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Worldwide Report

NUCLEAR DEVELOPMENT AND PROLIFERATION

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WORLDWIDE REPORT

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WEST EUROPE

JAPAN

MITI TO REPLACE NUCLEAR REACTOR SAFETY PINS WITH U.S.-MADE PINS

Tokyo THE JAPAN TIMES in English 5 Jun 79 p 3 OW

[Text] The Nuclear Safety Commission Monday approved a Ministry of International Trade and Industry plan to replace defective pins found in pressurized water-type nuclear reactors.

The commission also approved MITI's measures to improve safety control of all pressurized water reactors and boiling water reactors.

The defective pins were first found in the No 3 reactor of the Mihama nuclear power plant of Kansai Electric Power Co in Fukui Prefecture.

Cracks were found in 106 control-rod guide pipe support pins of the reactor.

During regular checks, similar defective pins were found in the No 2 reactor of the Takahama nuclear power plant of Kansai Electric, the No 1 reactor of Ikata nuclear power plant of Shikoku Electric Power Co in Ehime Prefecture, and the No 1 reactor of the Genkai nuclear power plant of Kyushu Electric Power Co in Saga Prefecture.

All the defective pins were made in Japan. As a result of MITI analyses, it was found that there were problems in the material used for the pins and the heat processing.

MITI decided to replace the domestic-made pins with pins made of U.S.-produced material through a new heat processing method.

It was also decided to alter the design of the pins and sought NSC approval on these measures.

CSO: 5100

JAPAN

BRIEFS

BT-3 CENTRIFUGES--The Power Reactor and Nuclear Fuel Development Corporation on 8 Jun announced the BT-3 centrifuge, a lengthened 92 meters vs 1.7 meters) version of the BT-2 centrifuge. With a separation efficiency 50 percent above that of the BT-2, the centrifuge is on line with international standards and reduction in cost via mass production is now the main focus. The OP-1B centrifuges for the Ningyo-toge enrichment pilot plant will be BT-3 models now being built by Mitsubishi Heavy Industries, Toshiba, and Hitachi. [Tokyo GENSHIRYOKU SANGYO SHIMBUN in Japanese 14 Jun 79 p 1] Development of a centrifuge of even higher performance for the OP-2 units is planned, and may be accomplished by fall 1979. Performance of the 7,000-unit pilot enrichment plant is thus expected to be well above the initial projection of 50 SWU. [Tokyo NIHON KOGYO SHIMBUN in Japanese 9 Jun 79 p 2]

CSO: 5100

PAKISTAN

BRIEFS

ATOMIC BOMB TEST--Pakistan will probably explode its first atomic bomb in less than 1 year in the Sind Desert near the Indian border. A uranium enrichment plant is being built at Kohuda, some 40 kilometers from Islamabad. Pakistani atomic scientists recently went to Libya, another Moslem country that desires to obtain nuclear weapons. [Text] [Paris VALEURS ACTUELLES in French 21 May 79 p 43]

CSO: 5100

WIDER EFFECTS OF ARGENTINE, BRAZILIAN PROGRAMS EXAMINED

Bonn EUROPA ARCHIV in German 25 May 79 pp 279-290

[Article by John R. Redick: "The Nuclear Energy Programs of Argentina and Brazil and Their International Effects"]

[Excerpts] The two Latin American countries which are the most advanced in the process of industrialization, Argentina and Brazil, have decided in favor of nuclear energy with particular emphasis. The significance of this decision for the future of energy policy in the two countries is obvious, but the effects are far-reaching on the international level too--in the Latin American region and in the rest of the world.

Neither Argentina nor Brazil has committed itself bindingly to the non-proliferation of nuclear weapons. On the other hand, both countries are clearly endeavoring to achieve as much independence and freedom of movement in all phases of the nuclear fuel cycle as they can. The consequences are growing mistrust between the two countries, clear uneasiness among their neighbors in the region, and lasting ill-will among some nuclear supply countries, above all in the United States.

Regional and International Developmental Tendencies

The atomic programs of Argentian and Brazil deserve particular attention from two points of view: first in view of the rivalry between the two countries within the Latin American region, and second in view of their relations with the most important nuclear supply countries.

There can no longer be any doubt today about the rivalry between Argentina and Brazil in the area of nuclear energy.[8] The military governments of the two countries are watching all the nuclear activities of the other side with distrust and attention. Their reactions in this area are particularly sensitive, for it is the only one in which Argentina still has a significant advantage over its up-and-coming neighbor to the north. The massive transfer of German nuclear technology to Brazil does not change the fact that the Argentinians will very probably keep their advantage as long as a general economic or political collapse does not upset their calculations.[9]

It is questionable whether this rivalry in itself would be enough to move one of the two countries to develop nuclear explosives nad to produce an explosion--of course (on the Indian model) "for peaceful purposes." Considerations of security rather speak against it in the foreseeable future. Both states have a mutual interest in not burdening their bilateral relationship with the destabilizing uncertainties and potential dangers which would be connected with the unilateral development and detonation of nuclear explosives. It might also be in the interests of both governments to keep open the possibilities for influence which the status of a near-atomic power gives them against those states which--like the United States--take the nonproliferation of nuclear weapons particularly seriously. On the other hand, situations are conceivable which could cause either of the two countries to develop their own nuclear weapons without regard to bilateral relationships.[10]

Thus the rivalry between Argentina and Brazil does not necessarily have to lead to nuclear armament, but it still has significant effects for the Latin American region. This can be seen most clearly in the long-term efforts of Argentina for cooperative agreements with other Latin American states. Argentina concluded an aggreement with Peru in March 1977 about the construction of a research ractor with zero capacity which includes the option for the purchase of this reactor as well as a power reactor with a capacity of 10 MW. An agreement from the year 1967 on nuclear cooperation with Paraguay was renewed in 1975 for a large number of projects; similar agreements exist with Columbia and Uruguay. The president of the Argentinian Atomic Energy Commission signed a comprehensive treaty with his Chilean colleagues in 1977; the cooperation based on it, in the course of which Argentinian nuclear experts went to Chile as advisors, while Chilean technologists were guests in Atucha, was still functioning without friction in 1978, when the two countries were on the verge of waging war against each other because of border disputes.[11] Argentina has also concluded a nuclear cooperation treaty with Ecuador, and a comprehensive agreement with Bolivia which was signed at the beginning of 1978 regulates the long-term training of Bolivian experts in Argentina.

For Argentinian interest in bilateral nuclear cooperation with less developed neighbor states, the decisive consideration might be that in this way the heavy water reactor technology based on natural uranium will find wider distribution. In a Latin American "club of friends of natural uranium," the states which had once decided on this type of reactor for themselves would have to rely extensively on Argentinian technology, Argentinian uranium and Argentinian heavy water. Chile, Bolivia, Paraguay, Uruguay and Peru would be particularly welcome in this respect. In addition, in a U.S.-Argentinian communique of 1977 "the potential role of Argentina as a significant nuclear supply country" is recognized.[12]

In contrast to Argentina, Brazil has exerted much less effort on bilateral agreement in the region and instead has emphasized its national independence in the region of nuclear energy. Still, there are Brazilian agreements with Paraguay and Uruguay, and in a significant step Brazil signed a treaty with Venezuela at the end of 1978 which anticipated technical training assistance

with regard to the building of the first Venezuelan reactor in the 1990's.[13] This is a first substantial indication of Brazil's interest in resale of nuclear techniques and technology, which it has acquired from the German-Brazilian agreement of 1975. Behind this is the intention of the Brazilians to enter the Latin American market also as suppliers of enriched uranium and nuclear plants. The developmental lines of future patterns of nuclear cooperation and conflict can already be clearly seen today.

No less significant is the development of the relations of Argentina and Brazil with the leading nuclear supply countries. The two Latin American states have made it unmistakably clear that they would like to turn more to the European supply centers and move away from the United States and Canada. Brazilian-U.S. relationships have clearly been injured in the quarrel about the treaty of 1975 and the intention of Brazil, revealed at that time, of having access to the whole nuclear fuel cycle. It is true that the U.S. government has come to terms with the fact that it will not succeed in preventing Brazil from going its own way by the exercise of open pressure. President Carter underlined that during his visit to Brazil in March 1978 with the words: "The right of Brazil and West Germany to continue their plans is not questioned by us."[14] Nevertheless, it is obvious that the United States wishes to continue to try to make technological alternatives palatable to the Brazilians, such as the development of the thorium cycle for advanced reactors. A decisive factor for the future of U.S.-Brazilian relations will be whether Brazil continues to accept de facto uninterrupted international supervision of its total nuclear energy program--including the projected pilot plants for reprocessing and enrichment.

In spite of the growing uncertainty which looms over the progress of the German-Brazilian project beyond Angra II and III--especially since the new Brazilian president, Figueiredo, took office--it appears to be an established fact that Brazil's nuclear program will remain closely tied to Europe for the foreseeable future. An important link in this tie is the 10-year treaty that Brazil concluded with the German, British and Dutch gas centrifuge consortium URENCO. According to this, Brazil will receive in the years 1981 to 1991 enriched uranium to the amount of 2 million separation units, as well as an option on an additional 2 million for the Angra II and III reactors. After violent internal policy struggles, the Netherlands finally agreed to this treaty in 1978 under the condition that an international plant will be created for the storage of plutonium under the supervision of the IAEA or in accordance with a special agreement. Details of this plutonium regime are dependent among other things on the recommendations which the International Conference for Nuclear Fuel Cycle Evaluation (INPCE) in session at that time may make up to February 1980. A further condition is that such an arrangement must be able to function by 1986 at the latest, for it is anticipated that at that time Brazil will have a militarily evaluable capacity for reprocessing of plutonium at its disposal.[15]

Argentina also shows a tendency to free itself from cooperation with Canada and the United States and to look for access to advanced nuclear technology in the FRG. High CNEA officials openly admit that they would really prefer the Canadian CANDU technology, but they stick to the Germans instead for a variety of reasons. Some reasons mentioned are: positive experiences in scientific and nuclear-technological cooperation, the long-term interests of the Germans in Argentinian uranium, and their more conciliatory position in questions of nonproliferation controls and the transfer of nuclear technology.

The relations between Argentina and the United States in the area of nuclear energy, based on a treaty from 1969, have not developed exactly favorably during the Carter administration. The United States still supplies uranium for the five Argentinian research reactors. Areas of potential differences between the U.S. and Argentina are in the questions of the supply of heavy water, the resale of nuclear fuels, preparation of fuel elements and reprocessing.[16] In reference to heavy water supply, first of all in Argentina an absolutely reliable guarantee of supply on the part of the foreign country and on a longer-term basis the development of industrial fabrication in their own country is considered to be absolutely necessary to keep the national nuclear energy program running, but also to fill the expected demand from other Latin American countries. Argentinian government representatives at the end of 1978 announced their interest in an agreement according to which the United States was to be of assistance in the development of heavy water technology, while Argentina could show its appreciation by restraint in reprocessing and possibly by ratification of the treaty of Tlatelolco. Unfortuantely American politicans have not yet reacted to this.

The further distribution of nuclear fuels of U.S. origin to other Latin American states has become a problem for the Argentinians since they have had to deal with the complicated stipulations of the new U.S. nonproliferation law (Nuclear Nonproliferation Act) of 1978. There were difficulties already in 1978 in the distribution of 14.8 kilograms of enriched uranium to Peru. Problems have also surfaced in the preparation of fuel elements, and particularly in connection with zirconium. The United States supplies zirconium to the FRG, which in turn sells the metal to Argentina. A process for producing zirconium of its own in Argentina was tried out in a plant of which the Carter administration had the impression for a time that it was not sufficiently safeguarded against misuse. And finally there remains the question of reprocessing. Argentinian government officials have let it be known that they are willing to hold back commercial reprocessing for the time being, but they wish to continue working with pilot plants--which the United States in turn does not wish to accept.

Nonproliferation Policy

Argentina and Brazil have often announced their support of nonproliferation of nuclear weapons in public statements. Nevertheless, international suspicion of the two countries remains lively. The attitude that they have adopted toward the most important international nonproliferation agreements

may be regarded as an indication of their intentions. Thus Argentina did not complete ratification of the limited test ban treaty of 1963, which among other things bans nuclear weapon tests in the atmosphere, while Brazil entered into it as a full partner. Both states refuse decisively to sign the treaty on the nonproliferation of nuclear weapons (Nuclear Weapon Ban Treaty) of 1968. They consider it discriminatory because it assigns different obligations to the member states and thus cements a status quo in which the states without nuclear weapons must exercise perpetual abstinence while the states with nuclear weapons can continue to develop their nuclear arsenals as much as they wish.[17] Both states are very active in their role as members of the International Atomic Energy Organization (IAEO). But as yet they are not ready to accept the idea of comprehensive international control in principle for their own nuclear activities. It is true that in reality, in the opinion of many experts, the two countries are de facto completely subject to international control, since they have voluntarily opened all their plants existing at the time to the inspections of IAEO. Both countries have officially and insistently announced their intention of developing nuclear explosives "for peaceful purposes," although in the opinion of a majority of experts peaceful nuclear explosions are technically questionable and ecologically harmful. Argentina and Brazil were also the severest critics of those "guidelines" with which the nuclear supply countries--with partial success--tried to limit the transfer of nuclear technology with regard to the nonproliferation of atomic weapons.[18]

One might come to the conclusion that under present circumstances Argentina and Brazil insist equally on keeping a legal option to atomic weapons open. But it is important to be aware of the attitude which the two countries have adopted toward a further nonproliferation agreement, i.e. the treaty on a nuclear weapon ban in Latin America (Treaty of Tlatelolco). This independent regional pact for the creation of a nuclear weapon-free zone in Latin America has as yet received little attention--especially in Europe. But it is very possible that it still offers the best chance to tie Argentina and Brazil into a nonproliferation regime in a legally effective form.[19]

The treaty of Tlatelolco, which was worked out after very thorough discussions in the years 1964-67, came into effect in 1969. Twenty-two Latin American countries subscribed to it as full members. Four Latin American states are not full members: Argentina, Brazil, Chile and Cuba. The ratification of the reports added to the treaty documents a remarkably widespread international consensus. Tlatelolco is at present the only significant armament regulatory agreement that is supported equally by the great atomic powers, the United States, the Soviet Union and China. In addition to these three states, France and Great Britain have also ratified the reports or announced their intention of ratifying them.

Brazil and Chile have ratified the Tlatelolco treaty in a formal sense; Argentina announced its intention of ratifying it in 1977. However, the Brazilian approval (and also the expected consent from Argentina) is only valid to a limited extent at present. For the very detailed treaty conditions anticipate that the treaty will only come into effect completely when all Latin American states have ratified the treaty and all states with nuclear weapons have ratified the corresponding reports.

The international ratification of the reports is almost complete today. What is missing in order to put the treaty into effect is final ratification by Argentina, ratification by Cuba and the settlement of an insignificant border dispute between Venezuela and Guyana which is a condition for Guyana's ratification. As soon as these conditions have been fulfilled, the treaty obligation of subjecting all their nuclear activities to control by the IAEO (details of which still have to be worked out) comes into effect for Argentina and Brazil. Although it can be said that in both countries this comprehensive control already exists de facto, unlimited participation in the Tlatelolco treaty would be the first legally binding involvement in an international nonproliferation regime for Argentina and Brazil. Such a step would have to be evaluated as a serious statement in favor of the idea of nonproliferation.

The governments of the two countries are quite clear about the significance of this step. The Brazilian government, which was the first to bring into play the idea of a nuclear weapon-free zone in Latin America, is already closer to the material obligation of the Tlatelolco treaty than Argentina. That the ratification of the treaty has more than symbolic meaning for Brazil can be clearly seen in official statements. In the document issued by the Brazilian government in 1977, "The Brazilian Nuclear Energy Program," it says, "With the signing of the treaty, Brazil has, under the rules of international law, committed itself to refraining from any action which is contrary to the goals of the treaty."[20] The Argentinian government, on the other hand, having signed the treaty in 1967, is still delaying ratification today, although the beginning of the process was announced in 1977--at the urging of the Carter administration. This delay can be traced back in part to differences of opinion within the military government. Influential forces in the atomic energy department, CNEA, and in the exterior ministry emphatically support ratification, as does President Jorge Videla himself, but it is known that parts of the army are opposed. Ratification is further complicated by the U.S. nonproliferation law of 1978 which makes a revision of the United States-Argentinian agreement on nuclear cooperation necessary. The very unfortunate way in which the Carter administration has pursued its human rights policy toward Argentina has doubtless also had its effects. There is a natural connection (even if it is denied by both sides) between the U.S. desire for ratification of the treaty of Tlatelolco and the Argentinians' desire for unrestricted access to advanced nuclear technology under appropriate international control.

Argentina and Brazil Beyond INFCE

The International Conference on Nuclear Fuel Cycle Evaluation (INFCE), in which more than 50 states and several international organizations participate by now, is approaching its final stage, which will come to an end with a plenary session in February 1980. The work of the conference is carried out in a total of eight working groups (of which one, which is concerned with regulations for nuclear burnoff, meets under the co-chairmanship of an Argentinian).[21] INFCE is a way-station in the long-term international dialog that arose from the dispute about those "guidelines" of 1977 with which the nuclear supply countries stirred up such deep bitterness, particularly among the

Argentinians and Brazilians. In INFCE a larger forum was created, in which countries with undisputed technological potential for the development of nuclear weapons, like Argentina and Brazil, can also find a hearing. INFCE is intended mainly for the exchange of technical information, but the results of the conference--however scanty they may be--will have political consequences. But it appears less and less probable that INFCE will still be able to find an international consensus on the critical problems of the nuclear fuel cycle before the final report; the viewpoints on the thorniest questions are simply too widely separated. With the conclusion of INFCE there will be the task of grasping the hot political irons directly if a non-proliferation regime accepted by all sides is to function.

The willingness of Argentina and Brazil to cooperate in the period after INFCE will be of decisive significance. What difficulties may arise in the process may be seen from the very fact that the two countries are not participating in the first and most important undertaking in conjunction with INFCE, i.e. the Second (Verification) Conference of the nonproliferation treaty which is to take place in June 1980. All attempts on the part of the advanced nuclear energy countries to integrate Argentina and Brazil into nonproliferation efforts beyond INFCE will have to take into account the extent of national pride and prestige that the two states have invested in their nuclear energy programs. For the Argentinians and Brazilians, the struggle for nuclear energy is primarily a battle for access to technical progress in which they see the key to the economic development of their countries. Any policy directed at barring or cutting off the two countries from advanced ("sensitive") nuclear technology is doomed to fail and will only produce deeper embitterment.

The leading nuclear energy countries should therefore not pursue a policy of technological refusal, but instead should assist the Argentinians and Brazilians in developing their nuclear industry--and insist at the same time that the development of the necessary political institutions in Latin America should progress. In the framework of a comprehensive political conception, the nonproliferation regime of Tlatelolco should be encouraged as much as possible; voluntary contributions and political demonstrations of confidence could support the work of the Tlatelolco control organization OPANAL (Organization for the Ban of Nuclear Weapons in Latin America). In addition, the thought of a Latin American regional conference on the model of INFCE should be supported and encouraged. A regional INFCE conference could give momentum to the exchange of nuclear information between Latin American countries. It would be desirable for the states of Latin America to find common projects of nuclear cooperation desirable in this way, as well as possibly one or more nuclear energy centers in which sensitive plants can then be located with appropriate international or regional control.

Argentina and Brazil, the most advanced nuclear energy countries in Latin America, would have to play a leading role in this. But the prerequisite would be that the most important nuclear supply countries in their turn would show their readiness to give benevolent support to cooperative undertakings of the Latin American countries. It is to be hoped that in the nuclear supply

countries the realization will become widespread that having a share in advanced nuclear technology and creating regional cooperative projects and institutions would benefit the peace and the security of Latin America equally.

FOOTNOTES

8. The bilateral rivalry between Argentina and Brazil in the area of nuclear energy is a very explosive topic for government representatives of both countries. Officials deny hotly that there is any rivalry, and are particularly incensed if foreign observers say anything on this subject.

9. It is noteworthy that the Argentinian atomic program was successfully sealed off from influences from the unstable internal position and has made constant progress.

10. This question and others connected with it are treated in more detail in John R. Redick, "Regional Restraint: U.S. Nuclear Policy and Latin America," in: ORBIS, Spring 1978.

11. How strong Argentinian commitment to nuclear cooperation is became clear to the author of this report when he experienced the participation and the friendly statements of a respected official of the Argentinian CNEA (Martinez Favini) during an international nuclear energy conference arranged by the Chilean nuclear energy commission at a time when the two countries appeared to be on the verge of war (September 1978).

12. Joint communique of the Republic of Argentina and the United States, 20 November 1977. The language of this communique commits the United States unambiguously to supporting Argentina's desire to become a supplier of nuclear material. Officials of the Argentinian CNEA were angered when the Carter administration later tried to interpret the communique differently.

13. BRAZIL TODAY, Brazilian Embassy in Washington, D.C., 20 November 1978.

14. THE NEW YORK TIMES, 31 March 1978.

15. NUCLEAR NEWS, October 1978.

16. The following description of important differences in the nuclear energy area between the United States and Argentina is based on the interpretation of conversations that the author had with Argentinian officials during a visit to Argentina at the end of 1978.

17. This subject and related questions were discussed by an international group of American, European and Latin American officials at a conference of the Stanley Foundation about energy and nuclear safety in Latin America which was held in St. John's on Antigua from 25 to 30 April 1978. (The conference report is available from: The Stanley Foundation, Muscatine, Iowa 52761, U.S.A.)

18. Text: EA 6/1978, p D 171 ff.

19. More details on this treaty can be found in John R. Redick, "Regional Nuclear Arms Control in Latin America, in INTERNATIONAL ORGANIZATION, Spring 1975; text of the treaty in: EA 14/1967, p D 152 ff.

20. Text of the Brazilian nuclear energy program in: EA 14/1977, p D 387 ff.

21. Cf the work program of INFCE in: EA 24/ 1977, p D 710 ff. The eight working groups, which have produced more than 500 documents with about 10,000 pages, will prepare their documentation for the Technical Coordination Committee of INFCE at the end of May, it is anticipated. The committee then has time until February 1980 to complete a final report which will be presented to the plenum. NUCLEONICS WEEK, 15 February 1979.

9337
CSO: 5100

EGYPT

BRIEFS

JOINT NUCLEAR POWER--The Israelis are planning to build, jointly with the Egyptians, a nuclear power plant in the northwestern Sinai. The power would be used by both countries. [Text] [Paris VALEURS ACTUELLES in French 28 Mar 79 p 33]

CSO: 5100

FINLAND

CONSORTIUM TO JOIN IN SOVIET NUCLEAR PLANT FOR LIBYA

Stockholm VECKANS AFFARER in Swedish 10 May 79 p 31

[Article by Goran Ek]

[Text] Helsinki--Finland, the first western nation to buy a Soviet nuclear power plant, will probably be rewarded for this by its eastern neighbor in the form of an entrance ticket to a similar project in Libya.

When the general agreement recently reached between the Muammar Qadhdhafi government and V/O Atomenergo Export on the construction of a 400 megawatt atomic power plant at Libya's expense was signed some time ago there was a very interested third party in the background, namely the Finn Atom atomic pool consisting of eight Finnish steel firms with an interest in the nuclear power plant industry.

The Soviet Union is selling nuclear technology and the fuel needed for it to Libya. The Finns have been promised inclusion in contract bidding on related projects, the residential community to be built near the nuclear plant, planning, construction work, electrical systems, components, etc., which in all amounts to a good part of the roughly 1.5 billion kronor the nuclear plant will cost.

"The Finn Atom group delivered products worth well over 100 million kronor to the nuclear power plant, now several years old, at Hastholmen outside Lovisa in Finland, the plant that is our point of reference. Thus we have the resources for substantial enterprises," Finn Atom executive director Daniel Jafs told VECKANS AFFARER. Later this month he will go to Moscow to discuss the Libyan project.

Iraq is also on the list of Finnish-Soviet cooperative projects in the form of four big thermal power plants. They were offered with the Finnish firms Kontram, Nokia and the Jaakko Poyry consultant firm acting as interested parties.

Cooperation in third countries is of great importance to the Finnish metal industry which anticipates employment problems in the 198.'s. That is also why Finnish critics of the Libyan project are lying low. Instead the government is saying that it won't be Finland that is providing Libya with atomic power and plutonium. The responsibility for that must be borne solely by the Soviet Union, a nation with enough authority, the argument proceeds, to make sure the international regulations on atomic fuel usage are adhered to.

Firms in the Finn Atom group include AA Ahlstrom, Nokia, Rauma-Repola, W Rosenlew, Stromberg, Tampella, Valmet and Vartsila. Among these firms Vartsila built some of the cooling system for the two units at Hastholmen and recently sold the license for this to the United States. Valmet has provided charging machinery and ventilating equipment, Ahlstrom and Stromberg have built main circulation pumps and Nokia has provided computers and measurement equipment.

Finn Atom has delivered similar products to ASEA-Atom's nuclear plant in Olkiluoto as well as to nuclear power plants in Sweden to a lesser extent.

6578
CSO: 5100

FRANCE

FIRST NUCLEAR ATTACK SUBMARINE LAUNCHED

Paris LE MONDE in French 26 May 79 p 14

[Article by Rene Moirand: "No Ceremony at the Launching of the First Nuclear Attack Submarine"; passages in slantlines are emphasized in the text]

[Text] Cherbourg--There will be no chief of staff, music or ceremonial wine at the Cherbourg arsenal on Saturday 26 May for the launching of the first nuclear attack submarine of the French navy.

Military authorities made the decision to go through with a simple "technical launching" and canceled all the ceremonies that had been planned since the decision to renew on this occasion the tradition of public launchings, which had been suspended because of the demonstrations at the launchings in 1974 of the "Indomptable" and the "Agosta." The vessel in question is the "Provence," the prototype of five units to be built by the arsenal specializing in building nuclear submarines.

The shipyard management fears that demonstrations may be organized by unions, which have been involved in a job action since 15 May to have the minister of Defense reinstate two decrees dating from 1951 and 1967. By the terms of these decrees, the wages of the people working for national defense had been indexed on those of Parisian metallurgical workers. But they were suspended for a year in July 1977 under the Barre plan, and the suspension was extended in 1978. The CGT [General Confederation of Labor], CFDT [French Democratic Confederation of Labor], FO [Workers Force], and CFTC [French Confederation of Christian Workers] are demanding that they be reistated and that negotiations also begin concerning a reduction in hours.

The Cherbourg arsenal unions were summoned to a meeting on Wednesday 23 May by the director of naval arms and construction; the unions refused to promise /"clearly and precisely"/, as they were asked to, that no personnel would disturb the launching of the "Provence." This kind of operation lasts more than 12 hours, and it cannot be interrupted without risk to the hull.

The 1st Naval Region justified on Thursday 24 May its decision to go ahead with the launching/"out of a desire not to encumber a very crowded calender of new navy ship launchings."/

8782
CSO: 3100

FRANCE

SMALL LEAK DETECTED IN CADARACHE NUCLEAR REACTOR

Paris LE FIGARO in French 6 Jun 79 p 14

[Text] A small leak of radioactive material has just been reported as having taken place at the Center for Nuclear Research at Cadarache (Drome Department) where an experimental reactor called the CAP (for 'chaufferie avancee prototype'--advanced prototype heater) was involved.

According to the [French] Atomic Energy Commission, the leak occurred in one of the heat exchangers of the reactor when the radioactive water in the primary circuit leaked into the secondary circuit which is supposed to remain "clean." This resulted in an increase in pressure in one circuit thereby forcing the reactor's fine control system to blow off a small amount of steam into the atmosphere.

It was emphasized by the AEC that this steam release amounted to less than one tenth the maximum concentration permitted. Moreover, it was stated that in contrast to what took place in Harrisburg this incident did not degenerate into an accident. "We are quite relieved," said one of the AEC officials, "since everything remained under control. Far from being entirely negative, this type of incident permits the testing of the safety systems, and in this case, we found that everything worked without a hitch; both core shutdown and emergency cooling occurred in time, and at no time was the situation out of control."

By yesterday, the core temperature had returned to normal, according to the AEC, which stated that the reactor had not been damaged by the leak. All that will be necessary, it was explained, will be to replace the defective heat exchanger and the reactor can resume operations testing fuel.

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END