated
Russia	19 843		119	40	15	11	43	10	1
Kalinin (2 × V320)	1 900	Tractebel (B)	20				20		
Balakovo (4 × V320)	3 800	RWE (D)	18				18		
Sosnovy Bor (4 × RBMK 1000)	3 700	Magnox (UK)	20	20					
Smolensk (3 × RBMK 1000)	2 775	Scottish Nuclear (UK)	20	20					
Kola (2 × V230 + 2 × V213)	1 644	KKE-Emsland (D) (1)	19		8	11			
Beloyarsk (1 × BN 600)	560	Nersa (F)	9					9	
Novovoronesh (2 × V230 + 1 × V320)	1 720	RWE (D)	12		7		5		
Bilibino (4 × EPG-6)	44		1					1	
Kursk (4 × RBMK 1000)	3 700								
Appropriations not allocated			1						1
Ukraine	13 045		89			23	66		
Rovno (1 × V213 + 2 × V320)	1 695	EDF (F)	26			23	3		
Zaporozhe (6 × V320)	5 700	GKN (D)	25				25		
South Ukraine (3 × V320)	2 850	DTN (E)	21				21		
Khmelnitsky (1 × V320)	950	DTN (E)	8				8		
Chernobyl (2 × RBMK 1000)	1 850								
Not allocated to a specific site			9				9		
Armenia	752		10		10				
Medzamor (2 × V270-V230 variant)	752	ENEL (I)	10		10				
Kazakhstan	150		5					5	
Aktau (1 × BN 350)	150		5					5	
Not allocated to a specific country			6						6
Total for the newly independent States	**33 790**		**229**	**40**	**25**	**34**	**109**	**15**	**7**
Bulgaria	3 526		20		19		1		
Kozloduy (4 × V230 + 2 × V320)	3 526	EDF (F)	20		19		1		
Czech and Slovak Republics	3 192		6		2	3			
Bohunice (2 × V230 + 2 × V213)	1 632		3		2	1			
Dukovany (4 × V213)	1 560		2			2			
Mochovce (4 × V213 under construction)									
Temelin (2 × V320 under construction)									
Not allocated to a specific site			1			1			
Lithuania	2 600		1	1					
Ignalina (2 × RBMK 1500)	2 600		1	1					
Hungary	1 730								
Paks (4 × V213)	1 730								
Romania	620								
Cernavoda (1 × PHWR, CANDU-Canada)	620								
Slovenia	620								
Krsko (1 × PWR, Westinghouse-USA)	620								
Not allocated to a specific country			17		4	1	1		11
Total for Central and Eastern Europe	**12 288**		**43**	**1**	**24**	**5**	**2**		**11**
Grand total for operational safety	**46 078**		**272**	**40**	**49**	**39**	**111**	**15**	**18**

(1) EDF replaced by KKE.

Source: Commission decisions.

Table 3

Location of Soviet-designed nuclear power plants operating in the CEECs and NIS

Source: http://atom.pnl.gov:2080/inspmedia/allmap98.gif — INSC database (ANL/United States Department of Energy).

The Court's audit

1.6. The Court's objective was to evaluate the implementation of the resources deployed by the EU since 1990 for the purpose of improving nuclear safety in the CEECs and the NIS, while taking account of the multilateral context and the coordination task entrusted to the Commission by the international community within the scope of the G7 and the G24 ([5]).

1.7. Audits on the Commission's premises focused on the operations of the PHARE and TACIS programmes and were supplemented by visits to the Ukraine, Bulgaria, Lithuania and the Russian Federation, and to several specialist organisations within the EU. (The various subjects of these audits are set out in *Annex 2*.) The Court was assisted in its work by an expert on nuclear-safety. With regard to the Ukraine, some observations regarding the nuclear-safety programmes have been published by the Court in a Special Report concerning all of the TACIS operations in this country ([6]).

2. SUMMARY OF THE OBSERVATIONS

The European Union's approach

2.1. The intervention strategy, which was not explicitly stated by the Commission until 1996, is still confused as regards old-design reactors, decommissioning and dismantling, and waste treatment (see paragraphs 3.2 to

([5]) See Annex 1, paragraph 8.

([6]) Special Report No 6/97 concerning TACIS subsidies allocated to the Ukraine (OJ C 171, 5.6.1997).

3.6). The urgent short-term requirements are not clearly defined (see paragraphs 3.8 to 3.10). There has been a delay in mobilising the financial instruments that could take over from PHARE and TACIS where the most expensive projects are involved (see paragraphs 3.7 and 3.11).

2.2. With regard to coordination, the Commission, in the context of the mandate conferred on it by the international community (G24), has been unable to achieve more than an exchange of information between donors, the IAEA, the EBRD and recipients (see paragraphs 3.13 to 3.20).

2.3. The Member States' lack of a concerted approach towards agreements concerning third-party liability (see paragraph 5.18) and instituting technical standards and safety regulations (see paragraph 3.1), plus the lack of a clear contractual framework for PHARE and TACIS operations (see paragraph 3.14), compounded by difficulties in communicating with some recipients (see paragraphs 4.3 to 4.4, 4.17 to 4.18, 5.1, 5.13 and 5.18 to 5.20), have stunted the development of relations of trust and partnership, although the latter is of strategic interest to the EU and its nuclear industry.

Management of the operations

2.4. The disparate and frequently changing staff numbers employed by the unit responsible for the programmes, the inadequate tools for managing the projects and monitoring the related accounts, and the lax management prevent the Commission from ensuring that the operations are monitored satisfactorily, problems are dealt with swiftly and the quality of the services provided by contractors is checked (see paragraphs 4.12 to 4.16 and 5.14).

2.5. The volume of contracts concluded without invitations to tender having been issued accounted for almost one third of the total (ECU 192 million), but there was no corresponding increase in the rate of implementation (see paragraphs 4.1 to 4.2 and 4.11).

2.6. The use of supply agencies as intermediaries between recipients and the managers of nuclear power plants in the EU that are responsible for on-site assistance complicated implementation, contributed to the delays, created tensions and enabled over-high advances to be paid, thus enhancing the picture of the mobilisation of appropriations (see paragraphs 4.3 to 4.10 and 5.9).

2.7. Some of the external bodies which the Commission used to assist it in planning work and in the appraisal of contracts (see paragraphs 4.5 and 5.4 to 5.5) were set up on a case-by-case basis by creating an association of commercial companies which also held contracts financed under the programmes. The Commission delegated too many of its responsibilities in the planning field, thus undermining its authority and independence.

2.8. The resources devoted to managing the programmes are not shown clearly in the Commission's accounts and exceed the levels fixed by the Budget Authority, but have not remedied the weaknesses detected (see paragraphs 4.19 to 4.20).

Mobilisation of aid and the results

2.9. The implementation mechanism selected by the Commission proved particularly slow. Programmes at the power plants which posed most safety problems were the ones that made least headway (see paragraphs 5.8 to 5.12). Supplying equipment was often favoured over other aspects of the development of a safety culture. It has not been established whether the division of the budgets between power plants and the various types of measure was appropriate (see paragraphs 5.6 and 5.7).

2.10. Once decisions had been taken, the content of the programmes underwent many changes. The lack of transparency caused misunderstandings and delays and enabled the most dynamic partners to reorient the programmes. Some projects were cancelled after considerable expenditure had been incurred. Some useful projects were scaled down, owing to insufficient budgetary resources, while some appropriations also remained unutilised, notably because of amendments made to programmes that were already under way (see paragraphs 5.1 to 5.3).

2.11. Account was not taken of the fact that the granting of licences ([7]) by the safety authorities in the recipient countries safeguards satisfactory completion of equipment projects until late in the day, and the procedure was not coordinated convincingly (see paragraphs 5.15 to 5.17).

2.12. Owing to the failure to communicate the results of studies costing a total of nearly ECU 40 million that were undertaken as part of the 1991 TACIS programme, their usefulness to the recipients is doubtful (see paragraph 5.18). Moreover, the conditions imposed on Russian subcontractors taking part in the studies are extremely severe. There is a risk that the subcontracting procedures will allow contractors in the EU to make sizeable profits that cannot be verified (see paragraphs 5.19 and 5.20)

2.13. At the end of the financial year 1997 the contracts entered in the accounts exceeded the value of actual contracts by 20 %, the result being that only 63 % of the decisions were covered by contracts and 37 % by

([7]) Authorisation to change installations and then to start operating new equipment.

payments. In the case of Chernobyl, where the situation is particularly difficult, the corresponding rates were 20 % and 8 % respectively. The lack of transparency in the structure of the budget and in the administration of the accounts deprives the managers and the Budget Authority of the means of ensuring and maintaining optimum allocation of the resources (see paragraphs 5.21 to 5.23).

3. THE EUROPEAN UNION'S APPROACH

European integration

3.1. At the end of 1997, owing to the absence of a binding legal basis, there was still no formal consensus at European level concerning technical standards in the area of the design and operational safety of nuclear installations ([8]). The 25 basic nuclear-safety principles published by the IAEA are still implemented in accordance with each Member State's own technical standards and regulations, which has not facilitated the action the EU has been taking with regard to the safety authorities in the CEECs and the NIS.

Objectives and resources

3.2. Between 1990 and 1994 the EU's nuclear-safety programmes were decided on and implemented in the absence of an explicitly defined overall strategy. During this period PHARE funding focused on problems concerning the VVER 440-230 reactors in Kozloduy, Bulgaria, on the basis of the action programme drawn up by WANO in 1991. The TACIS programmes first of all comprised studies that would enable the EU partners to gain an understanding of the technology involved and analyse the safety problems inherent in Soviet-designed nuclear power plants. They were then directed towards providing on-site assistance and equipment, supplemented by assistance to the safety authorities. It was only following repeated requests by the Council ([9]) and the Parliament that the entire matter was scrutinised in 1995, which resulted in the Commission proposing a strategy covering all of the fields of action concerning nuclear safety to the PHARE/TACIS Committee in June 1996.

3.3. 54 % of Russia's nuclear energy was still being generated by RBMK reactors as late as 1996. The RBMK power plant in Ignalina, Lithuania, and the VVER 440-230 reactors in Kozloduy, Bulgaria are of paramount economic importance to both of the above countries. No agreement has been concluded between the Commission and the recipients as to which reactors are to be closed down in the short or medium term, or on the conditions governing their continued operation. The Commission has made no allowance for the political, social and economic realities in its programmes and has not acted in a transparent manner, which has caused tension among the recipients (as is the case with the Kozloduy power plant).

3.4. The Commission has made no distinction in its programmes between the objectives and the resources on the basis of the age or recentness of the reactors from the point of view of safety. Improvements that would allow the life of the reactors to be extended beyond the normal duration and those contributing solely to short-term operational safety have not been defined. Given the uncertainties as to when old plants should be closed down, such clarification was a prerequisite for ensuring consistency in the planning and selection of projects.

Decommissioning and dismantling of reactors

3.5. Despite the importance of the decommissioning and dismantling of reactors that cannot be modernised, and of waste-processing, the mobilisation of appropriations in their regard has been very low. It is true that dismantling operations are technically arduous and very costly; despite the experience gained by the EU in dealing with some specific cases ([10]), it is also faced with economic and practical difficulties in this area.

3.6. In its comments on the 1995, 1996 and 1997 budgets, the Budget Authority asked the Commission to devote ECU 150 million in 1995, the same amount in 1996 and a further ECU 100 million to environment-related projects, notably in connection with dismantling RBMK reactors. Wording of this sort is not precise enough to constitute a real framework and to encourage monitoring and the submission of detailed reports concerning the objective of dismantling RBMK reactors, which, other than in the case of Chernobyl, has not been written into the Commission's programmes.

3.7. The TACIS programmes have not allowed perceptible results to be achieved in dismantling the Chernobyl power plant. Although a multilateral account was set up at the EBRD in 1997 later than planned, it constitutes a better response to the need for true international cooperation than the TACIS bilateral programmes, which were given limited resources and did not place sufficient focus on cooperating with the other aid donors.

([8]) Paragraph V.3 of the Communication from the Commission on the nuclear industries in the EU (an illustrative nuclear programme according to Article 40 of the Euratom Treaty), COM(97)401 final, 25 september 1997.

([9]) Specific request made at the meeting of the PHARE/TACIS Committee on 27 July 1995.

([10]) Grundremmingen A and Greifswald in Germany, Chinon A and Saint-Laurent A in France, Windscale AGR and Berkeley in the United Kingdom and Vandellos 1 in Spain.

Supply of equipment

3.8. It is the Commission's view that equipment must be supplied to cope with emergency situations. The Court's examination of the time used for implementation revealed that these urgent requirements have not always been met. The managers responsible for the Kola and Sosnovy Bor power plants confirmed that these time limits made it impossible to finance emergency measures.

3.9. The supply of pilot equipment was also intended to enable technology to be transferred and to pave the way for larger-scale industrial projects financed from sources other than TACIS. The recipients recognise and appreciate the pilot nature of the projects. However, although successes such as that achieved in Kalinin in respect of replacing electrical-penetration mechanisms demonstrate the appropriateness of this approach, industrial cooperation, which is needed for technology transfer, had not developed very far by the end of 1997.

Non-industrial aspects of operational safety

3.10. In addition to piloting industrial projects, on-site assistance should also focus on improving the safety culture. Such activities, which involve training, organisation and procedures, have rarely taken the form of projects, but have instead been incorporated into the general specifications governing on-site assistance. These tasks have therefore continued to be too poorly defined and have not been sufficiently supervised by the Commission to allow them to be properly developed, monitored and evaluated. The situation varies considerably from one power plant to another. The Balakovo plant, which has proved most active in this area, should serve as a reference.

Euratom loans

3.11. Although it has only been possible to contract Euratom loans since March 1994, no borrowing worthy of mention had taken place by the end of 1997, even though the preparation of three important projects had started in 1995 (see paragraphs 4 and 5 of *Annex 1*).

Multilateral coordination

Coordination of G24 (NUSAC) assistance

3.12. The G24 unit for 'coordinating' nuclear safety set up at the Commission has not carried out genuine coordination. This is because it has no responsibility within the assistance programmes, especially those of the Commission. The shortcomings identified by this unit have rarely provided the basis for action taken by the donors. NUSAC has estimated the funds committed by the international community at ECU 1 480 million. Owing to the fact that many donors, including the Commission until mid-1997, have not provided the necessary information, NUSAC's data comprise only approximate figures.

Cooperation with the EBRD (NSA) in supplying equipment

3.13. Even though the Commission's and the EBRD's objectives are the same as regards the supply of equipment, it was impossible to establish close cooperation between these two institutions at the power plants at which they were both working to this end (Kozloduy, Sosnovy Bor, Kola and Novovoronesh). It is true that all of the invitations to tender financed by the Nuclear Safety Account (NSA) managed by the EBRD are open to all of the donor countries, whereas the Commission's invitations to tender are restricted to EU countries, but the fact that both institutions have separate equipment programmes means that any efforts at cooperation are redundant. For example, there is no coordination of the programmes involving two projects at the Kola power plant (safety valves and leak detection).

3.14. Furthermore, the NSA financing agreements comprise a conventional framework that could be applied to Commission supply programmes, given that financing agreements in respect of the latter are either over-concise or simply do not exist, because the NSA agreements lay down the conditions concerning the future cessation of the operation of the oldest RBMK and VVER 440-230 units, the conduct of safety analyses at each power plant and compliance with modernisation programmes, which also cover the equipment supplied.

3.15. The budgets provided for in the NSA financing agreements concerning the granting of licences for equipment supplied fall far short of the amounts needed, whereas the TACIS programmes make a far greater contribution in this area. The complementary nature of the measures, and cooperation between the Commission and the NSA managers in assisting the safety authorities, must therefore be enhanced.

Cooperation with the other partners

3.16. The Commission makes no reference in its contracts to the working tools [11] developed by the IAEA. Transparency and a willingness to cooperate with the IAEA on the part of the Commission continue to be inadequate.

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[11] Listing and classification of safety problems, ASCOT guidelines for auto-evaluation of the safety culture, ASSET and OSART methods of assessing operational safety, etc.

3.17. Some of the measures financed by PHARE and TACIS fall within the framework of the Member States' respective commercial strategies and action programmes. Owing to their economic importance, these bilateral programmes are actually linked with the commercial strategies of the major European operators. However, given that the interconnection between these programmes and those of the Commission is not explained, it is difficult to establish the degree of consistency and efficiency of the operations as a whole.

3.18. Whereas reliance on WANO, and then on the TPEG, was at first justified on the basis of turning to account the expertise of the western operators, WANO's methodologies and experience were not incorporated to a sufficient extent by the Commission into its contract clauses. Consequently, practices such as using performance indicators, performing peer reviews or applying best practice on a broad scale were not implemented in a standardised manner.

3.19. The contribution to the ISTC was paid out of the TACIS budgets in accordance with procedures that were quite inappropriate to the manner in which the former operates. For example, in 1997, although the availability of appropriations was not a cause for concern, the Commission's procedures caused the ISTC serious financing difficulties, forcing it to ask other founding members to cover payments which the Commission was late in making. With regard to the Ukraine, at the end of 1997 the EU had still not taken part in financing the Ukrainian Science and Technology Centre, despite the relevant provisions made under the 1996 programme.

3.20. The OECD's Nuclear Energy Agency (NEA) has recommended that a strategic safety-research plan be drawn up in collaboration with the main partners and in a spirit of willingness to share research findings ([12]). The Commission's strategy regarding PHARE and TACIS operations in the field of safety-related research makes no mention of the ISTC's activities and synergy is not sought in this area. And yet the ISTC has financed 23 projects (ECU 6,5 million) in the field of nuclear-reactor safety and 41 others in the area of environmental safety with regard to nuclear activities (ECU 19,6 million).

4. MANAGEMENT OF THE OPERATIONS

Invitations to tender

4.1. Since the nuclear-safety programmes began, the Commission has made extensive use of Article 118(2) of the Financial Regulation ([13]) to conclude, by means of private treaty, service contracts involving large sums. Use of such procedures accounted for ECU 192 million out of operations totalling ECU 610 million, i. e. 31 %.

4.2. In July 1994 the Financial Controller approved a derogatory framework proposed by DG IA that was based on a list of the types of measures and reasons justifying derogation. This framework did not, however, specify the supporting documents that were to be provided, notably so as to ensure that, irrespective of the procedure applied, the economically most advantageous tender would be selected, in accordance with Article 117 of the Financial Regulation. Implementation of the framework resulted in delays and difficulties in appraising contracts (experts' fees).

Supply agencies

Appraisal of supply projects

4.3. The Commission decided to make use of supply agencies in 1994 to assist it in administering supply contracts, since it doubted the impartiality and quality of the services provided by the managers of nuclear power plants in the EU responsible for on-site assistance in this particular area. This mechanism gave rise to tensions that were hardly conducive to efficient work and it watered down responsibilities.

4.4. The details of the purchasing procedures that involve intervention by supply agencies were not approved by the Commission until October 1996. They involve 35 stages: 11 fall under the terms of reference of on-site assistance, the supply agency is responsible for 20 and the Commission for two. While the recipients are signatories to the contracts, they are responsible for only two stages: incorporating the requirements connected with the granting of licences by the safety authorities into the specifications, and final acceptance of the supplies. Contrary to the provisions of the TACIS regulation, recipients do not always participate in the financial evaluation of tenders.

([12]) Report on the requirements regarding research into the safety of Soviet-designed reactors, published by the NEA at the beginning of 1998.

([13]) Service contracts may be awarded by private treaty when the measures involved are low in value (ECU 0,3 million and subsequently ECU 0,2 million, according to the successive TACIS regulations) or short-term, entrusted to non-profit-making bodies, extensions to measures already under way, or where the invitation to tender has been unsuccessful.

The entry in the accounts and the reality of the operations

4.5. The Commission's management accounts show an amount of ECU 167 million for TACIS ([14]) contracts with supply agencies. This represents an estimated purchase volume of ECU 162,5 million, and agencies' fees and remuneration for overseeing these purchases, which, on the basis of the contracts, are estimated at ECU 4,5 million (or 2,8 % on average). This practice gives an inflated view of budget implementation as far as the volume of contracts is concerned. In fact, the value of the supply contracts concluded by the agencies was only ECU 44,6 million at the end of 1997 and the expenditure shown in the management account should be reduced by ECU 118 million to reflect the actual contracts.

4.6. Thus, the view provided by the statement of the commitments was enhanced to show ECU 65,8 million for Russia ([15]), ECU 38,5 million for operations connected with Chernobyl ([16]) and ECU 13,7 million for the other power plants in the Ukraine and Armenia ([17]). Furthermore, most of the contracts with the supply agencies were concluded at the end of the year, since the manner in which they are entered in the accounts allows large volumes of commitments to be made available very quickly and, in so doing, improves the rate of utilisation of appropriations at the year-end.

4.7. With regard to payments, advances totalling ECU 43 million that were intended to cover supply contracts and paid into special bank accounts held by the agencies are recorded as final payments in the Commission's accounts. At the end of 1997 the total volume of payments made by the agencies was only ECU 24,3 million. The Commission's management accounts should therefore be revised downwards by ECU 18,7 million, if an accurate view of these transactions is to be gained. The payment into special bank accounts of sums in excess of those actually required has the effect of increasing the consumption of payment appropriations ([18]).

4.8. The contracts concluded by the agencies and the payments they make are not recorded in the Commission's accounting system or in its management system.

4.9. At the end of 1997, according to the agencies, the bank interest generated on the special accounts amounted to ECU 2,2 million and had not been entered in the accounts or audited by the Commission since the programmes had begun.

4.10. All these practices deprive the accounts of the transparency needed to allow the transactions to be monitored and audited.

Contractual procedures

4.11. Of the 14 TACIS contracts concluded with five supply agencies since January 1994 (see paragraph 4.5), only the first two, concluded in January and February of 1994, were awarded following an open invitation to tender. A further four were concluded following a restricted invitation to tender. The remaining eight, involving a purchasing volume of ECU 82 million and fees of ECU 2,4 million, were concluded by private treaty, despite the fact that the fees and, more especially, the extent of the activities involved justified an invitation to tender and technical evaluation.

The Commission's monitoring of the operations

4.12. DG IA's administrative unit does not have the staff needed to ensure that implementation of the programmes is monitored correctly. Since the unit was set up in 1993, 25 persons have been appointed to it (five in 1994, six in 1995, 10 in 1996 and four in 1997) and 17 staff have left (three in 1995, five in 1996 and nine in 1997). Of the 22 staff working in the unit at the end of 1997, five were due to leave in the first half of 1998. Out of the seven Category A managers, three (a seconded national expert and two auxiliary staff) only had term contracts, two of which expired at the end of March 1998. Three of the seven Category B managers also had term (auxiliary) contracts, one of which expired at the end of March 1998. This turnover of staff and the precarious nature of the posts resulted in piecemeal management that has been directly prejudicial to working discipline and to the monitoring of measures in the past.

4.13. No methodology is consistently applied by the Commission's managers and they have no reliable tool to assist them in monitoring and managing projects. There are weaknesses in the computerised management system (Désirée). The administrative organisation is improvised and does not provide for compiling structured files that are kept up to date in accordance with clear guidelines. The monitoring carried out by Commission departments does not enable them to control the development of the

([14]) See Annex 2, Table 2.4. Only one PHARE contract was concluded at the end of 1997 for ECU 1 million (reference No ZZ95280701 97-0779).
([15]) Contracts with Italtrend and Crown Agents.
([16]) Contracts with GTZ (Gesellschaft für technische Zusammenarbeit).
([17]) Contracts with Europa and Fichtner.
([18]) See also paragraph 5.8 of the Court's Annual Report concerning the financial year 1997 (OJ C 349, 17.11.1998).

operations (see paragraphs 5.2 and 5.3) or to resolve swiftly any problems raised with them by recipients or providers of on-site assistance (see paragraphs 5.12 and 5.13).

4.14. The Commission subcontracts follow-up and on-the-spot evaluation of measures to consultants. It was not, however, until September 1995 that nuclear-safety operations in Russia were made subject to this procedure and monitoring did not begin until mid-1996. As a result many operations, including all the contracts under the 1991 programme have not been monitored, or were monitored only belatedly. Moreover, the problems raised by consultants in their evaluation reports were not resolved promptly by the Commission (on-site assistance at Sosnovy Bor and assistance to the safety authorities in the Ukraine).

4.15. Interim invoices for services which were adequately backed up by supporting documents have on several occasions been paid instead of being rejected, with the Commission departments merely asking the contractor to supply the proof at a later stage. The resolution of problems concerning the financial settlement of contracts that arise when intermediate payments are made is thus postponed, in some cases until the final-payment stage ([19]), when it is too late for the contractor to be able to take the corrective action that sound financial management of the contract would have dictated from the moment the first intermediate payment had been made. At the end of 1997, for example, there were a large number of invoices that had still not been paid by the Commission. Furthermore, there is no procedure or contractual provision requiring the contract accounts to be closed within a specified period after the final payment, so that any disputes can be resolved, the project accounts reflect the reality of the operations and the allocation of any residual balances can be decided in good time ([20]).

4.16. The clearance work undertaken by the Commission in 1997 in connection with the financial settlement of PHARE and TACIS contracts, which was complicated by the loss of background knowledge resulting from the turnover of contract staff and the lack of sound administrative practices, was not accompanied by a single measure to prevent such situations from recurring.

([19]) Contract Nos 94-0046, 93-0504, 94-1281 and 95-0242 provide examples of this situation.

([20]) 15 of the 43 contracts audited showed outstanding balances totalling ECU 5,9 million on 31 December 1997, even though the contracts had expired more than a year earlier (93-0958, 94-1263, 93-0533, 94-0120, 94-0491, 94-0116, 93-0410, 94-0547, 95-0775, 95-0774, 94-1281, 93-0972, 95-0190, 93-0895 and 94-0028).

On-the-spot monitoring of programmes

4.17. The 1992 TACIS programme provided for a budget of ECU 1 million for the management and coordination of projects by a Joint Management Unit (JMU) based in Moscow ([21]). The JMU comprises staff of the Ministry of Atomic Energy (Minatom), the safety authority (GAN), the body managing nuclear power plants (REA), some other Russian organisations involved and western experts. Its purpose is to ensure that TACIS measures are implemented properly and to facilitate relations with western institutions. The need for a structure of this nature was reiterated in the 1993 TACIS programme, in which it was pointed out that this matter had been discussed with the Russian authorities within the more general framework of a draft protocol of agreement specifically concerned with nuclear safety. The protocol was signed in February 1995, but only dealt with matters concerning third-party liability.

4.18. When discussions were held with representatives from the Russian Ministry of Atomic Energy in October 1997, the latter stated that they were distressed by the lack of progress made in setting up the JMU. Two contracts were eventually concluded in November 1997, so that it could be funded up until September 1999, and were charged to the programmes for 1994 (ECU 0,7 million) and 1996 (ECU 0,3 million). Given that the Commission Delegation in Moscow did not monitor the nuclear-safety programmes, the absence of a JMU prevented any continuous on-the-spot monitoring of the programmes in Russia from taking place until the end of 1997.

Cost of management

4.19. Prior to 1996 the use of operating appropriations to finance technical assistance for the Commission was forbidden, but since then it has been governed by the notes (remarks) to the budget ([22]). However, the report submitted by the Commission at the beginning of 1998 concerning the use of this technical-support 'facility' provides no information concerning the resources allocated by DG IA to support the nuclear-safety programmes. The figure of ECU 29,2 million entered in the accounts, i. e. 5 % of the total value of contracts concluded since 1990 ([23]), does not reflect the full amount. For example, it does not include fees of ECU 1,8 million paid to supply agencies, nor the resources allocated by on-site assistants for the administration and technical monitoring of operations, which are difficult

([21]) A sum of ECU 1 million was also set aside for a Joint Management Unit based at Kiev in the Ukraine.

([22]) In aggregate, this expenditure must not exceed 2 % of PHARE appropriations and 3,5 % of TACIS appropriations.

([23]) See the 'Planning, management and evaluation' column in Table 1.

to identify as a result of the Commission's weak accounting requirements as regards the content of technical assistants' reports.

4.20. The total cost of managing the programmes and projects (chargeable to administrative and operating appropriations) is not evident ([24]) from the Commission's complex mechanism. The 5 % entered in the accounts exceeds the standards fixed as of 1996 by the Budgetary Authority, but does not avert the management weaknesses that were detected.

5. MOBILISATION OF AID AND THE RESULTS

Planning

5.1. Between 1990 and 1992, during the initial stages, the projects selected for inclusion in programmes were proposed by western experts and produced results that were of limited practical use to the recipients ([25]). From 1993 onwards cooperation focused on projects better suited to the requirements. However, the drawing-up of annual programmes has always raised difficulties and misunderstandings among recipients, especially in Russia, owing to the priorities selected. Not one project was mentioned, even on an indicative basis, under the 1993 and, subsequently, 1994 programmes for Sosnovy Bor. The projects were finalised *a posteriori*. With regard to the other Russian power plants, the use to which the budgets adopted in 1993 would be put could only be determined when the 1994 programme was drawn up. On-the-spot visits revealed that the lack of communication and explanations, which was not helped by the Commission's rare presence on site, also led to misunderstandings that were detrimental to smooth cooperation.

5.2. After the Commission had decided on the projects, there were several cases where those that had been included in the programmes were cancelled, amended or new elements had been added. The Commission did not, therefore, always have control over the development of the programmes' content and the allocation of resources:

(a) in the case of operations split up into stages financed by successive annual programmes, the results of each stage were not always evaluated before the next stage was finalised and launched. In several cases this shortcoming resulted in the Commission losing control over the content of projects (the computer network and then the operational management system at Sosnovy Bor, the display of safety parameters and then the management and control information system of the maintenance unit at Kalinin) or losing control over elements of contracts (evaluation of RBMK reactor safety). Similar risks apply to the project for modernising the control room in Sosnovy Bor that is now being prepared;

(b) two important projects, the Nikiet technical centre (ECU 2 million) and the reactor core protection at Kola (ECU 4 million), were cancelled, but the budget balances (ECU 3,3 million) were not reallocated. The latter project was cancelled after ECU 2,7 million had been paid in respect of studies which were not followed up with the investments originally planned;

(c) several useful projects (water chemistry in Kola and fire-detection sensors and the monitoring of fuel loading in Balakovo) were scaled down, owing to the limits imposed by the indicative budget appropriations allocated to the project or power plant under the annual programme concerned. In such cases, the Commission should evaluate the usefulness of maintaining the projects by proposing the transfer to them of funds that would otherwise not be used;

(d) work that was not covered by the terms of the contracts was carried out because the Commission did not react when developments in a situation revealed that the initial specifications were inappropriate (assistance to the safety authorities in Lithuania).

5.3. For this reason the content of the programmes has varied within the budget allocations to each power plant, and the operations have often moved in the direction sought by the most dynamic party. It has been difficult to maintain overall consistency because of the number of parties involved and the diversity of the operations.

5.4. Since 1992 TPEG has become increasingly involved in discussing and drawing up Commission programmes. The Commission has not, however, been represented during many of the visits made to recipients and has over-delegated its responsibilities in this area ([26]).

5.5. Little use was made of the Joint Research Centre's (JRC) former relations with the nuclear community in eastern Europe as regards planning measures in consultation with recipients. It was not until the end of

([24]) See also paragraphs 5.37 to 5.39 of the Court's Annual Report concerning the financial year 1997 (OJ C 349, 17.11.1998).

([25]) Minutes of the Cooperation Forum for VVER Regulators held from 27 to 29 August 1997 in Finland.

([26]) The Court made observations concerning the conditions governing the Commission's delegation of its public responsibilities in its Special Report No 1/96 concerning the MED programmes (OJ C 240, 19.8.1996, paragraphs 39 to 57).

the financial year 1997 that the Commission decided to entrust the JRC with the task of drawing up the terms of reference governing projects included in the TACIS programmes, which had, until then, been the task of TPEG. This manner of allocating responsibilities is more conducive to the Commission fulfilling its programme-preparation and decision-making responsibilities properly than the former practice was. Furthermore, the JRC is independent of operators in the nuclear sector, whereas TPEG, irrespective of its ties with the EU, is not in a position to distance itself totally from its members' industrial interests.

Budgets allocated for on-site activities

5.6. It can be seen from the list in *Table 4* that most of the projects connected with on-site assistance at four Russian power plants involve industrial equipment. Few of the projects concerned other aspects of improving operational safety, despite the emphasis placed on this area since the 1992 TACIS programme:

(a) measures concerning organising staff and taking the human factor into consideration (improving procedures, training and the person/machine interface);

(b) measures accompanying the supply of equipment to improve the safety aspects of its utilisation (documentation, reporting of incidents and other events, inspection, maintenance and training);

(c) technology transfer to ensure that measures can continue because equipment is produced locally.

Table 4

Nature of the projects connected with on-site assistance at four power plants visited in the Russian Federation

(million ECU)

Projets	RBMK Sosnovy Bor	VVER 213/230 Kola	VVER 320		Total	
			Kalinin	Balakovo	Amount	%
Operational-monitoring systems	4,29		2,50		6,79	12,0
Maintenance-management system			2,00		2,00	3,5
Subtotal for computer systems	4,29		4,50		8,79	15,5
Control and safety valves		2,00	2,15	3,00	7,15	12,6
Waste treatment	3,00	3,00	0,09	0,20	6,29	11,1
Water chemistry and leak detection		2,30	1,62	0,86	4,78	
Conduit cleaning and filtering			0,80	3,97	4,77	8,4
Spare parts	0,20	1,00	0,55	1,41	3,16	5,6
Modernisation of control rooms	3,00				3,00	5,3
Fire protection	0,20	1,50		0,50	2,20	3,9
Power supply			1,10	0,84	1,94	3,4
Fuel loading	0,90			1,00	1,90	3,4
Turbine vibration			1,25		1,25	2,2
Measurement of neutron flows in the reactor			1,00		1,00	1,8
Tools			0,48	0,47	0,95	1,7
Electric-penetration mechanisms			0,85		0,85	1,5
Hydrogen concentration			0,70		0,70	1,2
Radiation protection (ALARA)		0,60			0,60	1,1
Emergency cooling pumps			0,30		0,30	0,5
Steam flowmeter				0,25	0,25	0,4
Corrosion monitoring			0,10		0,10	0,2
Subtotal for industrial equipment	7,30	10,40	10,99	12,50	41,19	72,7
Quality control and organisation				1,30	1,30	2,3
Training	0,50			0,70	1,20	2,1
Probabilistic safety evaluations		0,30			0,30	0,5
Subtotal for other projects	0,50	0,30		2,00	2,80	4,9
Budgets not allocated or cancelled	1,97	0,85	0,38	0,65	3,85	7
Total set aside for the programmes	**14,06**	**11,55**	**15,87**	**15,15**	**56,63**	**100**

Source: On-the-spot visits and on-site assistants' reports. The amounts relate to the contracts signed or, where contracts have not yet been signed, the estimated budget.

5.7. The uniformity of the TACIS annual budgets for operational safety that are allocated to each power plant (around ECU 4 million per annum per plant) is in marked contrast to the widely differing situations prevailing among them. These appropriations are also divided uniformly between on-site assistance and projects. It has not been established whether this splitting-up of funds in the case of equipment purchases is efficient.

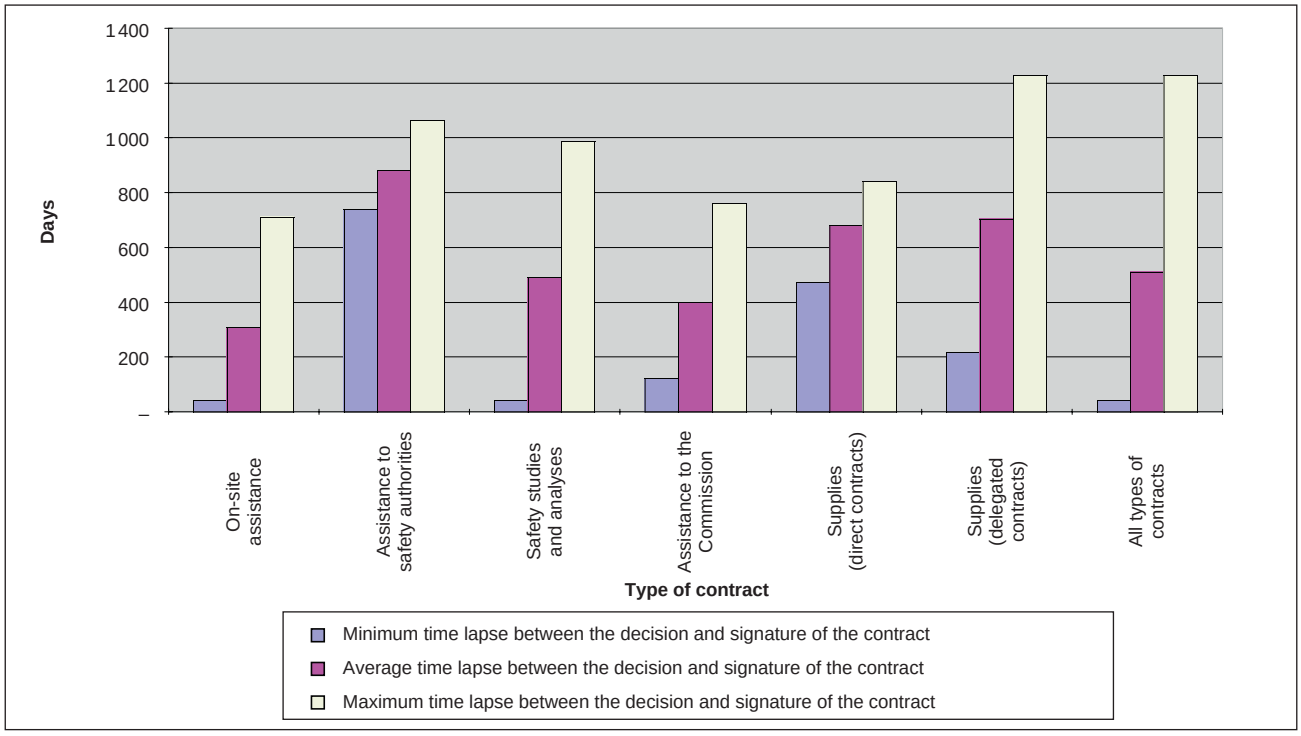
Delays and the stage reached in implementing the operations

Delays in preparing contracts

5.8. *Table 5* provides a breakdown of the time that elapsed between the Commission taking its decision and the contract being signed for the operations audited. The longest delays apply to assistance provided to safety authorities (882 days on average), and to supply contracts (an average of 705 days), whose administration is entrusted to the supply agencies. This delay of almost two years is additional to the time taken to prepare decisions, which actually resulted in the Commission deciding on most of the programmes at the end of the financial year.

Table 5

Time lapses between the Commission taking its decision and contracts being signed in respect of the operations audited



(in days)

Type of contract	Minimum time lapse between the decision and signature of the contract	Average time lapse between the decision and signature of the contract	Maximum time lapse between the decision and signature of the contract	Number of contracts audited
On-site assistance	43	308	713	17
Assistance to safety authorities	741	882	1 063	3
Safety studies and analyses	42	493	987	10
Assistance to the Commission	121	400	763	10
Supplies (direct contracts)	474	682	840	3
Supplies (delegated contracts)	217	705	1 227	16
All types of contracts	**42**	**511**	**1 227**	**59**

(in days)

Situation regarding other supply projects (delegated contracts) still under preparation on 31.12.1997	Average time lapse between the decision and approval of the specifications	Average time lapse between the approval of the specifications and 31.12.1997	Total time lapse between the decision and 31.12.1997	Number of operations audited
Specifications being drawn up			725	8
Specifications approved, contract yet to be concluded	799	518	1 317	9

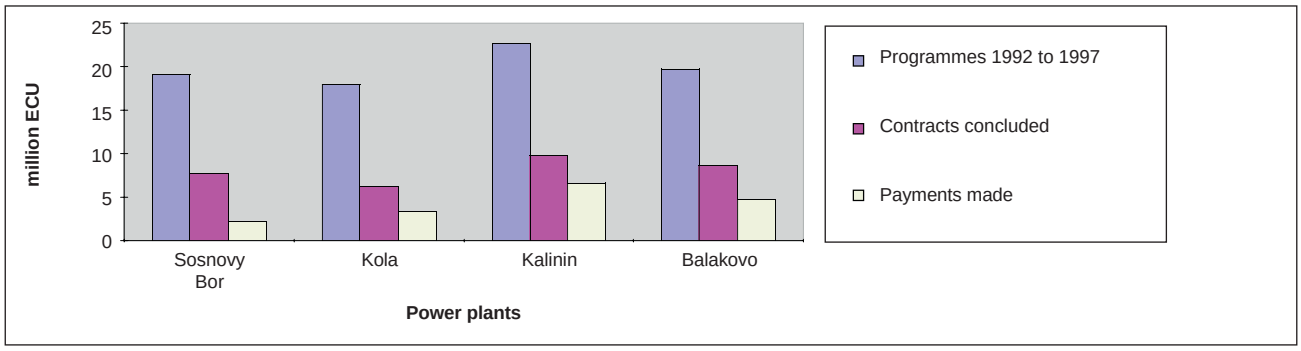
5.9. The contracts concluded with the supply agencies are nothing more than intermediate instruments that provide no indication of the situation regarding supply operations. At the close of the 1997 financial year, only 16 of the 38 operations audited were covered by contracts, which had been signed an average of 705 days ([27]) after the date on which the Commission had taken its decision. Five had been cancelled before the specifications had been approved. The preparation of the remainder, which all related to Russia, also took an abnormally long time. On 31 December 1997 the specifications concerning eight of these operations had still not been approved after an average 725 days following the decision date. In nine other cases the specifications had been approved, but the contracts had still not been signed an average of 1 317 days after the Commission had taken the corresponding decision.

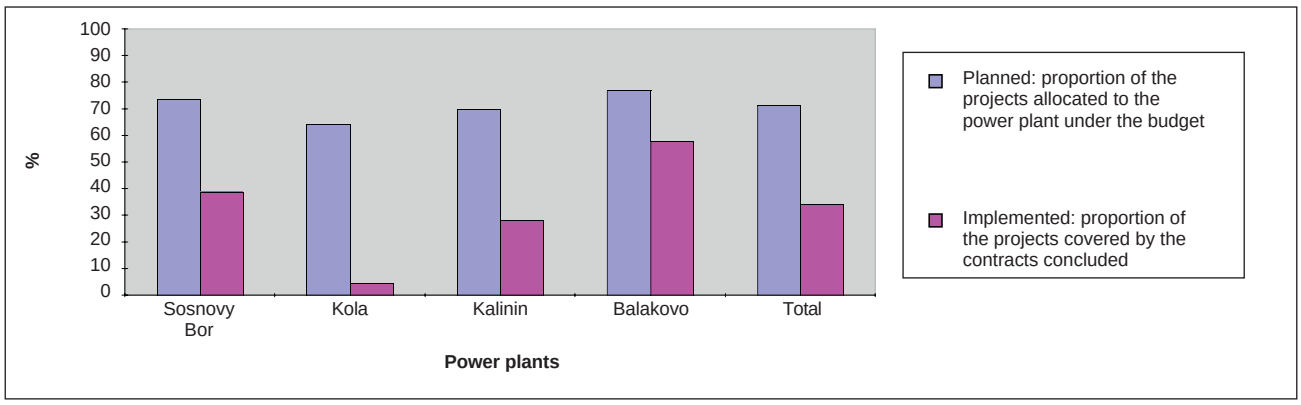
Stage reached in implementing operational-safety projects

5.10. *Table 6* summarises the stage reached in implementing the TACIS operational-safety programmes for the years from 1992 to 1997 in respect of the Sosnovy Bor (RBMK 1000), Kola (VVER 440-230 and 440-213), Kalinin and Balakovo (VVER 1000-320) power plants. At the end of 1997 only 14 of the 52 projects connected with on-site assistance under the 1992 to 1995 programmes at the above-mentioned four power plants had been implemented (all at Kalinin and Balakovo). Two projects were in the course of being implemented and 11 had been cancelled. The remaining projects, including those under the 1996 and 1997 programmes, were still in preparation.

Table 6

TACIS programmes for the years 1992 to 1997 relating to on-site assistance and improving operational safety in Kola, Sosnovy Bor, Kalinin and Balakovo (Russian Federation)





([27]) 446 days to approve the specifications and 259 days to conclude the contract.

(million ECU)

		Programmes			Contracts concluded				Payments		
		Number of contracts	Budget	% of the budget	Number of contracts	Amount	% of the budget	% of the contracts	Amount	% of the contracts	% of the budget
Sosnovy Bor		16	19,08	100	6	7,71	40	100	2,16	28	11
of which	On-site assistance	6	5,02	26	5	4,72	94	61	1,35	29	27
	Associated projects	10	14,06	74	1	2,99	21	39	0,81	27	6
Kola		19	18,00	100	6	6,26	35	100	3,37	54	19
of which	On-site assistance	6	6,45	36	5	5,98	93	96	3,09	52	48
	Associated projects	13	11,55	64	1	0,28	2	4	0,28	100	2
Kalinin		35	22,73	100	11	9,78	43	100	6,63	68	29
of which	On-site assistance	6	6,86	30	3	7,02	102	72	3,87	55	56
	Associated projects	29	15,87	70	8	2,76	17	28	2,76	100	17
Balakovo		33	19,73	100	12	8,62	44	100	4,75	55	24
of which	On-site assistance	6	4,58	23	5	3,65	80	42	1,79	49	39
	Associated projects	27	15,15	77	7	4,97	33	58	2,96	60	20
	Total	**103**	**79,54**	**100**	**35**	**32,38**	**41**	**100**	**16,91**	**52**	**21**
of which	On-site assistance	24	22,91	29	18	21,37	93	66	10,10	47	44
	Associated projects	79	56,63	71	17	11,01	19	34	6,81	62	12

Source: The Commission's programmes and accounts and the supply agencies' reports.

5.11. With regard to the same four power plants, while 93 % of the indicative budgets earmarked for on-site assistance were covered by contracts at the end of 1997, the proportion was only 19 % in the case of the projects related specifically to on-site assistance. Even though the project contracts were to be concluded shortly after the on-site assistance contracts, serious delays were noted at most of the power plants. This being the case, in the end the duration and cost of the on-site assistance contracts were disproportionate to the actual projects they were supposed to accompany. The Commission took no significant steps to check this trend, even though it became evident when the 1992 programme was implemented. In the two oldest power plants, where the needs were most urgent (Sosnovy Bor and Kola), the results achieved account for exceptionally low sums, despite sizeable investment in technical assistance. This imbalance is striking in the case of Kola, where payments account for just 2 % of the budget for the projects, despite the fact that 48 % of the amounts earmarked for on-site assistance were disbursed.

5.12. The main reasons for projects being delayed were:

(a) the extreme slowness with which purchasing procedures and, in particular, matters concerning the origin of equipment are dealt with, which is compounded by the Commission departments' failure or tardiness in reacting to problems referred to them (water analysers and computer equipment at Kalinin and spare parts at Kola and Balakovo);

(b) administrative inertia that tends to give the impression that tendering procedures are in progress in situations where a technical or commercial monopoly exists (waste incineration at Kola), instead of regulating these situations by applying alternative procedures ([28]) that will ensure that supplies are obtained at a reasonable price;

(c) the granting of licences by the Russian safety authorities (combating hydrogen concentrations, water chemistry and monitoring the bituminisation of waste in Kalinin);

(d) late recognition of the scope for synergy between the programmes at the various power plants (safety valves at Balakovo and Kalinin);

(e) the unsatisfactory standard of the specifications and technical evaluations (vibration analysis at Kalinin, water chemistry at Balakovo and safety valves at Kozloduy);

(f) the lack of satisfactory procedures governing the preparation and monitoring of mixed projects combining supplies and computer developments (computer network at Sosnovy Bor, simulators at Kola and maintenance management at Kalinin).

([28]) Western operators faced with the same problem use substitute procedures, such as itemising and analysing prices or concluding framework contracts.

5.13. Both recipients and on-site assistants highlight the failure to respect the timetables set out in the initial action plans, and the unforeseeable nature of the actual timing of the delivery of supplies, which is particularly important when equipment can only be installed during the power plants' annual shut-down periods. The main grievances concern the slowness in preparing calls for tenders and contracts, the complexity and sluggishness of the Commission's procedures, the fact that there are no timetables that are binding on the various parties, the low level of awareness concerning the state of progress of the files and the inferior role accorded to recipients in terms of project management, particularly as regards evaluating tenders and issuing acceptances.

5.14. The progress made in implementing projects depends primarily on the quality of the on-site assistance-providers since, given the method of organisation chosen, they are, realistically speaking, the only ones who can take charge of the operations. The Commission's supervision has lagged too far behind to enable services to be brought into line with optimum practice, which has led to widely differing results depending on the types of measures and the power plants involved.

Assistance to the safety authorities

5.15. Significant progress has been made in the assistance provided to the safety authorities in respect of granting licences, despite the European failure to harmonise standards and regulations (see paragraph 3.1). In Russia, EU assistance has helped the safety authorities to establish legislative instruments and general procedures enabling them to set up a framework for implementation of the modernisation programmes. These authorities' activities are, however, hindered by the limited financial resources available to them.

5.16. The Commission's approach towards granting licences for the equipment it finances, termed the 'two-plus-two approach', consists of providing, for each project, assistance to the operators within the framework of on-site assistance, on the one hand, and, on the other, assistance to the safety authorities in respect of granting licences. As in the case of the assistance given to the operators, the east European safety authorities are assisted by their west European counterparts, who thereby transfer know-how to them. The problem with this approach lies in the difficulty in achieving coordination and cooperation between four partners.

5.17. The problems connected with the granting of licences came to light at a late stage as far as the equipment financed by TACIS is concerned, owing to delays in carrying out programmes and the gradual increase in the powers of the safety authorities. In Russia it appears likely that these latter procedures will increasingly slow down the execution of the programmes, because of slowness in understanding and taking account of the existing regulations, albeit in an uncoordinated manner. The same is also true of the tasks and resources needed to apply them. The role of on-site assistance as a catalyst in relations between the partners is also a determinant of success in this area. The Commission should therefore ensure that the experience acquired in connection with the new procedures at each power plant is promptly shared with the other sites.

Safety studies and analyses

5.18. In June 1997 the Russian authorities had received only one final report concerning the studies that had been provided for at a cost of some ECU 40 million, of which some ECU 34 million was paid, under the 1991 TACIS programme. Several large contractors pointed to Russia's non-ratification of the Vienna Convention and doubts concerning the civil-liability arrangements as reasons for refusing to forward the results of the studies to the recipients, despite the further clarifications provided in the Protocol to the Agreement signed between the Commission and the Russian Federation in February 1995. Under these conditions, the usefulness of these studies to the recipients and their impact on the substance of the Russian modernisation programmes can only be diminished.

5.19. The study contracts concerning design safety are awarded mainly to Russian design institutes by means of subcontracts. The specifications in the subcontracts are often identical to those in the main contract, which makes it extremely difficult to evaluate the respective workloads of the EU contractors and their Russian subcontractors. The way in which the work is divided between the contractor and the subcontractor is, however, essential as far as the transparency of the prices is concerned, because, according to the contracts, the western experts' fees are 10 to 15 times higher than those paid to east European experts with equivalent qualifications. In one of the cases examined (study of the embrittlement of the reactor vessels at Kola and Novovoronesh), the value of the subcontract which the Commission imposed on the tenderers without making an adequate prior analysis had to be renegotiated upwards after the main contract had been awarded.

5.20. The subcontracts contain a very one-sided clause which stipulates that the payments to the subcontractor may only be made after the Commission has paid the invoices issued by the main contractor. In three cases ([29]) the Russian subcontractors did not receive a large

([29]) Contract Nos 93-0490, 93-0502 and 95-0844.

proportion of the amounts owing to them from the Commission's contractors, even though all the work stipulated in the subcontracts had been carried out. The slowness with which both the contractors and the Commission settle the financial aspects of contracts is damaging to the subcontractors and to the partnership with the EU.

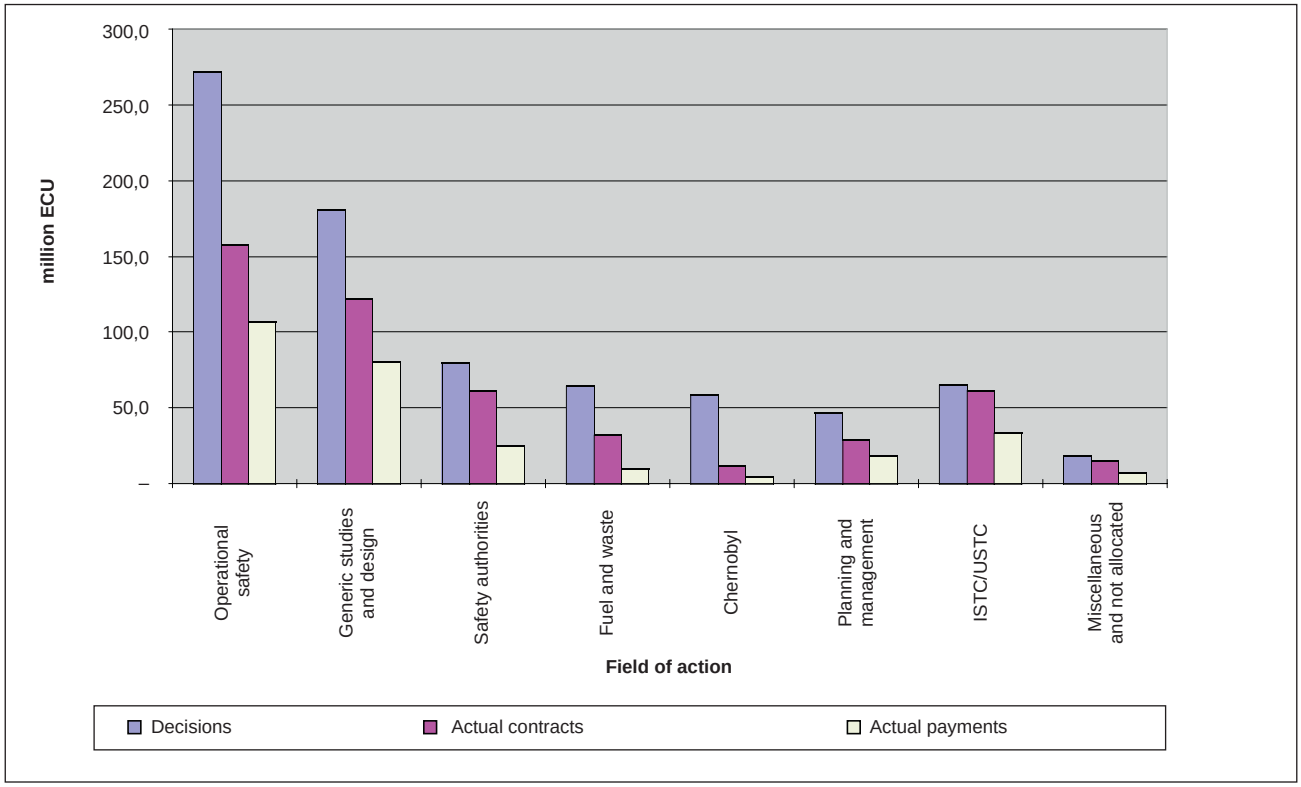
Actual mobilisation of the appropriations

5.21. *Table 7* provides an overview of the Commission decisions actually implemented via contracts as at 31 December 1997. The volume of the contracts and payments recorded in the management accounts has been corrected in the table to remove the main anomalies detected in connection with the description of the 1991 TACIS programme allocations in the abovementioned accounts and especially the contracts with the supply agencies.

Table 7

PHARE and TACIS decisions covered by actual contracts as at 31 December 1997

(million ECU)



(million ECU)

	Decisions	Contracts entered in the accounts	Reclassification of 1991 TACIS	Volume of purchases made by the supply agencies	Actual contracts	Payments made	Reclassification of 1991 TACIS	Unutilised advances in special accounts	Actual payments
Operational safety	271,9	228,6	5,4	–75,9	158,1	120,6	5,0	–18,7	106,9
Generic studies and design	181,4	85,9	40,2	–3,6	122,5	46,3	34,1		80,4
Safety authorities	79,8	54,8	7,2		62,0	19,8	5,8		25,6
Fuel and waste	64,2	32,3			32,3	10,5			10,5
Chernobyl	59,0	50,5		–38,5	12,0	4,8			4,8
Planning and management	46,7	29,2			29,2	18,3			18,3
ISTC/USTC	65,0	61,4			61,4	33,5			33,5
Miscellaneous and not allocated	18,2	67,6	–52,8		14,8	52,7	–44,9		7,8
Total	**786,1**	**610,2**	**—**	**–118,0**	**492,2**	**306,6**	**—**	**–18,7**	**287,9**

Source: Audit of the Commission's revenue and expenditure account (Désirée) as at 31 December 1997.

5.22. In total, 63 % of the appropriations allocated under the decisions result in contracts and 37 % in payments. This actual level of mobilisation of appropriations is especially poor in the case of the operations concerning Chernobyl (20 % in the case of contracts and 8 % in that of payments) and fuel and radioactive waste (16 % for payments).

5.23. The appropriations for which contracts still have to be concluded amount to ECU 294 million, rather than the ECU 176 million shown in the management accounts. This volume of appropriations results from decisions that are, on occasion, old and does not always correspond to the actual requirements. In the interests of sound management with due regard to the proper use of public funds these allocations should be examined carefully and, with the recipients' agreement, the programmes should either be closed or there should be a reallocation, taking account of the updated requirements.

6. CONCLUSION

Overall assessment

6.1. The EU's intervention in the field of nuclear safety in east European countries was motivated by the desire to protect their populations from the consequences of a Chernobyl-type accident and also, within the framework of the PHARE and TACIS programmes, to set up a partnership between the nuclear-sector industries of both the EU and eastern Europe and to integrate it into a market economy. It was with this twofold prospect in mind that the Commission allocated almost ECU 850 million ([30]) for programmes to support nuclear safety in the CEECs and the NIS between 1990 and 1997, ECU 786 million ([31]) of which was committed under the PHARE and TACIS programmes, resulting in payments worth ECU 307 million ([32]).

6.2. Although progress has been achieved in a field of intervention that was new to the EU and in which there had previously been little opportunity for international cooperation, the audit of the operations showed that the results have been achieved too slowly and that the programmes' short-term objectives had not been achieved by the end of 1997, owing to both ambiguities at the strategic level and implementation procedures that were not really appropriate to this specialised and very complex environment. Moreover, at the end of 1997 there was no methodology to enable an overall evaluation of the progress of the safety arrangements at each power plant. The IAEA is to organise an international conference in 1999, where the intention will be to evaluate the progress made, and it is also working on establishing the safety indicators that are currently lacking. Under these conditions it is not at this time possible to produce an objective report on the progress that has been made. Consideration must therefore be given to concrete measures that will increase the effectiveness, efficiency, economy and transparency of Community action.

Effectiveness

6.3. The lack of clarity and realism in the strategy (see paragraphs 3.1 to 3.11), the closed-circuit development of the PHARE and TACIS programmes (see paragraphs 3.12 to 3.20) and the Commission's excessive transfer of responsibility to third parties (see paragraphs 4.3, 5.4 to

([30]) See Table 1.1 in Annex 1.

([31]) See Table 1. This amount includes the contribution to the ISTC and USTC totalling ECU 65 million.

([32]) See Table 1.

5.5) resulted in prevarication and procrastination as regards the action to be taken, a lack of consistency in the allocation of resources (see paragraphs 5.1 to 5.3 and 5.6 and 5.7) and delays which undermined the value of EU action (see paragraphs 5.8 to 5.14). Better account should be taken of the economic circumstances prevailing in the recipient countries when the strategy is revised, especially as regards the future of older-design power plants. Cooperation with other partners, especially the IAEA and the EBRD, as well as with the recipient States, should be increased. The strategic and contractual frameworks need to be clarified in order to promote mutual trust and cooperation and, in addition, the targeted objectives must be defined jointly beforehand by the EU and the recipients. Furthermore, priority attention should be paid to developing and using indicators, in collaboration with the IAEA, that will enable the effectiveness of the programmes and safety developments at each power plant to be measured.

Efficiency

6.4. The departments responsible for executing the programmes should be merged and equipped with managerial and staff resources that are equal to the complexity and scale of the task and able to act with the necessary speed of action which, since 1990, has never been the case (see paragraphs 4.12 to 4.16). The Commission should consider redeploying its managerial staff and allocating the programmes to a Directorate-General whose area of specialisation is more suited to managing technically complex projects than is the case at present. A reorganisation of this nature would reduce the effort of interdepartmental coordination, the efficiency of which has yet to be proven. It would allow the highly specialised skills that are available to the Commission to be put to better use.

6.5. These departments should be in a position to guarantee control of cooperation and permanent relations with the recipients, without excessive reliance on intermediaries. Within the framework of on-the-spot monitoring, the functions of planning, implementing and evaluating projects should be strengthened. The departments responsible for them should be given the authority and resources to enable them to identify problems promptly and resolve them in good time.

6.6. Lastly, the procedures that were at the root of many of the delays must be reexamined and adapted to the particular technological constraints in this sector in accordance with best practice (see paragraphs 4.3 and 4.4 and 5.12).

Economy

6.7. The transparency of account entries (see paragraphs 4.5 to 4.10 and 4.19 and 4.20) should make it possible for the accounts to become genuine management tools that can serve as indicators of the performance obtained and prevent the counter-productive freezing of funds where measures have not been defined or have already been overtaken by events. The allocation of appropriations that have not been mobilised via contracts (ECU 294 million, see paragraphs 5.21 to 5.23) should be examined fully and updated in the light of requirements and results.

6.8. The matter of subcontracting certain measures to institutions or enterprises in the recipient countries should be reviewed, as there is a risk that western contractors will be in a position to obtain profits in excess of the commercial margins normally applicable to their sector of activity (see paragraph 5.19), to the cost of the Community budget, by having some of the work entrusted to them carried out by subcontractors in east European countries. Furthermore, direct cooperation between the EU and some of these institutions or companies in the recipient countries would establish the confidence that is necessary to both parties and is still often lacking (see paragraphs 4.17 and 4.18, 5.1 and 5.18 to 5.20).

6.9. There are no tendering procedures for contracts with on-site assistants and they are rare in the case of supply agencies, which results in fees being high (see paragraphs 4.1 to 4.2 and 4.11). They are, by contrast, excessively cumbersome where supply contracts are involved, which results in implementation being delayed (see paragraphs 4.4 and 5.12). The Commission should be guided in this area by the best practice of other donors, so as to ensure that the prices obtained are reasonable, that rules of origin are not applied at the cost of promptness or the measures' consistency with those of other donors, and that the recipients are more fully involved in the main stages of the procedure. In any case, the rules concerning the use of the derogation system need to be defined so that a sudden loss of control does not have adverse repercussions on the Community budget (see paragraph 4.2).

Transparency of the operations

6.10. Owing to the specialised nature of the operations in support of increased nuclear safety in east European countries, they should be shown separately from the amounts for PHARE and TACIS programmes in the EU budget. Clear identification of measures in the nuclear field would thus enable the budgetary authority to monitor the measures in a more transparent way, by requiring the Commission to submit regular, detailed reports on the conduct of the programmes and progress recorded (see paragraph 3.6).

This report was adopted by the Court of Auditors in Luxembourg at its meeting of 12 November 1998.

For the Court of Auditors

Bernhard FRIEDMANN

President

ANNEX 1

Background to the PHARE and TACIS nuclear-safety programmes

Community background

1. In 1975 the Council adopted a resolution [1] defining the Commission's role with regard to the technological problems of nuclear safety. Since these problems extend beyond the Community's borders, the Commission was to act as a catalyst for Member States' initiatives, seek a common position within international organisations, promote the progressive harmonisation of safety requirements and criteria and, on these bases, submit to the Council the optimum draft Community provisions.

2. The Chernobyl accident in 1986 revealed the extent of the safety problems posed by existing Soviet-designed nuclear reactors. Under the mandate laid down in the Euratom Treaty [2], Community action was at first restricted to protecting the public from radiation in the event of a nuclear accident [3].

3. In June 1992 the Council adopted a new resolution concerning nuclear safety [4] which replaced the 1975 resolution in the light of the cooperation with the CEECs and the NIS and called on the Member States and the Commission:

(a) to increase their joint measures with these countries;

(b) to seek to raise nuclear installations in east European countries to safety levels comparable with those applied in the Community;

(c) to act in a coordinated manner, within the IAEA, to define a system of internationally accepted nuclear-safety criteria and requirements.

Euratom loans

4. Euratom loans are limited to 50 % of project costs. Where EBRD co-financing is involved, the cumulative total with the Euratom financing may not exceed 70 % of a project's total cost. The loans must be guaranteed by the recipient State. The projects must form part of the global energy plan and be proven to be economically viable. These various factors make the consideration of loan applications a complex matter. As of 31 December 1997 no loan had yet been granted, but three projects were under consideration:

(a) a loan of ECU 100 million, applied for in August 1995, which was to be supplemented by French, German and Russian export credits and a national loan, to finance a ECU 220 million project to modernise units 5 and 6 of the Kozloduy power plant in Bulgaria. If the loan agreement can be signed before the end of 1998, the application will have been under consideration for three and a half years;

(b) a loan of ECU 623 million, applied for in July 1995, which was to be supplemented by a loan from the EBRD and by the State's own funds to finance a ECU 1 265 million project to modernise unit 2 at Khmelnitsky and unit 4 at Rovno in the Ukraine. If the loan agreement can be signed in July 1998, the application will have been under consideration for three years;

(c) a loan of ECU 335 million, applied for in December 1995, which was to be supplemented by the State's own funds, for a project to complete and modernise Kalinin unit 3 in Russia, the provisional estimated cost of which was ECU 670 million. In February 1998 consideration of the project was slowed down by the Russian party's failure to communicate financial information needed for the project evaluation.

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[1] Council resolution of 22 July 1975 on the technological problems of nuclear safety (OJ C 185, 14.8.1975, p.1).

[2] The Euratom Treaty does not relate directly to the safety of nuclear power plants. However, the obligations arising from Chapter 3, concerning radiological protection, and the safeguarding of fissile materials entrusted to the Commission under Chapter 7, are in practice connected with the safety measures taken at power-plant level.

[3] Council Directive 89/618/Euratom of 27 November 1989 on informing the general public about health-protection measures to be applied and steps to be taken in the event of a radiological emergency.

[4] Council resolution of 18 June 1992 on the technological problems of nuclear safety (OJ C 172, 8.7.1992, p.2).

5. While recourse to Euratom as regards large-scale operations has increased little, borrowing from banks in the EU, particularly in Germany, have been used to finance smaller-scale projects by the power plants at Sosnovy Bor (simulator) and Balakovo (waste-processing installations).

Multilateral background

6. In response to the international community's expectations, the operators of 144 nuclear power plants worldwide met in Moscow on 15 May 1989 and founded the WANO association to promote the improvement of nuclear power plant safety and performance. In July 1990 WANO decided to draw up a programme for improving the safety of VVER 440/230 reactors. This programme was submitted in July 1991 and endorsed by the IAEA's Nuclear Safety Committee (INSAG). Implementation of this programme began in Bulgaria with measures financed under the PHARE programme. In order to extend its activities to other power plants, WANO set up a VVER Steering Group comprising the operators of the Novovoronesh, Kola, Bohunice and Kozloduy power plants and western operators. When the TACIS on-site assistance programmes were launched in 1993, the EU asked WANO to perform the coordination and advisory functions. The VVER Steering Group has extended its activities to all types of reactor of Soviet origin and took the name 'WANO Advisory Committee Paris and Moscow'.

7. In parallel, in 1990, the IAEA began working with the east European countries to set up safety programmes agreed at international level. Furthermore, in 1994 the IAEA took the initiative of promoting a Convention on Nuclear Safety, which was signed by 66 countries at the end of 1997.

8. In view of the volume of finance that needed to be mobilised for the east European countries, in 1992 ([5]) the members of G7 asked the member countries of G24 to supplement their bilateral programmes with a multilateral fund and to strengthen the coordination mechanisms. The multilateral fund was set up at the EBRD in March 1993 and called the NSA (Nuclear Safety Account). In order to strengthen international coordination, a structure called NUSAC was set up within the Commission which had already been given a general mandate to coordinate G24 aid to east European countries at the G7 Paris summit in 1989 ([6]).

9. With regard to Chernobyl, in 1994 ([7]) the G7 and the EU agreed on an additional action plan and the related Protocol to the Agreement was signed with the Ukraine in December 1995. This plan was to lead up to the closing of Chernobyl by the year 2000 and, in consideration of that, to assist with the completion of three reactors that were under construction on the sites of the Zaporozhe, Rovno and Khmelnitsky power plants. In the case of unit 4 at Chernobyl, a plan to construct a protective mantle (SIP) was added to the 1995 Protocol with the Ukraine in 1997. Following the G7 Denver summit in June 1997, a new multilateral fund was set up at the EBRD to finance this protective mantle. In September 1997 the Commission proposed to the Council that a maximum contribution of ECU 100 million be allocated to this fund out of the TACIS appropriations for 1998 and 1999.

10. *Table 1.2* gives an idea (the database set up by NUSAC is incomplete) of the volume of the international community's contributions towards nuclear safety in the CEECs and NIS.

11. This aid was provided at a time when the situation for the nuclear-energy sector was unfavourable in economic terms and commercially difficult. The traditional markets of the nuclear industries in EU countries and North America are shrinking. Although investment programmes to replace and modernise power plants currently in operation exist, the prospects that new units will be constructed are very limited. The prospects are greater in Japan and the Far East and very close links have been created between the nuclear industries of Japan and the United States in order to foster cooperation and take advantage of these opportunities.

([5]) Conclusions of the G7 Munich summit (Group of 7 most developed countries) of 10 July 1992.

([6]) The G7 Paris summit in July 1989 entrusted the Commission with the task of coordinating aid provided by the 24 most developed countries (G24) for Poland and Hungary, which was subsequently extended to cover the other CEECs. The G7 London summit (July 1991) called for specific aid and coordination to be developed in the field of nuclear safety. The G7 Munich summit (July 1992) extended this aid in the nuclear field to the NIS. The general coordination mandate given to the Commission remained in force during these successive extensions.

([7]) G7 Naples summit in July 1994.

12. Possible commercial outlets in east European markets, which were closed in the past, and the development of industrial cooperation with the nuclear industries in these countries are of strategic importance for the EU's nuclear sector.

13. *Table 1.3* details the financing agreements concluded by the EBRD under the NSA.

Background in the recipient countries

14. The majority of the reactors in the CEECs and NIS are Soviet-designed RBMK or VVER reactors. There have been three generations of RBMK technology. The first of these reactors was put into service in 1973 (Sosnovy Bor 1) and the most recent in 1990 (Smolensk 3). VVER technology has also passed through three main generations. The VVER 440-230 technology, which was put into service between 1972 (Novovoronesh 3) and 1982 (Kozloduy 4), is the oldest. It was followed by VVER 440-213 technology, which went into service between 1982 (Paks 1 and Kola 3) and 1988 (Dukovany 4). The most modern generation, the VVER 1000-320 class, which went into service between 1981 (Novovoronesh 5) and 1995 (Zaporozhe 6), is still being used for the units under construction (Rovno 4, Khmelnitsky 2 and Kalinin 3). The stock of Soviet-designed reactors is, on average, no older than that in western countries. The age or modernity of a reactor is relevant in terms of the extent to which safety was taken into account when it was designed, rather than the year in which it went into operation. From the point of view of safety, the VVER 1000-320 reactors are closest to western designs.

15. The difficult economic situation in the CEECs (particularly Bulgaria), and especially in the NIS, is impeding the implementation of these countries' modernisation programmes, which include the western aid programmes and substantial calls on borrowed funds, including Euratom loans.

Table 1.1

Appropriations allocated to nuclear safety in the CEECs and NIS by the European Union between 1990 and 1997

(million ECU)

Budget headings and managing departments		Appropriations allocated	of which							
			1990	1991	1992	1993	1994	1995	1996	1997
PHARE and TACIS programmes		786,1	3,5	73,6	109,3	113,2	119,0	133,0	132,5	102,0
of which	PHARE — aid for economic restructuring in the CEECs (B7-500, DGIA)	150,7	3,5	16,7	29,3	25,2	31,0	27,0	6,0	12,0
	TACIS — technical cooperation with the NIS (B7-520, DGIA)	635,4		56,9	80,0	88,0	88,0	106,0	126,5	90,0
Other budget headings		62,4		3,0	7,0	8,0	32,0	5,4	7,0	
of which	Training and exchange of nuclear-safety experts in the CEECs and NIS; introduction of a system of accounting for fissile materials in Russia (B4-2001, DG XI)	6,9				1,0	1,0	1,8	3,1	
	Cooperation with the Soviet Union and, subsequently, the CEECs and NIS (as of 1993) in the field of nuclear safety (B6-8201, DGXII)	28,0		3,0	7,0	7,0	11,0			
	Cooperation with the CEECs and NIS in the field of nuclear safety (B/534, DGIA)	7,5						3,6	3,9	
	Community contribution to the EBRD's Nuclear Safety Account (NSA) (B7-630, DGIA)	20,0					20,0			
	Grand total	**848,5**	**3,5**	**76,6**	**116,3**	**121,2**	**151,0**	**138,4**	**139,5**	**102,0**

Source: Commission Decisions concerning nuclear safety under the PHARE and TACIS programmes (where there is no specific budget heading) and commitment appropriations in the case of other budget headings.

Table 1.2

Breakdown by recipient and source of finance of funds received and committed from the international community

(million ECU)

Recipients	European Union	Other sources of finance	Total	%
Russian Federation	243,6	301,5	545,1	37
Ukraine	213,9	124,2	338,0	23
Regional or not allocated	16,1	202,6	218,7	15
Bulgaria	51,1	60,8	111,8	8
Lithuania	9,2	82,1	91,3	6
Slovakia	27,5	17,4	44,9	3
Czech Republic	24,4	17,1	41,5	3
Hungary	22,2	14,2	36,4	2
Armenia	11,2	6,3	17,5	1,2
Romania	1,4	9,5	10,9	0,7
Belarus	2,4	4,9	7,3	0,5
Kazakhstan	5,1	1,9	6,9	0,5
Slovenia	2,5	0,7	3,2	0,2
Poland	1,0	1,5	2,5	0,2
Latvia	1,0	0,5	1,5	0,1
Estonia	0,9	0,4	1,3	0,1
Uzbekistan	0,4	0,4	0,8	0,1
Kirgizstan	0,4	0,2	0,6	0,0
Moldovia, Georgia, Azerbaidjan	0,0	0,6	0,6	0,0
Total	**634,4**	**846,4**	**1 480,2**	**100**
%	43	57	100	

Source: NUSAC — updated data as at 31 December 1997.

NB: Reconciliation of the Commission's accounting commitments (ECU 786,1 million) for PHARE and TACIS programmes alone and those recorded by NUSAC (ECU 634,4 million) reveals the highly approximate nature of NUSAC's database.

(million ECU)

Sources of finance	Total	%
European Union	634,4	43
Nuclear Safety Account	257,4	17
United States' bilateral aid	219,5	15
European bilateral aid	206,2	14
Japanese bilateral aid	103,8	7
IAEA	27,9	2
Canadian bilateral aid	19,1	1
Miscellaneous	11,9	1
Total	**1 480,2**	**100**

Table 1.3

Financing agreements under the NSA concluded by the EBRD as at 31 December 1997

(million ECU)

	Financing agreements		Implementation as at 31 December 1997			
	Date of conclusion	Amount	Contracts concluded	Balance to be contracted	Payments made	Outstanding balance payable
Bulgaria		24,0	23,5	0,5	22,1	1,9
Kozloduy 1-4	June 1993	24,0	23,5	0,5	22,1	1,9
Lithuania		43,1	41,2	1,9	38,1	5,0
Ignalina 1-2	February 1994	34,8	33,3	1,5	32,1	2,7
Ignalina safety analysis	April 1994	8,3	7,9	0,4	6,0	2,3
Russian Federation		76,4	29,1	47,3	6,5	69,9
Sosnovy Bor 1-4	June 1995	30,4	21,3	9,1	3,9	26,5
Kola 1-2		21,9	4,0	17,9	1,2	20,7
Novovoronesh 3-4		23,3	2,9	20,4	1,0	22,3
Gozatomnadzor (GAN)		0,9	0,9	—	0,4	0,5
Ukraine		118,0	9,8	108,2	2,8	115,2
Chernobyl 1-3	November 1996	118,0	9,8	108,2	2,8	115,2
Total for financing agreements		**261,5**	**103,6**	**157,9**	**69,5**	**192,0**

Source: EBRD.

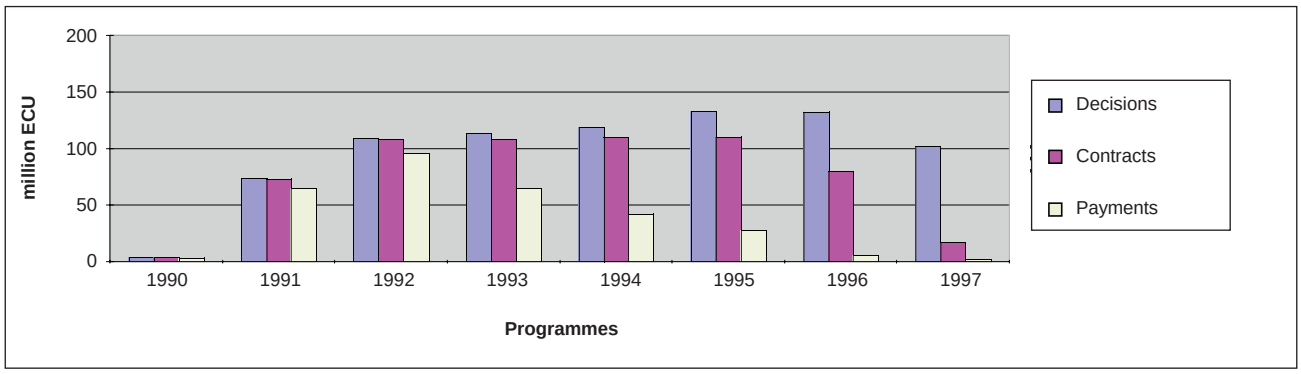
ANNEX 2

Operations audited and visits carried out

Table 2.1

PHARE and TACIS decisions on nuclear safety taken by the Commission since 1990

(million ECU)



(million ECU)

Programme	Title	Total amount under the decision	of which allocated to nuclear safety		
			Decision	Contracts	Payments
TACIS		702,5	635,4	496	238,3
WW9103	Energy	115	56,9	56,7	48,6
WW9204	Regional nuclear safety	60	60	59,6	51,0
WW9206	ISTC nuclear safety	20	20	20,0	20,0
WW9306	Nuclear safety	88	88	84,2	49,3
WW9406	Nuclear safety programme	67,5	67,5	64,7	23,5
WW9507	Financing proposal for ISTC	10	10	10	9,6
WW9508	Nuclear safety programme	58,5	58,5	47,6	10,6
WW9606	Financing proposal for ISTC	15	15	14,5	2,1
WW9608	Nuclear safety programme	80	80	49,3	2,1
WW9707	ISTC 1997	17	17	17	1,9
WW9708	USTC	3	3		
WW9711	Nuclear safeguards	2	2		
WW9715	Nuclear safety 1997	68	68		
UK9402	Energy sector 1994	23,5	20,5	19,87	13,23
UK9502	Energy sector Chernobyl	37,5	37,5	37,12	4,93
UR9601	Action plan energy in Ukraine	37,5	31,5	15,46	1,51
PHARE		240,6	150,7	114,3	68,2
ZZ9112	Nuclear safety	3,5	3,5	3,5	3,5
ZZ9217	Nuclear safety improvement	20	20	19,7	15,4
ZZ9317	Nuclear safety	20	20	19,8	12
ZZ9423	Regional nuclear safety	20	20	19,9	3
ZZ9528	Regional nuclear safety	20	20	12,1	1,2
ZZ9720	Nuclear safety 1997	12	12		
BG9107	Energy	10	1,2	1,2	1,2
BG9110	Safety nuclear power plants	11,5	11,5	11,4	11,4
BG9202	Nuclear safety	8,3	8,3	8,1	8,1
BG9207	Energy emergency winter	10	1	1	1
BG9311	Nuclear safety	3,8	3,8	3,1	2,7
BG9402	Cross-border cooperation	25	6	0,6	0,3
BG9407	Nuclear safety	5	5	4,8	2,3
BG9512	Nuclear safety	7	7	3,5	1,4
BG9608	Nuclear safety	6	6	0,7	
CS9002	Environment programme	30	3,5	3,4	3,3
LI9101	Agriculture/energy Lithuania	6	0,5	0,5	0,5
LI9302	General technical assistance facility	22,5	1,4	0,9	0,9
	Total	**943,1**	**786,1**	**610,3**	**306,51**

Source: Commission's decisions and revenue and expenditure account (Désirée) as at 31 December 1997.

Table 2.2

List of contracts audited

(million ECU)

Decision	Project	Contract	Contractor	Recipient countries	Power plants involved	Amount	%
TACIS						161,88	25
On-site technical assistance						22,11	
WW9204	01.01	93-0958	Nuclear Electric (=Magnox)	Russia	Sosnovy Bor	0,27	
WW9204	01.01	94-1263	Nuclear Electric (=Magnox)	Russia	Sosnovy Bor	0,94	
WW9406	01.01	95-0964	Nuclear Electric (=Magnox)	Russia	Sosnovy Bor	1,32	
WW9204	01.01	93-0533	EDF	Zaporozhe	Kola	0,40	
WW9204	01.01	94-0120	EDF		Kola	2,26	
WW9406	01.01	95-1211	Kernkraftwerke (KKE)	Russia	Kola	1,81	
WW9204	01.01	93-0411	RWE-Biblis	Russia	Balakovo	0,14	
WW9204	01.01	94-0491	RWE-Biblis	Russia	Balakovo	0,95	
WW9406	01.01	95-0933	RWE-Biblis	Russia	Balakovo	2,19	
WW9204	01.01	93-0412	Tractebel	Russia	Kalinin	0,50	
WW9204	01.01	94-0116	Tractebel	Russia	Kalinin	1,95	
WW9406	01.01	95-2151	Tractebel	Russia	Kalinin	4,58	
WW9204	01.01	93-0410	EDF	Ukraine	Rovno	0,58	
WW9306	02.01	94-0547	EDF	Ukraine	Rovno	4,22	
Assistance to safety authorities						3,58	
WW9204	03.01	94-1342	Risk audit	Russia	General	3,09	
WW9306	03.01	96-5287	Risk audit	Russia	General	0,49	
Other safety studies and analyses						23,54	
WW9103	03.01	93-0504	EDF (training centre)	Russia	General	5,40	
WW9306	02.02	95-0775	EDF (training)	Ukraine	General	1,20	
WW9306	02.02	95-0774	Tecnatom (training centre)	Ukraine	General	1,10	
WW9306	01.02	95-0190	AEA-T (safety assessment)	Russia	RBMK	2,98	
WW9103	03.01	93-0972	Siemens (RVE study)	Phare/Tacis	VVER 230	4,67	
UK9402	03.01	95-1295	EDF	Ukraine	VVER 320	8,18	
Direct supply contracts						6,39	
WW9406	01.04	96-5580	Nukem	Russia	Kola	0,28	
WW9204	02.01	94-1281	Corys (simulators)	Phare/Tacis	VVER 230/213	4,12	
WW9306	01.02	95-0242	Sema Group (SPDS prototype)	Russia	Kalinin	1,99	
Contracts with supply agencies						83,62	
WW9306	02.01	94-1351	Fichtner	Ukraine	General	24,67	
WW9204	01.01	94-0046	Crown Agents	Tacis	General	12,05	
WW9306	02.01	94-1165	Crown Agents	Tacis	General	3,96	
WW9306	01.01	94-1355	Italtrend	Tacis	General	28,44	
WW9508	01.01	96-5455	Italtrend	Tacis	General	14,50	
Other technical assitance to the Commission						10,43	
WW9204	04.01	93-0895	TPEG	Phare/Tacis	General	4,36	
WW9306	02.06	95-2329	TPEG	Phare/Tacis	General	6,07	
International Science and Technology Centre						12,22	
WW9206	01.01	95-1265	ISTC	Russia	General	12,22	

(million ECU)

Decision	Project	Contract	Contractor	Recipient countries	Power plants involved	Amount	%
PHARE						11,97	8
On-site technical assistance						7,83	
BG9202	05.01	x	EDF	Bulgaria	Kozloduy	3,84	
BG9311	02.01	x	EDF	Bulgaria	Kozloduy	2,00	
BG9407	02.01	95-0838	EDF	Bulgaria	Kozloduy	1,99	
Assistance to safety authorities						0,79	
ZZ9217	01.01	94-0028	ANPA	Lithuania	Ignalina	0,79	
Other measures						1,17	
LI9101	02.01	93-0195	Corys (simulator)	Lithuania	Ignalina	0,49	
LI9302	09.05	93-0189	Corys (simulator)	Lithuania	Ignalina	0,37	
LI9302	09.05	94-0359	Corys (simulator)	Lithuania	Ignalina	0,31	
Technical assistance to the Commission						2,18	
BG9202	07.01	x	Nuclear Electric (PIU)	Bulgaria	Kozloduy	1,00	
BG9311	01.01	x	Nuclear Electric (PIU)	Bulgaria	Kozloduy	0,63	
BG9407	04.01	96-0445	DTN (PIU)	Bulgaria	Kozloduy	0,54	
Total		43				**173,86**	**22**

Source: DG IA's revenue and expenditure account (Désirée).

Table 2.3

Supplies operations audited in connection with contracts with supply agencies

(million ECU)

Description of the projects and contracts with the supply agencies concerned	Project	Contractor	Power plant involved	Budget (contract not signed)	Contract (contract signed)
Fichtner	5				8,50
WW9306 02.01 94-1351	5			—	8,50
Computer information system	U1.01/94A	Syseca	Rovno	—	4,99
Spare parts	R1.02/92D	Siemens	Balakovo	—	0,04
Spare parts	R1.02/92D	Bopp & Reuther	Balakovo	—	0,28
Spare parts	U1.03/93A	Limitorque	Zaporozhe	—	0,25
Fire protection equipment	U1.03/94A	SVT	Zaporozhe	—	2,95
Crown Agents	7				5,05
WW9204 01.01 94-0046 **WW9306 02.01 94-1165**	7			—	5,05
Water chemistry	R1.03/92A	CITA	Kalinin	—	0,31
Laboratory analysis	R1.03/92A	Millipore	Kalinin	—	0,06
Laboratory analysis	R1.03/92A	Maihak	Kalinin	—	0,04
All station computer network	R1.04/92A	Marex	Sosnovy Bor	—	2,99
Condenser cleaning	R1.02/92A	Taprogge	Balakovo	—	1,65
Repair of floor coating (fire risk)	U1.01/92A	GEHOLIT	Rovno	—	0,96
Equipment for SG control	U1.01/93A	intercontrole	Rovno	—	1,48
Italtrend	26			23,13	1,24
WW9306 01.01 94-1355	21			16,68	1,24
Water chemistry (secondary side)	R1.03/94A1	CITA	Kalinin	—	0,32
Capillary electrophoresis analyser	R1.03/94A2		Kalinin	0,18	—
Primary circuit water quality	R1.03/94B		Kalinin	0,50	—
Automated system for maintenance	R1.03/94E		Kalinin	0,75	—
Safety valves	R1.03/94G		Kalinin	0,65	—
Diagnosis system	R1.03/94H		Kalinin	0,70	—
Thermal H2 recombiner	R1.03/94J		Kalinin	0,70	—
Water chemistry (sides 1 & 2)	R1.02/94A	Balduf	Balakovo	—	0,46
Safety relevant spare parts	R1.02/94C		Balakovo	0,50	—
Safety valves	R1.02/94E		Balakovo	1,00	—
Equipment for fire fighting	R1.02/94G	Bosch	Balakovo	—	0,03
Accumulator cells	R1.02/94X	VARTA	Balakovo	—	0,44
Reactor control system	R1.01/94A		Kola	2,00	—
Reliable power supply	R1.01/94B		Kola	0,50	—
Safety valves	R1.01/94C		Kola	2,00	—
Leak detection system	R1.01/94D		Kola	1,00	—
Equipment for diagnostic system	R1.01/94F		Kola	1,00	—
Liquid waste removal system	R1.01/94G		Kola	1,50	—
Incineration facility	R4.03/94		Kola	0,20	—
Solidification facility	R1.04/93D		Sosnovy Bor	3,00	—
Emergency fire alarm system	R1.04/93F		Sosnovy Bor	0,50	—

(million ECU)

Description of the projects and contracts with the supply agencies concerned	Project	Contractor	Power plant involved	Budget (contract not signed)	Contract (contract signed)
WW9508 01.01 96-5455	2			1,75	—
Automated system for maintenance	R1.03/95A		Kalinin	0,75	—
Safety panel display system	R1.03/95D		Kalinin	1,00	—
Not allocated to a specific contract	3			4,70	—
Completion of maintenance project	R1.03/96C		Kalinin	0,50	—
Waste treatment systems	R1.01/96C		Kola	1,20	—
Upgrading of control room panels	R1.04/96A		Sosnovy Bor	3,00	—
Total for the operations audited	38			23,13	14,79

Source: Reports from the supply agencies and on-site assitants.

Table 2.4

Stage reached in implementing TACIS contracts with supply agencies

(million ECU)

				Implementation by the Commission						Implementation by the agency			
				Contracts				Payments					
Contract	Procedure	Start	End	Commission and other contractual fees	Commission fees as a % of estimated purchases	Estimated purchases (special fund)	Amount entered in the accounts	Advances on and payments of commission fees	Advances from the special fund	Contrats concluded	Payments made	Interest received	Cash balance in the special fund
Italtrend				1,54	2,6	59,25	60,79	0,44	11,00	1,47	1,09	1,19	11,10
94-1355	IC	12.94	12.99	0,80	2,9	27,64	28,44	0,30	11,00	1,47	1,09	1,19	11,10
96-5455	RT	12.96	12.98	0,48	2,8	16,82	17,30	0,14					
97-0518	DA	12.97	12.99	0,03	3,3	0,82	0,85						
97-0586	DA	11.97	10.00	0,20	1,5	13,00	13,20						
97-0779	DA	01.98	02.00	0,03	3,5	0,97	1,00						
GTZ				0,73	1,9	38,50	39,23						
97-0573	RT	11.97	11.00	0,19	1,9	10,00	10,19						
97-0577	RT	11.97	11.00	0,54	1,9	28,50	29,04						
Fichtner				1,01	3,6	28,34	29,36	0,77	16,95	26,58	12,81	0,25	4,39
94-0013	OT	02.94	09.95	0,23	5,2	4,46	4,69	0,17	4,46	4,31	4,31		0,15
94-1351	IC	12.94	06.98	0,78	3,3	23,88	24,67	0,60	12,49	22,27	8,50	0,25	4,24
Crown Agent				0,92	3,7	24,60	25,52	0,73	15,00	16,52	10,42	0,72	5,30
94-0046	OT	01.94	01.97	0,45	3,9	11,60	12,05	0,41	10,00	15,30	10,42	0,72	0,30
94-1165	IC	12.94	01.98	0,26	7,0	3,70	3,96	0,25					
96-5449	RT	12.96	12.98	0,21	2,3	9,30	9,51	0,07	5,00	1,22			5,00
Europa (1)				0,27	2,2	11,92	12,19						
97-0585	DA	11.97	11.00	0,18	2,2	7,92	8,10						
97-0561	IC	10.97	10.00	0,09	2,2	4,00	4,09						
Grand total				**4,48**	**2,8**	**162,62**	**167,09**	**1,94**	**42,95**	**44,56**	**24,32**	**2,16**	**20,79**
			%	2,8		100			26	27	15		
			%						100	104	57	5	48

(1) Subsidiary of Crown Agents.

Source: DG IA's revenue and expenditure account (Désirée) and supply agencies' reports.

Table 2.5

Nuclear authorities and power plants visited

Country	Authorities	Power plants
Russia	Gozatomnadzor safety authority (GAN) Ministry for Atomic Energy (Minatom) The operator Rosenergoatom (REA) MOHT (important sub-contractor)	Sosnovy Bor Kola Kalinin Balakovo
Ukraine	Ministry of the Environment Ministry responsible for Chernobyl Nuclear Regulatory Administration (NRA) The operator Goskomatom Energoproekt (Ukranian Engineering Institute)	Rovno Zaporozhe
Bulgaria	Ministry of Energy and Energy Resources (MEER) The Operator National Electric Company (NEK) Bulgarian Nuclear Safety Authority (BNSA) Energoproekt (Bulgarian Engineering Institute)	Kozloduy
Lithuania	Safety authority (VATESI) Ministry of Energy	Ignalina
Groupings of companies and internal organisations		
	TPEG in Brussels (Twinning Programme Engineering Group) Riskaudit in Paris OECD/NEA in Paris (Atomic Energy Agency) WANO/PC in Paris (World Association of Nuclear Operators, Paris Centre) ISTC in Moscow (Institute for Scientific and Technical Cooperation) AIEA in Vienna (International Atomic Energy Agency)	

THE COMMISSION'S REPLY

GENERAL REMARKS

The draft Special Report is a well-researched document that makes a number of pertinent criticisms. In many cases the Commission has already taken corrective measures. In other cases, the issues highlighted by the Court will be addressed in the Commission's proposals for a new Tacis Regulation and for the updating of the Financial Regulation. However, in a number of cases identified below, the Commission does not agree with the Court's remarks.

The Phare and Tacis nuclear safety programmes have been implemented in a context, that, as the Court acknowledges, is particularly complex. Therefore, without denying the need to improve its assistance, the Commission takes satisfaction in the progress that it has achieved, notably in developing with the programme partners a climate of trust and cooperation, in raising their awareness and know-how concerning nuclear safety issues, and in strengthening the National Nuclear Regulatory Authorities of the partner countries. Safety culture is no longer unknown but still needs further strengthening.

Strategy

In the NIS there are at present 29 nuclear reactors in operation in Russia, 14 in Ukraine, one in Armenia, and one in Kazakhstan. In the central and eastern European countries there are 20 Soviet-designed units: six in Bulgaria, four in Hungary, four in the Czech Republic, four in Slovakia, and two in Lithuania. Not all of these are of a type that can be upgraded to western safety levels. The cost of upgrading those reactors that are deemed to be upgradeable is high, perhaps ECU 100-200 million per unit, and dwarfs the Tacis allocations to the nuclear safety sector.

The strategy pursued by Commission through the Nuclear Safety programmes takes this situation into account. In particular, for those partner countries that are not candidates for EU accession the Commission seeks to support and accelerate domestic safety upgrading programmes, principally through an extensive programme of on-site assistance, which includes equipment supplies but also aims at instilling a 'safety culture' among the programme partners, and through the promotion of independent nuclear regulatory authorities.

The reasoning in the special report is flawed. The report claims that the objective of external aid in the field of nuclear safety — including the aid given by the Phare and Tacis programmes — was to bring the stock of Soviet-designed reactors up to a level of safety in line with international standards. However, the donors have never accepted this responsibility and their objective has always been confined to helping the recipients to meet *their* own responsibilities in the field. Furthermore, the Commission was never going to be able to provide the ECU 50 billion to 60 billion required to close down or modernise the 65 nuclear reactors in eastern Europe and the former Soviet Union with 'donations' of around ECU 100 million a year, essentially in the form of technical assistance (since the Phare and Tacis rules strictly limit investment funding).

This is not to say, however, that the Commission does not endeavour to improve its strategic approach or to adapt it in the light of political developments. In Agenda 2000, for example, the Commission clearly defined its approach to nuclear safety in the context of EU enlargement.

Where the safety of Soviet-designed nuclear power stations, which are in operation or under construction, can be upgraded to meet international safety standards, modernisation programmes should be fully implemented over a period of seven to ten years. (This applies to Dukovany and Temelin in the Czech Republic, Paks in Hungary, and certain units at Bohunice

and Mochovce in Slovakia and at Kozloduy in Bulgaria.) The timetables agreed by the governments concerned, subject to certain conditions, for the closure of non-upgradeable units must be respected. (This applies to Bohunice in Slovakia, Ignalina in Lithuania and certain units at Kozloduy in Bulgaria.) [1]

New orientations for the Phare and Tacis programmes are also outlined in the *Communication from the Commission to the Council and the European Parliament on nuclear sector related activities for the applicant countries of central and eastern Europe and the new independent States.*

Finally, a panel of high level advisers was established at the beginning of 1998 to make further recommendations regarding the Commission's activities in this sector. Its report, **Nuclear Safety in Central and Eastern Europe and in the New Independent States, A Strategic View for the Future of the European Union's Phare and Tacis Programmes,** has recently been published. The Commission will examine the recommendations and assess to what extent they can be included in its future activities in this field.

Programming

The Commission accepts that there have been shortcomings in the manner in which its strategy has been translated into concrete projects. These shortcomings in the programming process can be attributed largely to the *urgency* with which the initial programmes were launched, the differences of perception between eastern and western experts, and the *inadequate staff* resources that were allocated for the implementation of the programmes (point 2.4). This has led the Commission to rely extensively on external consultants to draw up the nuclear safety programmes and their component projects.

However, the Commission fully agrees with the Court in that there is a need for more suitable arrangements. Therefore the Commission undertook to circumscribe the role of consultants such as the Twinning Programme Engineering Group, and Directorate-General IA has established a Framework Agreement with the Joint Research Centre in order to avail itself in-house of the requisite technical support. Nevertheless, it is clear that the Joint Research Centre cannot cover all the needs for nuclear expertise that arise in the course of implementation of the programme.

Implementation

The Commission acknowledges that the programmes have suffered from delays and management deficiencies, and it has adopted a number of measures to redress this state of affairs:

— reduction of the number of projects selected for financing,

— cancellation of projects whose launch is unduly delayed,

— commitment of funds only once projects have been sufficiently developed to permit a rapid launch after the financing decision,

— establishment of better lines of communication with the beneficiaries, for example through the Moscow-based Joint Management Unit.

It should be noted that, given the typical duration of the project cycle, it will take some years before the full benefit of these measures is reaped. The high rate of staff turnover in the Commission departments concerned remains worrying.

Finally, the Commission acknowledges that its general procedures are not always well adapted to the specific constraints of the nuclear safety programmes, and that they have contributed to delays in their implementation. However, it would stress that these procedures have, in some cases, been imposed on the Commission by the Council.

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[1] Agenda 2000, Chapter 6, p. 53.

1. INTRODUCTION

Phare and Tacis nuclear safety programmes

1.1. - 1.2. In the context summarised by the Court, the European Commission was mandated by the Council to take action to improve nuclear safety both for the countries of central and eastern Europe and for the former Soviet Union. This mandate was a real challenge because the constraints in this sector were much greater than for all the other activities financed by the Phare and Tacis programmes. There are four such constraints:

1. *The technical constraint* was greater than for any other activity, not only because of the very complex scientific and technical content of this sector, but also because of the restricted information available in Europe at the start of the 1990s on the Soviet nuclear sector, which was very secretive and closely linked to the military.

   In order to overcome this constraint, the Commission turned to operators in this sector in Europe (power station operators, industrialists, safety authorities) to acquire the necessary knowledge and attempt to define a strategy. This collaboration has reached a level of dependency that is criticised by the Court.

2. *The political constraint* was also greater than for other sectors. The principle of demand-driven programmes adopted by the Council regulations for both Phare and Tacis was much more binding in the nuclear sector for two reasons. This sector is dominated by very powerful bodies, sometimes by virtual states within a state, or by power station directors who have a very great influence on whole regions because of a lack of any alternative energy sources (as was the case at Chernobyl). As a rule, these powers refuse any debate on their strategy and reject the western conception of safety as 'exaggerated'.

   While the Commission has gradually overcome this constraint in applicant countries such as Bulgaria or Lithuania, bringing pressure to bear within the context of enlargement by implementing a pre-accession strategy, the situation remains more difficult in Russia, which is imposing its own conditions for potential cooperation in a sector which generally does not recognise the need for it.

3. *The financial constraint* was also more sensitive in the sense that improving the safety of a nuclear stock made up of around fifty power stations required budgets out of all proportion with the Phare and Tacis programme funds. This constraint is particularly tough and prevents the Commission from applying any real leverage to the process of solving the problems, in particular by closing power stations.

4. *The legal constraint* was also greater in the sense that the Phare and Tacis regulations imposed the same rules for invitations to tender in the nuclear sector as in the other sectors, which was somewhat inappropriate in view of how few, and what type, of operators were competent in this field: the Commission was thus asked to make the Member States' safety authorities compete with each other.

   The Commission has overcome this constraint by a broad use of the derogations permitted by the Financial Regulation for concluding contracts by private treaty; the Court criticises the scale of this practice.

2. SUMMARY OF THE OBSERVATIONS

The European Union's approach

2.1. The strategy which has been the basis for defining the Commission's programmes was first that adopted by the G7 in 1992 at the Munich Summit. The action programme adopted by the G7 was based on the following measures:

— improvements in operational safety,

— technical improvements based on safety assessments,

— strengthening the safety authorities.

This action plan also had a longer-term goal of replacing the least safe reactors and improving those of more recent design.

The Commission's strategy was reiterated in the initial funding agreements with the countries concerned, formulated more explicitly in 1995 and adopted by the management committee in 1996. The main thrust of this strategy for the applicant countries was clearly defined in Agenda 2000.

As regards decommissioning, dismantling and waste processing, these were not secondary objectives but rather objectives which have thus far not received the same level of funding as the safety of working reactors.

The report also stresses how difficult it is for the countries concerned to envisage closing their nuclear reactors.

However, it should be stressed that:

— on the one hand, it is the Tacis programme which prepared the plan for decommissioning the Chernobyl nuclear reactors, and it was almost entirely Tacis funds which financed the investigation of the case for

funding the completion of the Rovno 4 and Khmelnitsky 2 reactors, which should allow Chernobyl to be definitively closed,

— on the other hand, a clear strategy was set out in Agenda 2000 to lead to the least safe reactors in the applicant countries being closed.

The fact noted by the Court, that the financial instruments which could take over from Phare and Tacis for the costliest projects are taking a long time to be mobilised, shows the technical, economic and financial complexity of projects in the nuclear sector.

2.2. When setting up G-24 NUSAC, the mechanism was primarily a focus point for information exchange, enabling the various actors to coordinate amongst themselves. The participating parties never considered giving NUSAC a mandate to direct funds.

Finally, it needs to be stated that G-24 NUSAC enjoys excellent relations with the IAEA and EBRD, with which there is frequent contact.

Cooperation with the NSA to buy certain equipment was difficult because of the different procedures that exist, particularly as regards the firms that are eligible to take part in the invitations to tender.

2.3. Relations with the beneficiaries in the partner countries have been governed by rules which normally apply to the beneficiaries of the Tacis programme. They have been associated with all the programming and evaluations received in connection with invitations to tender.

While the recipients sometimes complain of communication problems, this can be because they challenge the results of the evaluations of the invitations to tender. The recipients normally participate in the evaluations. In some cases the recipient may not have been asked to travel for the evaluation of the price bids, since this evaluation was confined to choosing the lowest bid.

Management of the operations

2.4. The Commission notes that its replies show that while there has occasionally been a lack of rigour (often due to constraints on human resources, which are too variable and too limited for the large number of projects) this is certainly not the case across the board. More efficient management tools were put in place after the start of the programme.

2.5. The complex and specific nature of the field of action, nuclear safety, meant that private treaty contracts were used more than in other fields.

Derogations from the competitive bidding procedures mainly concerned projects to assist the safety authorities and the contracts with the Union electricians for on-site assistance.

2.6. It was decided to interpose supply agencies in order to increase the transparency of the process of purchasing equipment, to balance out the very great involvement of the Union's electricians.

As regards advances, the Commission would draw attention to the fact that it must choose between a few large advances (which are covered by bank guarantee) or many small advances. In the light of the staff constraints highlighted by the Court, the second choice is not really an option for the Commission departments.

2.7. The shortcomings in the programming process can be attributed largely to the *urgency* with which the initial programmes were launched and the *inadequate staff resources* that were allocated for the implementation of the programmes (paragraph 2.4). This has led the Commission to involve external consultants to draw up the nuclear safety programmes and their component projects. However, the Commission has meanwhile put in place more suitable arrangements. The role of consultants such as the Twinning Programme Engineering Group (TPEG) has been carefully circumscribed and Directorate-General IA has established a Framework Agreement with the Joint Research Centre in order to avail itself in-house of the requisite technical support.

The fact remains that the nuclear sector is so complex that the Commission, and in particular its Joint Research Centre, cannot claim to have sufficient resources to meet all its needs in programming and drawing up terms of reference.

Finally, it should be noted that the use of consortia is also linked to the limited number of players in the nuclear sector.

2.8. The levels set by the budgetary authority have not been exceeded. The management expenditure mentioned by the Court as excessive expenditure does not come under the ceiling entered in the budget remarks.

Mobilisation of aid and the results

2.9. The Commission does not deny that the implementation of some actions has been slow. The choice of implementing arrangements has been dictated above all by a concern for transparency and control. It is for this reason above all that supply agencies have been selected for equipment purchasing projects.

As regards the priority given to supplying equipment, the point should be made that there is no contradiction between supplying equipment and the development of a safety culture. Equipment supply projects must largely serve to implement appropriate procedures, reflecting an acceptable safety culture.

It is this same approach which led the Commission to spread the budgets across many power stations.

2.10. As the requirements in any case exceeded the available resources, the choice of the best projects had to be based on several criteria. For these projects, the active participation of the partners could be considered as a positive sign for its implementation.

Changes had to be made following problems such as: excessive delays in preparing the specifications (Nikiet technical centre), underestimation of budgets, stricter criteria imposed late by the safety authorities, a change of direction by the authorities in the recipient country (abandonment of an investment project with a Euratom loan at the Kola power station at the end of the preparatory phase financed by Tacis).

2.11. In certain cases, the Commission received a formal declaration from the recipients that they had obtained the agreement of the safety authorities for the necessary licences. It subsequently transpired that this had not been the case.

The Court's comments in paragraph 2.3 on relations with the recipients should be read in this light.

2.12. Because of the lack of appropriate cover for the EU's contractors in the event of a nuclear accident, the results of certain contracts signed before the Memorandum of Understanding (MoU) was signed in 1995 could not be made freely available to the recipients.

Under the MoU protection is provided by the Russian Federation, thereby obviating the need for this restriction for the contracts signed subsequently.

An interim solution has been found for the contracts that were concluded before the *Memorandum* was signed, and the results of the projects in question have been made formally available to the recipients.

It should also be noted that, from the start, the Russian institutes have closely collaborated in drawing up the studies concerned and have therefore gained direct use from them. For some of these projects, the results have also been used in subsequent related projects. The terms between contractors and sub-contractors are not the direct responsibility of the Commission.

2.13. The contracts are correctly accounted for and not overestimated. However, the amounts entered in the accounts for supply contracts should not be used as an indicator of progress on purchases.

For Chernobyl, the low rate of mobilisation can be explained above all by the link established between the Tacis projects (decided in 1994) and the political negotiation between the G7 and the EBRD with Ukraine for the MoU and the NSA agreement which were completed only in 1995 and 1996 respectively. Before then, it would not have been appropriate to unilaterally start implementing projects on decommissioning the power station.

3. THE EUROPEAN UNION'S APPROACH

Objectives and resources

3.2. The strategy which has been the basis for defining the Commission's programmes was first that adopted by the G7 in 1992 at the Munich Summit. The action programme adopted by the G7 was based on the following measures:

— improvements in operational safety,

— technical improvements based on safety assessments,

— strengthening the safety authorities.

This action plan also had the longer-term goal of replacing the least safe reactors and improving those of a more recent design.

Reference to this strategy was clearly made in the proposals and agreements on funding the first programmes adopted (nuclear safety programmes for the Russian Federation and Ukraine 1992 — 93).

The Commission's strategy was more explicitly formulated in 1995 and adopted by the management committee in 1996. The main priorities of this strategy have been pursued since the beginning of the programme. Finally, the strategy for the central and eastern European countries was clearly defined in Agenda 2000.

It should be borne in mind that the characteristics and technical deficiencies of the Soviet-designed reactors were relatively unknown at the beginning of the programmes. It was therefore necessary to address the problem by

conducting studies. These also made it possible to establish links between European industrialists and their counterparts, particularly in Russia. Subsequently, more concrete action was taken. It was backed up by two additional elements: support for the regulators (safety authorities) and support for the power station operators.

It is therefore not true to say that the programmes between 1990 and 1994 were decided upon without an overall strategy.

3.3. The Commission placed the question of closing the least safe reactors within the more general framework of the G7 and the Nuclear Safety Account (NSA), judging that only concerted action by all the donor countries could lead to a positive result. Under the NSA there does indeed exist an agreement with Lithuania, Bulgaria and Russia. The case of Ukraine is covered by the G7 MoU.

3.4. All the strategy documents which were used for programming clearly indicate that the Commission's action may not contribute to extending the lifespan of the reactors planned for closure in the short term. This is looked at when the annual programmes are assessed.

Decommissioning and dismantling of reactors

3.5. to 3.7. The Commission has always considered decommissioning the least safe power stations as a paramount political objective. This is clearly confirmed in Agenda 2000, and is demonstrated by the Commission's actions in Ukraine and in the context of the accession partnerships and its support, both technical and political, for the NSA's and the G7's efforts.

It should also be noted that, when the context allowed, the necessary resources were allocated to deal with this question. The Tacis programme prepared the decommissioning plan for the Chernobyl power station. Invitations to tender for the construction of three waste processing plants for waste resulting from the decommissioning of Chernobyl, to be financed by the Tacis programme (ECU 40 million), are in preparation.

Lastly, the investigation of the case for financing the Rovno 4 and Khmelnitsky 2 reactors which would enable Chernobyl to be definitively closed down was financed almost entirely out of Tacis funds. Furthermore, the abovementioned projects have been scrutinised in detail by various international bodies, and the quality of the results has never been called into question.

The multilateral account set up in 1997 with the EBRD does not affect the decommissioning of the Chernobyl reactors but the sarcophagus surrounding Unit 4, where the 1986 accident took place.

As regards the closure of Chernobyl it is important to stress the link with completion of two new reactors.

The difficulties encountered in mobilising appropriations for this action do not come from the Commission, but from other institutions, particularly the EBRD.

Supply of equipment

3.8. Given the very considerable amounts required to modernise the reactors in relation to the limited resources which the Commission has at its disposal, it considers that the first purpose in supplying equipment is to transfer the safety culture, basing it on practical examples which involve the recipients directly, rather than on studies alone. In view of the state of the power stations concerned and the perceived needs, it would have been impossible to ensure that the recipients cooperated if the Commission had arrived empty-handed.

It should also be mentioned that it has been possible to deal with urgent problems, particularly in Ukraine, where significant quantities of spare parts have been supplied to the nuclear power stations at Rovno, southern Ukraine and Zaporozhe.

The supply of equipment was also a response to a repeated criticism that the programmes contained too many studies with no real impact on the safety of power stations. The actions that have already been concluded have brought real improvements to the power stations concerned. For example, the supply of non-destructive control equipment (Balakovo, Smolensk), treatment of water chemistry (Kalinin), welding (Kalinin), fire prevention (Zaporozhe) or computerised maintenance systems (Beloyarsk, Smolensk).

In this context, it should be stressed that there is still a need for studies in all circumstances. The Commission has tried to find a better balance between studies and equipment.

3.9. The Commission had proposed cooperation as one of the (secondary) objectives of its strategy. This objective is not unanimously supported by the Member States. Some of them consider that this must be left to the industrial players.

Furthermore, a proactive policy in this field in many cases requires derogations from the rules on competitive tendering, in view of the existing industrial relations.

This question should be addressed in depth when the new regulation is being drawn up.

Non-industrial aspects of operational safety

3.10. The inadequate definition of on-site assistance tasks is partly due to the very nature of these activities, which must meet more short-term demands, but is also partly a direct consequence of the lack of Commission staff.

Multilateral coordination

Coordination of G-24 (NUSAC) assistance

3.12. The NUSAC had no decision-making power; its role was one of information exchange.

Cooperation with the EBRD (NSA) in supplying equipment

3.13. Discussions have taken place between the Commission and the EBRD in order to put together a common project for the delivery and installation of the safety relief valves for the Steam Generator main lines.

The criteria for eligibility of potential suppliers and origin of goods, the requirements for the tender implementation process and the evaluation of the received tenders were compared. Regrettably, it became clear that it was impossible to reconcile the differences without creating undue delays.

3.14. It is true that Tacis should specify the conventional framework for the supply programme.

However, as regards the aspect of the Nuclear Safety Account (NSA) agreements on the conditions for the future cessation of certain reactors, it must be conceded that the success of these agreements is far from clear: the NSA money is being spent without the conventional consideration being obtained. This demonstrates the difficulty in imposing a strong conditionality on the subsidies given by the technical assistance programmes.

3.15. An example of the type of cooperation recommended by the Court concerns the granting of licences for dismantling plants in Chernobyl. The Tacis programme has undertaken to provide this service for the plants financed by the NSA too.

Cooperation with the other partners

3.16. The Commission actively participates in IAEA meetings and presents its programmes there. The categorisation of the failings of Soviet-designed reactors drawn up by the IAEA is therefore used in the programming (choice of projects).

3.18. The on-site assistance arrangements implemented by the Commission has drawn upon the programme of the World Association of Nuclear Operators (WANO). The same actors are broadly involved.

3.19. The Court's observation that payments to ISTC were blocked in 1997 is correct. This was due to a lack of a legal base at that time. The payments were suspended pending the signature of the Bilateral Financial Agreements between DG IA and the ISTC. These agreements were signed, with a delay attributable to staff rotation, on 15 September 1997 and since then there have been no delays in payments to the ISTC.

3.20. The Tacis programme concentrates on the most serious safety issues, and for these the scientific basis of the solutions has already been worked out for some time. Thus the activities financed under ISTC are generally too far upstream in the R& D cycle to have a direct impact on the Tacis programme. The Commission's strategy in research on safety was defined in the EU's specific framework programme and under Tacis, and research projects have been very limited in number and voluntarily separated from the ISTC.

4. MANAGEMENT OF THE OPERATIONS

Invitations to tender

4.1. and 4.2. Given the specific nature of the nuclear safety projects, the operational services and the financial controller have specified the framework in which the conclusion of contracts by private treaty, authorised by the Financial Regulation, could operate. Recourse to exceptional procedures is entirely justified by the exceptional nature of the field of intervention.

The same goes for on-site assistance where the Commission wanted both to call only on the operators of the Union's nuclear power stations and also to cover a

large number of sites in the recipient countries. It was not possible to organise an invitation to tender and act within both of these constraints.

Many improvements depend on the technical characteristics of the technology in place and can be identified only by a single contractor familiar with the technology or producing that equipment. National regulatory authorities have, for the sake of effectiveness, pooled their knowledge in one forum, with which a direct agreement is then the sole contract form available.

Use of a direct agreement has not led to a lack of rigour, particularly as regards the fees. In the mutually agreed contracts, the Commission has chosen fees in line with the fees determined in invitations to tender from the same time, for experts of the same standing and in similar working conditions.

In spite of repeated requests for adjustment, these initial rates have not been revised upwards, as the Commission has argued that the working conditions, having been improved in the meantime, compensate for rises in the cost of living for which the standard contracts normally provide for an adjustment.

Supply agencies

Appraisal of supply projects

4.3. Without the introduction of a procurement agent, the EU utilities participating in the On-Site Assistance (OSA) programme would have responsibility for all stages of the project cycle: project definition, drafting of technical specifications, tendering, contracting and implementation. In the Commission's view, this would not be conducive to transparency and would not allow public expenditure to be correctly monitored.

4.4. While it is true that in 1996 the Commission published a more detailed version of the procedure applicable to purchases of equipment, the main elements of the procedure were established and brought to the attention of those concerned right from the start of this programme.

The recipients participate throughout the purchase procedure, for example in the preparation of the specifications and the technical evaluation of the bids, the signature of the supply contract and the (provisional and final) acceptance of the equipment. While the Commission makes the recipients responsible only for a limited number of stages in the procedure, this is partly due to the fact that it does not have the contractual instruments necessary to guarantee that this responsibility is discharged.

It should be noted that the procedure for evaluating tenders is divided into two parts: the financial evaluation is carried out only after the Commission has accepted the report on the technical evaluation, with the aim of ensuring the quality and objectivity of the technical evaluation before opening the price bids. It has happened that the recipients have not taken part in the financial evaluations, whenever it was the lowest bid that had to be selected, so as to avoid travel and additional costs.

The entry in the accounts and the reality of the operations

4.5. and 4.6. Contracts concluded with supply agencies include the budget itself provided for purchases and the fees and costs for the agency. The full amount of these contracts must, of course, be entered in the accounts. Clearly, the purchases by the supply agencies are made some time after the conclusion of the parent contract, hence the divergences mentioned by the Court.

Without questioning the issues raised by the Court, it should be emphasised that payments are made in accordance with the established contracts. Nonetheless, in view of the Court's remarks, the Commission services have decided to review the financial structure of contracts.

The internal database Désirée, to which the Court refers, is not the Commission's accounting system. The accounting system of the Commission is Sincom, where all commitments and payments are properly registered.

4.7. The advance payments made by the Commission in accordance with the established contracts are properly registered. (See also paragraph 4.6.)

4.8. The information mentioned by the Court is indeed information additional to what is required by the accounting system. The Commission receives this management information via the procurement agents' regular reports. (See also paragraph 4.6.)

4.9. In accordance with the established contracts, the interest accruing on the amounts under the special funds has only to be credited by the contractor or the guarantor to the Commission at the end of the contract. (See also paragraph 4.6.)

4.10. The Commission is making efforts, particularly in the Phare and Tacis annual reports, to give as much additional information as possible to the accounting reports, increasing the transparency of the operations.

Contractual procedures

4.11. The contracts with the supply agencies are service contracts for which the 'restricted invitation to tender' is the standard procedure laid down in the Financial Regulation.

As regards the eight contracts (amendments) concluded by negotiation:

— the clear advantage of maintaining continuity of the services must be highlighted (cf. Article 118 of the Financial Regulation),

— for several of these contracts the fees are below the ceiling for the award of negotiated contracts.

The Commission's monitoring of the operations

4.13. Désirée is an internal database, providing a tool for contractual and financial management of projects. As such, certain aspects of the Désirée database could indeed be improved.

4.14. A formal work methodology exists and is described in several documents, such as the guidelines for task managers and the handbook on project cycle management. Training on management rules is provided regularly to task managers at the Commission and Delegations. Tools for the follow-up and management of projects also exist, for example:

— the monitoring programme which provides fundamental information to the management during the life of the project,

— the *Tableau de Bord*, which is a project forecast tool,

— Désirée, which gives detailed information of the financial life of contracts and programmes,

— monthly reports from the procurement agents,

— a database on projects in progress maintained by the Joint Management Unit (Moscow),

— notes on projects and programme issues produced by the EC Delegations.

Starting up of monitoring activity of nuclear safety projects took more time than for other Tacis projects due to the complexity and confidentiality of this particular area.

The Court notes that problems raised by monitors' reports on nuclear safety projects are not always quickly solved by the Commission. The complexity and the number of actors in this kind of project often require some time for all the necessary consultations and to find a solution — which often is the responsibility of the partner state authorities.

4.15. The Commission acknowledges that such an adjournment happened in certain cases in the past. However, this is no longer the case.

On-the-spot monitoring of programmes

4.17. and 4.18. It should be noted that the Joint Management Unit (JMU) has been established to help the Russian authorities coordinate their participation in the nuclear safety programmes, particularly in drawing up these programmes, and to act as a clearing house for information.

Cost of management

4.19. and 4.20. The Commission does not agree with the Court's statements. The respective legal bases have always allowed the operating, preparation, implementation and other costs to be financed, without which it would not be possible to involve the partner country in the preparation, implementation and monitoring of the programme. The budget remark introduced in 1996 limited a clearly defined part of this assistance to a ceiling which the Commission has adhered to completely. The administrative expenditure incurred by the contractors — under service, equipment or supply contracts — in managing the activity for which they were contracted is an integral part of the programme and constitutes eligible expenditure. The Court's statement that the expenditure entered in the accounts exceeds the limits set by the budgetary authority is incorrect and the result of a unilateral interpretation of the budgetary remark in question. The Commission has already answered this criticism by the Court on many occasions, taking the same position; the Court's criticism is in no way specific to the nuclear safety programme but is a general criticism applied to the Phare and Tacis programmes in their entirety.

5. MOBILISATION OF AID AND THE RESULTS

Planning

5.1. It was appropriate to start the programmes with a number of general studies before undertaking more concrete, detailed actions.

The position of certain recipient countries, which did not fully share the Commission's concerns as regards the safety of their nuclear plants and for which the supply of equipment was the only need, must certainly be seen in relative terms.

As regards the origin of on-site assistance, the Commission has drawn the management committee's attention to the necessarily general character of the proposals contained in its initial proposal. The group of experts and the management committee for the Tacis programme have, however, been informed of the progress of the programmes.

The Commission has redoubled its efforts to improve communication with the recipients. Furthermore, the permanent presence of European experts on the sites of nuclear power stations is a unique feature of the programme, as well as being a considerable expense. In order to explain the misunderstandings which the programme has suffered, the following must be taken into consideration:

1. the quality of the services provided by these experts, and

2. the differences between the points of view of the lender and the recipients, which are much more marked in the nuclear safety sector than in the other sectors to which the programmes apply.

5.2. (a) In the case of complex projects, the technical choices which could arise, including, potentially, abandoning the project, cannot be known in advance. A sufficiently detailed definition of the tasks which the contractor must undertake over the whole duration of the project is therefore not possible. In any case, a phase-by-phase approach is imperative for the proper management of public funds. Like the Court, the Commission considers that a phased approach generally leads to better monitoring of the content and the organisation of the contracts. The obvious disadvantage of this approach is that it tends to complicate and slow down the implementation of the projects.

5.2. (b) Reallocation of the budgets to other projects is desirable only if it is compatible with the duration of the budgetary commitment and if it does not involve an increase in the workload which would prejudice the execution of projects that have already been selected.

The ECU 2,7 million project, subsequently cancelled, concerns a study for a new system of protection for the Kola VVER 440/213 reactors. The Russians were very keen to obtain this investment preparation project, and they had decided to request a Euratom loan to finance the corresponding investment. It was only at the end of the Tacis project's lifespan that the loan request was abandoned. This project, designed to prepare for a major investment, was therefore a fully justified project for Tacis.

5.2. (c) This is already the practice. However, an increase in the budget allocated to a project can be effected only if the budget balances or reserve funds are available when the need to increase the budget is identified (normally during the financial evaluation of the invitation to tender).

5.2. (d) The difficult staff situation under which the programme unit had to operate, as recognised by the Court in paragraph 4.12 of its report, must be borne in mind.

5.3. As the requirements in any case exceed the resources available, the choice of the best projects should be based on several criteria. For these projects, the active participation of the partners could be regarded as a positive sign for its implementation.

The number of partners is indeed high, but it is justified by the desire to ensure a high level of transparency and to ensure an implementation which respects the objectives of our programme. This primarily concerns the technical preparation, the method of awarding the contract and the involvement of the safety authorities.

5.4. The role of the TPEG is set within a contractual framework. In this context, it is not unusual that Commission contractors visit the recipients without the participation of the Commission.

However, important or final discussions have always been carried out by the Commission.

The difficult staff situation in the unit concerned, acknowledged by the Court in paragraph 4.12, must also be borne in mind.

5.5. It should be noted that the status of the Joint Research Centre, which has allowed it to participate as a contractor in the implementation of the programmes, is possible only in the light of an amendment to the Financial Regulation which was made in May 1995. Furthermore, while the JRC has considerable advantages as a result of its independence, it is not in a position to meet all the needs for expertise required to implement the programmes. Consequently, implementation must continue to rely partly on the Union's nuclear industry.

As regards the TPEG, its formation was investigated by the Directorate-General for Competition ('negative clearance' was granted). Moreover, the obstacles to its participation in the preparation of the programmes appeared only with the adoption of the third Tacis regulation (1996).

Budgets allocated for on-site activities

5.6. It should not be concluded that an action is less important because it has been allocated a smaller budget. Other factors such as the intrinsic cost of the services or

supplies concerned or the recipient's capacity for absorption must be taken into account.

It should be borne in mind that, at the outset, the presence of EU experts at nuclear power plants in the NIS and in the CEECs was looked upon with suspicion by the plant operators. They were often of the opinion that the West had little to teach them and that only equipment supplies were of real interest. Advice and training on operational and organisational issues was at best to be tolerated.

On the sites where the contractor's contribution to operational safety was not appreciated by the recipient, the transfer of the safety culture mainly took the form of training activities created around equipment supply projects, which were therefore not identified as complete projects so that they would not be refused by the recipient. For the sites which have shown a greater capacity for absorption, it has been possible to implement activities that are more targeted to operational safety and are independent of equipment supplies.

5.7. The Commission is aware that the budgets allocated to nuclear safety are considerably less than actual requirements and is counting on its actions to serve as an example and guide. The budgets are therefore determined mainly by considerations of lending and absorption capacity.

Delays and the stage reached in implementing the operations

Delays in preparing contracts

5.8. Since 1997, the Commission has put in place several measures to accelerate programme implementation, especially:

1. a reduction in the number of projects financed,

2. cancellation of projects which cannot be contracted quickly enough,

3. commitment of budgets only for projects that are sufficiently developed to be implemented immediately after the financing decision.

5.9. As far as equipment supply projects are concerned, the stages where the delays occur are mainly:

1. definition and approval of specifications, which are the responsibility of the on-site assistance operators and the recipients, and

2. evaluation and approval of the tenders, which are principally the responsibility of the on-site assistance operators and the Commission.

In this context, the difficult staff situation in the unit concerned, acknowledged by the Court in paragraph 4.12, must be borne in mind.

Stage reached in implementing operational safety projects

5.11. It is easier to implement technical assistance projects than concrete projects. It is therefore not surprising that it should be quicker. Furthermore, technical assistance has a raison d'être independent of equipment supplies.

Having said that, the Commission does accept that neither its contractors' services (on-site operators) nor its own supervision of these contractors has been of the standard required. In this context, the difficult staff situation in the unit concerned, acknowledged by the Court in paragraph 4.12, must be borne in mind.

5.12. (a) and (b) The Commission accepts that its procedures have contributed to the slow implementation of the programmes. The question of how to adapt them will be considered as part of the process of drawing up the Commission's proposal for the new Tacis Regulation.

5.12. (b) As regards the tendering procedures more particularly, it should be mentioned that several projects were delayed by the refusal of the recipient bodies in the partner countries to accept or cooperate with the opening of the contracts to competition, even when this was objectively justified.

The Commission on several occasions consulted the operators involved to see if competitive bidding could be applied to the programme. Their response was to confirm that invitations to tender should indeed be the basis on which equipment supply contracts should be awarded.

5.13. It is natural that the recipients should wish that the assistance promised them should be provided as quickly as possible, by giving them as much authority as possible in defining and implementing the programmes, and that they should not concern themselves greatly with the procedures followed:

Timetables

At the outset, the only timetables possible were those based on European parameters. It rapidly became clear that the local situations encountered by the partners and the application of new procedures for all the participants rendered these timetables irrelevant, in spite of the fact that they were supposed to be binding, and each partner laid responsibility at the other's door.

Procedures

The Commission has recently revised the procedure for awarding contracts in on-site assistance, so as to clarify who is responsible for what and reduce the number of stages where Commission approval is necessary.

It remains the case, however, that the procedures put in place to ensure rigorous management of public funds are sometimes too complex for the operational requirements of the Tacis programme. These procedures are not very different from those which govern the use of public funds in the Member States.

Participation of the recipients

As in the other sectors of the Tacis programme, the recipient has a vote in the evaluation committees.

Communication with the Russian recipients has been considerably improved with the creation of the Joint Management Unit in Moscow, and has compensated to some extent for the Commission's lack of internal resources.

Assistance to the safety authorities

5.16. The Commission recognises the truth in the Court's analysis of the assistance to the safety authorities. This component of the Tacis programme is a key element in promoting nuclear safety in the recipient countries. It should be stressed that the Commission's approach, even though it may appear unwieldy in its implementation, is based on respect of a basic code of ethics intended to strengthen the safety authorities' independence:

1. as a general rule, the participation of the formal recipients in the Tacis programme cannot be financed by the Commission,

2. the granting of licences was not financed by the Commission, so as to avoid creating a conflict of interests for the safety authority,

3. services for the safety authority must be provided by its European counterparts so as to avoid a situation where industrial players are advising the safety authority.

Safety studies and analyses

5.18. So as not to hold up the implementation of the Tacis programme, the Commission concluded contracts under the 1991 programme which, because of doubts about the current system of civil liability, included restrictive clauses on sending the results of studies to the recipients. However, the Commission did at the same time try to find an interim solution to this problem, pending Russia's ratification of the Vienna Convention. These efforts led to a *Memorandum of Understanding* being signed with the Russian Federation in 1995, which includes a provision on nuclear civil liability.

Since the Memorandum was signed, all restrictive clauses proposed by the contractors have been systematically rejected. In the course of 1997 a solution was also found for contracts concluded before the Memorandum was signed. There was an exchange of correspondence between the contractors concerned and the Minister for Atomic Energy of the Russian Federation (Minatom), since when the respective reports have been sent to the recipients. It should be noted that the complaints made on this subject are not entirely justified: the Russian technical institutes did in fact collaborate closely on the studies concerned.

5.19. The Commission agrees with the Court about the importance of proper management of sub-contracts with the Russian institutes. These Russian institutes often provide input for our projects in more than one capacity, as design institute, preferred industrial partner of the final recipient and main instrument of cooperation and technology transfer from the Union to the recipient.

The approach chosen, particularly for the study contracts under the 1991 Tacis programme, consisted of imposing the same amount for the subcontract on the tenderers. This amount was set at a flat rate in advance by the Commission on the basis of a technical opinion by European Union experts. In all cases except one, this amount was in fact accepted by the Russian subcontractors.

Furthermore, the fees paid to European experts have for the last few years been between 7 and 9 times those paid to Russian experts. This difference takes account of many factors such as purchasing power parities, wage costs, and working tools and methods.

5.20. As has already been said, the Commission avoids interfering in questions of subcontracting. However, it does encourage:

a) local subcontractors not to accept clauses linking their payment to the main contractor's payment;

b) tenderers to specify the subcontracting terms, which would allow the subcontractors to be paid an advance on their services.

In certain cases, in order to avoid a dispute between the contractor and the local subcontractor prejudicing the programme as a whole, the Commission has tried to

resolve the points at issue. It has also happened that a subcontractor has complained of not being paid, while the contractor has been able to prove that he has made the payments.

Actual mobilisation of the appropriations

5.21. and 5.22. Since 1997, the Commission has made a number of changes to the programme that will lead to more rapid implementation in the future. These include:

— reduction of the *number* of projects selected for financing,

— cancellation of projects whose launch is unduly delayed,

— commitment of funds only when projects have been sufficiently developed to permit an immediate launch after the financing decision,

— establishment of better lines of communication with the beneficiaries, for example through the Moscow-based Joint Management Unit.

5.23. As a general rule the recipients confirm their interest in these projects which have not yet been launched and deplore the possibility of cancelling projects for which considerable preparatory work has often been done.

6. **CONCLUSION**

Overall evaluation

6.2. The Commission is pleased to note that the Court's findings confirm the progress that has been made in developing, together with the beneficiaries, a common understanding of the objectives of the programme and a climate of trust and cooperation.

The Commission also accepts that the programme has suffered from excessive delays and, to a lesser degree, distortions of the original objectives. This is not surprising in view of the difficulties associated with a dialogue between two very different safety cultures.

While stressing the fundamental difficulty that exists in measuring the results of an action which is limited in terms of needs and which in large measure concerns the safety culture, it should be mentioned that several sources have confirmed that positive results have been achieved. Clearly account must be taken, when assessing the development of nuclear safety in the countries concerned, of the particularly difficult economic conditions that the players involved have to face. This goes as much for the safety authorities as for the operators of nuclear plants.

Effectiveness

6.3. As indicated in points 2.1, 3.2, 3.5 to 3.7 and 5.1, the Commission has acted within the framework of a well-defined strategy. As far as the applicant countries are concerned, this strategy is clearly indicated in Agenda 2000 and in the communication to the Council and Parliament of 31 March 1998 (COM (1998) 134).

The Commission is making a considerable effort to discuss the strategic priorities with the countries concerned. This is the case for the applicant countries under the accession partnerships and for the new independent States. As far as the latter in particular are concerned, the Commission is having regular discussions with Ukraine, both bilaterally and in the context of the G7. As for Russia, a new initiative has been undertaken to redefine the priorities for the future.

The Court recommends that better account should be taken of the economic reality of the recipient countries. The Commission considers that it is necessary to find a way of cooperating with these countries so that they can give sufficient priority to nuclear safety and reach realistic solutions for their energy problems, while taking account of the need to develop alternative energy sources and increase energy efficiency.

Efficiency

6.4. to 6.6. The Commission has taken concrete steps to improve the implementation of the programmes.

— In March 1998, the Commission set up an interdepartmental group responsible for improving the coordination of its activities in the nuclear sector in the East and making better use of internal resources.

— Since September 1997 the resources available at the Joint Research Centre have been fully used at all stages of the programme.

— Generally speaking, the implementation of the technical assistance programmes will be improved as a result of the creation of the Joint Relex Service (SCR) in 1998.

— A Joint Management Unit was set up at the beginning of 1998 in Moscow, which should improve transparency for the Russian recipients.

The Commission will consider an update of the procedures under the new Tacis regulation.

Economy

6.7. See paragraph 4.6.

6.8. and 6.9. The Commission pays particular attention to whether the contractual relations between the European contractors and the partners in the recipient countries are in order.

Cooperation between the EU companies and the recipient organisations does exist. The Commission agrees that it must be strengthened and that the problems and misunderstandings of the past must be avoided. In this context, it is important to assess the real costs of the organisations in these countries, which rarely have cost-accounting systems.

Transparency of the operations

6.10. It is true that the operations relating to nuclear safety are financed from several budget headings. Article B7-534 (Completing the programme of cooperation on nuclear safety with the countries of central and eastern Europe and the new independent States) now exists only to carry out the final payments and then will disappear. Article B7-535 concerns cooperation with the central and eastern European countries and the newly independent States under the Euratom Treaty. In 1997, these actions were financed by articles relating to the Phare and Tacis programmes. Article B7-536 (Community contribution to the European Bank for Reconstruction and Development for the Chernobyl Shelter Fund) also concerns a one-off action.

However, the largest amounts come from the Phare and Tacis headings. These are geographical programmes intended for countries listed in the legal basis and covering several fields. For these two programmes, the amounts intended for projects relating to nuclear safety can come from multi-recipient programmes or be included in national programmes. This is the case for all the sectoral programmes intended for these countries and included in the two big geographical programmes. Creating special budget headings for each heading would lead to a proliferation of budget headings for each geographical area.

This system gives an overview of the amounts intended for each country on the one hand and of the horizontal programmes on the other. The needs of the various countries are very different and this must be taken into account.

As regards the monitoring and the reports that the Court would like, the nuclear sector is of course included in the Phare and Tacis annual reports sent to the budgetary authority and published. In general, each programme is also evaluated individually.