EURATOM SUPPLY AGENCY

AA/7/75-E

Brussels, April 29, 1975

ANNUAL REPORT OF THE EURATOM SUPPLY AGENCY FOR THE CALENDAR YEAR 1974

General: Three events influenced the activities of the Supply Agency during 1974. The first was that, for the first time since late 1964, it was possible for the Supply Agency's Advisory Committee to be convened and to resume its activities. Secondly, in the natural uranium sector, the market moved from a buyers to a sellers market. Finally, the activities of the Agency in the uranium enrichment sector were marked by the exhaustion of the USAEC's enrichment capacity earlier than expected.

The Supply Agency's Advisory Committee, totalling 33 members, met on 17 January, 30 April and 3 December 1974. At the first meeting Mr E Bonomi (ENI) was appointed Chairman and Mr Houdaille (URANEX) and Dr M Stephany (NUKEM) were appointed Deputy Chairmen. The Advisory Committee laid before the Commission two opinions on the extension of the "simplified procedure", which had expired on 31 December 1973 (Article 5 of the Agency Rules, Official Journal of the European Communities of 11 May 1960, page 777/60). It also made a working party responsible for assessing the Community's long-term requirements, determining potential sources of natural uranium supply, preparing proposals on incentives for uranium prospecting and working out ways of carrying out projects on a Community scale. The initial provisional report of the Working Party was approved at the Advisory Committee's meeting on 3 December and passed on to the Commission by the Committee's Chairman. It is planned to have these investigations by the Working Party continued during 1975.

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I. Natural uranium and other source materials

As already mentioned in the introduction, a decisive influence on this sector during 1974 was the movement from a buyers to a sellers market. Various circumstances have contributed to this new situation.

Examination of the contracts and offers submitted to the Agency has lead it to the conclusion that the uranium producers in the free world, who had hitherto only been able to sell their products on the non-American market at low prices, which in most cases barely covered production costs and which did not yield proceeds high enough to afford reasonable profits nor, more especially, funds for urgently required investments (particularly for new prospecting), no longer competed on price with each other. They appear to have taken advantage of the situation analysed in the following paragraphs so as to obtain more remunerative prices.

The reticence of the overseas producers was also considerably influenced by the attitudes of their governments. Australia completely withdrew from the natural uranium market and the Australian Government promulgated a new uranium policy of putting the country's abundant uranium on the market primarily in the form of enriched uranium (which necessitates the acquisition of enrichment technology and considerable investment in the construction of new enrichment plant) and channelling all exports of natural uranium purely at government level via the Australian Atomic Energy Commission at prices considered appropriate by that body. In addition, the Australian Government ruled out further participation by outside undertakings in prospecting campaigns and in mining companies.

The Canadian Government is also exploring the possibility of only exporting its uranium after enrichment. Its studies on the acquisition of enrichment know-how and the construction of an enrichment facility are still in progress. Also in Canada, control of contract prices by the Atomic Energy Board at the time of issuing export licences has been introduced and the conversion of U_3O_8 into UF_6 in Canada has been imposed. On top of this, the Canadian Government has secured the use of Canadian uranium deposits for the coverage of the domestic needs of the country by restricting the level of investment by non- Canadian firms in Canadian uranium-producing companies, and by imposing upon the mining companies a requirement to attribute in priority their reserves to the coverage of the national requirements. Finally, it has laid down the condition that Canadian reactor operators must conclude uranium supply contracts

for nuclear power plants under construction or planned for terms of at least 15 years, with an option of a further 15 years. These measures have considerably reduced opportunities for obtaining supplies from Canada.

The South African producers have also reduced their sales and reduced the volume of their offers. The South African Government too is considering the construction of an enrichment facility, using a hitherto unkown process *). Since uranium extraction in South Africa is linked with gold production, the rise in the price of gold has led to the exploitation of deposits having only a low gold and uranium content. Thus, although ore output has increased, there has been a cut in uranium production at the processing plants and refineries, irrespective of the capacity employed. There are plans for expanding capacity. In contrast with Australia and Canada, the Union of South Africa has not ordered any scaling-down of investments of foreign capital.
It must be added that even potential French suppliers have had to withdraw temporarily from the natural uranium market following the political uncertainties which have hindered the fixing of the selling price for the production from their African mines. This situation persisted throughout the year 1974.

On the demand side, the oil crisis of fall 1973 has provoked an acceleration or increase of nuclear programmes and consequently an increase of the demand for natural uranium resulting from such programmes. The intention of the US-AEC to increase its so-called transaction tails assay (which became known late 1974 ⁎) likewise increased the natural uranium requirements for the same quantity of enriched uranium. It can not be excluded that in view of this development and of the expected progressive opening of the American market to foreign natural uranium producers, consumers in the Community have been induced to create some stocks. In 1974 the American and non-American uranium producers were not in a position to adapt their production capacities to this new situation.

During 1974 the Supply Agency was concerned in the conclusion of 36 contracts for natural uranium, 12 contracts covering deliveries of 9,200 tonnes of monazite and a contract for the supply of 2.5 tonnes of thorium.

The natural uranium contracts largely involved "spot" purchases, i.e., purchases of small amounts to cover short-term requirements either for immediate delivery or for delivery during 1974/75. Such spot purchases were entered into mainly by fuel-element fabricators who needed additional rolling stock or feed

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*) Statement of Dr. A.J. Roux, Chairman of the Atomic Energy Board at the Paris Conference on April 24, 1975

⁎) The decision was published on January 6, 1975

material for enrichment contracts for individual MTRs or other research reactors.

In all, 18 contracts relating to 235.07 tonnes of uranium govern such transactions.

Of the 36 contracts, only 10 were for the supply of nuclear power plants in the Community. Quantities delivered under these 10 contracts totalled 4.997 tonnes of uranium in the form U_3O_8 or UF_6.

The breakdown is as follows:

3 for German nuclear power plants	2 487 tonnes
3 for Italian nuclear power plants	1 061 tonnes
3 for Belgian nuclear power plants	1 397 tonnes
1 for a Netherlands nuclear power plant	52 tonnes
	4 997 tonnes

Only in one case was it possible, as a result of long-standing business relations, to conclude a long-term contract, which was for 1 645 tonnes and extended over the period 1974-86.

One contract covers the period 1976-80. The remaining contracts relate to supplies for two years only.

Of the remaining 26 contracts, five covering a total of 676 tonnes of uranium were signed by a reactor constructor for an export order.

A further contract was for the leasing of 254 tonnes of uranium in respect of the period 1974-77.

In two further cases the supply of 31 tonnes of depleted uranium was agreed upon.

Towards the end of the year the straitened circumstances of the American electricity undertakings enabled Community consumers for the first time to take over contracts from American consumers in default, these contracts being largely confined to the supply of natural uranium for a first core or direct purchases from American uranium producers needing to improve their liquidity positions. By the end of the year six such arrangements had been reached.

The supplier situation in the 36 contracts mentioned was as follows:

In 6 cases French undertakings dealt with	40 tonnes
in 11 cases German undertakings dealt with	184.07 tonnes
in 2 cases Belgian undertakings dealt with	23 tonnes
in 5 cases UK undertakings dealt with	357 tonnes
in 10 cases American undertakings dealt with	3 090 tonnes
and in 2 cases Canadian undertakings dealt with	2 465 tonnes

In the two supply arrangements concerning depleted uranium, a UK and a French company were the sellers.

The data compiled show that throughout 1974 only one long-term and one medium-term contract covering the supply of natural uranium for nuclear power plants in the Community were signed. It also proved difficult in

many cases to cover short-term requirements, e.g., for research reactors, because there was scarcely any interest on the part of manufacturers and suppliers in business of that kind.

The upward trend in prices which was recorded in the annual report for 1973 continued at a vigorous pace during 1974. In the last 12 months prices have more than doubled. By the summer of 1974 they had already risen to about US$12/lb U_3O_8, and by the end of the year had climbed to US$17/lb U_3O_8 for deliveries in 1974/75. For deliveries in the years 1975/76 and 1977/78, an escalation clause is regularly applied to the basic price for the year of the contract. In some cases, the contracts provide that the parties shall reach agreement 12-24 months in advance on the price to be paid during the year of delivery; this is done "on the basis of the world market price". Many suppliers, especially American companies, have adopted the practice of asking for a high down payment - sometimes even the full contract price - on signature of the contract.

With regard to the formal procedure for the conclusion of supply contracts, it has already been mentioned that the term of the "simplified procedure", which was based on Article 5 of the Agency Rules, expired on 31 December 1973. The Agency's Advisory Committee has stated that it is fundamentally in favour of an extension of this procedure, although Article 5 is clearly worded to the effect that it should only be used where supply is obviously in excess of demand - a market situation which no longer exists today. The Commission and the Agency are now examining how far the wishes of the Advisory Committee can be complied with. As yet, the Commission has reached no decision. In 1974 the Agency confirmed by its signature on all supply contracts that it had participated in the conclusion of the contract in question. In no case has

there been any difficulty, not even with suppliers outside the Community.

II. Enriched uranium

On 13 June 1974 the Supply Agency made an application to the USAEC to increase the maximum quantity of enriched uranium which can be supplied to the Community under American law (Euratom Cooperation Act). The ceiling of 35 000 MWe is to be increased to 55 000 MWe, whilst the maximum quantities for purposes of research, fuel-element fabrication and the chemical reprocessing of irradiated fuel elements remain unchanged at 25 000 kg U^{235} and 1 500 kg plutonium.

This application prompted the USAEC to begin by getting the US Congress to change the unwieldy procedure. Instead of a law which had to be passed by both Houses of Congress in order to increase the quantities supplied to international organizations, all that is now required is an application from the USAEC to the Joint Committee on Atomic Energy; the application must be up before both Houses during 60 days when Congress is in session, and is regarded as approved if no objection is raised in the House of Representatives or the Senate.

This change of procedure will in future considerably speed up and simplify the handling of applications from the Agency to increase the deliveries to the Community. In the specific case of the increase from 35 000 MWe to 55 000 MWe, however, the initial amendment that had to be made to the law brought about a delay in the processing of the Agency's application. Although the amendment of the law went through, the Congressional elections and the close of the session meant that the 60-day period required for the application itself could not be complied with.

Accordingly, an affirmative decision on the application to increase the facilities for the supply of enriched uranium will not be forthcoming until the new session of the US Congress, say, at the end of the first quarter of 1975.

A. Toll enrichment

In view of the new USAEC enrichment services criteria which took effect on 9 May 1973, the Supply Agency carried out a market survey with the utilities in early 1974 to ascertain the number and output of the planned nuclear power plants in the Community which will be needing enriched uranium for the first time during the second transition period specified by the USAEC, i.e., between 1 July 1978 and 30 June 1982.

Owing to the worldwide oil crisis which occurred in the autumn of 1973 and the subsequent decisions by the various Member States of the Community to enlarge and speed up their nuclear construction programmes, there was an unexpectedly large number of notifications. The breakdown of these is as follows:

Belgium	5	nuclear power stations of	5 000 MWe
Denmark *)	2	" " " "	1 800 MWe
Germany	21	" " " "	25 590 MWe
France	47	" " " "	49 680 MWe
Ireland	1	" " " "	600 MWe
Italy	19	" " " "	19 000 MWe
Luxembourg	1	" " " "	1 250 MWe
Netherlands	3	" " " "	3 000 MWe
United Kingdom	11	" " " "	12 200 MWe

totalling 110 nuclear power stations with an output of 118 120 MWe.

In the meanwhile it has transpired that these programmes in the Member States have had to be reexamined and in some cases cut back because of the mounting administrative difficulties in granting site and construction permits, and also the heavy increase in the financial burden on the electricity producers. Another reason is the levelling-off which is gradually becoming apparent in the rate of energy consumption. In regard to the United Kingdom, it should be pointed out that the notification submitted at the time had a reservation attached to it, as the British Government had not yet reached any decision on the type of reactor to be built; it was not until the summer of 1974 that the die was cast in favour of the British SGHWR, which meant that the whole programme had to be revised.

Only 20% of the planned nuclear power stations expressed their willingness to conclude a long-term toll enrichment agreement with the USAEC. At the end of May - i.e., well before the target date of 30 June 1974 set by the USAEC - the Agency submitted an application to the USAEC for the conclusion of 23 such agreements for:

	8	German nuclear power stations
	8	French " " "
	1	Irish " " "
	2	Italian " " "
	1	Luxembourg " " "
	1	Dutch " " "
and	2	British " " "

*) subject to the approval of the Parliament

To the surprise of all concerned, the USAEC gave notice at the end of June 1974 that, owing to the large number of applications received, the enrichment-plant capacity which it was allowed by Congress to assign for the supply of nuclear power stations inside and outside the United States had been used up earlier than expected, and that it was therefore unable to accept and countersign all these agreements.

Lengthy negotiations were held between the authorities concerned and the US administration on the question of what criteria should be applied in selecting contracts from among those awaiting signature. The Delegation of the Commission of the European Communities intervened energetically on behalf of consumers in the Community. At the hearings before the Joint Committee too, the Agency was given the opportunity of presenting the Commission's viewpoint and setting out the consumers' interests, both orally and in writing.

The outcome was that the USAEC was empowered to conclude five firm contracts with consumers in the Community on standard conditions. The five contracts concerned one Italian, two German and two French nuclear power stations with a total of 6 200 tons of separative work over a ten-year period. In the other eighteen cases the consumers were offered "conditional contracts". The condition governing the validity of these contracts, which have to be signed by the consumers by 17 March 1975, is that the successor organization to the USAEC - the Energy and Research Development Administration (ERDA) - issues, by 30 June 1975, a "generic statement on plutonium recycle", which in principle will permit the recycling of plutonium in the United States. The Administration hopes, by permitting plutonium recycling in nuclear power stations, to create sufficient enrichment capacity in its plants to enable it to service the conditional contracts. If this condition is not fulfilled by 30 June 1975, the conditional enrichment contracts will become null and void unless the ERDA and the consumer concerned agree on a new date for the publication of the "generic statement".

On 6 August 1974, the President of the United States also made an official statement that in any event the United States would meet its contractual obligations in full through either private or new state-owned enrichment facilities.

Finally, five further short-term contracts were concluded in 1974 with the USAEC for supplying MTRs and other research reactors covering a total of 69 tonnes of separative work for Belgian, Dutch and German users.

In the year under review, the current capacity of the enrichment plants in the Community, EURODIF and URENCO, was taken up, partly through contracts and partly through letters of intent. URENCO concluded a contract with a Dutch nuclear power station in respect of an enrichment capacity to be provided by the pilot plant in Amelo for a reload and two ten-year contracts for two German nuclear power stations totalling 2 270 tonnes of separative work.

The EURODIF capacity covers primarily the requirements of the EURODIF partner countries (France, Italy, Belgium and Spain). In addition, EURODIF announced the conclusion of a ten-year contract with Japanese electricity producers for an annual capacity of 1 000 tonnes of separative work. A contract for 400 tonnes of separative work was concluded through the CEA (French Atomic Energy Commission) with the Belgian group Synatom and a contract for 700-730 tonnes of separative work with RWE, which will enable an initial core and three reloads to be delivered in the period 1981-85.

In view of the uncertain situation regarding enrichment in the USA, several users decided to conclude further agreements with the Soviet organization Techsnabexport. In addition, nuclear power station operators who had signed short-term contracts with Techsnabexport in 1973 found that, because of the exhausted capacities of the European and American enrichment plants, they wereinduced to exercise the options open to them by the terms of the contract with Techsnabexport. Other electricity producers began preliminary negotiations to have the conditional contract offered them by the USAEC replaced by a contract with Techsnabexport.

By the end of the year, the following agreements had been concluded:

- first, at the beginning of 1974, the ENI contract, already mentioned in the 1973 annual report, to cover part of the Italian separative work requirement,
- a contract between a nuclear power plant constructor and Techsnabexport for the delivery of 395 tonnes of separative work 1976/78.
- and two contracts signed by electricity plants on the exercise of existing options for the periods 1977-95 and 1979/95 for a total of 5 110 tonnes of separative work.

Negotiations on five further contracts will be concluded in the first few weeks of the current year.

The difficult situation in which a large number of American electricity producers find themselves for administrative and financial reasons resulted in several American undertakings that had signed binding contracts with the USAEC having to revise their construction programmes and, because of considerable delays with or abandonment of construction projects, being no longer interested in the USAEC enrichment services that were contractually ensured to them. Termination of the contracts would have burdened the American firms further with considerable termination costs. The consequence was that towards the end of 1974, enrichment contracts were offered, partly through existing pool organizations or brokers and partly directly through the Agency as well, either in whole or in part, to be taken over by European users.

After the Agency had been able, through talks with the USAEC, to obtain that organization's agreement in principle to such transactions, several users in the Community who had only received conditional contracts commenced negotiations with American companies whose contracts corresponded to their own projects in such aspects as reactor size, delivery date and scale of supplies. By the end of 1974, two such take-over contracts for more than 1 600 tonnes of separative work had been concluded by German electricity plants with a large American undertaking, so that the USAEC offer regarding the conclusion of conditional contracts thus became null and void for one of these undertakings. Other agreements of this nature are scheduled for early 1975, which means that their number should be considerably reduced by the final date fixed by the USAEC, 17 March 1975, for the signing of conditional contracts.

It should also be mentioned that on 18 December 1974, after publication of the requisite announcement in the Federal Register, the USAEC effected an increase in the price for separative work services. This price now stands at US$42.10 per kg separative work for standard enrichment contracts and at US$47.80 per kg separative work for "requirements" contracts. The price will increase automatically every six months, starting on 1 July 1975 with 2%.

Below is a list of the imports that entered the Community on the basis of existing contracts with the USAEC in the year under review (1974):

0.7-5% Country	KgU	KgU^{235}	Enrichment costs (US$)	Kg natural uranium used as fuel
Belgium	32 935.396	1 073.47	6 266 879.32	197 173.803
West Germany	88 562.623	2 212.17	12 844 923.40	398 552.968
Netherlands	14 936.881	510.96	2 760 141.36	87 698.564
France	51 190.986	1 492.12	-	-
Italy	-	-	-	-
U.K.	-	-	-	-
5-93%				
Belgium	845.480	158.28	1 187 901.27	30 643.341
West Germany	291.365	271.49	2 616 742.77	53 012.829
France	340.436	317.06	-	-
	189 103.167	6 035.55	25 676 588.12	767 081.505

In 1974 as well, the first enriched uranium was imported from the Soviet Union under the contracts concluded with the assistance of the Supply Agency. The deliveries were effected to the complete satisfaction of the recipients, the relevant breakdown being as follows :

1. 1 420 kgU at 1.9%)
   1 420 kgU at 2.5%) 23 225.95 kg separative work
   4 320 kgU at 3.2%)

2. 21 594 kgU at 1.9%)
   21 240 kgU at 2.5%) 167 598.64 kg separative work
   21 240 kgU at 3.2%)

3. 36 238.56 kgU at 1.90% = 56 992 kg separative work

All these deliveries were to West Germany

B. Deferred payment contracts (PDPI)

AGP	Imported enriched uranium in Kg	1974 Payments to the USAEC US$		Inventory		
		Burn-up	Interest	Date	Amount - KgU	Value - US$
1 Carigliano	615	615 835.43	267 739.47	1 June 1973 30 June 1974	63 529.522	9 480 527.83 5 542 518.82
2 Trino	2 226	1 080 132.44	1 614 824.84	1 May 1974	76 016.691	17 760 826.32
4 Choos	-	462 702.10	817 018.80	30 Nov 1974	49 181.400	15 049 128.18
		2 158 669.97	2 699 583.11			
Total PDPI payments in 1974		4 858 253.08				

C. Purchase contracts

During the year under review, a total of eight transactions were carried out under the existing Master Sales Agreement with the USAEC or through purchase contracts concluded separately with the USAEC by the Agency. These were as follows:

0.7-20 %	Contracts	Kg U	KgU-235	Value (US $)
Belgium	1	5.—	0.250	2 725.—
France	1	8.909	0.224	2 043.06
Germany	3	467.230	15.982	159 808.31
Netherlands	1	1 804.—	12.826	42 321.84
				206 888.21

20-93 %	Contracts	KgU	KgU-235	Value (US $)
France	1	0.133	0.124	1 724.05
Germany	1	11.491	10.342	143 543.39
				145 267.44

D. Lease contracts

As stated in the 1973 Annual Report, no new lease contracts were concluded by the USAEC after 30 June 1973. The existing lease contracts expired on 31 December 1974.

The action of the Agency concerning the acquisition of lease material, as described in the 1973 Report, through the purchase of natural uranium as feed material and the conclusion with the USAEC of an "in-situ" toll-enrichment contract has been successfully completed. By 30 June 1974 all except two of the lessees in the Community had repaid the sums due under the bank loan which the Agency had raised at a 7½% rate of interest. By this action of the Agency the lessees in the Community have been saved considerable sums of money, since natural uranium was still available at US $ 18.85 per kgU in UF_6 and the then enriching charge was US $ 32. By the end of 1974, natural uranium was already costing $ 42 per kgU in UF6 and the USAEC enriching charge had risen to $ 42.10. The saving to the lessees in comparison with a purchase at 31 December 1974 was therefore about 24 %.

III. Plutonium

No firm market based on supply and demand has yet developed in this sector owing to insufficient demand. Nor, is there any visible trend towards an upturn in this particular sector.

Only insignificant quantities, each transaction being in the order of merely milligrams, were acquired from the USAEC for purposes of research.

In total there were 12 transactions amounting to 2.382 g. There were 4 exports from the Community to third countries totalling 16.090 kg fissile plutonium *).

In a further instance, a Community undertaking acquired about 60 kg of plutonium from an American nuclear power station operator and sold 58 kg of it to Japan after conversion and purification.

Within the Community only two major agreements were concluded, covering the German and Belgian shares in the SNR project at Kalkar.

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*) With an option on a further 35 kg

IV. Transfers to and from non-member countries

Altogether, 183 transfers to and from non-member countries involving materials of American origin were carried out during 1974.

	Imports from	Exports to
South Africa	1	-
Austria	-	6
Australia	1	1
India	1	2
Japan	3	2
Norway	4	7
Sweden	12	30
Switzerland	3	1
Taiwan	-	2
USSR	3	-
USA	91	13
	119	64

In general, these consisted of exchanges of rather small quantities of special fissile materials between research establishments for irradiating and testing purposes.

The picture presented by the industrial-scale exports covering conversion or the manufacture of pellets or MTR and power-reactor fuel elements for non-member countries is as follows:

From Belgium	1 transaction	covering	147.608 kgU
From Germany	26 transactions	"	120 919.— kgU

In seven cases materials were supplied by the United Kingdom to other Member States of the Community. These transfers had to be formally carried over, with USAEC approval, from the still valid USA-UK bilateral Agreement into the Euratom-USA Agreement.

V. The Agency is not able to present full details of material movements within the Community. These are mainly in connection with processing or reprocessing operations, where the obligation to notify the Agency in accordance with Article 75 of the Euratom Treaty is frequently disregarded. The Agency, therefore, refrains from summarizing the notified transactions, since these offer no relevant picture of

Community-wide activity. It should be noted, however, that the Agency has participated in transfers of enriched uranium between Community undertakings in 29 instances. These transfers are mainly in respect of fuel fabrication scrap being acquired by firms engaged in fuel-element manufacture.

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VI. Summary

The following picture is presented by all the transactions involving Supply Agency's participation :

1.	Natural uranium		38
	Monazite, thorium and depleted uranium		15
2.	Toll enrichment		20
	USAEC	12	
	Techsnabexport	3	
	URENCO	3	
	CEA	1	
	EURODIF	1	
3.	Purchase contracts with the USAEC		8
4.	Plutonium		19
5.	USAEC transfer licences		
	for imports		64
	for exports		119
6.	Intra-Community transfers		29
	Grand total		312

The EURATOM Supply Agency

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