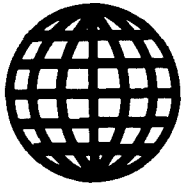


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10 August 1993



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JPRS Report

Proliferation Issues

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PROLIFERATION ISSUES

JPRS-TND-93-026

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10 August 1993

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Comprehensive Nuclear Test Ban Objectives, Definitions, and Related Issues

93FE0780 Beijing INSTITUTE OF APPLIED PHYSICS AND COMPUTATION MATHEMATICS in Chinese Jun 93 pp 1-8

[Text of statement by Chen Xueyin [7115 1331 0603] at the Chinese-United States Informal Session on Arms Control, 31 May to 2 Jun 1993]

[Text] Based on the issues set forth by our American friends, this is my first statement. The topic is "The Objectives, Definitions, and Related Issues of a Comprehensive Nuclear Test Ban (CTB)." I am prepared to discuss the following three areas:

1. From the perspective of nuclear disarmament and nuclear arms control, what are the objectives a CTB can attain, what does it neglect, what are its functions, and can it attain the desired objectives?
2. CTB definitions, programs, and related issues or indeterminateness.
3. Should a CTB prohibit all research and development work related to nuclear weapons technology, such as fusion and fission laboratory research?

I. The Role or Objectives of a CTB in Nuclear Disarmament and Nuclear Arms Control

In general, we wish to attain two objectives or foster two roles: (1) A global CTB can prevent non-nuclear nations from developing nuclear weapons, which means preventing the appearance of new nations with nuclear weapons or so-called horizontal nuclear proliferation and (2) preventing nuclear countries from studying, developing, and deploying new nuclear weapons (in actuality, nuclear warheads) to curb nuclear competition, which is so-called vertical nuclear proliferation.

These two areas are interrelated. Many countries that participate in the NPT are dissatisfied with the major efforts of the United States and Soviet Union in the past at nuclear arms competition and consider a CTB to be the best method for stopping nuclear arms competition and link the achievements of the nuclear nations in implementing a CTB with the continued effectiveness of the NPT in 1995. In reality, both of these are NPT objectives. However, there are now several "de-facto nuclear weapons states," "threshold nuclear weapons states," and "potential nuclear weapons states" that are not participants in the NPT and that have not accepted its restrictions on the development of nuclear weapons.

What we wish to point out is that a CTB is merely one measure for nuclear disarmament and nuclear arms control and that only in a situation of substantial progress in other areas in nuclear disarmament and nuclear arms control can a CTB be truly achieved, which is to say that only then can a true CTB be achieved. The most fundamental objective as well as the most urgent objective in nuclear disarmament is to eliminate or

reduce the threat of war or the use of nuclear weapons. Viewed in terms of this point, a CTB is obviously not the most urgent problem, nor is it a vanguard or leading issue. Moreover, a true CTB should help spur comprehensive nuclear disarmament, which is a step toward the ultimate goal of the complete prohibition and total destruction of nuclear weapons. It cannot be a tactic for "attempting to limit other countries while actively preserving and developing one's own advantage." I feel that what CISAC advocates is very sensible, which is that "the United States cannot gain its security at the expense of increased insecurity for other nations" (see The Future of the US-Soviet Nuclear Relationship, NAS 1991). This is to say that we cannot not merely consider ourselves, but must also consider others. This is a principle that should be observed when dealing with issues that concern mutual international security interests, and they cannot proceed otherwise.

1. Can a CTB prevent the appearance of new nuclear states and prevent horizontal proliferation? It would seem that a CTB would play a very limited role in this area. Simply relying on a CTB will not attain this objective or will make it very hard to attain it.

1) Everyone knows that two basic factors determine whether or not a nation develops nuclear weapons: One is consideration of the political and security interests of that country, which creates a need, motive, or option for nuclear weapons. The second is its technical and economic capabilities. However, the first factor is the primary or decisive one. Only when they have this need or option will they try every possible way to develop them sometimes without regard to the risk. Generally speaking, the nations that now maintain or are attempting to develop nuclear weapons certainly understand that this is behavior that concerns their major security interests. Simply relying on a CTB will not solve the problem of this type of "need or option." A better measure is to do more work according to different situations that help to eliminate or alleviate this type of need or option, such as to eliminate threats. On the other hand, there is the role of actively reducing or restricting nuclear weapons and eliminating the threat of using nuclear weapons, which may be even more important. This is the responsibility of the nuclear states, among whom the United States and Russia should play a leading role. The present situation is not this way, however. If the United States fails to readjust certain methods (policies), it may cause the opposite, which would run counter to this. The East-West confrontation led by the United States and Soviet Union (Russia) has now basically ended, but global, regional and local conflicts and contradictions are greater in number and more acute, and wars may even occur. The United States and Russia are still using their powerful military strengths to intervene in world affairs. In particular, the United States is a global superpower and feels that all events in all regions of the globe are related to the interests of the United States. As a result, the United States is involved in regional and local conflicts, and there is even a high

probability of war. In certain regions (such as other independent countries of the CIS, Eastern Europe, South Asia, etc.), Russia may also become involved in conflicts. The problem here is that, based on the progress of the United States and Russia in nuclear disarmament such as the achievement of START-2, after 2003 the United States and Russia will still be deploying excessively powerful strategic nuclear weapons or tactical nuclear weapons (the United States and Russia will deploy 3,500 and 3,000 strategic nuclear weapons, respectively, with a destructive force estimated at 900 to 1,200 MT, and they will also deploy 5,000 to 7,000 nuclear warheads, according to DOD and CDI data). Moreover, because START-1 and START-2 do not restrict non-deployed nuclear warheads (no limit on the total number of non-deployed warheads), they are not required to destroy and dispose of the remaining nuclear warheads and do not even have to destroy and dispose of the missiles they eliminate. In reality, this is equivalent to "eliminating deployments, expanding reserves, and maintaining strengths." Moreover, there can be more nuclear weapons held in reserve than are deployed, or at least a huge number of them. The United States is now proposing a shift in its strategic focus to the prevention of nuclear proliferation. The problem is that the United States and Russia are maintaining such huge nuclear war capabilities, and the United States has not agreed to the Russian proposal for complete elimination of nuclear alerts (zero-alert) and maintains a policy of allowing the first use of nuclear weapons. In this type of situation, how can other countries, especially those on guard against the United States and Russia or those countries in direct or indirect conflict with or even opposed to the interests of the United States and Russia, abandon the nuclear option? Some in the United States have advocated the use of coercive measures to coerce those countries, but this is not the best policy and would not be certain to be effective and could even be dangerous. There is an idiomatic phrase used in China to criticize inequality between the strong and the weak which says, "the magistrates are free to burn down houses, while the common people are forbidden even to light lamps." Fundamentally and in the long term, in international affairs, especially those that affect the security interests of a country or nationality, this method is not possible.

2) Developing elementary or crude fission weapons and even producing a small quantity of them and establishing a very small nuclear weapons stockpile does not necessarily require nuclear explosion tests. This is a fact. The United States did not conduct a nuclear test prior to dropping the first gun-type atomic bomb on Hiroshima on 6 August 1945. Israel and South Africa have developed and established a very small elementary nuclear weapons stockpile, yet they have not conducted nuclear tests (although there is suspicion that one was conducted in September 1979, but there is not sufficient confirmation of this). The facts have shown that the present national technical measures (NTM) are not adequate to discover this type of situation. As for on-site inspections (OSI) like the U.N. group's inspections in Iraq, it would

be hard to determine the situation without the internal coordination and assistance of Iraq.

In the area of nuclear technology, there are many similarities in technology, personnel, facilities, and other areas between those for military and civilian purposes. For quite some time, the basic principles or concepts for designing elementary nuclear weapons can be read in books and journals. There are also many companies in the West who have used a variety of legal and illegal routes to sell the relevant technologies and equipment in order to earn huge profits, and there is much dual-use technology and equipment that is hard to control completely. The ability of Israel, South Africa, Iraq, and other countries to develop nuclear weapons is an example, and a CTB will not solve such problems. However, the development of more advanced nuclear warheads, especially thermonuclear weapons, is impossible without a substantial number of nuclear tests. A CTB would play an extremely limited role in this area. As for preventing horizontal proliferation, strict controls on the development, production, and transfer of fissionable materials for military purposes, especially strict controls on chemical processing and concentration technology and equipment, should be said to be the key and even more effective.

2. In the area of preventing vertical nuclear proliferation, meaning the area of progress in spurring nuclear nations to nuclear disarmament and arms control, the role and significance of a CTB would also be very limited. Of course, a true CTB (depending on the definition) could prevent research, development, and deployment of new nuclear warheads and help prevent fierce nuclear competition like that between the United States and Soviet Union in the past. However, the present situation has changed:

1) The nuclear competition between the United States and Russia has already lost its foundation and motive power. England, France, and China are merely starting with their national defense and are only maintaining the lowest nuclear deterrent capability and are not involved in nuclear competition. As for nuclear technology, the United States and the Soviet Union (Russia) had already approached the flat top of the "S" curve in development long ago (this is the earliest assessment by York). After the 1970's, for instance, there were very few changes in the specific yield (yield-to-weight) of nuclear warheads and they mainly used improvements in their delivery vehicle launch systems (SNDV) and C³I to improve and increase their nuclear war making capabilities. As for nuclear weapons development, the United States and Soviet Union (Russia) could have stopped their nuclear tests quite some time ago. Besides conducting a small number of nuclear tests to improve the safety and examine the reliability of the strategic and tactical nuclear weapons (the so-called second generation nuclear weapons) that the United States and Russia now have deployed (there could also be effects tests, tests to improve new delivery vehicles related to improvements in warheads, etc.), they do not need to conduct more

R&D tests. Of course, a CTB or stricter limitations on nuclear tests could prevent the United States and Russia from doing R&D on the so-called third generation nuclear weapons, limit optimum configurations of new delivery vehicles, and so on. The situation is changing, however, and many people in the United States feel they are unnecessary and plan to reduce them substantially and have partially stopped them.

2) Russia has been incapable and unwilling to continue its nuclear competition with the United States for some time now and has proposed an even larger and more thorough nuclear disarmament, such as reducing the number of strategic nuclear warheads deployed to 2,000 to 2,500, completely eliminating nuclear alerts (zero-alert), exchanging and announcing key data on nuclear weapons (such as the total number and types of nuclear warheads, total stockpiles of fissionable material for military purposes, etc.). The latter is the foundation for evaluating true large-amplitude nuclear disarmament and the development of nuclear inspection technology (if the total number is unknown, how can the magnitude be evaluated?). The United States has not responded to any of these. Instead, it would seem that the United States is using the temporarily weaker status of Russia to develop its own advantages, for example, the serious inequality in START-2, which has already aroused dissatisfaction among many people in Russian military circles, and there may be resistance to approval in parliament. One can imagine that if it is possible, Russia will try to strengthen and improve its SLBM and ASW capabilities. History has proven that advantages are always temporary, and the nuclear competition between the United States and Russia may not have ended.

3) The United States and Russia both have absolute superiority in the two areas of nuclear weapons technology and nuclear weapons capabilities, and they have done a great deal of research in the areas of post-test ban technical preparations and nuclear inspection technology, so it can be said that they have made substantial preparations. Moreover, if START-2 is achieved on schedule, the number of nuclear weapons deployed by the United States and Russia will still exceed the nuclear forces of England, France, and China by several numerical grades, so many scholars in the United States feel that now is not the time to ask England, France, and China to join in nuclear disarmament negotiations. The British and French governments also have stated clearly that they would not participate in nuclear disarmament talks prior to changes in the quantitative differences in nuclear forces. Several scholars have proposed that the United States and Russia should immediately begin START-3 negotiations and reduce their deployments of strategic nuclear warheads to 2,000 to 1,000 (Dr. Garwin present here also has made a similar proposal) and even reduce them to a few 100. We advocate truly comprehensive nuclear disarmament in that we should reduce those deployed and reduce and control those in reserve (non-deployed), and all of the reduced nuclear warheads

and carrying tools should be destroyed and disposed of. They should at least be controlled and not re-used as nuclear weapons.

A true CTB cannot simply be a freezing of the current situation. Doing so would on the one hand not push nuclear disarmament forward and on the other hand, I fear that the different development phases and differences in actual conditions in each country would make a simultaneous cutoff impossible. After the United States Congress passed a bill concerning a test ban, England and France both indicated that because of the demands of the situations in their own countries, they could not stop nuclear testing, which is understandable.

In essence, our view is that if we wish to achieve a true CTB, especially if we want to attain the objectives envisioned for a CTB (achieving a CTB would not make it certain that the desired objectives for a CTB would be attained) and continue and strengthen the NPT, which means a global nuclear non-proliferation system, we must adopt more effective fundamental measures in the areas of nuclear disarmament and arms control. First, for example, we could prohibit the use of nuclear weapons like the global treaty to prohibit the use of biological and chemical weapons. If this is possible, then the desired objectives of other issues such as large magnitude nuclear disarmament and a CTB and NPT could all be readily solved and everyone on the globe could avoid nuclear catastrophes. If the subsequent part is not achieved, the intermediate or transitional phase should limit the use or role of nuclear weapons, such as only using nuclear weapons to avenge a nuclear attack, which would allow other weapons of mass destruction (such as biological and chemical weapons) to play a deterrent role (threatened use). This is the policy of "no first use." The nuclear nations should bear the responsibility of not using nuclear weapons against non-nuclear regions. One important measure that could be used for nuclear inspections is a complete elimination of nuclear alerts. "Prohibiting use" or "no first use" eliminates the possible threat of nuclear weapons attacks and are most conducive to the elimination or alleviation of the need and enthusiasm for nuclear weapons and would be most conducive to promoting the achievement of the objectives of a CTB and NPT, so it could be viewed as the most fundamental measure based on trust in the nuclear arena. The United States has made prevention of nuclear proliferation its focus and should make new efforts in this area, while all of the nuclear nations should make their own efforts.

II. The Definitions and Issues of CTB and Indeterminateness

First of all, there must be a clear definition of a CTB because otherwise everyone will do as they please and the name will not correspond to reality, and it will be impossible to formulate nuclear inspection standards. If a low-yield threshold is established, it would mean substantially different degrees of limitations at different technological development phases.

We hope that a CTB will truly help promote comprehensive and total nuclear disarmament, which means taking a step toward the ultimate goal of a complete prohibition and total destruction of nuclear weapons. This definition should be "prohibiting all nuclear explosion tests." "All" includes R&D related to nuclear weapons and conversion to weapons (safety and effectiveness tests) as well as the maintenance of effective and reliable inspection and all other nuclear tests, which means prohibiting any type of nuclear explosion testing. This would create a situation in which no R&D could be done and would restrict maintenance and improvement. As time passed, the reliability (trustworthiness) of existing nuclear warheads would gradually decline, and they would lose effectiveness. This provisionally would not include laboratory fusion and fission research (to be discussed below). Based on this definition, the nuclear explosion yield would be $Y_{CTB} \approx 0$. This definition is determined on the basis of the objectives that we wish to attain with a CTB. The nuclear tests prohibited in this case would include one-point safe tests, which in the United States is $Y_{OPS} < 2$ kg TNT, that are the so-called hydronuclear tests. The high energy density facility (HEDF) envisioned in the LLNL is ($Y_{HEDF} < 0.3$ KT). Although the laboratory miniature fusion facilities envisioned in the United States' ICF plan have a projected successful nuclear fusion energy output of as much as 100 to 1,000 MJ, equivalent to 20 to 200 kg of TNT, because the system has dual uses and is qualitatively different, other discussions will be held. This type of definition requires nuclear inspections to a 0 yield. In actuality, it prohibits the testing of any type of nuclear explosion device regardless of the size of the yield. This type of truly thorough CTB is very hard to inspect (theoretically, they could be conducted in a concealed manner at any time and any location on the globe, and there is also interference from chemical explosions and earthquakes). United States Department of Defense Secretary H. Brown (1977-1981) stated that this type of CTB cannot be achieved ("a CTB is not in the cards"), and Dr. R. E. Kidder who is present here has discussed this issue. I feel that nuclear inspections require the development of a new concept and are not necessarily limited to seismic detection, for example things like nuclear inspection research and testing facilities, and all this requires further R&D.

Some people have proposed substituting the Low Yield Threshold Test (LYTT) for CTB, and this type of program also touches upon many issues:

1) There is much disagreement about how to set Y , the so-called minimum test yield Y_{ms} (Y_{ms} = the lowest yield of military significance). The proposals made in the United States in the past include:

John S. Foster $Y_{ms} < 0.25$ KT (1973)

Harold M. Agnew $Y_{ms} < 5$ KT - 10 KT (1973)

Harold Brown $Y_{ms} = 0$ (1977-1981)

In reality, Y_{ms} varies substantially with different testing objectives, different technological development stages, and different (accumulated) experience. People are aware that computers can be used for simulations so that low-yield tests are calibrated and magnified to large yields. This cannot be done in countries that are beginning to develop nuclear weapons, and they can only conduct full-yield tests. The 1 KT threshold now being recommended by the United States basically conforms to the development levels and needs of the United States (and Russia). The United States and Russia conducted a large number of low-yield ($Y < 1$ KT) nuclear test studies in the past. One of the main aspects of the Test Ban Readiness Plan implemented in the United States since 1988 has been using under 1 KT nuclear test studies to estimate the capability of an elementary full yield (such as about 5 to 20 KT). Obviously this definition means "restricting other countries, developing one's own advantages." Foster proposed that 1 KT and even $\frac{1}{2}$ KT or $\frac{1}{4}$ KT all have military significance (here the discussion has been omitted).

2) The issue of detection limits and estimating limits.

Y_d —the lowest limit explosion yield reliably detected and identified—may be several KT or 1 to 5 KT at the present time. This was estimated based on analysis of some of the tests at sites in the United States and Soviet Union (Russia), and it is hard to extrapolate this to other regions of the world. If it is 1 to 5 KT, this would require a substantial number of external seismic networks and the establishment of a substantial number of network stations within the country. This type of detection involves a considerable degree of intrusiveness and concerns political and foreign relations issues. There is also the issue of the estimable Y_E , which is the lowest yield (tested) that can be estimated with proper accuracy. The error in the estimable yield limit is too large, so the inspections would be insignificant. The 150 KT threshold stipulated in the TTBT requires the use of CORTEX to attain an error of $\pm 30\%$. Moreover, low yields may also require consideration of evasive technology, and differences in the geological structures at the test site are even more acute. The dry alluvial deposits of the loose geological structure at the United States' Nevada test site may reduce the seismic signal several times to several 10s of times. Some people in the United States have pointed out that it is very hard to discover tests under 1 KT in this type of geological structure.

3) The most important thing is the 1 KT threshold. LYTT is certainly not a CTB, and it runs counter to the objectives of a CTB. If we only take into consideration the technological development advances and needs of the United States and Russia in considering the definitions, there is of course no reason to request that other countries participate.

If an intermediate program is required, it would be best to have a quota program to restrict the number of tests. Strictly controlling the number of tests could block R&D on new nuclear warheads and achieve the objective of

preventing nuclear competition, which could partially satisfy the desires of the non-nuclear states and avoid several of the disputes concerning the LYTT described above. Of course, a quota is not a CTB, and efforts must still be made in the direction of a CTB.

In essence, there are two views:

1) The conditions necessary for achieving a true CTB are lacking at the present time, and there are many problems to solve in both the political and technological areas.

2) As for achieving a true CTB, it will be hard to attain the objectives by simply relying on a CTB. More effective fundamental measures must be adopted in other areas.

III. Should or Can a CTB Prevent All R&D Work Related to Nuclear Weapons Technology?

If we wish to attain the objectives of a CTB, we must prevent all work that could aid in R&D and improvement of nuclear weapons technology, which could include laboratory research, such as inertial confinement fusion (ICF) plans for military purposes. In the broad sense, some people in arms control circles proposed to include military R&D in arms control quite some time ago. Several years ago we also proposed that scientific circles should prevent R&D on new weapons of mass destruction that threaten the global ecology and the environment in which mankind exists. Most people in scientific circles hold this desire. How and whether it can be achieved, however, is a scientific and technological issue as well as an even greater political issue. As far as nuclear weapons technology is concerned, it will be very hard to achieve.

1. Fusion and fission research has dual uses. For example, ICF has many similarities to thermonuclear weapons, and laboratory miniature fusion is equivalent to the explosion of a miniature hydrogen bomb. It certainly can be used to study even more weapons physics questions, but it is also a very hopeful route for achieving the peaceful use of fusion energy. I am afraid that refraining from doing something necessary for fear of a risk is not a good idea. We should have a cautious attitude concerning dual-use technologies. Actually, the situation is similar for biochemical weapons and other high-tech weapons, which depend on the development of many types of technologies. This is a very complex issue that should not be dealt with simply.

2. There is a substantial distance between the R&D stage and conversion into a weapon. For nuclear weapons, applying laboratory research results (such as ICF) in weapons designs usually still requires conducting nuclear tests, especially of new principles and concepts. This returns us to the nuclear testing issue. ICF cannot totally replace nuclear explosion tests.

3. The R&D stage is very hard to inspect, with the exception of mutual participation in experimental research and design. This type of highly intrusive inspection system would appear to be hard to accept at present. No type of S&T research is independent, which also concerns S&T classification issues, especially for military S&T.

4. As for the objectives of a CTB, other routes may be even more effective, such as a fundamental solution to the problems to prevent or restrict the use of nuclear weapons.

The desire to prohibit all related R&D work is understandable but very hard to achieve in reality.

South Korea

Scientist Urges ROK To Aid DPRK With Reactors

SK0508082493 Seoul SEOUL SINMUN in Korean
4 Aug 93 p 5

["Special Contribution" article by Yi Chang-kon, researcher from the Atomic Energy Research Institute: "We Should Handle The Transfer of Light-Water Moderated Reactor Technology to North Korea"]

[Text] North Korea has requested from the United States a transfer of technology on light-water moderated reactor on the premise that it will accept nuclear inspection by the International Atomic Energy Agency (IAEA). Thus, it is now the time for the United States to respond.

No one is precisely aware of North Korea's true intention. In negotiations with North Korea, the United States always appeared to be pushed back. This being the present situation, I think that the United States should now hold discussions with us and prepare an exemplary paper [mobom taban].

Securing Safety Is Urgent

I would like to stress that as a condition for transferring technology on a light-water moderated reactor, the United States should have North Korea promise that it would not only accept the IAEA inspection, but that it will also dismantle reprocessing facilities and shut down its gas-cooling reactor.

This is because radioactivity management and securing the safety of reactors, along with nuclear nonproliferation measures, are very important. Since we have witnessed the handling of this issue in the former Soviet Union, we are well aware of the seriousness of the situation in North Korea.

The actual welding condition of radiochemistry facilities in Yongbyon, which was reported on television, proves the seriousness of this issue, and the deep concern expressed by IAEA experts who have been to North Korea confirms it.

We would like to urge North Korea to keenly realize that a reactor accident is a technological problem that cannot be prevented by the party, even if it so decides, and that a radioactive leak cannot be protected by the chuche idea. These are indeed serious problems related to technological management and practice.

No U.S. Experience for Past 20 Years

It is more effective for the ROK to take the lead in the transfer of technology on light-water moderated reactor to North Korea. This is because the United States has had no experience in the design and manufacture of light-water moderated reactor for over 20 years. On the other hand, however, we have either designed or built more than 10 reactors in the past and are presently

engaged in these activities. Therefore, our experience is fresh, and we can transfer technology immediately.

Moreover, we are in the stage of completing the development of a Korean-type light-water moderated reactor. Therefore, our position is more advantageous than that of the United States whose technology might be rusty because it has not had a hand on it for a long time.

In addition, we are using the same language as the North Korean people, and we would work with a sense worthy of masters because of the fact that the reactor in question would be ours after reunification. Thus, it is clear that we will devote greater passion to this work than foreigners.

However, one thing that we should keep in mind is that a supplementary provision of the agreement between the ROK and the United States stipulates that when the ROK wants to transfer technology offered from the United States to a third party, it should obtain prior consent from the United States. Therefore, it is desirable that the two countries participate in solving this issue as common partners.

One-Million-Megawatt Level Is Adequate

It was learned that North Korea is building a 200,000 kilowatt-level gas-cooling graphite moderated reactor in Taechon, North Pyongan Province. However, what we would like to recommend to North Korea is a one million-kilowatt-level pressurized light-water moderated reactor.

The reason for this is that we have developed this type of reactor in earnest. We also plan on building two more reactors each at Yonggwang and Ulchin. Therefore, if North Korea chooses this type of reactor, enormous benefits would be guaranteed not only in terms of expenses in design and construction, but also in its operation and management.

I propose building a pressurized light-water moderated reactor on the Armistice Line or in its vicinity. Joint use of electrical power in the course of designing and building the reactor and even after its inauguration is ideal as was seen in the case of the pressurized light-water reactor in Daya Bay, a joint-venture project between China's Guangdong Province and Hong Kong. This reactor is a replica of ours in Ulchin.

It is also desirable for South Korea to take charge of operations for the first five years following its inauguration in order to avoid management confusion.

Armistice Line Area Is Adequate

Increasing the voltage of electricity generated from this power station to the 800 or 1,000 kilovoltage A-class is necessary for this station to play the leading role in the construction of a power transmission network after national reunification.

When North Korea's nuclear facilities are dismantled, there will be a need for a radioactive waste material

disposal site. I believe it is desirable for the North Korean side to offer an international-level disposal site for radioactive wastes, which can be used jointly by atomic energy circles in the North and the South, and for the South Korean side to furnish all the technology, equipment and expenses. If this is realized, it will be the symbol of genuine reconciliation and cooperation between the North and the South.

Furthermore, it may be advantageous for the South Korean side, in addition to building social overhead facilities in the station's vicinity to offer support and cooperation in technological domains to which North Korea's technological camp has had no access, such as safety engineering and quality control of atomic energy, measures for quality insurance, cost computation, process management, and establishment of regulations on atomic energy safety. In addition, intensive training for those who will work on design, manufacture, construction, operation, repair and safety, should be carried out.

The Atomic Energy Training Institute of the Korea Electric Corporation is world-renowned for its outstanding educational and training facilities. In addition, the Atomic Energy Research Institute has invited and trained leading atomic energy experts from over 10 developing countries each year in answer to requests by the IAEA. The fact that it enjoys a very favorable reputation around the world is indeed something to be proud of. While we train foreigners in foreign languages, it would be truly worthwhile if we could jointly discuss technological problems with our fellow scientists and technicians in the North who will design, build, and operate our atomic reactors.

North-South Technological Exchange Should Be Realized

It is desirable to send our members to the North for training in order to learn specific technology in which the North is advanced. With a view to laying a foundation for this, technological circles in the North and the South should make joint efforts to unify technological terms in each sector and to formulate technological standards.

Novelist Hwang Sok-yong allegedly heard President Kim Il-song say, "We will not adhere to socialism. Now, who would believe that?" If this is true, there cannot be any reason for the North and the South not to carry out mutual technological exchanges.

With a view to building a foundation for genuine North-South cooperation, North Korea should make joint efforts with the South to shut down its gas-cooling reactor whose safety has been seriously suspect, and dismantle reprocessing facilities, which constantly invoke international troubles. At the same time, North

Korea should make efforts with us to resolve the shortage of electricity by building and operating the one million-kilowatt level pressurized light-water moderated reactor.

Meanwhile, South Korea should expedite the creation of reunification funds and the establishment of organizations in each specialized field that will contribute to achieving these projects.

Washington and Seoul To Discuss Nuclear Technology Transfer

SK3107051893 Seoul YONHAP in English 0504 GMT 31 Jul 93

[Text] Seoul, July 31 (YONHAP)—South Korea and the United States are to begin consultations, perhaps as early as next week, on the North Korean nuclear problem, with the transfer of nuclear technology one of the key issues, officials said Saturday.

Chang Chae-yong, director-general of the Foreign Ministry's American Affairs Bureau, is expected to go to Washington for the working-level talks. Assistant minister-level negotiations are scheduled for soon afterward.

A well-informed official said that future Seoul-Washington talks would have to deal with North Korean demands for aid in modernizing their nuclear reactors, determining just how far the United States can go in promising the aid and when the aid can actually begin.

Washington said after high-level nuclear talks in Geneva earlier this month that it was willing to help North Korea to build light water reactors to replace its aged, unsafe graphite-moderated reactors.

"The United States believes more that North Korea's demand is sincere than that it is just another delaying tactic," he said. "Seoul believes we should not forget that there is ample possibility of the latter.

"Seoul and Washington will need to look more closely into North Korea's motives and reaffirm our initial positions that no technology goes to Pyongyang before the nuclear situation is resolved," he said.

Light water reactors are safer and require more regular changes of nuclear fuel, making them easier to check for plutonium production and other nuclear activities.

One light water reactor is said to cost at least 2 billion U.S. dollars to build.

The two sides plan to follow up with assistant minister-level talks after watching progress of North Korean negotiations with the International Atomic Energy Agency on resuming nuclear inspections.

Hungary

German Nuclear Fuel Purchased

*AU0208164893 Budapest MTI in English 1538 GMT
30 Jul 93*

[Text] Bonn, 30 July (MTI)—Germany's Environmental Protection Ministry today licensed the delivery of 260 nuclear fuel cassettes to Hungary.

The Soviet-made cassettes were originally destined for the Rossendorf test reactor near Dresden, which in the meantime has been closed. Other German reactors were out of the question as the cassettes can only be used in Soviet-type power plants.

Before issuing the export license, the German Environmental Protection Ministry and the Radiation Control Institute of Salzgitter had thoroughly examined the Hungarian reactor which is to receive the fuel. The examination showed that, unlike similar Soviet makes, the Hungarian reactor is of high security standard.

Argentina

'Remaining' Condor-2 Parts To Go To Spain in September

*PY0308210093 Buenos Aires NOTICIAS
ARGENTINAS in Spanish 1346 GMT 3 Aug 93*

[Text] Buenos Aires, 3 Aug (NA)—It has been learned through Defense Ministry sources that the remaining parts of the Condor-2 missile project will finally be sent to Spain during the first week of September in order to continue with the dismantling program agreed on with the United States.

Most of the parts had been sent from the plant in Falda del Carmen, Cordoba Province, to Spain in January, to be sent later to the United States. Some parts, which remained in Argentina, are considered key parts by U.S. experts, and for that reason they filed a claim.

In the beginning, former U.S. Ambassador to Argentina Terence Todman was in charge of insisting before the Argentine Government on the total remittance of the Condor-2 parts for their dismantling, while it was said in Argentina that it had been totally dismantled.

The newspaper LA NACION today reports that four days after presenting his credential letters, the new U.S. ambassador, James Cheek, presented a formal claim to Defense Minister Oscar Camilion to finish the process of sending parts to the Spanish port of Rota.

Some parts claimed by the United States began to turn up after the agreement, like the French Sagem platforms, the Thrust Vector Control (TVC) [preceding three words and acronym in English], and two launching trucks found in a warehouse close to the bunker in Falda del Carmen.

The only parts allegedly remaining in Falda del Carmen are the mixers, which also were requested by Todman for their destruction.

The French Sagem platforms are approximately 30 cm high and have a cylindrical shape, crowning the missile's tip like a Chinese hat.

While U.S. intelligence claims there were 12 Sagem platforms, Argentina said it only had three of them, of which one was out of order, which is why they sent only two to Spain.

The controversial situation of the most important missile project in the history of the Argentine Air Force has

caused Commodore Miguel Guerrero, one of the "fathers" of the Condor-2 project, to "ask" for leave.

"About a month and a half ago, Commodore Guerrero asked for a leave, therefore it is no news. He asked for leave when Brigadier Jose Julia was still Air Force commander. He requested six months of leave," Camilion said in statements to LA NACION.

Brazil

More on Former Navy Minister's INTERVIEW Discourse

*PY3007180893 Buenos Aires NOTICIAS
ARGENTINAS in Spanish 1552 GMT 30 Jul 93*

[Text] Rio de Janeiro, 30 Jul (AFP-NA)—This month's issue of the magazine INTERVIEW quotes former Navy Minister Admiral Maximiano da Silva Fonseca as saying the recent military regime that ruled the country had a project for manufacturing the atomic bomb.

This is the first time a high-ranking military chief of the dictatorship has acknowledged the existence of such a project. Da Silva Fonseca was Navy minister under the last military president, General Joao Baptista Figueiredo (1979-1985).

The military minister of Itamar Franco's government avoided commenting on the former minister's remarks.

An officer of the Army Social Communications Center said: "This is a delicate matter and the Army minister should discuss with the Army Staff before making any comment."

Da Silva Fonseca indicated that the Navy did not participate in the bomb project, he became aware of it through the now deceased Brigadier Jardim de Mattos, Figueiredo's Air Force minister.

He stated that the bomb was not manufactured due to the lack of money and a political decision.

At that time, Da Silva Fonseca defended the building of the bomb because he believed Brazil should demonstrate its technological capability to wealthy nations.

Testing the bomb was to have been performed in a 300-meter hole at the Cachimbo Air Force Base in the Amazon state of Para. [Former] President Fernando Collor de Mello threw a symbolic shovelful of lime into the Cachimbo hole as a sign that the Brazilian Nuclear project was meant for peaceful means.

India

U.S. Nonproliferation Policy Viewed

*BK0408030093 Delhi INDIAN EXPRESS in English
29 Jul 93 p 8*

[By Amrita Abraham: "Pressure Mounts on India"]

[Text] The most useful reading we can make of the cryogenic rocket affair and of hard-nosed American statements on Kashmir, human rights and trade, is that India comes very low in the Clinton Administration's list of international priorities. Until now it was possible to imagine the transition to a new and Democratic Administration in the US and India's economic liberalisation policies would provide the impetus for putting relations between the two countries on a better footing. That clearly is not about to happen unless India can change the way it is perceived in Washington.

Behind America's squashing of the Indo-Russian rocket deal lies not so much a misunderstanding of Indian intentions and scientific capabilities or failure to recognise the impact it would have on Indo-US relations—some American thinktanks hoping to influence the Clinton Administration's policy towards India have made those points very well—as a willingness to subordinate Indian interests to America's pursuit of its own particular non-proliferation objectives. Russia and the CIS states were the prime US concerns; India is so peripheral on the US map of the world that trade sanctions against ISRO (Indian Space Research Organisation) are not being lifted immediately, as in all fairness they should be, but have become one more means of twisting India's arm to adhere to the MTCR (Missile Technology Control Regime).

The US has shown it intends to strengthen the NPT (Nuclear Non-Proliferation Treaty) and MTCR, centre-pieces of its non-proliferation policy, in ways which will perpetuate its freedom to make a unilateral determination of what constitutes a proliferation threat and how it should be dealt with. After sanctions were imposed on Glavkosmos and ISRO by the Bush Administration last year, the Indo-Russian deal was suspended but not cancelled. Following a series of national export controls on dual-use technologies which Russia (and CIS countries) adopted in the meanwhile, some akin to but outside the MTCR, the possibility arose of Moscow making its own determination of whether the Glavkosmos-ISRO deal could go through and what restraints on end-use could be placed on India. This certainly is how senior members of the two Russian space agencies seemed to understand the situation before the Yeltsin-Clinton meeting in Tokyo, and this is probably what influenced U.R. Rao's optimistic announcement from Moscow.

But if an Indo-Russian deal had taken place in that form, it would have had the effect of challenging the status of the 1987 US sponsored MTCR as the sole determinant of missile proliferation. The purpose of carrots and the

stick, commercial incentives and sanctions for Russia's space agencies, on the basis of which US officials negotiated in Washington, was to nip a parallel Russian system in the bud and with it the Indo-Russian deal. Clearly it is in America's interest for Russia and China, both of whom have promised to abide by the MTCR but have not signed it, to conform closely to the MTCR and not set up rival, independent non-proliferation controls, differently interpreted and applied. The regime Washington presides over is designed so as not to interfere with its own strategic and foreign policy goals (e.g. in the Middle East where the US exports missiles and know-how to Israel).

Having got Russia to fall in line, the next US target must be China, which was still exporting M-11 missiles and technology to Pakistan and Syria one year after agreeing to adhere to the MTCR. But it remains to be seen how much success can be achieved there. One can interpret the contradictions between what the Chinese say and do as reflecting differences between civilian and military leaders over missile sales. A better explanation may lie in a speech on arms transfers by China's delegate to 89th Inter-Parliamentary Conference in Delhi last April. He said Beijing is opposed to discriminatory applications of arms control measures, believes it is unwise to ignore the security concerns of small and medium-sized countries and is against measures which "compromise or affect the peaceful applications of advances in science and technology by the developing countries." If we accept this as the true position, it suggests that Chinese policy is not just at odds with the MTCR, it also contains the germ of an alternative non-proliferation regime.

It is difficult to see how Washington can get Beijing's compliance with the MTCR just now. China has both an ambitious commercial space programme of its own with entities like the Great Wall Industry Corporation, and aggressive weapons-export corporations like New Era and Poly Technologies. And then again, China is well placed to retaliate against US commercial interests: US direct investment amounted to over \$6 billion by the end of last year and US exports to China are worth some \$3 billion and 100,000 American jobs.

Just as the US has a strong compulsion to tighten up the MTCR and prevent departures from it, so it must act on the NPT front in various ways. Vis-a-vis North Korea, which at first threatened to pull out of the treaty and continues to resist IAEA (International Atomic Energy Authority) inspection of two nuclear dumps, the US must prevent any exceptions being made or new precedents being set. Vis-a-vis Japan and others, the US must try to ensure there are no doubting Thomases when the NPT comes up for indefinite extension in 1995. Vis a vis India, viewed as cursed and a major obstacle to universal acceptance of the NPT, pressure to sign has been increased as witness the US embassy's prohibitions on the reprocessing of spent fuel after the Indo-US agreement on Tarapur expires.

Thus, although the NPT and MTCR are demonstrably discriminatory in principle and practice, the US is determined that they alone should be the basis of global non-proliferation. It will not tolerate alternative models or parallel methods and is disinclined to consider ways of improving its own regimes. So eager is the Clinton Administration to push through extension of the NPT unchanged that, by declaring a unilateral moratorium on nuclear tests for 15 months, it has virtually committed itself (hastily in light of the silence from Beijing) to bringing about a Comprehensive Test Ban within the next two years as token of the five weapons powers' own progress on disarmament. Other confidence-building measures on the anvil are a Big Five freeze on production of fissile material and a no-first-use of nuclear weapons declaration.

Although the chips are stacked against India, a few things can be done while pressing on with our industrial development. An expert body has studied the question of India's nuclear policy and apparently advised the Government against India signing the NPT. India cannot and should not sign a treaty consigning us to permanent second-class status. Some steps to narrow the gap between India and the US on the NPT have also been aired such as a unilateral no-first-use declaration, placing all but two or three nuclear facilities under IAEA safeguards and tightening India's own export controls on nuclear and missile parts and knowhow. It seems likely, when India is considered such a soft target, that these measures will whet the US appetite for more. But some such measures could improve India's credentials as it pursues through more active diplomacy than we have seen lately an alternative agenda on non-proliferation (the Rajiv Declaration, perhaps).

'Breakthrough' in Missile Technology Reported

BK0308141593 Islamabad THE NATION in English
3 Aug 93 pp 1, 6

[Text] New Delhi—In a major breakthrough, India has evolved an aerodynamic code for a wide range of missiles including the most advanced of them all, the Cruise missile.

The development will make it possible to design a number of missiles like large ballistic, small heat-seekers and even Cruise missiles. With the new code, it will also be possible to shorten the time taken for a new missile development by at least one-third.

According to scientific sources, the comprehensive aerodynamic code enables rapid estimation of aerodynamic forces acting on the missile's surface when in flight. It is called the Missile Aerodynamic Design Manual.

Indian defence scientists describe this new involvement as the most significant development in the Indian missile calendar since the first flight of the intermediate range ballistic missile, Agni.

It is learnt that some details of the project classified as "secret" were revealed to select group of people during a recent symposium at National Aerospace Laboratory (NAL).

It may be recalled that the Cruise missile was the most widely used US weapon during the Gulf War and the latest attack on the Iraqi intelligence headquarters was also launched by a Cruise missile "tomahawk". Its technology is a closely-guarded secret with only a few countries possessing it.

While it is believed that the Indian guided missile programme also includes a Cruise missile. There has been no official confirmation. Its aerodynamic code, contained in the new missile aerodynamic design manual is a confirmation that such a project has been undertaken.

Missile experts say the most laborious aspect of any aerospace project is the time taken to study the effects of wind on a projectile. The movement of a missile is dependent on wind flow and scientists work out an optimum surface design that can cruise through the most difficult wind conditions.

This is a complex process involving several hundred man-hours using most advanced and powerful computers. According to reports available here at least 25 different types of missile can be assembled with the new missile prediction code.

The authoritative Jane's defence review on missiles lists an Indian Cruise missile programme with a 600 km range and 450 kg warhead. The US has been crying wolf over missile proliferation in the subcontinent and has placed India at the top of a list of nations that are "potential missile threats to the United States."

Morocco

Status, Objectives of Nuclear Program

93WP0208A Casablanca LA VIE ECONOMIQUE
in French 9 Jul 93 pp 45-46

[Interview with El Mediouri Khalid, chief executive officer of the National Center for Nuclear Energy Sciences and Technologies (CNESTEN), by Laila Jalal; place and date not given: "The Development of Nuclear Research in Morocco"; introductory paragraph in italics as published]

[Text] In an interview with LA VIE ECONOMIQUE, Mr. El Mediouri Khalid, the chief executive officer of the National Center for Nuclear Energy Sciences and Technologies (CNESTEN), spoke about the center's mission as well as the strategy that has been adopted to invigorate its activity and develop nuclear research in Morocco.

[Jalal] The National Center for Nuclear Energy Sciences and Technologies (CNESTEN) was established to serve

all nuclear activities in Morocco. Basically at what levels does the center operate? And what are the areas that will benefit from its work?

[Khalid] First, thanks for the interest you have shown in our agency, which operates in a special technological sector unknown to public opinion, where it is only perceived through unfavorable prejudices raised, rightly or wrongly, by the history of nuclear science in this country.

So I will start by briefly reviewing the two major peaceful applications of nuclear energy: the first energy-related application is the production of electricity supplied by nuclear power plants (approximately 20 percent of world electricity production).

The second application relates to the use of radioelements¹, or rather the emitted radiation, for very varied uses: in medicine, industry, mines, agronomy, the environment, biology, scientific research, etc.

It was with these two goals that CNESTEN was established in order, on the one hand, to prepare the country on the technological level, for the introduction of nuclear-generated electricity, and on the other, promote applications of nuclear techniques that have already been introduced in Morocco for more than two decades in various socio-economic sectors.

Accomplishing these two missions presupposes the existence, as is the case in many countries, of a Nuclear Studies Center (CEN), an infrastructure that we have suggested building about 20 km from Rabat in the middle of the Maamora forest and that will be equipped mainly with one reactor for experimental research.

Around this nuclear reactor, CNESTEN anticipates under normal circumstances three main activities:

- Work producing radioisotopes earmarked basically for medical uses initially.
- Carrying out specialized physicochemical analyses of samples of materials coming from sectors: mines, biology, the environment, industry, etc.
- Research activity to be developed mainly with universities and national research institutes.

Simultaneous with these two activities directly tied to use of the reactor, CNESTEN will try to supply service to public and private agencies that use nuclear technology in various areas; as an example, I would mention quality control in industry, water research (hydrology), studies of the movement of sediment in ports and dams, etc.

The third level of activity relates to support work of these activities, viz.:

- Training in reactor technology and the use of different nuclear techniques.
- Assistance in the area of nuclear safety to users and environmental monitoring.
- Collection and management of radioactive waste produced at the national level by different users.

- Keeping up in nuclear instrumentation, which is a major handicap when developing nuclear techniques.
- Dissemination of technical information to different users using international information systems to which CNESTEN belongs as well as general information for the public.

I would like to say a word about the approach that CNESTEN has taken on the issue of nuclear-generated electricity, keeping in mind the country's current direction in the field of energy and in particular of technical and economic studies undertaken by the National Electricity Office [ONE] for the nuclear program, which do not foresee the prospect of setting up a nuclear power plant before 2010-2020: to begin with, CNESTEN will be limited to ensuring technological oversight of research and development programs carried out internationally in the areas of lines, fuel cycles, waste, safety, and the environment.

Every country with a nuclear-generated electricity program first started by establishing nuclear research or study centers, which are valuable assets to acquire basic competency in the area of nuclear technology, making it possible to grasp all the issues linked to the sensitive introduction of this type of technology.

[Jalal] After existing for seven years, can you list CNESTEN's accomplishments?

[Khalid] You could say this time was spent on the following tasks. First, as with every new agency, we had to link ourselves to the establishment's administrative structure. Second, efforts were focused on doing feasibility studies of engineering concepts as well as preparing the CEN Maamora site, for which the administrative grant procedures were lengthy. Third, in the meantime CNESTEN had altered its first reactor project, replacing it with a more powerful reactor, one that was better adapted to the desired uses.

At the same time we launched programs to recruit and train specialized professional workers trained as engineers and doctors who currently make up the first teams in charge of developing the CEN's various activities.

With regard to scientific and technical activities, it should be noted that these teams have already gotten a certain number of projects off the ground connected with X-ray monitoring of the CEN's environment, the collection and storage of used sources of radioactivity from domestic users, and promoting and using nuclear techniques in certain areas such as medicine, sedimentology, and industry.

Furthermore, I would point out to you that CNESTEN is also taking part in launching the nuclear department of the Mohammedia Engineering School.

Internationally CNESTEN has benefited from technical assistance from the International Atomic Energy Agency

as well as the experience of a certain number of friendly countries such as France, the United States, and Malaysia.

[Jalal] Mr. Khalid, what strategy do you intend to implement to invigorate CNESTEN's work? What are these strategy's major directions and the changes that have occurred?

[Khalid] The strategy we propose to follow has as its goal providing our country with a nuclear study center that is technologically efficient and appropriate to the country's evolving needs so as to provide impetus for technological changes in user sectors.

To do this, the directions of this strategy can be summarized as follows:

- Between now and the end of the year draw up a final realistic, optimal, and flexible conception of the center, particularly in terms of activities, how it is set up, and how it is equipped.
- Complete an assessment of needs in the area of research and service to our "customers" and potential partners, particularly universities, institutes, and sectors that use nuclear technologies.
- Beginning now, set up sectoral structures for discussion and collaboration among CNESTEN's scientific teams and those of various agencies so as to launch joint activity projects, some of which can get off the ground before the CEN starts up.

This collaboration is necessary with the university in particular, with which we hope to establish permanent communication, a task that is all the simpler today given CNESTEN's administrative transfer to the Ministry of National Education.

Set up a flexible, adaptable organizational structure to carry out the project and use the CEN's plant.

Carefully plan the training of professionals and technicians who make up the center's main backbone.

Stay alert internationally to the experiences of both highly industrialized and developing countries which have preceded us on this path.

[Jalal] Mr. Khalid, do you think that those areas that use nuclear technologies in Morocco still deserve much more attention? What position does Morocco occupy in terms of nuclear research if we compare it to countries that have already taken major steps in this area, the countries of Europe in particular?

[Khalid] The situation is different from one sector to another. Although nuclear technologies have penetrated most of the country's socio-economic sectors, the number of applications is still quite limited and their current level of development requires the existence of a national infrastructure of the type represented by the Nuclear Study Center.

With regard to other countries at a similar technological level, Morocco is behind in the area of nuclear equipment. That is true for nuclear medicine and in agriculture, where preliminary studies have demonstrated opportunities for our country to be able to have industrial plants to preserve food through irradiation; I would also mention industrial applications which are held up owing to the absence of standards, regulations, training structure, etc.

With regard to university research, here I would like to pay tribute to those who have pioneered in teaching and training in nuclear sciences and techniques, covering different socio-economic sectors (research, agronomy, medicine, geology and mines, industry, etc.), who have been putting forth splendid efforts, while chronically underequipped, to launch many research studies applied to local problems.

That is to say that bit by bit CNESTEN will try to make its contribution in the area of knowhow to all users who have the necessary human and material infrastructures at the CEN.

In relation to industrialized countries, that's another dimension of the problem, since it should be mentioned that, although nuclear science is no longer a cutting edge technology in those countries, it is being put to more expanded uses: producing electricity, nuclear and therapeutic medicine, food preservation, the sterilization of medical items and cosmetics, the massive use of nuclear techniques in industry, naval propulsion, and the environment.

[Jalal] Does CNESTEN have the material and human means necessary to accomplish its functions?

[Khalid] In terms of a budget, the state has supported us to get started, acquire the reactor, and do engineering studies for the CEN. To carry out the project, we are at the moment in the process of studying financing methods with the authorities we report to.

On the human side, CNESTEN currently has a major human potential. Out of a staff of about 100 people we have about 50 professionals spread out among the various activities, the majority of whom make long-term visits to foreign nuclear [research] centers. I believe the human element is our crowning glory.

Footnote

1. Radioelement: an unstable clinical element, which tends to regain its stability by emitting energy rays.

Pakistan

Foreign Minister Denies Possession of Nuclear Weapons

PM0408115493 Paris *LE MONDE* in French 4 Aug 93
p 4

["P. de B." report: "Foreign Minister Visits Paris: Pakistan Denies Possession of Nuclear Bomb"]

[Text] "We do not have the nuclear bomb, and we do not want it," the Pakistani foreign minister said Monday, 2 August, during a visit to Paris. However, Abdul Sattar added that his country "possesses a certain nuclear capability or potential. But our government's decision is steadfast: We have no desire to turn this potential into a reality." With these remarks he was responding to the statement by the former chief of staff and head of Pakistan's nuclear program, General Aslam Beg—indirectly confirmed by former President Ghulam Ishaq Khan—that Pakistan has possessed the nuclear weapon since 1987. This information has been widely confirmed by non-Pakistani sources.

Mr. Sattar said that General Beg made these remarks within the context of the campaign for the elections in October and that his ambition was to be elected president. He recalled his government's position that the entire Indian subcontinent, and not just Pakistan, must be nuclear-free. "We do not accept that (international) pressures be put on Pakistan alone," he said, despite the fact that India exploded a nuclear device in 1974.

The Pakistani minister is in Paris at the head of a delegation of Islamic Conference Organization (ICO) countries charged with briefing the five permanent members of the UN Security Council on unrest in the Muslim countries over the situation in Bosnia. The delegation—which is comprised of the foreign ministers of Pakistan, Senegal, Tunisia, and Turkey, as well as the ICO's secretary general—was due to be received by Alain Juppe Tuesday afternoon before proceeding to London Wednesday. Several members of the ICO—including Pakistan, Malaysia, Tunisia, and Bangladesh—have suggested to the UN secretary general that they make troops available to him.

Prime Minister: We Can Manufacture Nuclear Device 'Any Time'

BK0108110893 Islamabad THE MUSLIM in English 1 Aug 93 p 1

[Text] Islamabad, July 31—Caretaker Prime Minister [PM] Moinuddin Qureshi said here on Saturday evening that Pakistan's nuclear programme was vital defence. "The programme is in the stage where we can manufacture a nuclear device wherever, we need it," he said. [punctuation as published]

The caretaker Prime Minister was talking informally with a group of journalists after his news conference at the PM House.

To a query, the Prime Minister refuted the impression about the rolling back of the nuclear programme and said Pakistan could not afford to abandon its nuclear programme which was meant for the defence of country.

However, the Prime Minister said, "We will never develop a nuclear device," but he added whenever Pakistan was faced with a threat it could build a nuclear device any time.

When his attention was drawn to a statement of Pakistan's High commissioner for India, describing the relations between Pakistan and India at the lowest ebb, he did not agree with it and said Pakistan did not want to have bad relations with India, since a large number of Muslims were living in that country. "We want their welfare," he said.

The Prime Minister said we had asked the United States to use its influence on India to force her to have meaningful negotiation with Islamabad on Kashmir as Pakistan wants serious negotiations to resolve the issue so that funds could be spared for the welfare of the masses.

To a question about the delivery of F-16 planes, the caretaker Prime Minister said Pakistan had made substantial payment for these planes and these should be delivered to Pakistan without any further delay.

Editorial Reiterates Nuclear Policy Unchanged

BK3007130293 Islamabad THE PAKISTAN TIMES in English 30 Jul 93 p 6

[Editorial: "Pakistan's Nuclear Policy Unchanged"]

[Text] Talking to newsmen at the weekly briefing in Islamabad, a Foreign Office spokesman denied that the Pakistan had tested a nuclear device in 1987. He said that story carried by an international news agency about an interview given to an Urdu daily of London by the former Chief of Army Staff, Gen. Aslam Beg, had been distorted. He added that the General himself had refuted the report saying that he was misquoted. The spokesman further stated that, in his opinion, there was no such thing as a 'cold laboratory test' and the paper had wrongly attributed the statement to him. Ever willing to conclude a regional nuclear test ban treaty with India, Pakistan had again floated the proposal recently but it was rejected by India through Press statements about a week ago.

It is universally known that Pakistan has refrained from carrying out any nuclear test and has always been ready to conclude a regional nuclear test ban agreement. Such a proposal was first conveyed to New Delhi as far back as in 1987 but it evoked a negative response. Later, another proposal to achieve nuclear non-proliferation in South Asia through a five-nation conference was also rejected by India. Pakistan has repeatedly expressed its willingness to sign the Nuclear Non-Proliferation Treaty (NPT) provided India signs it simultaneously. This is what India has refused to do persistently. It had earlier offered the excuse that since it faced a threat from China, a nuclear power, it was not in a position to sign the NPT. But since China has already signed the NPT, India has no further excuse to offer. On the contrary, it has geared up its nuclear programme and now poses a threat to nuclear non-proliferation in the region. Confirmed reports indicate that it possesses vast stocks of unguarded plutonium which gives it the capability of manufacturing 200 atom bombs. In fact, it had already

crossed the nuclear threshold prescribed in the Nuclear Non-Proliferation Treaty by exploding a nuclear device in 1974. It is now testing missiles which have the capability of carrying nuclear warheads. This shows that India has hegemonistic designs and nurtures the ambition of becoming a superpower in the region. On its part, Pakistan is pursuing a nuclear programme only for the purpose of processing nuclear energy for its needs. It is not Pakistan's but India's nuclear programme which needs to be rolled back for the peace and security of the region. The world community must take serious notice of the inconsistent and belligerent stance adopted by New Delhi on the nuclear issue and put pressure on it to see reason. India must not be allowed to defy world opinion and go against the worldwide trend towards disarmament—both nuclear and conventional.

Construction of Water-Type Nuclear Reactor To Begin 31 Jul

*BK3007124593 Islamabad THE NEWS in English
30 Jul 93 p 1*

[Text] Islamabad—The first concrete pouring into building of 300 megawatt Pressurised Water-Type Reactor will be held at Chashma Nuclear Power Plant, near Mianwali on Sunday. This will mark the beginning of construction of the main reactor of the plant which on completion will be the second after Karachi Nuclear Power Plant (KANUPP) which was commissioned in 1972.

This, according to experts, is a breakthrough in Pakistan's sustained efforts to step up share of nuclear power in the overall regime of electricity generation to mitigate acute shortage of energy which the country has all along been facing.

The ceremony will be jointly performed by the Chairman, Pakistan Atomic Energy Commission (PAEC), Dr Ishfaq Ahmed, and chief of China's National Nuclear Corporation, Jiang Zinxiong. The Chinese and Pakistani scientists and engineers associated with the project will also be present on the occasion with senior officials of the PAEC.

It may be recalled that the contract for supply of Nuclear Power Plant by the People's Republic of China was signed in Beijing on December 31, 1991. Excavation for civil work of the plant began on December 26, 1992.

All the excavation work for nuclear and conventional islands of the plant, including installation of 42 tubewells for O-watering to lower the water table in the project area, has since been completed.

The Preliminary Safety Analysis Report (PSAR) which is a prerequisite for obtaining the construction permit of the plant was submitted to the Directorate of Nuclear Safety and Radiation Protection (NSRP) in December last year. The first PSAR defence meeting held in Shanghai was attended by representatives of NSRP, NNSA, the regulatory body of China's Shanghai Nuclear Engineering Research and Design Institute (SNERDI) and the Pakistan Atomic Energy Commission.

Besides construction activity at the site, training of engineers in various specialities of Pressurised Water-Type Reactor Nuclear Power Plant design and engineering is currently in progress in China.

Chashma Nuclear Power Plant engineers are participating in the designing of the plant being carried out at SNERDI and East China Electric Power Design Institute (ECEPDI) in Shanghai.

On completion, Chashma Nuclear Power Plant will be an upgraded version of China's Qinshan Nuclear Power Station which started producing electricity in 1991. The plant will also have upgraded safety and efficiency features.

Pakistan has already placed this plant under International Atomic Energy Agency (IAEA) safeguards according to the conditions of the contract.

Pakistan and IAEA signed a contract for application of Agency's safeguards on Chashma Plant in February 1993. The contract was signed by the Chairman, PAEC and the Director General of IAEA, Dr Hans Blix. [graph as published]

It may be mentioned here at present there are 425 power reactors in 30 countries contributing about 17 per cent of total electricity generation in the world. This share has increased steadily over the years, but the projections of nuclear power growth made by the International Atomic Energy (IAEA) have rather overestimated the actual achievements.

The United States remains the leader in the generation of nuclear power. This can be gauged by the fact that in the period 1970-1990, the nuclear share in the US electricity generation increased roughly from 2 to 17 per cent.

It may be pointed out that the know-how which will become available from the implementation of Chashma Nuclear Power Plant [NPP] Project would be invaluable. Pakistan is thus will placed for establishing more NPP with increasing local participation.

Commonwealth of Independent States

Joint Control of Nuclear Forces Essential

*PM0308161993 Moscow ROSSIYSKAYA GAZETA
in Russian 4 Aug 93 First Edition pp 1-2*

["Commentary" by Deputy Desk Editor Vyacheslav Kocherov: "Creatures Born To Fly Can Also Spread Across the Face of the Earth"]

[Text] A briefcase has been quietly spirited away, as they say. Not at Kazan Station [notorious for thefts], however, but from Marshal of Aviation Yevgeniy Shaposhnikov's office. And not a briefcase full of clothes, but the one containing the nuclear button. As a result the levers of Strategic Forces command and control have passed to the complete and undivided possession of the Russian minister of defense. In the flurry of events of differing significance the incident of the complete "privatization" of the nuclear button has gone almost unnoticed by the public and has not given rise to any serious objections from the CIS member states.

Although previously adopted documents on this matter confirm that the CIS participants jointly formulate policy on nuclear issues and recognize to an equal extent the need for joint command of the Strategic Forces and the preservation of joint control over nuclear weapons and other types of mass-destruction weaponry, it is Russia, however, that retains the dominant place in the collective security system. The point is that those with access to the nuclear button—apart from the commander in chief of the CIS Joint Armed Forces [JAF] and the presidents of all the states with nuclear weapons located on their territory—included the Russian defense minister, since the Strategic Rocket Forces commander in chief and the CIS JAF deputy commander in chief for this area of responsibility was first and foremost a deputy defense minister.

And there is an explanation for this. Seventy percent of mass destruction forces and weapons systems are located in Russia, which is responsible to the world community for them. Incidentally, Moscow, not Kiev, is the site of the defense ministry to which the tried and tested threads of control of a unified diabolical machine ready to spring instantaneously into action at the first signal from the nuclear button stretch from all corners of the former USSR. And the people with the best understanding of the machinery of these interconnections are the commanders in chief of the branches of the Armed Forces of the Russian Defense Ministry located in the same building on the Arbat which used to house the USSR Defense Ministry.

Taking this factor into account, last year the presidents of the CIS states adopted a wise decision: Each commander in chief of a branch of the Armed Forces would have to perform the duties of CIS JAF deputy commander in chief for his own area of responsibility. If this decision had been implemented in practice, it would have been possible to save the unified air defense system

from disintegration and we would not have the current Black Sea Fleet problem—a problem supremely stupid in form and tragic in content—since the Navy commander in chief would still be the single and indivisible commander of all the fleets and flotillas. In brief, a unified organism of the most important armed forces systems would have been preserved despite the parade of sovereignties. As for access to the nuclear button, which had become more of a subject of political games by that time, the presidents of Belarus, Kazakhstan, and Ukraine had real access to it on an equal basis, and only by agreement with them could the president of Russia make a decision to use the weapons.

Strange as it may seem, however, it was Russia which was the first to disagree with this approach to solving the collective security problem. Not even six months had passed after General Maksimov, commander in chief of the Russian Strategic Rocket Forces, had been appointed deputy commander in chief of the CIS JAF when, by presidential edict—without explanation and without consultation with the other heads of state—he was released from the post of rocket forces commander in chief and Russian deputy defense minister and, as a consequence, was no longer able to perform duties in the CIS JAF High Command since he no longer had the corresponding services, personnel, and command and control centers under his jurisdiction.

Many military experts believe that this was done with just one aim—that of removing the commander in chief of the Strategic Missile Forces from the CIS JAF High Command. We also have the Russian defense minister's opinion on this point: No kind of leadership of the Strategic Forces can be exercised by the CIS JAF High Command. Why not? Because, in Grachev's view, command and control of these forces on the territory of Russia and Belarus is already exercised by the Russian Defense Ministry. As for the nuclear forces of Ukraine and Kazakhstan, their state affiliation must be determined on a bilateral basis, but the possibility must be examined in the near future of unplugging the neighboring groupings from the system of centralized combat command and control of the Strategic Nuclear Forces.

How is this stance to be explained? Maybe the defense minister is motivated by his native peasant gumption, thinking that this way it will work out "cheaper" for us? But no, the 14 February 1992 Agreement Between the CIS Member States on the Status of the Strategic Forces stipulates that these forces must be maintained out of fixed contributions by all the signatory states. So now, it seems, Russia alone is taking the burden of their maintenance on its own shoulders?

Judging by General Grachev's stance, new upheavals await us in the near future, this time connected with the sharing out of the Strategic Forces, with all the ensuing consequences. The "expropriation" of the nuclear briefcase confirms yet again that Russia, regrettable as it may be, is looking more and more unreliable from day to day

as a partner both for the so-called nearby foreign countries and for foreign states proper, since it is Russia that is violating the Treaty Between the USSR and the United States on the Reduction and Limitation of Strategic Offensive Arms, the Lisbon Protocol to which stipulates that "the nuclear arms of the former USSR will remain under the secure, strict, and reliable control of a single joint command."

In the opinion of a number of military experts, in response to Russia's unilateral actions with regard to the Strategic Forces, Belarus and Kazakhstan could declare their own status as nuclear states, despite the fact that Nursultan Nazarbayev is the most consistent advocate of integration in the military sphere. Incidentally, such attempts can already be observed on the part of Ukraine.

What is the way out of this situation? In the view of many officers whom I have spoken with both at the Defense Ministry and at CIS JAF headquarters, what should be done is to take the path of setting up a small staff (in the form of a Nuclear Planning Committee) for command and control [upravleniye] of nuclear forces, under the joint command of the CIS JAF and with the participation of representatives of Belarus, Kazakhstan, Russia, and Ukraine. And the leadership of this staff should be vested in the Strategic Rocket Forces commander in chief. That is to say, the best option is a return to the wise decision by all the presidents last year, concerning the dual subordination of the commanders in chiefs of branches of the armed forces. That is the view of the majority of sensible high-ranking military men in Russia.

As for the reaction of the defense ministers of the CIS states to the situation concerning the leadership of the Strategic Forces, we will presumably learn what it is next week, when there is to be a meeting of the council of defense ministers to examine the questions of the CIS JAF commander in chief and the commander of the Strategic Forces. It remains to be hoped that the defense ministers will find a mutually acceptable solution to the problem that has arisen.

Russia

Dealings in Nuclear Materials Detailed

Investigative Report

93WP0209A Moscow NOVAYA YEZHEDNEVNAYA
GAZETA in Russian No 17, 16 Jul 93 p 3

[Investigation report by NOVAYA YEZHEDNEVNAYA GAZETA: "An Atom Bomb for Private Ownership May Be Purchased in Russia"]

[Text] We will repeat the heading: An atom bomb for private ownership may be purchased in Russia. It may be obtained in its entirety, and the commodity may, if there is a shortage of cash or a great desire to make it oneself, be obtained piece by piece. We will undertake to prove

that a bomb or its components are a commodity. We ascertained this in the course of a two-month investigation, acting as representatives of an important foreign businessman. We are sorry, but we are forced to omit from this piece of reporting a number of details, names, and addresses lest some maniac make use of the facts we have assembled and one fine day declare himself a nuclear power. But you will see photographs of the "products" and expert-appraisal certificates in the series of our reports.

The Sellers

There is in the CIS quite a ramified network of "ventilators"—dealers in rare earths, platinum and gold waste, beryllium, osmium isotopes, and, finally, so-called "red mercury." The business is considered highly profitable, although more often than not the ventilators deal in air, bluff, take a deposit, and are off to the races with it.

Any ventilator can pull from his pocket a tattered certificate confirming the quality of his red mercury, although such a substance simply does not exist in nature, and the certificate has been purchased in the Giredmet Expert Institute or forged.

In their spare time, the ventilators may deal in chocolate and strike up a friendship with top functionaries of Russia (like Sadykov, director of the Yekaterinburg Promekologiya concern, who won the permission of Yeltsin and Burbulis to export this same mercury).

But some deals work out well for the ventilators. Former military personnel, employees of weapons plants, officials of defense ministries and institutes, and retired officers of the special services are often encountered in their distrustful ranks. Getting into the ventilator chain is difficult but possible. We got in.

As a rule, ventilators steal the radioactive material and rare earths. They sometimes export them in the guise of scrap metal, and we know of an instance of a whole container with the rarest material used as a detonator for a nuclear device being written off from a secret enterprise. It was simply believed to have disappeared at the time of a fire.

Thanks to the ventilators' well-established connections, there is always information concerning technological innovations of the military-industrial complex—in the course of one deal, we were offered an antiradar aircraft coating. This system was employed by the Americans in constructing the invisible Stealth aircraft. We were then shown the container with the commodity.

Customs in the ventilator system are quite strict. If one of them manages to palm off onto another in the guise of plutonium clay packed in lead and the fraud is uncovered, the guilty party is hit with a penalty—stiff fines. There is also the "reflex camera," in which partners are responsible to one another for an equal amount of money. If, say, one of them demands as a deposit \$5,000, the second has the right to demand of him the transfer of

the same amount to a third party. If, however, the quality of the commodity is not confirmed...One of our "partners" once disappeared. Only a week later did we learn that his companions, whom he had cheated, had taken him hostage until the fine had been paid. He declined our assistance in getting him released—once you violate the rules of the system, you cannot return to it.

The ventilators make all payments in hard currency only. Speaking about rubles is considered simply improper, although there have been instances of payments at the exchange rate. According to them, some have accounts in foreign banks, and they have their own ventilators and bankers facilitating the movement of money. They very rarely take the entire sum in cash, preferring to receive about 10% in "actual cash" and for the rest to be transferred to the bank.

They export via the Baltic. Until the "merchandise" has been delivered, a dealer remains a hostage with the customer. Ventilators do not specialize in any one commodity; they are prepared to deliver whatever you like if they feel that the client has the money. At a "verification" meeting, we had hardly displayed a clear interest and proven our solvency before we were offered a consignment of weapons-grade plutonium.

Dirty Bomb

At the appointed time, equipped with radiation monitors and protective clothing lent by the Moscow branch of Greenpeace, we were in an unobtrusive office in one of Moscow's most prestigious districts. The mission was to obtain a sample of a commodity—a lead container with several grams of plutonium—for analysis. The seller pulled from a safe a lead tube flattened out at one end. The radiation monitor crackled furiously: In 10 seconds, the level of beta radiation had gone 2,000 times above normal! We were offered as packaging a cardboard box that had held pastries.

The results of a gamma-spectrometric analysis:

americium-241
uranium-237
plutonium-241
europium-154
thorium-232
uranium-238
cesium-137.

Conclusion: The sellers were passing off something else as "pure plutonium." But in scientists' opinion, the contents of the container represent "an Irish terrorist's dream," an ideal product for the manufacture of a radiological or, simply put, dirty bomb—the plutonium would be perfectly sufficient to contaminate one-fourth of Moscow.

In such cases the rules are rigorous, and we stuck to them. There was a tough conversation with the sellers. As compensation for the lost time—24 hours—we were

offered \$1,000 or a consignment of the "real" merchandise. The length of time was a week. Meanwhile, it was reported from the Moscow suburban city of X that a consignment of uranium was already waiting for us.

The NOVAYA YEZHEDNEVNAYA GAZETA investigation concerning the purchase of nuclear weapons will be continued in a coming issue.

Further on Supposed Trade

93WP0210A Moscow NOVAYA YEZHEDNEVNAYA GAZETA in Russian No 18, 21 Jul 93 p 3

[Report by NOVAYA YEZHEDNEVNAYA GAZETA Investigative Service: "In Russia One Can Acquire a Nuclear Bomb for Personal Possession"]

[Text]

Uranium in Saucepans and Milk Cans

There was indeed uranium waiting for us. In a milk can filled with lead for safety's sake. The uranium pellets had been pilfered from an enrichment plant, where a considerable part of the city's population works. Despite the fact that the plant itself is a top security installation, sentries, several rows of barbed wire, OMON (Special Designation Militia Detachment), its own security service. At the entrance checkpoint, there were metal detectors and radiation measuring devices, and television cameras were in the most unexpected places. Still, people bring things out.

Residents of city N are not afraid of radiation: "If we are still alive, nothing is going to happen to us now." In city N every kid knows about "hot" waste disposal sites, contaminated trucks and tractors, and forests surrounded by barbed wire with signs that say, "Stop! Danger Zone." There are rumors of a special psychiatric hospital where underground facility workers undergo treatment for years. In a city where nobody pays attention anymore to the unbearably yellow smoke coming from the city's smokestacks, people look at uranium pellets in as calm and businesslike a manner, just as a carpenter looks at a log.

The plant worker with whom the intermediaries brought us together was not particularly forthcoming on the methods of taking the pellets out of the plant: "They are carried in saucepans, too," he said. He added later that right now he only had 10 kg in his possession, but if needed, he could bring out more. Then he left to get a couple of pellets out of the milk can hidden in the garage and bring them in a home-made container.

The result: We did indeed get pure uranium-238. The degree of enrichment, however, was closer to fuel-grade rather than weapons-grade uranium. After Chernobyl, however, no one needs to have it explained what several kilograms of "reactor-grade" uranium means.

We did not even bring up the subject of a fine with the seller. He was simply trying to break out of poverty. It so

happened that he found a job in the uranium enrichment plant. Had he worked in a meat-processing plant, he would just as cautiously offered us ecologically clean ham.

"The Plutonium Is Here; We'll Cut Off a Piece in a Moment"

Meanwhile, the "system" kicked into high gear for us. Raw materials began to arrive from hiding places and secret depositories. The sellers, who previously tried to palm off spent fuel to us, informed us at the next meeting: "All right, we got your 242." This means that another shipment of plutonium has arrived in Moscow from Siberia. The subsequent chain of events was something a normal person could hardly even imagine.

The seller, digging into his safe, pulled out a lead sheet folded envelope-fashion. Fiddling with it for a few minutes, he pulled out of it a fragment of a metal plate coated, he said, with a layer of weapons-grade plutonium. The plate was about the size of a cigarette pack and 2-3 millimeters thick.

"I cannot give you the entire plate," he informed us. "It costs too much."

We refused to put down a deposit. Then the seller, armed with a hammer and cutting pliers, in front of our very eyes in a matter of 20 minutes broke off a piece weighing about six grams. It turned out later that dust particles from the scandium layer flew around the room. Then he put a dosimeter against the plate. "Ten times higher than the natural background," he said proudly and asked whether we had a container. We did not. He sighed and, armed with a chisel, chopped off a piece of lead. Then he folded it into some semblance of a pipe and put the plate into it. The dosimeter was chirping like crazy, but we already felt like those workers from the uranium combine.

The analysis showed plutonium.

To get one kilogram of plutonium, however, would take at least 80 kg of plates. We were offered 1.8 kg on the spot, 25 later, and a promise to deliver any quantity after a prepayment.

Enter the Boss

The meeting was attended by our "boss," an almost full-fledged American, Roger Cook. Roger decided to play it up for us: The silver Volvo-940 gave the boss's entry the needed look of authenticity, while his knowledge of financial affairs made the sellers believe in the seriousness of our intentions. (Let us mention at the outset, however, that as a full-blooded American who likes to make money, Mr. Cook could not resist the temptation to tell ITN (International Television Network) that he had witnessed a unique deal, in the course of which he was offered 25 kg of pure weapons-grade plutonium. The largest agencies in the world treated it as a big sensation.)

The overseas buyer's dialogue with our sellers deserves separate attention.

Buyer: The goods are mediocre, of course, but if there are sufficient quantities, we will probably be interested.

Seller: We have almost 2 kg.

Buyer: I need more, about 25 kg.

Seller: We have to consult...

Buyer: How much do you want?

Seller: It will be \$45,000 per kg, delivery included.

Buyer: Where?

Seller: We can do it in Vilnius. But you will have to pay in cash.

Buyer: Nobody carries that kind of money in a suitcase.

Seller: Right. Therefore, you pay 20 percent here in cash, and the rest put in our account in the Union Bank in Finland.

Buyer: The goods are interesting, of course, but this is not what you promised.

Seller: We have been deceived; a consignment of pure weapons-grade plutonium is being prepared specially for you right now in Tomsk-7.

This meeting ended up with one more surprise. The seller left the room; when he returned, he was dragging an extremely heavy jar resembling the kind of jar used for pickling tomatoes, but it was filled with lead. As proof of the quality of the goods, he even produced a certificate for a uranium-plutonium mix. The "uranium-plutonium" mix produced such a background that it sent the dosimeter screaming again.

We simply refused to purchase this material because the risk of opening the "jar" and taking our sample from it was just too great.

Californium and Other Remote Foreign Items

The next sellers appeared unexpectedly. They simply called on the phone and told us that another Moscow entity has had in its possession for already half a year a container with a highly active substance quite suitable for making a detonator for a nuclear bomb.

"No problem," the owner of the goods told us, sitting comfortably in an office located in plain view of one of the Moscow militia administrations. "Here is a certificate of quality with a detailed description of both the size and weight of the item."

He showed us a quite official certificate for californium-252, a highly radioactive, extremely rare, and quite expensive substance. Our objections with respect to the unusual nature of the goods did not particularly concern

the seller. Neither, as a matter of fact, did the suspicion that it had been obtained in some criminal way.

"There was a fire at the enterprise, following which about 1.5 kg of this product was simply written off the books, considered lost. So nobody is searching for it, and you will not be charged with any criminal action. I have a lot of friends in one of the rocket forces' military academies. They will open this thing for you, conduct a detailed certification, and give you all the data."

He would not give us a sample, though.

"You see," said the seller, "there is only 6.5 grams in this container. I simply do not know how many hundreds of thousands worth you will "clip" for the analysis."

For reference, a gram of californium-252 costs \$1.2 million on the world market.

That exactly the same certificate had been brought to us by colleagues from Austria did not impress the seller at all:

"There are few buyers—this is a very special item. So this certificate has been already circulating in Europe for about eight months."

The owner of the goods came to see us the next day, told the details of the analysis, and expressed willingness to bring the item on his own to Germany.

"Put down 30,000 and the container is yours," he said. "You have to understand, I have been badgered for half a year already by the people who stole it from the production plant; I have spent a lot of money to bring it to Moscow, but there is no buyer."

Back to Plutonium!

After a week's silence, an enterprise that had tried several times to sell us "substandard" goods finally woke up. The telephone conversation was brief and quite impressive:

"We have got our hands on a container of weapons-grade plutonium. It is somewhere in the vicinity of Ryazan right now, but it will be in Moscow tomorrow."

The next day we were told all the details of the "trip," including how the container was transported in a gasoline truck with Ukrainian plates and how, in an effort to "draw" a sample of the goods for us, they broke cipher locks and took several grams of the substance. Then the goods disappeared. Telephone calls every half hour produced nothing, until finally we were told that the goods had been seized by the KGB. Its owners managed to escape undetected, though. To be honest, it was a typical "ventilator" story.

"Oh, well," one of the intermediaries shrugged it off, "a regular 'airborne paratroop'—just moving air back and forth. They do not know what they sell. They heard from someone that you can make big money selling plutonium, so they try to sell anything that is remotely

radioactive. Although it is quite possible that absolutely by accident they will indeed come across real plutonium. Things get stolen right and left."

The Bomb

A bomb was offered to us matter-of-factly as easily as they sell socks in a sundry shop. If you are not happy with californium and the antiradar coating, said the seller, we do have a whole warhead from an SS-20. He showed us a photo: There it was, a nuclear warhead, peacefully sitting in a garage against a background of canisters. (True, we had never seen one before, and therefore we were ready to believe.)

"One hundred fifty thousand dollars, and you can take it with you," said the seller, "it is right here, in Moscow."

CERTIFICATE OF QUALITY of a nuclear reactor product

Product name: uranium-plutonium mix

$UO(238) + UO(235) + Pu(239) = 1,000 \text{ g}$
 $70\% + 10\% + 20\% = 100\%$

Result of product mass analysis

Contents of Pu(239) in the uranium-plutonium mix—
20%

Product quantity—1,000 g

Proportional weight of Pu(239) in the mix—200 g

Quantity of impurities in the product—0.01%

No nuclear disintegration products detected in the mix.

ATTENTION !!!

Do not allow the container to be jolted in transportation.

(The NOVAYA YEZHEDNEVNAYA GAZETA investigation will continue in September.)

Further Reportage on India Rocket Deal Cancellation

Glavkosmos Head Criticizes

93P50259A Moscow KOMSOMOLSKAYA PRAVDA
in Russian 31 Jul 93 p 5

[Sergey Ivanov article: "They Went to So Much Trouble"]

[Text] "*When two great states, Russia and India, sign an agreement, then no third party can prevent us from fulfilling it. And therefore we will deliver cryogenic engines to India.*"—B.N. Yeltsin, 28 January 1993, Delhi.

"Upper Volta with rockets," said Margaret Thatcher in her time. She had missiles in mind, missiles peering out of their silos like a middle finger sticking out of a fist at an enemy. They were turned back according to a mutual agreement for peaceful purposes, but one commercial

little finger, so to speak, grew up—peaceful space travel, an area in which Russia is ready to sell anything to anyone, for a good price.

On 18 January 1991 Agreement No. 800/1-50 was signed between the then-USSR Glavkosmos and the Indian Space Research Organization. It dealt with the delivery of cryogenic orbital transfer stages to India, which wanted to sail the seas of space. The first stage of the deal was worth \$210 million; with the next stage it would total \$350 million. After some well-known events, Russia declared itself the legal inheritor of the profitable agreement and methodically carried out the contract until 16 July of this year. The day before that, a document, turgidly entitled "Memorandum of Understanding Between the Government of the Russian Federation and the Government of the United States on Existing Contracts," was signed by both sides in Washington. But the text of the memorandum specified a certain third participant: "The Parties agree to promptly stop any participation by citizens or representatives of third countries in carrying out such contracts..." For Russia, the document was signed by Russian Space Agency General Director Yu. N. Koptev.

What does this have to do with India and the cryogenic agreement? The Russian Federation Foreign Ministry made it clear when it sent a note to Delhi the very next day saying: "As a result of unforeseen circumstances, after 16 July of this year Glavkosmos will be unable to continue to fulfill its obligations under Agreement No 800/1-50 of 18 January 1991 with the Indian Space Research Organization, specifically, that part of the agreement dealing with the transfer of technology and production equipment. This situation has arisen due to the decision of the Government of the Russian Federation in connection with perfecting controls over exports from the Russian Federation of materials, equipment and technologies used in the development of missile technology..."

Glavkosmos Chairman A.I. Dunayev declared that he was ready to be interviewed the very minute a correspondent was able to get to his office from our editorial office.

[Question] Aleksandr Ivanovich, a simple question: Explain the situation with the Indian agreement.

[Dunayev] Since as of today there have been no orders or directives from the government to Glavkosmos, we are acting in accordance with the obligations we have taken on and in accordance with the declarations made at various times by Burbulis, Khasbulatov, and Yeltsin while visiting India. Until the beginning of July, or, more precisely, until the Big Seven meeting in Tokyo, the position of our government, approved by the the country's president, was the for complete fulfillment of the Indian contract. The Americans, as is known, had their own opinion. There were five or six rounds of talks between Russian and U.S. representatives on this

problem. The Americans were irreconcilable: "We demand that the deliveries of space technology under this contract be stopped."

[Question] And what exactly were they accusing us of and what was their basis for it?

[Dunayev] They claim we are guilty of violating the Missile Technology Control Regime. We have our own arguments. Cryogenic engines cannot be used in combat missiles, so they do not come under this limitation. I have a package of technical conclusions by leading specialists. Anyone can acquaint himself with them. For instance, here is a document from the deputy chairman of the Russian Federation Defense Industries Committee, where it clearly says: "...the engine cannot facilitate the development of nuclear weapons delivery systems." Here is yet another declaration, signed by First Deputy Defense Minister Kokoshin. I quote: "The Russian-Indian agreement will not enable India to produce nuclear weapons delivery systems."

I have a great many such documents. It is necessary to specify that Russia is cooperating with India in developing the GSLV rocket. In tandem, India is developing PSLV rockets, which can place a payload of up to 1.2 tonnes into orbit. The engines for them are French, under license. This rocket corresponds to the level of powerful U.S. ICBM's. Why is America silent about these engines?

It is completely obvious to me that this is not a technical question, but a political and economic one. The fact is, they want to squeeze us out of India. And if this happens, although I know that the government is already considering a draft statute on missile technology export controls, then an entire complex of questions will arise. How will India cooperate with us in space? What form will trade and economic relations with that country take? What image will Russia have? And what about our domestic problems? More than 65,000 specialists are working on just this one contract. Overall, about 100,000 people are employed in cooperation with India. I am not even speaking of the fact that the penalty for abrogating the contract may be as large as the entire value of the contract.

[Question] The United States is suggesting a serious alternative to the Indian project. Plus appropriate economic assistance.

[Dunayev] They tell us that, in exchange for dropping cooperation with India, they will invite us to work on several NASA projects, and that After October 1994 they will allow us into the space market and even into the space station Freedom—easy money.

Here are greetings to us from America, from Academician Roald Sagdeyev, in today's issue of THE NEW YORK TIMES: "Consideration of the space station Freedom in the House of Representatives was crowned with a hard-won victory. The members of the House of

Representatives were not inclined, despite the recommendation of the White House, to develop business cooperation with the Russians in connection with the space station project. The reason is probably that they are afraid of losing jobs in the United States."

Thus one cannot say that they waiting for us in the Western market. And I see no softening on the American side. It is necessary to cooperate, it is necessary to reach agreement, but on other principles, on a equal basis. And not to wait for a sop.

After This Issue Went to Press ITAR-TASS—The most recent declaration from the Indian side shows that Delhi understands the motives for the changes which we "were obliged to make in the agreement on cryogenic engines," said Grigoriy Karasin, director of the press and information department of the Russian Federation Foreign Ministry, in a briefing yesterday. He expressed the hope that "this necessary step by Russia will not affect Russia's many-sided relations with a great Asian state which is our good neighbor."

[Editorial note: The article is accompanied by a partial facsimile of a document headed "Russian Federation Council of Ministers-Government: Decree on Questions of Missile Technology and Equipment Export Controls," and signed "V. Chernomyrdin, Chairman of the Russian Federation Council of Ministers-Government." The following passages from the document are shown: "3. To temporarily halt any transfer to foreign companies or organizations of rocket technology and specially designed production capabilities for the development and production of rockets, until completion of analyses and amendments to the contracts specified in Point 1 of this decree...The Russian Federation Export Control Commission attached to the Russian Federation Government, and the Russian Federation Ministry of Foreign Affairs, are directed to report the specified data and information to the U.S. State Department, respectively, by 1 September 1993 and by 1 December 1993."]

News Conference on U.S. Talks

LD0508173493 Moscow ITAR-TASS World Service in Russian 1505 GMT 5 Aug 93

[By ITAR-TASS correspondent Veronika Romanenkova]

[Text] Moscow, 5 Aug—Something that is dubious from the point of view of security should not be developed. This approach was used at the recent Russian-American talks in the United States regarding the Russian-Indian contract to sell Russian cryogenic engines and technology. As a result, a package of documents has been prepared for a meeting between Russian Prime Minister Viktor Chernomyrdin and U.S. Vice President Albert Gore scheduled for the beginning or middle of September, Yuriy Koptev, general director of the Russian Space Agency, said at a news conference today.

According to the specialist, the contract envisages the transfer to India of Russian technology that can be used

in the manufacture of military missiles. The contract, he added, contradicts the international agreement on monitoring the export of equipment and technology for missiles with nuclear warheads, signed in 1987 and whose regime is being observed by 23 countries at present.

Vladimir Pivnyuk, a specialist-expert of the government department for the defence complex and conversion, thinks that Aleksandr Dunayev, head of Glavkosmos [Main Space Directorate], was "the number one culprit" in the fact that the Soviet-Indian contract initially contradicted this regime and that recently, feelings were running high over the contract. Vladimir Pivnyuk stressed that perhaps, "apart from the Indian deal," there were other similar treaties, since lately "there has been no control over foreign economic activity." However, they are being specially checked at present. Ways are being sought to bring the Soviet-Indian contract in line with the international regime. The expert called a possible compromise the first step toward enabling Russia "to join the regime club" so that in the future it could be represented on the world market of space technology and services.

Space Competition Agreement Discussed

93WP0216A Moscow KRASNAYA ZVEZDA in Russian 31 Jul 93 p 4

[Article by engineer A. Andronov: "It Is Easier To Penetrate Outer Space Than the Market"]

[Text] **The launch of commercial space satellites is acquiring continuously increasing popularity in the world. This is both a lucrative investment of money and enormous profits. What is Russia's place in the international outer space market?**

The lion's share of orders for the production of satellites here belongs to the United States, but the countries of Western Europe, headed by France (space-launch vehicles of the Ariane family), dominate in the sphere of space launch services. As for Russia, after numerous working meetings, a certain preliminary agreement has been drawn up that is now being discussed widely in the Western press. Its main point is:

Russia is permitted to conduct not more than eight launches of the Proton space-launch vehicle to put foreign payloads into geostationary orbit. This is the plan to the year 2000—that is, calculating one launch per year.

The difference between the cost of a Russian and a Western rocket must not be more than 7.5 percent of the price level established by Western competitors. Yes, the West is afraid of our low prices in conjunction with the RK's [space-launch vehicle] high performance characteristics. But a question arises on how to orient oneself here, if at the moment that negotiations are being conducted, the price of the competitors most often remains a secret.

One other condition is the continuation of negotiations on the nonproliferation of rocket technology. In practice, this means, for example, breaking a contract, which is beneficial to us, for the delivery of cryogenic rocket engines to India.

It is interesting to note that China, which has been launching commercial satellites since 1990, is not experiencing such strict restrictions on the part of the United States, probably because it possesses far more modest capabilities in this sphere that do not arouse particular concern in the West. The Russian-American agreement was met with great satisfaction by representatives of a large part of the rocket construction firms of the United States and Europe, inasmuch as it will reduce to a minimum Russia's influence on the space technology market right up until the beginning of the next millennium.

We cannot under these conditions demonstrate the obvious advantages of our rockets: low cost and high reliability and the practicality of preparation. As has been said, the Americans have stipulated the price level and the intensity of launches, and Western experts expect that, with the passage of time and to the extent that there is a drop in labor productivity, discipline, and quality of work, the high reliability of Russian rockets will be lost. Well, this also cannot be ruled out. Already in May of this year, the launch of Proton, our main commercial rocket—one of the most reliable in the world—was unsuccessful. At the same time, the Americans hope to create their own heavy space-launch vehicle by the beginning of the 2000's, inasmuch as for the time being they have nothing in this class to oppose our Proton.

However, it is naive to expect a favor from the Americans. But Russia still has enough capabilities to occupy a place in the international market that is consistent with its status. The most rational way is to learn how to build, within the framework of conversion, competitive communications space apparatuses that Russia could launch in the interests of other countries without American licenses. Negotiations are being conducted right now with foreign firms about the lease of Russian communications satellites of the Gorizont type that have been placed in geostationary orbit over the Asia-Pacific Ocean region. It is important for us to take the first steps.

Udmurtiya Worried About Lewisite Stockpiles

*MK3107090093 Moscow FEDERATSIYA in Russian
31 Jul 93 p 1*

[Unattributed report under "Izhevsk" rubric: "Russia's Chemical Weapon Stockpiles Subject for Destruction Are Approximately 40,000 Tons. Of This Amount, 11,000 Is Stored in Udmurtiya"]

[Text] The problems related to this were discussed at a press conference held by German Frizorger, acting chairman of the Udmurt committee on destruction of chemical weapons; Nikolay Zabrodin, the republic's

sanitation service chief; and Vyacheslav Gurov, chairman of the ecology committee.

For three years, a debate has continued on what is to be done with lewisite stocks in Kambarka. No decision has been made yet, and no funds have been allocated. The people are worried because the warranty period for storage of the lethal stocks is nearing its end, while no technology has been developed for the processing or destruction Russia's sole lewisite arsenal. Who is to decide on these questions? It was the opinion of participants at the press conference that Udmurtiya itself cannot cope with their solution on its own.

DPRK Loggers Allegedly Steal Uranium in Khabarovsk

Local Citizens Maintain Allegation

*OW0308134393 Vladivostok Radiostantsiya Tikhii
Okean Maritime Network in Russian 0715 GMT
3 Aug 93*

[From the "Pacific Ocean" Program]

[Text] Inhabitants of Verkhnebureinskiy Rayon of Khabarovsk Krai maintain that North Korean loggers working in the area have opened concrete sealed uranium adits located near their settlements. This forgotten raw material was taken off in an unknown direction and has, in all probability, somehow been conveyed to the DPRK. Witnesses to these criminal acts by the North Korean citizens for obvious reasons prefer not to publicize their names; however, it is known that many Verkhnebureinskiy residents who were in the taiga saw the bustling Koreans near the open adits.

Did the official Korean representatives, leaders of the logging operations, know about this? So far, there are no answers to these questions.

Deputy Minister Views Claims

*93WP0202A Moscow MOSCOW NEWS in English
No 26, 25 Jul 93 p 4*

[Article by Andrey Kolesnikov: "Russian Uranium for Korea?"]

[Text] *The Deutsche Welle radio station investigated rumours that "North Korea, with connivance or direct complicity by Russian authorities, has been taking uranium ore out of Siberia."*

Deutsche Welle reported, that the suspicions have been confirmed by the investigation. Oleg Kryuchok, the radio station's correspondent, discovered that "practically all the Korean timber camps in Siberia are located on territories which amount to uranium anomalies. Special lead containers are brought from North Korea to timber-felling sites in Russia, and are hidden on the camp's territory...Then, at night, as a rule, under the close supervision of the Korean secret service the North Korean

loggers use ordinary spades without any precaution measures to load uranium ore into containers and camouflage them either in logs prepared for dispatch to the DPRK or simply hide them under these logs. In the morning the train with timber sets out for the Russian-Korean border where, after a cursory customs examination, not including a check for radioactivity, all the documents are registered in a few minutes, permitting the train to continue to the DPRK..."

One finds it exceedingly difficult to tear away from the literal quoting of this information, where every letter carries weight. Being unable independently to appraise the scope of the sensational report, an MN correspondent turned to the main curator of Russian uranium, Nikolai Yegorov, Deputy Minister of Atomic Energy. He was greatly impressed by the investigation. The deputy minister requested the summary of Oleg Kryuchok's investigation in "Air-digest" to be passed on to him as soon as possible, so that he should be able to familiarize as many staff of his department as possible with it. "This kind of information will be of interest for everyone," Nikolai Yegorov said in a telephone conversation with the MN correspondent and only after that, barely having

been able to come to, did he agree to comment on the report. The spades with which uranium ore was loaded into lead containers made on him the greatest impression. The deputy minister kept asking the MN correspondent what explained the need for these containers if, prior to Deutsche Welle's investigation, the ore presented absolutely no radioactive threat to anyone. Then he started counting how much of this ore, in which, according to his data (varying, incidentally, roughly 20-fold from Oleg Kryuchok's data), there was 0.2% of natural uranium, in which 0.7% was fit for enrichment, had to be spaded up for all these superefforts to have at least some meaning—and he got lost altogether.

The deputy minister was interested in the information that all timber camps were on uranium anomalies, whereas "to the proposal of local authorities to Russia's Ministry of Foreign Affairs that it reconsider the location of North Korean camps the foreign policy department replied with silence." "For many years we have engaged in intensive geological prospecting in Siberia and other places with a view to finding these kinds of anomalies." Nikolai Yegorov said, "Yet we are successful."

France

Nuclear Testing Moratorium Discussed

'Self-Entrapment' Charged

93WP0203A Paris *LE QUOTIDIEN DE PARIS*
in French 6 Jul 93 p 5

[Article by Ph.M. "Nuclear Tests: How France Entrapped Itself"]

[Text] *Because it was too hasty in declaring a unilateral moratorium and subsequently did not dare to reverse its decision independently of the Americans and Russians, France is endangering the defense effort initiated by de Gaulle.*

The decision to prolong for an indeterminate period the moratorium on nuclear testing in the Pacific was applauded by the minuscule ecological groups, but it has not received unanimous support within the majority coalition. Many Gaullists view this step—which was taken by the chief of state and the prime minister acting "in complete harmony"—as the precursor of a break with the defense doctrine that General de Gaulle put into effect beginning in 1959.

As we know, on 8 April 1992, Francois Mitterrand decreed a unilateral moratorium on the French tests at the Muraroa test range in the Pacific. In the opinion of the president of the Republic, there was a dual objective: first, to attempt by this action to impart new impetus to the international disarmament process and demonstrate that if the two nuclear superpowers—Russia and the United States—were to disarm substantially, Paris could reverse its decision not to take part in the START negotiations. Subsequently, when the economic crisis was already knocking at the door and the successive Socialist governments had been forced to make deep cuts in the military budget, the suspension of the tests could portend some additional cuts.

Last September, under pressure from the U.S. Congress, it was George Bush's turn to order a moratorium of nine months on nuclear testing, three months before signing the START II treaty with Boris Yeltsin in Moscow. Although Bill Clinton, upon his arrival in the White House, had planned a series of 15 tests (including three for the British), he in turn had to yield to pressure from the Congress and call off the series. The American president accordingly announced last Saturday that the United States would not be the first to resume testing.

Russia, meanwhile, had also joined the moratorium, although admittedly it could hardly do otherwise, inasmuch as it had not had access to the Semipalatinsk test range in the Republic of Kazakhstan since the breakup of the Soviet Union in 1991.

Paris had, in a sense, fallen into its own trap. Because it had announced a suspension of its tests, it then had to rely on the goodwill of Moscow and Washington or else

be the first to resume testing and then find itself accused of derailing the laborious process of disarmament.

400 Warheads

It's a trap, because France's situation is in no way comparable to that of the United States or Russia.

First, from the quantitative standpoint, the 400 warheads at France's disposal are hardly comparable to the thousands of warheads in the possession of the two great nuclear powers. And qualitatively speaking, the considerable number of tests carried out by the Americans and Russians—respectively, 961 and 657—enabled them to modernize their forces continuously and more effectively than France with its mere 161 tests. In short, it is obvious to everyone that recourse to nuclear weapons is all the more essential for countries that do not have immense resources of men and weapons, which is precisely the case of France, as witness to the difficulties it had in sending 12,000 men to the Gulf.

In April 1992, Francois Mitterrand made a dangerous decision that has compromised France's security for the long term. He had failed once again to calculate all the consequences. Once the harm had been done, it was difficult for the prime minister openly to confront the person who under the Constitution is still the commander-in-chief and therefore enjoys considerable prerogatives in defense matters. To avoid this confrontation, all Edouard Balladur could do was find an honorable way out for himself. That is what he attempted to do when he announced last Sunday that he would organize—in concert with the president—a group of top-flight experts who would be entrusted with the mission of determining the precise extent of the potential damage that France's defense would suffer from an excessive prolongation of the moratorium on testing in the Pacific. Inasmuch as we know that most military and CEA (Atomic Energy Commission) experts believe that a resumption of the tests—even if in limited number—is a necessity and even a priority, we can hope that the decision taken Sunday to suspend the tests will be in effect only for a limited period.

Deterrence Weakened by Moratorium

93WP0203B Paris *LE QUOTIDIEN DE PARIS*
in French 6 Jul 93 p 5

[Interview with Hauts-de-Seine Deputy Jacques Baumel by Francois Raoux; "Jacques Baumel: 'The Moratorium Is a Serious Blow to Our Deterrence'"]

[Text] *The Hauts-de-Seine deputy, in an interview granted to LE QUOTIDIEN, expressed the belief that the decision to continue the moratorium is "a serious blow to our nuclear deterrence."*

[Raoux] In your opinion, what will be the consequences of the decision just taken to continue the suspension of the nuclear tests?

[Baumel] The consequences are exceptionally serious because this decision will prevent modernization of our deterrent force and will dangerously weaken our nuclear defense.

[Raoux] There are those who contend that simulations in laboratories could henceforth be sufficient. This question in any case has not been resolved, inasmuch as a group of experts will be formed to make an assessment of the matter...

[Baumel] Because the main aspect has just been decided—that is to say, the extension of the moratorium—it would probably be difficult for a group of experts to reach a different conclusion...The question is actually one of knowing whether it is possible to replace the underground tests by simulations, if only so as not to arouse certain sectors of public opinion in New Zealand, in Australia, or even in France. But then there would be no need for the agency in charge of this simulation program—PALEN [Preparation for Limitation of Nuclear Tests]—to receive, as is now the case, funding that is steadily decreasing.

[Raoux] Do you really believe this postponement of the tests could set back the nuclear programs for France's nuclear defense?

[Baumel] Yes, I do. All the projects now under way are in danger of being set back, especially those involving missiles, notably the M-5 and M-45 missiles with which our nuclear submarines are to be equipped. The upgrading of the medium-range air-to-ground missile (ASMP) and long-range air-to-ground missile (ASLP)—with which the Rafale aircraft are to be equipped—will also be delayed. This form of limited and precise nuclear deterrence (whereas the striking force of the nuclear submarines is massive) is perhaps the most necessary one, in that it responds to a specific threat that is the veritable Achilles heel of our national defense. It is the threat of limited (but nuclear) aggression posed by missiles that may be rudimentary (of the Scud variety) but could nevertheless reach cities such as Toulon or Marseilles from countries in the Middle East or on the other side of the Mediterranean. France at present has no way of responding effectively to nuclear blackmail of this type, for it does not have antimissile missiles of the Patriot variety, and a response based solely on Rafale aircraft and on the ASLP missile could not do the trick.

[Raoux] But would not the continuation of a nuclear test policy constitute an incentive for the other countries—especially the Third World countries—to pursue their efforts to acquire nuclear weapons?

[Baumel] Whether Europe or the United States continue to build weapons or not will in no way alter the decisions of certain underdeveloped countries that are tempted to undertake the venture. Countries that may have terrorist plans are in no way affected by the attitude of Mitterrand or Balladur...And if those countries are able to get their weapons from the Russians or the Chinese, they will do so. Moreover, we should not overlook the fact that

although present-day Russia no longer poses the threat of an apocalypse of 5,000 nuclear missiles, it continues to arm itself. We have recently seen the latest nuclear submarines of the Russian fleet at Murmansk, and they are veritable monsters! Nor should we overlook the fact that the Number Three nuclear power today is neither France nor Great Britain but the Ukraine, which has 1,270 nuclear warheads—three times more than France—which it refuses to dismantle and thereby poses the risk of a military Chernobyl, given the lack of high-quality maintenance...

[Raoux] Do you believe that the decision taken—which you believe to be unfortunate—is a consequence of the cohabitation? In other words, do you believe that Edouard Balladur felt himself bound by the promise made by Francois Mitterrand not to resume the French tests so long as the United States respects the moratorium?

[Baumel] I have no data that would enable me to respond with precision. I believe, however, that the cohabitation did have a great deal to do with the decision that was taken. Edouard Balladur opted for a courteous and smooth cohabitation, and he is sure that by taking that decision he has avoided a confrontation with the president of the Republic.

Moratorium's Political Background

93WP0203C Paris LIBERATION in French 15 Jul 93
p 4

[Article by Dominique Garraud: "Chief of State Sticks to the Nuclear Test Moratorium"]

[Text] *The president yesterday confirmed the suspension of the French tests, after Francois Leotard—following the advice of certain experts who favor modernization of the nuclear arsenal—had stated early in the week that nothing was ruled out.*

"Things are unchanged." Employing that short phrase to justify the de facto continuation of the suspension of the nuclear tests, Francois Mitterrand hinted that the agreement with the government concerning this sensitive question—a question that affects the "shared domain" (i.e., the Ministries of Defense and Foreign Affairs) in which the president of the Republic reserves the "right to intervene"—is not as perfect as proclaimed officially. With the consummate skill of a fencer who scores a hit, Francois Mitterrand limited himself to recalling that it was he himself who in April 1992 took the initiative in suspending the nuclear tests until the end of that year "on condition that the other nuclear powers do the same," which was done. And when President Clinton "wrote" to inform him that the United States wished to prolong the suspension from 1 July of this year until 1994 while simultaneously undertaking negotiations looking toward a total ban on such tests, Francois Mitterrand "quite obviously said yes."

In the view of the head of state, the matter is one of biblical simplicity. "The French policy," he said, "is one of nuclear sufficiency. France does not have nuclear forces comparable to those of Russia, Ukraine, or the United States. The problem is one of having enough to deter anyone from attacking us. That sufficiency was attained (in April 1992—editor's note), and things are unchanged." That is to say, with the understanding that "France will resume its tests" if another nuclear power violates the moratorium.

In "the hour of truth," Edouard Balladur had outlined the features of an idyllic cohabitation in the area of military nuclear matters. According to Balladur, he and the head of state had "jointly" drafted the statement in answer to Bill Clinton, had decided to organize a group of experts (which was done on 4 July), but had chosen to remain evasive with respect to the future of the French nuclear tests. Defense Minister Francois Leotard believed he understood this entente well enough to take the liberty—in an interview granted to AFP (Agence France-Presse) on 12 July—of suggesting that France might not comply with the moratorium, depending on the conclusions reached by the committee of experts.

Francois Leotard is playing an obvious role in all this—the role of a minister of the Armed Forces who is listening to a majority of military and industrial experts who believe that modernization of the nuclear arsenal requires underground tests at Mururoa, for lack of the simulation potential such as the Americans possess. The same experts believe the tests are indispensable for testing the new nuclear warheads of the M-45 missiles that are destined to replace the M-4 missiles on the missile-launching nuclear submarines (SNLE) of the new generation such as the *Triomphant*, which is scheduled to enter into service in 1996. This is all the more true in that the missile experts are already projecting for the year 2005 a new, more accurate missile that has greater stealth and is potentially adjustable with respect to power—the M-5.

In dealing with this very sensitive matter, Edouard Balladur chose the course of an *entente cordiale* with the head of state, perhaps secretly hoping to convince him that it was necessary to resume the nuclear tests. Francois Mitterrand "is hardening" his position in the name of a philosophical and political concept that seeks—as he reaffirmed yesterday—"to do away with nuclear weapons and excessive armament." Here we obviously have more than a problem of simple cohabitation between those who believe in the need for modernization, on the one hand, and the occupant of the Elysee Palace [Office of the President], who is anxious to show the way to disarmament. At Mururoa and at the Atomic Energy Commission everything is ready—if necessary—to conduct a series of tests in the fall. In the meantime, there is no doubt that in this domain France will strive to continue to "speak with one voice," even if everyone is well aware that there are differences of opinion that the higher interests of the nation prevent from being proclaimed loudly and clearly.

Turkey

Possible Missile Threat From Middle East Neighbors Detailed

NC0508152193 Ankara TURKISH DAILY NEWS
in English 30 Jul 93 pp 1, 11

[Report by Murat Yetkin]

[Text] Ankara—The new missile tests carried out by North Korea raised the issue of a missile threat to Turkey from its Southeastern neighbors once again, as all of them have arms trade with North Korea, Turkish sources said.

Turkish government officials, who asked to remain nameless, said that it is not yet known whether Turkey's neighbors Iran, Iraq and Syria have the new Nodong-1 missiles—which are subject to United States and South Korean claims that they had been used in a nuclear test by North Korea recently—in their inventory. But if any of those countries purchase that weapon, it would increase the existing missile threat to Turkey considerably.

The research, "Tactical Ballistic Missiles and Turkey," published earlier this year by Sitki Egeli, an expert at Turkey's Defense Industry Undersecretariat (SSM), shows that most of Turkey's big cities are military bases, including the capital, Ankara, are within the range of missiles owned by Syria, Iraq and Iran.

Egeli underlines that considering the possibility that Syria owns the North Korean made Nodong-1 missiles of 1,000-kilometer (620-mile) range, even Istanbul will be under a missile threat. For the time being Iran, Iraq and Syria have the following tactical ballistical missile systems.

Iran: North Korean made Scud-B, 280-320-km (174-198-mile) range; North Korean made Scud-C (Scud-PIP), 575-600-km (357-372-mile) range; and Iran's own design Mushak 120 (Nazeat) missiles, 120-km (74-mile) range.

Iraq: Former Soviet-made Frog-7, 65-km (40-mile) range; former Soviet-made Scud-B, 280-320-km (174-198-mile) range; Iraq's modification of Scud-Bs, Al-Husayn, 600-km (372-mile) range and Al-Abbas, 900-km (558-mile) range. According to the cease-fire accord signed between Iraq and the United Nations, Iraq cannot possess missiles having more than a 150-km (93-mile) range, but experts believe that Iraq might have hidden 80 to 200 Scud-Bs from U.N. inspectors.

Syria: Former Soviet-made Frog-7 of 65-km range, former Soviet-made Scud-B of 280-320-km range, North Korean-made Scud-C of 575-600-km range, former Soviet-made SS-21 of 70-120-km range, Chinese made M-9 (DF-15) of 600-km range.

Turkey's northwest neighbor Bulgaria and northeast neighbor Georgia and eastern neighbor Azerbaijan are

believed to have similar weapon systems inherited from the former Warsaw Pact defense. Also countries like Israel and Saudi Arabia have missile systems which have ranges covering Turkish territory. The missile threat on Turkey has been discussed publicly in Turkey from time to time since the Gulf War, when the public opinion became familiar with the terminology of the fight between Iraqi Scuds and American Patriots.

Egeli points out that Turkey has neither an antimissile defense system, nor a missile early warning mechanism. Actually, experts say that only the United States and Russia (inheriting the assets of the former Soviet Union) are believed to have the necessary complicated Command-Control-Communications and Intelligence (C3I) system enabling early warning of missiles.

Antimissile missile systems like the Patriot proved to be of limited success in the Gulf war, and some countries, including Turkey, which had plans to purchase the system have suspended the idea and started to wait for further improvements in that field.

The most efficient deterrent force Turkey has against the missile threat is its F-4E Phantom and F-16 Fighting Falcon fighter plane fleets, which could be used in retaliatory actions, since they are not mainly designed to hunt missiles. Egeli thinks diplomatic moves and lobbying could play an important role in deterring countries who have the capacity to hit Turkey.

Seyfi Tashan of Turkey's independent Foreign Policy Institute says such efforts should be U.S. oriented, such as having U.S. support as a deterrent force against those countries.

But can Turkey rely on the United States for that? Mahmut Aykan, the deputy head of the International Relations Department of the Middle East Technical University in Ankara, says the credibility of the United States in the Middle East is not as strong as it was a year ago following the Gulf war. Aykan underlines that fading hopes regarding the Middle East Peace Process, worsening relations between the United States and Syria, Iran and Iraq cause question marks on whether those countries could be deterred by Washington.

"I wouldn't call this pessimism, it's rather realism," Aykan says. "But don't believe Turkey has many diplomatic trumps in its hands to use against the missile threat from Syria, Iraq and Iran."

On the other hand, Aykan says Turkey was not a "number one target" for those countries, "which are mainly armed against each other. Turkey has not become involved in Middle East politics very much so far and has not been in line with Israel," he stresses in order to support his thesis.

Sukru Gurel of the international relations department of Ankara University's political sciences faculty doesn't share that view.

"A country cannot plan its defense according to the political will of another country," Professor Gurel says. "As long as the physical capacity exists, the threat may turn into reality." Pointing out that he, too, was not aware of any antimissile strategy of Turkey, Gurel underlines the need of having one, as other academics do, while government bodies prefer to avoid questions on the subject.

IAEA To Propose Centralized Storage of Plutonium

*OW0308150293 Tokyo KYODO in English 1157 GMT
3 Aug 93*

[Text] Tokyo, Aug. 3 KYODO—The International Atomic Energy Agency (IAEA) will propose the centralized management of plutonium from countries with more than the minimum 8 kg required to produce a nuclear bomb, Japanese sources said Tuesday [3 August].

The sources said the IAEA Secretariat is putting the finishing touches to a final version of the plan which it expects to issue to member countries as early as October.

Japan will likely support the IAEA proposal since it would allow for greater transparency over the management of plutonium, they said.

The sources said that under a draft now under study at the IAEA Secretariat, the plan would apply to all non-military uses of plutonium as well as highly enriched uranium.

It would also cover the some 200 tons of plutonium retrievable from weapons dismantled in the United States and the countries of the former Soviet Union, they said.

Scientists calculate that because of a lag in civilian use of the world's excess of plutonium, the international stockpile could amount to some 140 tons by the end of the century.

One of the advantages of the plan is that it would result in the maintenance of a register of plutonium for peaceful purposes held by countries with nuclear arms, which are not now subject to inspections by the IAEA under the terms of the nuclear non-proliferation treaty.

It would register plutonium held by each country and allow for the deposit of excess amounts of the substance when a country does not intend to use it for some time.

The IAEA would store the excess plutonium at centrally located and strictly controlled facilities in various countries as well as supervise access to the facilities.

If a country wanted to withdraw its plutonium, it would have to explain the intended use of the substance and gain the permission of the IAEA.

The Science and Technology Agency of Japan has welcomed the draft proposal, but government sources said concern remains over the possibility the system could obstruct the use of plutonium if it proves overly strict.

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