JPRS L/9662

14 April 1981

Worldwide Report

NUCLEAR DEVELOPMENT AND PROLIFERATION

(FOUO 6/81)

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CONTENTS

USSR SUPPLYING HEAVY WATER, ENRICHED URANIUM TO ARGENTINA

LD171319 London FINANCIAL TIMES in English 17 Mar 81 p 4

[Robert Lindley dispatch]

[Excerpt] The U.S.-sponsored embargo on grain shipments, to the Soviet Union and the controls which the "atomic club" of nations--especially the U.S.--wants to impose on Argentina's ambitious nuclear programme, has sent Argentina shopping in Russia for atomic energy components.

Five tons of heavy water purchased from the Soviet Union already are in Argentina, and more will be imported from the same source. Argentina is also buying enriched uranium from the Russians for its experimental nuclear reactors.

In view of Argentina's determination to have seven nuclear power stations installed by the end of the century, this overture to the Soviets is probably inevitable. Vice-Admiral Carlos Castro Madero, president of the National Atomic Energy Commission, recently denounced what he called "economic and political interests which are trying by whatever means possible to block both Brazil and Argentina from achieving independent nuclear development."

Argentina is pledged to ship 22.5m tons of grain to Russia over the next four years.

CSO: 5100

JAPAN

JAPAN FALLS TO THIRD PLACE IN NUCLEAR-POWER GENERATION

Tokyo JAPAN TIMES in English 5 Mar 81 p 2

[Text] Japan has dropped to third place among countries in the world in respect to generating capacity of atomic power reactors, according to a survey of the private Japan Atomic Industrial Forum, Inc.

The survey, conducted as of last December, showed that the United States continued to occupy the top spot as to the number and output capacity of atomic power reactors.

Ranking second was France, with a total of 22 A-power reactors with a total generating capacity of 15,350,000 kilowatts in operation. Last year alone, seven new reactors with an output capacity of 6,700,000 kilowatts started operating in France, which occupied the No. 6 spot in 1979.

It thus replaced Japan, which had been occupying the No. 2 spot since 1978. As of last December, 22 reactors with a total output capacity of 15,120,000 kilowatts were in operation in the country.

The JAIF survey also showed that the Soviet Union had 28 reactors with an output capacity of 13,600,000 kilowatts. Four new plants with a capacity of 2,500,000 kilowatts started operating in that country last year.

The Soviet Union is expected to overtake Japan during this year since it is promoting atomic power plant projects under its 11th five-year plan ending in 1985.

The JAIF said not one new atomic power plant started operating in Japan in 1980 but work for building four reactors, including the No. 3 reactor at the Tokyo Electric Power Co.'s No. 2 plant in Fukushima, was started.

It said the United States was still suffering from the aftereffects of the Three Mile Island accident in 1979 and added construction of 16 reactors, including nine for which work already was started, was canceled last year.

The JAIF survey also showed that construction of atomic power reactors started showing signs of picking up again last year on a global basis.

A total of 21 reactors with a capacity of some 16 million kilowatts started operation last year, it said.

This brought the number of reactors in operation in 22 countries in the world to 247 with a total capacity of 146 million kilowatts.

CSO: 5100

JAPAN

NUCLEAR INDUSTRY IN JAPAN DISCUSSED

Tokyo TECHNOCRAT in English Vol 14, No 1, Jan 81 p 59

[Text]

Japan's nuclear equipment industry has been evolving mainly through technology introduction from the United States. At present, however, it is capable of building eight reactors yearly in the million kw range, with nearly 100% domestic components. Tsuruga unit 2 reactor (PWR 1160mw) of the Japan Atomic Power Company now under safety inspection for licensing is a Japan-made, improved and standardized model adopting a prestressed concrete containment vessel (PCCV) – Japanese power companies including equipment manufacturers are considered leaders in this area. Firms doing business in the nuclear industry number over 500, with about 40,000 employees and an annual total expenditure of as much as ¥1.45 trillion, confirming the steady buildup of industrial structure for nuclear power generation.

Five BWR enterprises consisting of Toshiba Corporation, Hitachi Ltd., GE (U.S.), ASEA-ATOM (Sweden), and AMN (Italy) have recently proposed a detailed design for an ideal reactor. This is to be introduced into the Kariha nuclear generating plant, Kashiwazaki, Niigata, of Tokyo Electric after reliability tests.

The reactor has been jointly developed by the five manufacturers since signing a technical development contract on July 2 years ago, forming a technology improvement team. The new type provides a built-in coolant water recirculation pump, a fine-tuning control rod driving mechanism etc., reduced personnel radiation exposure, and is considered far more advanced than existing BWRs in operational performance. Organization of the technical reform task force in particular was symbolic of the progress and confidence in Japan's light water reactor technology.

The LWR refinement and standardization project begun in fiscal 1975 by joint public and private sectors intends to set up a "Japan-type LWR", and is expecting the conceptual blueprint within this fiscal year.

The results of the project directly affect the construction scheme for Tsuruga No.2 reactor which involves PCCV, improved aseismicity, refinement of fuels and steam generators, as well as measures for lowering radioactivity release.

The percentage of domestic production of nuclear equipment is 90% or more in most items, achieving 99% for reactors to date. Some exceptions are imported: very special instruments and a manipulator crane.

The industry in Japan has been able to accomplish the rapid domestic production of nuclear equipment within about two decades owing to technological experience in such techniques as welding, assembling of massive components, and process control techniques that have long been accumulated in thermal/hydroelectrical power generation, shipbuilding, iron works, heavy electric equipment, heavy machinery, and other manufacturing fields.

The sophisticated industry represented by nuclear-power plants requires a system engineering capability as its essential part. However, Japanese manufacturers are still behind the overseas firms in this regard, i.e. the creation of new comprehensive systems. Since the engineering sector saves much by avoiding double investments, it is advisable to further promote efficient LWR development through information exchange, joint research and development, organization reform, and other means.

The nuclear equipment industry is typically knowledge-intensive, which contributes to levelling up whole industries in Japan, and is a possible export leader in the future.

Current export items are centered in such components as reactor pressure vessels mostly for the Western industrialized nations, with an export sum annually of less than ¥1.4 billion.

Japan's nuclear industry is surely capable of wielding excellent production techniques, but its experience in the arena of nuclear fuel *cycle is poor, along with a seeming lack of overall engineering ability. The departments concerned are urged to make a "quantum leap" without disturbing the present component exportation.*

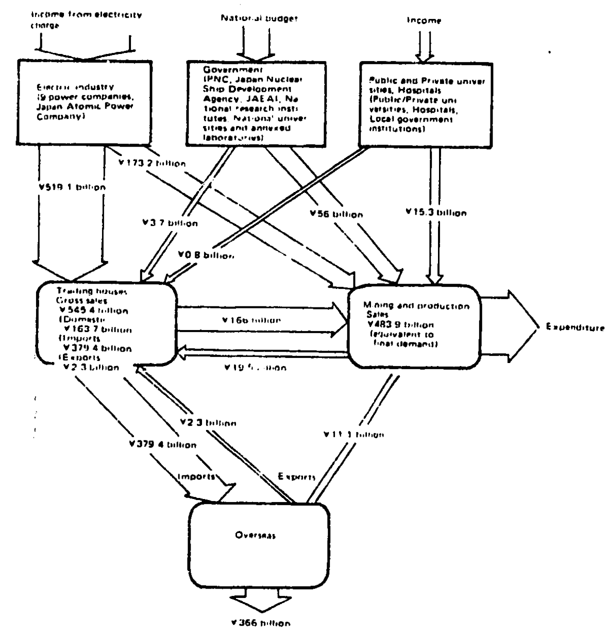

Fig. 1. Money Flow of Nuclear Industry

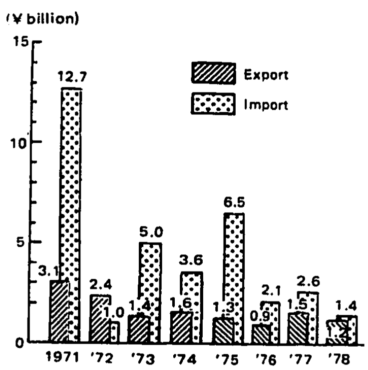

Fig. 2. Import-Export Progress of Nuclear Reactors and Equipment (based on Customs Statistics)

Table 1. Outline of Nuclear Industry Groups

Group	Number of member companies	Inauguration	Major business	Major enterprises: Host companies	Major enterprises: Major equipment manufacturers	Major enterprises: Fuel processing companies	Trading firms	Major related foreign firms
Mitsubishi	28	October 1955	PWR plants and fuel fabrication	Mitsubishi Heavy Industries	Mitsubishi Atomic Power Industries; Mitsubishi Metal; Mitsubishi Electric	Mitsubishi Nuclear Fuel (MNF)	Mitsubishi Corporation	Westinghouse Electric Co
Tokyo Atomic	23	March 1956	BWR plants and fuel fabrication	Hitachi Ltd	Hitachi Shipbuilding & Engineering; Babcock Hitachi; Kajima Corporation	Japan Nuclear Fuel (JNF)	Marubeni Corporation	General Electric Co
Mitsui	[illegible]	June 1956		Toshiba Corporation	Ishikawajima Harima Heavy Industries; Shimizu Construction		Mitsui & Co Ltd	General Electric Co
The First Atomic Power	27	June 1956	GCR AGR plants and fuel fabrication	Fuji Electric	Kawasaki Heavy Industries; Kobe Steel; The Furukawa Electric	Nuclear Fuel Industries (NFI)	C Itoh & Co Ltd	Internationale Atomreaktorbau GmbH (INTERATOM); Atomics International
Sumitomo	[illegible]	Apr 1956	PWR BWR fuel fabrication	Sumitomo Atomic Energy Industries	Nippon Electric; Sumitomo Heavy Industries		Sumitomo Shoji Kaisha	United Nuclear Corp; Combustion Engineering Inc

CSO: 5100

JAPAN

UTILITIES WILL PROMOTE URANIUM ENRICHMENT

Tokyo TECHNOCRAT in English Vol 14, No 1, Jan 81 p 58

[Text]

The electric power industry has decided to advance into a domestic uranium enrichment undertaking which constitutes the of the nuclear fuel cycle. The Japan Atomic Power Company and the other nine power companies are shortly to set up a Preparatory Department for Uranium Enrichment Business Promotion (provisional name) for detailed consideration. According to the concept, the Japan Uranium Enrichment Company (provisional name) will be established in the next fiscal year, financed by about 30 enterprises in the electric power, heavy industry, engineering and banking fields. The new firm intends to build a uranium enrichment plant of 3,000 ton SWU/year capacity, with planned initiation of operation around 1989, nearly ten years away. The decision has been made because the power industry is satisfied that the uranium enrichment pilot plant is running successfully, achieving most of the targets, and that PNC will almost surely begin the detailed designing, next fiscal year, to build a prototype plant (250 ton SWU/year capacity) for a 1985 start-up as the successor to the pilot facility.

CSO: 5100

JAPAN

CHEMICAL URANIUM ENRICHMENT DOMINATING OWING TO ION-EXCHANGE RESIN DEVELOPMENT

Tokyo TECHNOCRAT in English Vol 14, No 2, Feb 81 p 59

[Text] Uranium enrichment through chemical exchange process utilizing ion-exchange resin is drawing attention. The Asahi Chemical Industry has successfully developed an ion-exchange resin with high-temperature resistance and substantially heightened ion-exchange reaction velocity, which proves the economic feasibility for an enrichment method the U.S. Atomic Energy Commission had labelled unfeasible. Moreover, the process which requires three months to enrich uranium-235 from 0.72% in natural uranium up to 3% for LWR fuels, can be designated a "nuclear nonproliferation type uranium enrichment technique." The reasons: (1) continuous nuclear fission reaction in the system might be triggered by criticality when the enrichment reaches 40%; (2) even if the criticality risk is overridden, obtaining 90% highly enriched uranium for military purpose from 3%EU will need a period of as long as around 8 years. The future of the technique is quite rosy because of its export potential to developing nations as well as its domestic implication.

The Asahi Chemical Industry, given government subsidies, is already proceeding with a plan to construct a model facility separative work unit (SWU) with an annual capacity of 2 tons, comprising 4 enrichment columns in Hyuga City, Miyazaki Prefecture, in order to acquire experimental economic evaluation data by fiscal 1985. The company which has been conducting R&D since 1972 has succeeded in developing a high-power ion-exchange resin. The newly developed system provides a column packed with an ion-exchange resin in which an adsorption band having uranyl ions is placed with an oxidizing agent such as iron (trivalent) under it. When a liquid reductant is introduced from the top, uranyl ions in the adsorption band reduce to uranous ions. Then the latter ions pass through the adsorption band without sticking to the ion-exchange resin, and are oxidized again by an oxidant to uranyl ions, staying at the front of the adsorption band. Thus in the column, ions in the uranium solution repeat oxidation, adsorption, reduction and removal, lowering the band with a constant length to the bottom of the column. This oxidation-reduction process yields enriched uranium at the rear end and depleted uranium at the front of the column.

The Asahi Chemical Industry, utilizing the technique, has achieved 1% enrichment from 0.72% after about 20 days' operation of a small-scale test equipment consisting of four 2cm dia., 2m long enrichment columns set up in its factory site.

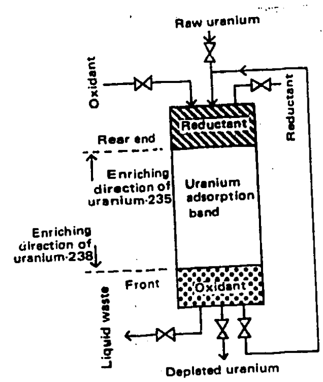

Fig. 1. Schematic Diagram of Enrichment Column

CSO: 5100

JAPAN

PLASMA TEMPERATURE OF 12.8 MILLION DEGREES ATTAINED

Tokyo TECHNOCRAT in English Vol 14, No 1, Jan 81 p 58

[Text]

The Japan-U.S. joint study group on a TOKAMAK type nuclear fusion reactor has conducted an experiment of electron cyclotron resonance heating (ECRH) and succeeded in raising a plasma electron temperature to 12,800,000 degrees. The group has been convinced of the effectiveness of this heating for improving plasma confinement properties. The achievement is the world's-highest – more than 3 million degrees over the temperature obtained last year-end by the Oak Ridge National Laboratory, and this is reflected in the General Atomics's Doublet III Project; the Japan-U.S. joint research. In addition, discussion has been initiated to equip the critical plasma test facility (JT-60) which Japan Atomic Energy Research Institute is now constructing with ECRH. Specifically, this result has attracted attention because of the expectation that it will be able to double the plasma test facility (JT-60) which the Japan on temperature or the magnetic field strength. This also provides a hope of simplifying the structure of the TOKAMAK type facility previously forced to be heavily equipped and complex.

In ECRH, a radio wave with the same frequency as the revolution of the electrons moving in the magnetic field is injected into the plasma. The wave energy is absorbed in electrons according to the principle of resonance absorption, and is utilized to heat electrons. The Japan-U.S. research team this time has installed GA's 28GHz, 200kW high-frequency oscillator in JFT-2 and a net 110kW high-frequency power was applied to JFT-2 plasma heated to 6.4 million degrees of electron temperature by the first stage heating. Tnis boosted the plasma temperature upto 12.8 million degrees. Furthermore, the group revealed that the electron temperature increase suppresses the plasma instability due to the drifting line of magnetic force etc. and improves the confinement properties. These experimental results are to be introduced into the Doublet III Project in which the high-frequency power will be upgraded to 60GHz and 2MW for the experiments, in a couple of years.

CSO: 5100

JAPAN

HELIOTRON E TRIES TO OBTAIN TARGET VALUES

Tokyo TECHNOCRAT in English Vol 14, No 2, Feb 81 p 58

[Text]

The Plasma Physics Laboratory of Kyoto University has started an experiment to realize aimed values by means of a uniquely developed nuclear fusion test facility, "Heliotron E" The device completed early last year has succeeded last September in confining high temperature plasma of up to 12 million degrees. The experiment this time intends to attain three major proposed objectives of electron temperature, plasma density, and plasma containment time. The research group of the center seems confident of success, based on the series of tests executed so far. Moreover, followed by this experiment, a neutral beam injector (NBI) is to be used in the additional heating test beginning around next spring.

Heliotron E which resembles TOKAMAKs now under study by the Japan Atomic Energy Research Institute and other organs, is an experimental nuclear fusion facility with a magnetic confinement system. The equipment is different from the TOKAMAK type in providing a helical coil wound along a doughnut vacuum vessel to contain plasma. The vacuum vessel has a diameter of 4.4m and weighs about 50 tons, providing the world's largest fusion test facility to date. Current goals are to materialize an electron temperature of 10 million degrees, plasma density of 100 trillion particles/cm^3, and energy confinement time of 10 milliseconds, almost complete conditions to initiate a thermonuclear reaction.

* The power industry has decided on a basic policy to take the initiative in commercialization of enrichment business using a centrifuge process. Nine utilities plus The Japan Atomic Power Company will immediately organize the Preparatory Office for Uranium Enrichment Business (provisional name), in an effort to perform the detailed study on the construction of Japan's first such commercial plant. In the lor first inge, about a third of demand for enriched uranium is projected to rely on domestic production. The heavy electric industry, plant engineering, banking and others are to found, hopefully within next fiscal year, a new firm, "Japan Uranium Enrichment Co." (tentative name), the host organ for construction and operation. Power companies have made long-term contracts with U.S. DOE equivalent to 51 million kWe, as well as with Eurodif amounting to 10,000 ton SWU. This means the industry has already procured a sum equal to 60 million kW to be necessary by the early 1990s.

The above-mentioned preparatory office, probing the future total enrichment supply and demand, will consider an enrichment undertaking coupled with a centrifuge production setup.

CSO: 5100

JAPAN

BEHAVIOR MONITOR RECORDS FUEL FAILURE PROCESS

Tokyo TECHNOCRAT in English Vol 14, No 2, Feb 81 p 59

[Text] The Japan Atomic Energy Research Institute (JAERI) has succeeded for the first time in the world in recording directly by a high-speed camera, the fuel collapsing process in an experiment of reactivity-initiated accident (RIA) for light water reactors. The feat was achieved through the development of a fuel transients monitor equipped with lights and a periscope in the capsule containing the camera together with a test fuel, all placed in the Nuclear Safety Research Reactor (NSRR) under intense radiation in limited space. In addition to the current recording of temperatures and pressures etc., this enables direct observation of the transient fuel's behavior, and is expected to be greatly helpful for determining RIA control values as well as establishing a more accurate and more comprehensive calculation model.

Photography was conducted with a color film for 13 seconds at a rate of 285 frames/second. The steps such as fuel heating, film boiling, melting clad, deformation, cooling fuel, and bubble release from a tubing failure, were clearly surveyed. JAERI, the tool inventor, is using a swimming-pool annular core constantly pulsed dual-purpose reactor to simulate runaway outputs during LWR reactivity induced accidents with pulsed outputs, and is performing tests to explain the fuel behavior in RIA by rapidly heating the capsuled test fuel inserted in the main experimental hole of the core.

The equipment consists of a stainless steel capsule (total length: 1,200mm; I.D. 120mm) incorporating the test fuel with a 3 kW lamp and periscope employing a non-browning glass which connects to a high-speed camera held 2.5m over them, all of which is housed in an air-tight pressure case with radiation shielding designed to protect the instruments from radioactive substances.

CSO: 5100

JAPAN

BRIEFS

UPDATED NUCLEAR FUELS--Power companies adopting BWRs such as Tokyo Electric and Chubu Electric as well as their fuel manufacturer, the Japan Nuclear Fuel (JNF) Co., are accelerating the joint development of a highly-effective, new type nuclear fuel that will enable a load follow operation. The firms plan to actually irradiate the test fuel in the Swedish reactors--Halden, Oskarshamn nuclear power plant and others, in an attempt to prove its performance within fiscal 1982 for practical use in the next fiscal year at the earliest. The goal of the updated fuel is that by furnishing helium-mixed pellets and by copper-coating the interior etc., the fuel assemblies will be less vulnerable to thermal stresses during reactor start-up and shut-down, thereby facilitating load follow-type power generation. [Text] [Tokyo TECHNOCRAT in English Vol 14, No 2, Feb 81 p 58]

PU-MIXED FUELS BY PNC--The Power Reactor and Nuclear Fuel Development Corporation (PNC) has fabricated plutonium-mixed nuclear fuels from plutonium extracted at the reprocessing plant (Tokai Village), which are to be used for PNC's advanced thermal reactor "Fugen" with an output of $165MW_e$. Plutonium has been produced for the first time in Japan and the achievement is regarded as an initial step to realization of a nuclear fuel cycle involving this element. Spent nuclear fuels from each power station at home were treated at the Takai reprocessing plant where extracted plutonium nitrate solution was heated and denitrated by microwave to form plutonium powder ready for nuclear fuels. The Takai plant began operation in October 1974, and has reprocessed more than 70 tons of spent fuels recovering plutonium of about 400 kilograms total. [Text] [Tokyo TECHNOCRAT in English Vol 14, No 2, Feb 81 p 58]

SAFETY MONITORING CAMERA--Japan Marine Science and Technology Center has successfully developed a camera system to investigate the integrity of drums containing low level radioactive waste, as they descend after being thrown into the sea. Japan is working on a project in which low level wastes discharged from nuclear power plants and other facilities are packed and cemented in drums for ocean dumping. The new camera unit, as part of inspecting the safety of this sea dumping scheme, is under study as entrusted by the Science and Technology Agency. The focal interest of the research is to follow and record with a camera, a drum from the point of dumping in the ocean all the way to the sea bed 4,000-6,000m under water. The system installs the camera over the wire suspending the drum, with glass balls to provide buoyancy, and a transmitter buoy, attached over the whole equipment. [Text] [Tokyo TECHNOCRAT in English Vol 14, No 2, Feb 81 p 58]

CSO: 5100

NIGER

URANIUM EXPECTED TO PRODUCE LESS INCOME THIS YEAR

Paris JEUNE AFRIQUE in French 18 Feb 81 pp 44, 45

[Article by Francoise Hubscher: "No Gift in the Prices"]

[Text] The year is beginning badly for Niger. Its uranium, which puts it in fifth place among noncommunist world producers, is causing it some anxiety. Not only is it stirring the lust of Libya's Colonel Qadhdhafi, a neighbor made only more worrisome by his recent victory in Chad, but it will also not bring in as much as was anticipated in the budget.

Indeed, the price of a metal kilo of uranium sold to the foreign companies that participate in exploiting Niger's mines was fixed for 1981 at 20,000 CFAF (compared to 24,500 CFAF in 1980) and overall production was fixed at 4,350 tons, whereas it should have reached 4,500 tons. "It's a political price, if anything, advantageous for Niamey," insist the French partners who carry out more than half of Niger's uranium each year. They insist that the world price has tumbled 35 percent in a year and that it is currently close to 16,000 CFAF a kilo.

A Distorted Picture

But on Niger's side, they are counting every penny. The lost business will exceed 10 billion CFAF. For a country that remains, according to the World Bank, one of the 30 poorest in the world and for a country whose uranium alone guarantees between 70 and 80 percent of its exports, the amount is considerable. It represents one-third of the government's revenues assigned to capital expenditure in 1981. In addition, the so-called "world" price that is serving as a reference in the negotiations is the "spot" price. It only gives a distorted picture of the real evolution of the uranium market, dominated largely by terminal contracts between producers and consumers. Thus, it is California's "spot" prices, published by NUEXCO (the Nuclear Exchange Corporation) that underwent this 35 percent fall in 1980 following the five-year delay in America's electronuclear program.

Resumption of Demand

However, during the same period, French projects were carried out within several months of the anticipated schedule. And while the OECD's Nuclear Energy Agency feels that in 1980 the world's uranium requirements (30,000 tons) were lower than the maximum productive capacity (50,000 tons), it is anticipating a noticeable increase in demand for the next 20 years: at least 60,000 tons in 1990 and 100,000 tons in 2000; and at the most 88,000 tons in 1990 and 200,000 tons in 2000.

The accession to the presidency of the United States of the pronuclear candidate Reagan can only accelerate the resumption of demand, and the OECD does not deny that, as early as 1985, Americans could be forced to import uranium even though they are the biggest producers in the West.

This doubtless partially explains why France is insisting on participating in new mines in Niger and Canada, while limiting uranium production in France, or why the Australians, until now not very eager to exploit their enormous reserves (second in the West), feel it advisable to increase their production, despite a strong national antinuclear swing. They say that they are ready to deliver uranium again, for the first time since 1972, to Japan, one of Niger's clients.

A Strategic Metal

Everyone knows very well that, in this area, the supply cannot adapt itself quickly to a sudden increase in demand. Uranium deposits, on the whole, are much smaller than those of other important minerals. Any sizable increase, therefore, requires opening new mines. But it takes from 3 to 5 years to start a new unit once a feasibility study is completed, and 15 years if the site has not been sufficiently prospected. Another reason is that although uranium, as opposed to oil, is distributed widely throughout the world, preventing the formation of an organization of producers like OPEC, it is nonetheless a strategic metal, subject more than others to political decisions and embargo risks.

In this context, a momentary price decrease only favors stockpiling.

Money ... Quick

At least from those who have the necessary resources, i.e., the industrialized countries. Although a price increase is foreseeable in the near future, the French, Japanese, Germans, and Italians are not getting such a bad bargain in buying Niger uranium at 20,000 CFAF a metal kilo.

However, Niger does not have time to wait until better days. It has to pay its oil bill (the price of Arabian Light increased almost twice as fast as that of uranium between 1971 and 1980). It needs new money and quickly to furnish itself with the resources to raise a gross national product that is not much over 220 dollars a person, to equip itself with indispensable infrastructures, to achieve food self-sufficiency, and to provide education for its children.

Of course, Niger could set aside for itself a part of the uranium and try to sell it at a price higher than that granted to the foreign companies that are its mining partners. But to whom? According to the minister of mines Mounkeila Arouna, it is out of the question this year to ask Libya, which in 1980 bought 500 tons of Niger uranium at the stiff price of 29,500 CFAF a kilo. Nor is Nigeria ready to take over yet even though it is tackling a civilian nuclear program and is participating in mining the small Niger deposit of Techili (opening forecast for 1985-1986 at best). Perhaps to some buyers in a hurry like Iraq or Pakistan? You can bet that Niger will have some difficulty finding a client quickly for the 800 tons that it has set aside for itself this year.

Understanding?

If they want to stick to the goals of their five-year development plan (1979-1983), which was a difficult and sensible compromise between the most urgent needs and the available resources; they need to research new foreign financial resources to add to the 58 billion CFAF already expected in 1981. Their external debt will find itself weighed down.

They will probably meet with understanding from their traditional partners. But does the North-South dialog mean that industrial countries should lend the Third World with interest an amount equal to the business the latter have lost by betting on the rules of the world market in raw materials?

9064
CSO: 5100

NIGER

DATA ON URANIUM RESERVES, PRICES

Paris JEUNE AFRIQUE in French 18 Feb 81 p 45

[Article: "This Is Not Eldorado"]

[Text] Considering only exploitable uranium of less than $80 a metal kilo, Niger has the fifth largest reserves in the noncommunist world (160,000 tons) after the United States (531,000 tons), Australia (290,000 tons), South Africa (247,000 tons), and Canada (215,000 tons) and ahead of Namibia (117,000 tons). If the annual production maintains the 5,000-ton rate (the level forecast in 1983), the most profitable deposits will be used up in approximately 30 years.

Therefore, the Niger government has 30 years to succeed in pulling out of underdevelopment a country of 5.5 million inhabitants deeply entrenched in the confines of the Sahara. It also is making an effort to extract the greatest possible profit from its strategic wealth, which it could not raise from the substratum without the help of foreign firms that are first and foremost French.

Through its National Office of Metal Resources (ONAREM), Niger controls 33 percent of the capital of the Air Region Mining Company (SOMAIR) and 31 percent of the Akouta Mining Company (COMINAK). Thus, it receives approximately one-third of the dividends. But the main portion of the revenue from uranium comes from the tax on the gains, to which is added a tax on the dividends, a mining royalty, custom taxes, as well as all the profits from the sale of a modest part of the mineral (800 tons in 1981) reserved for ONAREM. In all, Niger retrieves approximately 70 percent of the income uranium generates, providing a good third of its budget.

This result, certainly satisfactory, is not without other facets: the need for raw materials (e.g. sulfur, magnesium, hydrocarbons) and the equipment to operate the mines contributed in large part to the doubling of imports between 1974 and 1978 and to an enduring trade balance deficit (27 billion CFAF in 1978). But above all, because the oceans are so far away (the mines are located 2,000 km from the Atlantic Ocean and the Mediterranean), the cost of transportation heavily encumbers the import bill. It noticeably raises the cost of a kilo of uranium. For example, the price of a ton of sulfur delivered to the port of Cotonou (Benin) at 24,720 CFAF costs 120,000 CFAF on arrival at SOMAIR's factory in Arlit.

While waiting for the hypothetical extension of the Beninese railroad, the "uranium highway" Cotonou-Parakou, is being fixed. (The operation is profitable only if it transports twice as much merchandise as currently.) The asphalting and widening of the Arlit-Agadez-Tahoua portion is being finished. In addition, the thermal power station of SONICHAR [expansion unknown], set up on Anou Araren's coal deposit, has just gone into service. It is intended to supply uranium mines first, and will make notable hydrocarbon savings possible.

9064
CSO: 5100

INTERNATIONAL AFFAIRS

BRIEFS

NUCLEAR PROJECT FOUGHT--An open battle is raging against plans of the CERN [European Council on Nuclear Research] to tunnel under the Jura and Gex area countryside to make a 30-kilometer circumference electron [experimental] ring. It is being called "a new Concorde" by the defense committee, which considers the cost (900 million Swiss francs) and the time needed to complete the work to have been greatly underestimated. [Text] [Paris LA LETTRE DE L'EXPANSION in French 2 Mar 81 p 6]

CSO: 5100

END