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Worldwide Report

NUCLEAR DEVELOPMENT AND PROLIFERATION

(FOUO 10/81)

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BRAZIL

U.S. DECISION ON NEUTRON BOMB TERMED LOGICAL

PY132230 Rio de Janeiro LATIN AMERICA DAILY POST in English 13 Aug 81 p 4

[Editorial: "Neutron Controversy"]

[Text] The first thing to remember about neutron bombs is that they are neither better nor worse than other atomic weapons. Or conventional weapons, for that matter. They kill just as readily as other nuclear bombs. If you are against nuclear weaponry, you must be opposed to neutron bombs, as well.

The second thing to remember is that the neutron bomb controversy is a question about strategic warfare, not a question about the morality of nuclear warfare. The Soviet Union has attempted to place the neutron bomb issue on a moral plane but, in fact, it doesn't really belong there. Chemical and biological weapons do.

Neutron bombs are a strategic development of nuclear weaponry which makes a great deal of sense in the European theater where there is great population density and highly built up industrial installations. The idea of the neutron bomb is to block a massive conventional attack on Western Europe from the Warsaw Pact forces which have gigantic advantages over NATO. The neutron bomb threatens the Soviet Union and its allies because of the possibility to use the weapon to neutralize this advantage without destroying large tracts of Western European installations.

If you accept the nuclear deterrent defense posture that the superpowers have developed over the past 3 decades, you can't really condemn the development of the neutron bomb any more than you can condemn the cruise missile, the MX system, the backfire bomber or SS-20's. They are one more entry in the awesome arsenal.

The U.S. decision to produce neutron bombs is logical, given the realities of the Soviet nuclear threat and the aggressive development of their conventional forces which threaten Western Europe. The attempt by the Russians to stir up emotional arguments seems to us to be hypocritical since the Soviets undoubtedly have the neutron bomb under development themselves and they have shown little enough concern with the niceties such as the production and utilization of banned chemical agents, which are reliably reported being used in Afghanistan.

One of the arguments against the placing of neutron bombs on European soil is that their use would tend to escalate a conventional clash more rapidly into an all-out nuclear exchange. For that reason, the U.S. has decided not to stockpile the weapon in Europe but rather to produce it and keep it in the states in order to have it ready if it is needed. West Europe should have no quarrel with that.

CSO: 5100/2307

CUBA

NUCLEAR POWER PLANT CONSTRUCTION CONTINUES

Havana BOHEMIA in Spanish 5 Jun 81 pp 28-31

[Article by Ramon Lobaina Consuegra: "The Project of the Century"]

[Text] When it is stated that the first nuclear power plant will be the most complex project ever undertaken in the history of Cuba, in addition to the source of pride that this might represent for the Cuban people, we are moved by the awareness of the immense responsibility borne by the upper-level personnel and workers who in one way or another will participate in the gigantic venture.

The Revolution has completed major industrial projects throughout the national territory in recent years: fertilizer factories, textile mills, different types of food product plants and sugar mills, to mention but a few examples, and during the past 5-year period, the Punta Gorda nickel plant in Moa and the Karl Marx cement works in Cienfuegos are among the most important ones. However, in the opinion of specialists, the Nuclear Power Plant (CEN) that will be built in the Juragua area in the municipality of Cienfuegos, bordering on Abreus, will surpass all of them in size as well as complexity of construction. The amount of cement and prefabricated concrete, the steel used in reinforcement and the excavations are far greater than those of any of the projects previously undertaken.

For this year alone, earthwork costing 2 million pesos is planned. Civil construction will cost 2.18 million pesos and another 100,000 will go for assembly. When it reaches its peak, the project will require the presence of some 7,000 construction workers and the assembly will cost over 30 million pesos annually.

Considered to be the country's priority project, startup of the CEN will substantially increase the nation's electric power with the incorporation of 880 megawatts during the initial phase. At the same time it increases the country's energy capacity, it will help save oil. Consequently, progress according to the schedule drawn up is essential to the development of our economy.

Related Projects

Reynol Duarte, delegate from Industrial Projects Construction Enterprise No 6 at the nuclear power plant, and engineer Nestor Fernandez, who heads work, explained that in order to complete a project such as the CEN, a group of additional facilities has to be built to provide the technical support to guarantee the construction process.

Among these are the construction yard, the heavy machinery dock, social facilities, the CEN compound, a polytechnical school and road repair and construction, each of which has various component parts on which work is underway.

The construction yard, with an area of 50 hectares and costing approximately 20 million pesos, will provide the nuclear power plant with large automotive, civil engineering, machine and welding shops. It will also have warehouses with complete staffing, national and inflammable products and an industrial gas plant.

Near what will be the nuclear power plant, the construction yard is currently in the earthwork phase for one of the sections. At the same time, work is staggered on the other five, meaning that sometime this year, the remaining sections will be opened.

The roar of the bulldozers, the ceaseless movement of the loaders and the coming and going of the trucks, among them the magnificent Belaz, with a capacity of 15 cubic meters, show what progress is being made, thanks to skillful operators. Equipment earmarked for this and other areas will be complemented by more trucks, bulldozers and high-powered excavators supplied by the Soviet Union.

The loading dock (in the planning stage) where supplies will arrive should be completed by the end of 1983 and will require the construction of an accessway 1.5 kilometers long. Some 300,000 cubic meters of fill will be needed and will come from the other excavations for the plant.

With respect to the social facilities, the administrative buildings of the construction and investment enterprise will have to be built and in the first phase, a camp for 1,000 workers will be constructed, with its sociocultural facilities.

A tour of the areas shows how work is progressing. At the administrative base, we met Julio Niebla, head of the project and an experienced builder with 36 years in the field. Niebla proudly told us about work on the nuclear power plant and about the spirit among workers at the base, which now involves some 50 men. As Niebla talked, he pointed out different areas where work is underway.

Organized into special teams and paid based on an agreement, the men at the administrative base are putting up the buildings using the Sandino system. The walls of some are already up; others are having the foundations laid.

Housing for 1,000 Construction Workers

Accompanied by Nestor Fernandez on a tour of several kilometers, we arrived at the area where the rest of the social facilities are going up. Situated on the summit of a hill some 300 meters above sea level, looking toward the Hotel Pasacaballos, with Cienfuegos Bay on one side and the vast fields of henequen characterizing the region on the other, the site where the construction workers will live looks like a tiny city in the building.

First one sees the eight dormitories, each with a capacity of 140 persons, built according to the two-storey Sandino system. One is already finished. Alongside them is the brightly colored building that includes the central kitchen, dining room and cafeteria. The civil construction is completed and the building awaits the modern equipment that will be installed.

Close-by are other buildings that will, in the months ahead, become a medical dispensary, communications center (postal and telegraph office), barber shop, beauty shop, recreation room with different games, and an amphitheater.

The polytechnical school where skilled workers and intermediate-level technicians who will work at the nuclear power plant will be trained is being set up and completed at the end of the esplanade. It will have modern equipment and will be able to receive 60 students. It should go into operation in September.

Also part of the whole is the first housing to be turned over to the Soviet specialists who will work on construction of the nuclear power plant. Some of this housing is near completion.

Among the related facilities is the nuclear power plant compound, where earthwork began in January. It is estimated that in this 5-year period, 1,800 housing units will be completed with their accompanying sociocultural facilities. Their complete construction is indispensable in order to be able to house the specialists, builders and workers who will operate the plant.

Construction work also involves the rebuilding of the section of highway from Abreus to the nuclear power plant area, about 30 kilometers. The constant motion of equipment, graders, levelers and trucks results in new paved sections of road. New road systems will also be built, as in the case of the road from the loading dock to the nuclear power plant and accessways leading to other facilities.

Fieldwork is now underway as part of the geological studies of the zone that will be the location of the special building, the reactors and the machine room. Work is proceeding according to schedule.

Another Gigantic Undertaking

At the present time, some 400 construction workers are at the site, some of them living there. Many participated in construction of the Karl Marx cement works and they recall when Commander in Chief Fidel Castro summoned them to the new project, when he officially opened the Guabairo industry. Responding to the challenge were men like Juan Manuel Jauregui, Bernardo Iznaga, Hector Naranjo and Jose Florin, who we learned are from different parts of the country.

Juan Manuel Jauregui is 60 years old. He is a carpenter and has been in construction for 22 years. "We finished up at Guabairo and are now here, as Fidel asked. This is a source of pride for us because just look, there you have the cement plant, which is a great project, but we know this will be even greater, but we are not afraid."

During the break, Jauregui is surrounded by the younger workers, to whom he transmits his experience. His jovial nature and discipline on the job earn him the respect of those who attentively listen to his opinions. He tells them of the extremely difficult conditions under which construction workers toiled under capitalism and of the concern that now exists for the men. The young men listen to the anecdotes and nod their heads in agreement, as if to corroborate every word of the fluent language of the old builder and learn the lessons emanating from living history, from this participant in another undertaking of giants.

Construction of the nuclear power plant with the cooperation of the USSR will take place through an intensive investment program representing a high percentage of the national plan for this 5-year period and double the amount undertaken by the province in the 5 previous years.

The program scheduled for Cienfuegos includes other economic objectives of great importance to the nation, such as the oil refinery and 31 other industrial projects, 119 agricultural programs, major water project for irrigation and industrial and social uses, other projects devoted to health, education and recreation, and an extraordinary housing construction plan providing for an increase four times greater than what existed in the preceding 5-year period.

In order to undertake this gigantic construction program, the Ministry of Construction has worked out a wide-ranging plan to prepare the labor forces. The plan includes the retraining, in Cuba and abroad, of a large part of existing workers and the admission to schools for training as assemblers or civil construction specialists another 4,000 new workers, a large share of whom will be from Cienfuegos.

Training in the USSR will be 326 workers from all over the country. In alternate groups, they will receive suitable training for construction work on Cuba's first nuclear power plant. ECOI [presumably Industrial Construction Enterprise] No 6 in Cienfuegos, the main enterprise involved in current industrial projects for the nuclear power plant, has already chosen the first 45 engineers, intermediate-level technicians, foremen and skilled workers who will go to the Soviet Union, which represents 50 percent of the total of the first group.

Conscious of the volume of creative work planned for the 5-year period and independently of the help they will receive from other provinces, the Cienfuego people are getting ready to put their organizational and mobilizing abilities to the test in order to successfully wage these new battles.

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FRANCE

FRENCH ANALYSIS OF OSIRAK BOMB CAPABILITIES

Uranium Purchases, Capacity, Agreement

Paris LE NOUVEL OBSERVATEUR in French 22-28 Jul 81 pp 31-32

[Article by Michel Bosquet: "Osirak: France's Secret File;" passages enclosed in slantlines printed in italics]

[Text] Could the Iraqis really have used the reactors supplied by France to make themselves an atomic bomb? Many French and foreign experts think so, and Michel Bosquet gives their arguments. Georges Buis, for his part, presents the other side, the one espoused by the AEC [Atomic Energy Commission].

By bombing the Franco-Iraqu reactor at Tamuz, Israel committed an act that was criminal in legal[1], moral, and political terms. All the same, this crime could have been foreseen. It was so foreseeable, in fact, that even among those who have denounced it many are uncomfortable, while others are even frankly relieved that the abscess has been lanced. If they could speak candidly, they would speak of a crime with broadly mitigating circumstances. If they could be totally honest, they would add that, if Israel committed a crime, France was at fault for provoking it.

These matters are being discussed discreetly just now in Paris, particularly within the scientific community. People still recall an issue of FRANCE-SOIR dated 5 Aug 80 which had the 8-column headline: "Warning of French Atomic Scientist." The scientist in question was Francis Perrin, former high commissioner in Atomic Energy. He said, among other things: /"This atomic reactor (supplied by France to Iraq) could be used to create plutonium by irradiating uranium. In principle, Iraq has committed itself not to use such plutonium for military ends. But the Non-Proliferation Treaty (which prohibits any military utilization) could always be denounced. Consequently, it is possible that a few years from now Iraq, having prepared its plutonium with the French reactor which is not designed for that but which can be used for it, would say: "Now I am breaking my commitments in order to make atomic bombs." This is what India did...It is a question of prestige for that Arab country."/

"Caramel" Rejected

That was in August 1980. Three months later, Iraq, which had just invaded Iran, denied AIEA [International Atomic Energy Agency] inspectors access to it nuclear

installations, even though by terms of the Non-Proliferation Treaty it was obliged to accept them. For the second time in a month, Paul Quiles, the PS parliamentary spokesman for nuclear issues formally queried the government about /"the danger of proliferation of nuclear weapons which results from the export of nuclear materials for civilian purposes, a danger which appears especially worrisome in case of Iraq."/

That was in November 1980. Quite persuasive pieces of evidence continued to accumulate, leading to speculation that the Iraqi Government was involved in nuclear technology for basically military ends: First, when Jacques Chirac, in 1975, negotiated a major commercial agreement in Baghdad, the Iraqis placed an order with him for a big natural uranium reactor. It was this kind of reactor, provided by Canada, which enabled India to explode an atomic device. With a power output of 1,500 thermal megawatts, the reactor desired by Iraq would be difficult to monitor by the AIEA, because its fuel could be emptied out while it is in operation, without leaving a trace. More than a hundred kilos of plutonium per year could be extracted in this way.

Only six are needed to make a bomb. Chirac and the Iraqis, however, were unaware of one detail: France was unable now to supply this kind of reactor, for it had quit constructing them in 1969 and disposed of the equipment.

This agreement had to be renegotiated.

Second, Iraq then picked the Osiris reactor (renamed Osirak), whose mate is the Isis reactor. One interesting feature: the fuel for these reactors is almost completely pure (93 percent) U-235, which can be used without further processing to make a bomb. The cores of Osiris and Isis together contain 25.8 kilos of U-235. This is clearly more than enough to build an atomic weapon. Iraq tried, but in vain, to obtain delivery of several fuel elements at the same time. The AEC pretended that it had to procure these fuel elements from the United States. In fact, it could take them from French military stocks.

Third, after the 1979 attack at La Seyne against Osirak's reactor vessel, Raymond Barre tried to renegotiate the agreement with Iraq: he proposed to fuel Osirak with a combustible stripped of any military value ("caramel") but which would neither diminish the power of the reactor not its capacity to produce plutonium. Intransigent, the Iraqis told Barre they might denounce the entire agreement, which also provided for France to be supplied with 10 million tons of Iraqi oil per year.

Fourth, Osirak is not really a research reactor: it is more powerful than that. By way of example, the Israeli research reactor at Dimona has a power output of 5 MW; that of the Laue-Langevin Institute at Grenoble is 57 MW: it is the most powerful university research reactor in the world. But Osirak is 70 MW, and is unmatched in any country. It was intended to be used for testing materials used in the nuclear industry by means of irradiation. Well, Iraq does not have an atomic industrial program: it is hardly about to run out of oil. Osirak could, on the other hand, be used to irradiate natural or impoverished uranium in order to generate plutonium.

Fifth, Iraq in fact went right ahead with massive purchases of uranium: 100 tons bought from Niger, 130 tons from Portugal, still unknown quantities from Italy and from Brazil. Last year Iraq even tried to buy 11 tons of impoverished uranium from Canada in order to have them processed into [fuel] rods by the Nukem corporation in Hanau, Germany. Now impoverished uranium can only be used for one thing: it is easy to turn into plutonium.

A Game of Hide and Seek

Sixth, the extraction of plutonium is all the same a delicate operation. Though it produces radioactivity levels 10 to 100 times lower than the reprcessing operations at La Hague, it requires a "hot cell" so it can be manipulated from a distance. Now in fact Iraq did buy a hot cell from Italy, without having the slighest need for it in terms of its civilian program. For the irradiated fuel from Osirak, by terms of the contract, had to be sent back to France.

Seventh, the possibility of using Osirak to generate plutonium is denied by no one. The only controversy is over how much could be produced from it. According to the conservative estimates of three high-ranking physicists who at the end of May finished a very well-documented memorandum for Francois Mitterrand, Osirak would be able to produce 5 to 10 kilos of plutonium per year. One would need 6 to make a bomb. The AEC put the figure at 3.3 kilos maximum. The director general of the AIEA has put out the figure of 8 kilos. The inspector general of AIEA opened himself up wide to ridicule when he spoke of /"only a few grams. The reactor would have to be in operation for centuries to put together enough to make a plutonium bomb."/ The CIA, finally, estimated that Iraq would have its bomb by about 1985.

The Chirac and Barre governments, defending themselves against their critics, always invoked the total legality of Franco-Iraqi cooperation, as also the legality of the 1976 sale to Pakistan (which did not disguise its determination to build a bomb) of a plutonium extraction facility. The former government always acted as if the AIEA inspections alone were sufficient to prevent the diversion of fissionable materials for military purposes. It is widely recognized, however, that these inspections are no real safeguard. This is even admitted privately at least by the officials of the AEC themselves. Was not a French inspector assassinated in Taiwan after having discovered there the disappearance of 500 grams of plutonium? No sanctions, no protests, followed.

The AEC has also widely publicized some safeguards of a quite different nature: those provided by the presence of its own technicians at Tamuz, by the terms of an accord which up to now had been secret. But if the AEC has always been determined to prevent the Iraqis from building a bomb, it is equally certain that the Iraqis have always been just as determined to acquire the means to build one. A vast game of hide and seek was played in which each player pretended to be unaware of the real intentions of the other. This is why the questions posed by the exportation of nuclear technology go far beyond the problem of technical safeguards. Are peace and detente being well served by supporting willy-nilly the nuclear ambitions of bellicose and unstable states? Is it a course of action worthy of a civilized country to exploit the rivalry between nations engaged in the race for the bomb by selling both sides materials which could be the detonators of an atomic war?

These questions have been openly asked since the Israeli raid. Plainly, it was necessary to condemn Israel; but to go from that to conclude that we should also continue the Giscardian policy of nuclear exports is a step which the AEC will not force a leftist government to take.

Uranium and Plutonium

An atomic bomb can be constructed out of two substances: 1) Uranium-235 [U-235]. Natural uranium consists of 0.7 percent U-235, the remainder being U-238; to separate them, sophisticated installations for "isotopic separation" and "enrichment" are needed; 2) Plutonium. It is formed by subjecting U-238 to radiation in a reactor. In order to separate it, one needs only a chemical laboratory, equipped if possible with a "hot cell" and equipment for remote controlled manipulation.

Buis, AEC Contrary Opinion

Paris LE NOUVEL OBSERVATEUR in French 22-28 Jul 81 p 33

[Article by Georges Buis: "Fear For Naught"; passages enclosed in slantlines printed in italics]

[Text] /"Slander us if you will, there will alway be some pretext.:/ Such was the bottom line of the campaign launched by Israel to justify its terrorist raid on the Tamuz I and II nuclear research reactors being built in Iraq some 20 km south of Baghdad by Franch technicians. And so many decent people are letting themselves be taken in by this propaganda that it is necessary to set the record straight.

In 1975, Iraq asked France to train its atomic scientists and to supply it in the same connection with the research tool appropriate to this very high-level technology involving physics and chemistry. France responded favorably to the request and proposed a research tool which was not intrinsically dangerous, namely a reactor of the Osiris family--it would be called Osirak--the same kind of reactor used at Saclay for pure basic research. In doing so, France supplied Iraq with a tool for scientific training. To say that it provided a bomb factory is--to speak euphemistically--a mistake. That is, in reality--and this is not mentioned--at the same time that France was supplying the Osirak reactor, not only with the concurrence of the AIEA, but putting it under the AIEA's control, it signed in 1978 a 10-year agreement with Iraq for /"joint programs and research."/ That is to say, for a 10-year period nothing could be done to or with the products of the reactor without our knowledge. A reactor is not a bicycle from which one could surreptitiously remove a wheel Thursday night and replace it no less surreptitiously on Saturday morning--Friday being the "Sunday" of the Islamic world.

Two other safeguards of great importance have also not been discussed in this affair: 1) France has committed itself not to supply the enriched uranium necessary to the functioning of the reactor in quantities more than the bare minimum required, in order to make it impossible to produce enough plutonium to make a bomb. 2) The reactor itself is joined to a "critical model," in which the rods are tested, which makes them radioactive and prevents them from being re-used without reprocessing.

A whole set of operations, requiring the utilization fo considerable resources, would have to be effectuated behind the backs of the French engineers [to divert the fissionable material]. Certainly one can conceive the possibility of someone

putting in or around the reactor's core a sheath of natural uranium in order to create plutonium. But from the top of the pool in which the reactor is bathed, one can see the core, and the operation would thus be impossible to carry out without those working in the area knowing it.

Eight Meters by Forty

Of course, a day might come seven years from now when the Iraqis could say to the other researchers that they wanted henceforth to work alone. In order to do that, they would have to procure enriched uranium, which is very tightly controlled. There are, however, two sources: Pakistan and China. But then, there would be no more need for Osirak: the Iraqis could much more simply just make uranium bombs without plutonium.

In conlusion, it is their own affair if the Iraqis wanted to train good nuclear technicians, and in so doing they are on the same path as other semi-developed countries. To say that they were trying to prepare themselves to /rapidly/ produce nuclear warheads is ludicrous.

Finally, among the untruths Menahem Begin has broadcast whoesale one might mention: 1) that Sunday is not a day of rest for the French in Iraq for the good reason that it is not one for the Arabs. As luck would have it the bombing took place at 1837 hours, while the technicians had left the factory at 1830. That is a small margin in terms of such long-distance raid and thus one might well call it a lucky chance. One lone French technician was killed, doubtless from the effect of the blast and explosion and lung damage. Six Iraqis were also killed; 2) the fact that the Israeli prime minister spoke of the destruciton of a secret installation 40 meters deep. In fact, it was an ordinary laboratory, buried not 40 but only 8 meters deep, and that was for "structural" rather that atomic reasons.

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