

Iran's Peaceful Nuclear Program in Comparative Perspectives

I-Historical Perspective

West-Pahlavi Regime Nuclear Cooperation*

A. ALI AKBARI BAYEGI†

Abstract: Iran's scientific quest for mastering peaceful nuclear technology has become a hot topic of discussions among media outlets across the globe. Since the Iranian quest in this field dates back to the 1950s, and understanding the ongoing developments on Iranian nuclear program needs taking into consideration its chronological background, the present article, using authentic documents and records, tries to illustrate a general framework of Iran's past nuclear activities. Quite a lot of documents and records serve to further prove that the very same countries which are now at loggerheads with Iran over its civilian nuclear program were the ones that once collaborated with the Pahlavi's regime to develop the country's nuclear energy program.

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† Ali Akbari Bayegi is a senior researcher and expert at the Research and Document Centre of the Presidential Office.

Introduction

Over the past few years, Iran's scientific quest to master nuclear technology has become the most newsworthy item in media outlets around the world. The propaganda on the issue has been so extensive that it is viewed indeed as media rowdyism staged by the U.S. and a number of Western countries, as part of collective efforts to deprive the Islamic Republic of Iran of its inalienable right to peaceful nuclear technology through bringing up marginal issues

A few fundamental questions can be made with regards to such misinformation: Is it possible at all to deprive a nation of scientific research given the high intellectual growth of the present times? Does anyone have the right to declare that a particular nation has no right to pursue scientific works? And more importantly, could a country be made to give up its indigenous scientific achievements? Based on what legal/rational merits such demands are raised? Another pressing question is how come the countries which are now against Iran's nuclear program were willing to transfer the technology to the same country during the Pahlavi regime? Why did they ink numerous nuclear energy contracts with Iran at that time and sending experts and making huge investments in the country?

Their past extensive collaborations with the Pahlavi regime to master nuclear technology raise suspicion on the present attitudes and their true motives in putting pressure on Tehran to suspend the program while being aware of Iran's huge investments made in this program.

The following article is a documentary effort to discuss and analyze the attitude of Western countries towards Iran's scientific drive using the existing archive at the Research and Document Centre of the Presidential Office, as well as other library sources in order sketches out a brief history of Iran's nuclear activities during 1953-1978.

1. The Nuclear Energy Drama

The fortune of nuclear energy, as the most important scientific achievement for human beings in the second half of the 20th century,

had a twisted turn after the United States dropped two atomic bombs on the Japanese cities of Hiroshima and Nagasaki. After those horrendous incidents the US-Soviet relations (also known as the Cold War) overwhelmed the world politics in which the nuclear science was used as a tool for political gains.

At the outset, the United States had monopoly over nuclear technology, and the former US president Harry Truman, based on his political doctrine, was going to contain Communism and maintain the US nuclear monopoly. (Grenville, 1999: 930) To this end, Washington exerted efforts and took many drastic measures to prevent the former Soviet Union from mastering the technology. One of these measures was the Mutual Defense Assistance Control Act passed by the Congress on October 26, 1949. Under the Act, the United States was obliged to avoid exports of arms, munitions and equipment which could be used in producing nuclear energy or were strategic to the nations posing a threat to its national security. After ratifying the law, the US government took the necessary measures to implement it. Of course, the law also did create a number of problems for countries such as Iran (Prime Minister's Office, Ref. No: 14033). On the other hand, despite the American efforts, many experts and analysts speculated that sooner or later the Soviet Union would also build its own atomic weapon (Ambrose, 2007: 121).

A short while after these speculations, soon there were rumors suggesting that the Russian government had accessed the secrets of building a nuclear bomb and that it would soon carry out its own nuclear test. Then US president Harry Truman immediately announced that he had given a presidential order to build a Hydrogen bomb, which is 200 times more powerful than the nuclear bomb dropped on Hiroshima (Fontein, 1990: 33). However, the US president's public announcement came a bit too late as Russia had already mastered the technology of building nuclear weapon. At that time, the Americans admitted that the world did change forever (Fontein, 1990: 164).

2. US, Russia and Civilian Use of Nuclear Energy

Acquirement of nuclear technology by Russians transformed the Cold War's nature and the two opponent super powers in Moscow and Washington began making new alliances with other governments. They even tried to arm their allies with nuclear weapons (Fontein, 1990: 36). The two rivals were taking advantage of the rubric: "nuclear technology for civilian use", while accusing the other side of trying to strengthen its position by giving nuclear secrets to and equipping other nations with the technology. This led to the proliferation of nuclear weapons across the globe and countries such as the United Kingdom, France, Canada, India and the occupying regime of Israel also gained access to nuclear weapons technology (Prime Minister's Office, Ref. No: 65679).

Former US President Dwight Eisenhower administration took the first steps towards using nuclear energy for peaceful purposes. On December 8, 1953, he spoke before the UN General Assembly, asking the nations to join the treaty of peaceful use of atomic resources (Prime Minister's Office, Ref. No. 20755). Therefore, the US government tried to convince other nations on the civilian purposes of nuclear power. He even dispatched experts to other countries. In one of these trips, the American experts had a short stop in Tehran after returning from Australia (Prime Minister's Office, Ref. No. 16837).

Concurrent with efforts to promote civilian nuclear science, the United States and Soviet Union organized numerous conferences under the name of nuclear non-proliferation. In these events the call for nuclear non-proliferation was a pretension for advancement of their own interests and their contradictory actions further displayed the fact that they were not interested in nuclear disarmament at all. For instance, in 1946, the United States proposed the Baruch Plan for controlling nuclear arms and encouraged other nations to sign a treaty that banned atomic test. It also aimed to prepare the world public opinion for ban on all sorts of atomic tests. In return, the US came up with a program called "Atom for Peace" through which it could offer technological assistance, reactor and enriched uranium to 35 countries (Prime Minister's Office, Ref. No. 52925). Meanwhile, the British

government decided to test a nuclear bomb as the non-proliferation conference was still on its way. It even invited a number of countries including Iran to observe the test in Australia (Prime Minister's Office, Classified Ref. No. 500/5).

The enmity between the US and the former Soviet Union also encouraged other nations to try and join the nuclear club and countries likewise were caught in the cross-fire of hostile relations of the two super powers. After the Central Treaty Organization (CENTO) was signed, Moscow launched a widespread propaganda, claiming that the US had used Turkey and Iran's territories for nuclear attack against Russia (Prime Minister's Office, Classified Ref. No. 40466).

Nonetheless, as Washington and Moscow realized more about the strategic importance of atomic energy, not only they gave up the idea of following nuclear energy for peaceful purposes, but they put pressure on other nuclear nations to avoid of exporting it to other countries (Etemad, n.d: 386). The present trend in their policies on (Iranian) nuclear issue follows the same pattern.

3. Iran's Cooperation with Nuclear Countries

a. The United States

The United States was the first country that helped Iran to apply civilian nuclear energy and pursued the same policy until the victory of Islamic revolution in 1979. The following briefing summarizes these relations.

When the Americans decided to help India develop its nuclear program, Ali Asghar Hekmat, then Iranian ambassador to India, in a letter dated January 11, 1954, wrote to the Ministry of Foreign Affairs that the governments of India and Pakistan were trying to develop nuclear technology and had even set up several institutes for this purpose. Also, India had organized a conference on nuclear technology during which its Prime Minister Jawaharlal Nehru spoke about the importance of developing nuclear industries. Hekmat further mentioned that an American nuclear delegation was in New

Delhi to visit the nuclear sites and they had agreed to provide the Indian government with nuclear assistance. He went on to report that in the near future nuclear power will replace fossil fuels and that Iran had no program for nuclear energy. He then proposed Tehran to make optimum use of the recent US decisions and pursue nuclear technology. Then Iranian Prime Minister Dr. Mohammad Mosaddeq's view on the reported was quoted as saying, "the subject be brought up in the first cabinet meeting and that executive orders be given to this end" (Prime Minister's Office, 16315).

A few years later, in a report on July 17, 1957, the Foreign Ministry quoted the Iranian embassy in Amman (Jordan), as saying that according to the Jerusalem Post, Tel Aviv is setting up a nuclear training institute with the help of the United States and also plans to set up a laboratory for nuclear tests. The agreement with the US would help Israel take the first steps towards using nuclear energy. Based on the Israeli paper's report, the US also signed an agreement with Lebanon to sell six kilograms of enriched uranium. Lebanon's representative Charl Malek said, "We hope to overtake other regional states in nuclear field." The paper went on to report that similar US nuclear agreements with Turkey, Brazil and Colombia could also be reached with Japan, Spain and other negotiating nations. In reply to the report, then Prime Minister Hossein Ala wrote that, "These reports are significant. There needs to be explained by the Foreign Ministry how come Iran had never had such negotiations with the United States." Consequently, the Foreign Ministry asked its missions in the nuclear countries to keep Tehran briefed and send comprehensive information on the use of nuclear power (Prime Minister's Office, 17866).

As the above-mentioned reports indicate, following the US negotiations with other countries on scientific nuclear assistance, Iran was encouraged to pursue using nuclear energy. Since then, the Iranian officials kept walking towards using nuclear energy along with others. Pursuant to these correspondents and the subsequent talks between the Foreign Ministry and Washington officials, a temporary exhibition on nuclear science was held in Tehran University in autumn 1957. After these preliminary stages, Manouchehr Eqbal, then

Chancellor of Tehran University took the first steps toward using the US nuclear assistance. During his talks in Washington with Luis Henderson, then US assistant secretary of state and several other US officials, Mr. Eqbal submit a list of nuclear equipment needed for Tehran University. Henderson promised to assist Eqbal with the order (Prime Minister's Office, 26351). After his trip to Washington, Iranian Foreign Ministry resumed contacts with US embassy in Tehran which resulted in the embassy's offer of an agreement between the two governments upon which the nuclear reactor could be sold to Iran by the private American institutes. More important though, the deal had to get the US Congress approval, although it was binding the moment it was signed. After that, Tehran could enter negotiations with a US nuclear reactor manufacturing company (Prime Minister's Office, 26351).

Subsequent to these negotiations, the Iran-US agreement of mutual cooperation in civilian nuclear activities was signed whose introduction reads: "Given the use of nuclear energy is welcome news for all human beings, the governments of Iran and the US are willing to work together to develop civilian nuclear technology. Also the plan and the development of research reactors are on the right track; the technical research reactors are useful for conducting research on radio isotopes and radiotherapy treatment as well as various research applications; nuclear technology is a tool for valuable tests in the science of nucleus particles engineering; and it helps advance other peaceful applications from nuclear energy such as military clout of nucleus atoms. Since the Iranian government is willing to pursue a research and development program to better understand peaceful atomic energy applications and innovations, it is willing to win the much needed assistance of the US government and industrial firms. The government of the United States of America is decided to assist the Iranian government through the US Nuclear Energy Commission, and both parties agree to the following terms and conditions...". The agreement's act was sent to Mohammad Reza Pahlavi for final approval on March 18, 1958 (Prime Minister's Office, 30777).

Under the terms and conditions of the agreement and according to Iran's commitments given to the US Nuclear Energy

Commission, the Iranian had to provide technical staff for carrying out the technical affairs of the proposed nuclear reactor. The US government financial support for implementing the project was pending to preparedness of the technical staff. Once the agreement reached its termination, the US government made three proposals for its renewal:

1. A trilateral agreement signed between the governments of Iran, US and the IAEA based on which the US would transfer the required nuclear materials and equipment to Iran and the agency should have undertaken the safeguard responsibility.

2. Prior to March 26, 1964, the Iranian government should confirm its willing to extend the bilateral agreement with the US-proposed amendments and thereafter the IAEA accept the responsibility of safeguarding the nuclear materials and equipment based on a trilateral arrangement among the three parties.

The commission which was set up to examine the proposals, rejected the first offer and only agreed to the second one i.e., renewing the earlier agreement and Iranian Foreign Ministry also affirmed the rejection of the first proposal for the following reasons:

- A. It would be a lengthy process to reach an agreement on a new trilateral contract among US, Iran and the IAEA;

- B. The necessity for the quick refueling of the nuclear reactor;

- C. The probability for rising financial difficulties in payment of \$340,000 grant committed by US government, should the initial agreement be replaced with a trilateral one (Prime Minister's Office, 54941).

As a result, the Foreign Ministry asked the Prime Minister's Office to speed up the process of inking the nuclear agreement with the US for receiving nuclear fuel. This was mainly because of preventing any time lapse between signing the agreement with the US and avoiding the implementation of the part II of Article 11 in the 1957 agreement by the Iranian government for returning to the US the fuel elements supplied by the US Nuclear Energy Commission (Prime Minister's Office, 50366). In December 1966, the amended law of cooperation agreement between the Iranian and US governments

concerning the non-military use of nuclear energy, plus the agreement reached between the IAEA and the two governments to take the measures necessary for providing it, was signed by Mohammad Reza Pahlavi (Prime Minister's Office, 56029).

Thereafter, Iran entered into negotiations with a range of other international organizations and countries in a bid to prepare the ground for using civilian nuclear energy. The Iranian officials were trying to use the facilities of other developed nations in the field of nuclear technology (Prime Minister's Office, 52038). As per the bilateral agreements signed between Iran and the US government, as well as a trilateral arrangement between the two governments and the IAEA, the US could enrich uranium above 90 percent and then transfer it to Iran (Prime Minister's Office, 58511).

Iran, US and the IAEA continued cooperation until April 6, 1974 when the executive order to implement the law on the agreement reached between the Iranian government and the IAEA as well as the suspension protocol agreement reached between the Iranian and US governments and the IAEA were submitted to and signed by Mohammad Reza Pahlavi (Prime Minister's Office, 61660).

The supply of uranium was the main subject of the next stage in all discussions between the Iranian and American experts as well as IAEA representatives. During the visit to Iran of the head of US Energy Agency Commission, the two sides discussed the possibility of US cooperation with Iran to implement Iran's nuclear programs. A key subject matter in these discussions was supplying enriched uranium to the Iranian nuclear power plants. At that time, the US government had decided to boost the capacity of enriching uranium on its own soil. The US policy was to persuade private sector to invest in the field as a priority. But if they couldn't do so, then the US government would invest itself. After these developments, Iran decided to use nuclear energy for generating electricity. In August 1973, the US Institute of Overseas Councilors was commissioned to carry out feasibility studies on generating electricity from nuclear power in Iran. In addition, the institute was asked to introduce top counseling engineers to Iran. In reply, the Sun Corporation and the

Bechtel Inc. dispatched their representatives to Tehran (Intelligence Office, 1020).

A number of negotiations were also made with several other American corporations and for instance, Westinghouse which produces PWR reactors, promised to give its proposals as well. For the same reason, steps were taken for signing a new agreement between Iran and the US on supplying nuclear fuel to the Iranian nuclear power plants. They also had to take the necessary steps to supply enriched uranium not later than June 1973 (Prime Minister's Office, 712). To get enriched uranium for its atomic power plants, Iran held talks with the representative of US Nuclear Energy Commission in Tehran during which they discussed matters related to finalizing the agreement. Under the US government regulations, the final accord had to be signed before June 9, 1974. As per the accord, the US Nuclear Energy Commission was committed to supply the Iranian nuclear power plants with enriched uranium. These power plants were set to be commissioned between early 1980 and late 1984. The number of power stations was eight and they were expected to generate 7,200 megawatts of electricity. Also under the accord, the US had to supply fuel to the power plants for ten years. Also, under the agreement, only services related to enriching uranium had to be purchased and the natural uranium had to be supplied on time before being enriched by the US Nuclear Energy Commission.

Iran's efforts in this respect got the world's attention. For instance, the Financial Times in an article on November 13, 1975 and under the name of "Shah Has Decided to Purchase Nuclear Reactors" wrote: Iran's decision to pursue a major nuclear program has been welcomed by the world public opinion. This is the first time that a major oil producing country has decided to pursue such a program, with the belief that it is dangerous to depend on oil as an energy source (Prime Minister's Office, 62511).

Nevertheless, the Iranian efforts to gain access to nuclear technology for scientific and civilian purposes were concurrent with the European efforts to restrict services in this particular field. Based on a report by the Iranian embassy in Bonn, the German chancellor's visit to France and their joint statement on the transfer of nuclear

technology for civilian use was important. During this particular visit, Richardson and Helmut Schmidt as well as the German and French ministers of interior exchanged views on a range of issues, mainly the US-Europe relations. They said the new US government was ready to exchange views with the European countries and differences between France and Germany from one hand and the US on the other on exporting nuclear facilities could be resolved (Prime Minister's Office, 65085). Of course, this made things much more complicated for Iran in pursuing its own nuclear program (Intelligence Office, 711).

Presumably these high level political talks were not aimed at reducing the risks of nuclear weapons proliferation, rather they were linked to the rising oil prices that Western world had to find an alternative way for compensation. Therefore, they (nuclear technology have) increased the costs of transferring nuclear technology to other nations and continued to hold talks with other nations on nuclear energy. The West also embarked on a media propaganda campaign against countries that had entered the field of atomic energy in order to protect their own interests. The rhetoric by former US ambassador to Russia, George Kennan, during his interview with the New York Review of Books on a question that the United States had already armed the Middle East and was in talks with Iran to sell a large number of Arms, is worth mentioning. He replied, "The SALT negotiations and the prevention of nuclear proliferation is one of the most important issues facing by the Carter administration. We feel guilty before the world, because we have lost many opportunities to prevent the development of nuclear weapons and the international death race. We have also increased the number of destructive atomic weapons to a frightening level. We have about 25,000-30,000 nuclear warheads. Only in Europe, we have placed well over 7,000 tactical nuclear weapons. The destructive force of our smallest weapon in Europe is three times more powerful than the atomic bomb dropped on Hiroshima. We must now see what we could do to the world by only using these 7,000 terrible weapons in Europe. This is while experts suggest that between 10 to 20 nuclear weapons will be more than enough to destroy our planet." (Prime Minister's Office, 66581)

In another instance, the Iranian embassy in Washington on June 24, 1978 reported on a New York Times article entitled "Of Atoms and Allies". Its writer David Calce claimed that the United States is against arming other nations with nuclear weapons; because it believes that giving nuclear weapons to the irresponsible countries will not only increase the risk of military confrontation, but also limit the American support. He went on to state that, however, the United Kingdom, France, China, India and 'possibly' Israel have nuclear weapons and if other countries have not taken the necessary steps towards this end, it is because they have been under economic and political pressure (Prime Minister's Office, 65679). In addition, the magazine of Institute for Foreign Policy Analysis in an article entitled "Iran's Quest for Security" reviewed the security situation in Iran, emphasizing that the country might be able to gain access to nuclear weapons (Prime Minister's Office, 66582). Amid the media misinformation, a number of Western countries continued to cooperate with Iran in the field of uranium enrichment. For instance, Iran's Atomic Energy Organization reached an agreement with the Italian company Agip and the French industrial groups COGEMA and ONAREM for exploiting uranium in Niger's 6,000 KM Square long Adrarin region. Under the agreement, Iran's share was 26 percent, COGEMA 26 percent, the Nigerian company ONAREM 33 percent and the Italian company Agip 5 percent (Intelligence Office, 447). The American companies also had a close cooperation with the Iranian government in the same field. The Iranian embassy in Washington in a telegram on June 2, 1998 wrote: The Christian Science Monitor in an article wrote that Iran and the US have agreed on purchasing eight nuclear power plants and the only problem is finding the terms that could be used on the sales contract. Once this particular problem is solved, the US can also go ahead with the plan to sell nuclear power plants to 26 other countries (Prime Minister's Office, 65934).

Although, it is widely believed that Iran-US relations experienced fundamental changes during the tenure of Democrat President Jimmy Carter and a number of US politicians tried to hinder the extensive cooperation between the two countries, Carter approved

the plan to sell nuclear reactors to Iran (Prime Minister's Office, 67155). However the United States is currently the front-runner in trying to deprive Iran of gaining access to civilian nuclear energy, it was that main instigator of spending billions of dollars of Iran during the Pahlavi era on nuclear field and if Iran gives up the program now, it will only waste its 25 years of huge investments made under direct support of the United States.

The Soviet Union

As mentioned earlier, the Soviet government was trying to increase its influence among other nations and Iran was one of the main targets whose support and cooperation was very crucial for Moscow. Therefore, as the first step, the dean of Russian Academy of Sciences wrote a letter to the chancellor of Tehran University to invite an Iranian scientist to the meetings on civilian nuclear energy applications. The Iranian government accepted the invitation and sent Mahmoud Hessabi, a physicist to Moscow (Prime Minister's Office, 25202). Through the invitation Russia was trying to engage with Iran – at a time when for political reasons the country had been largely dependent on the West (the US and Western Europe) in nuclear energy field.

Afterwards, during the 11th economic meeting of the United Nations for Asia and Far East, a Russian envoy announced that Moscow plans to provide aid to the under-developed nations and offer training courses for their students on civilian nuclear energy in which Iran could send two students (Prime Minister's Office, 25395).

During the last years of his rule, Mohammad Reza Pahlavi tried to give Russia the much needed chance to invest in the country's nuclear energy sector. Of course, in those years, nuclear relations between Tehran and Moscow were not up to the mark yet. But after the victory of Islamic revolution in 1979 and radical changes in Iranian policies, the former Soviet Union and then the Russian government (after the collapse of the Soviet Union) began to hold serious and exclusive talks with Iran on the nuclear field.

Germany

Following the United States and Russia, Germany also entered nuclear negotiations with Tehran. The proposal made by the German company Kraft Werk Union for establishing nuclear power plants in Iran, was among the first proposals made to the Iranian government. Mohammad Reza Pahlavi ordered the government to review the German proposal (Intelligence Office, 711).

On December 6, 1974, Akbar Etemad, former head of the Atomic Energy Organization of Iran, asked Nosratollah Moeinian, chairman of Shah's Special Information Office, to review the German proposal for building a Turn-Key nuclear power plant in Iran. He also asked him to take part in negotiations with the German company and report the outcome of the talks to Shah. Shah ordered him to sign the contract to purchase the power plants. The contract was signed on November 18, 1974 in Tehran after which the German firm started the official works. Also on November 1, 1975, Etemad sent a letter to the Kraft Werk Union to express his satisfaction over the deal. However, the important matter was the costs of setting up the Halileh Nuclear Power Plant near Bushehr. Based on the estimates, the costs were going to be very high (Intelligence Office, 711).

The German chancellor was scheduled to visit Iran in November 1975 to negotiate on ordering the nuclear power plants from the Kraft Werk Union. Before the official visit, in order to devise a solid framework for nuclear cooperation between Iran and Germany, the head of the Atomic Energy Organization of Iran Akbar Etemad paid a visit to Germany. Once there, he also asked the German government to announce its position on the proposed deal. Following the visit, the German government sent a letter through its embassy in Tehran, expressing willingness for nuclear cooperation. It also set a framework for such cooperation.

In his letter to the Prime Minister's Office, Etemad said the nuclear countries were setting conditions and rules for exporting their nuclear know-how and equipment to Iran. He said they were reaching an agreement and that the terms of the agreements could limit the freedom of action for France and Germany - the main nuclear partners

of Iran. He went on to state that these countries would adopt a tougher position on Iran (Intelligence Office, 711). Despite these restrictions, Iran and Germany inked a contract on civilian nuclear energy on November 23, 1976 (Prime Minister's Office, 65143). Its executive order was also signed by Mohammad Reza Pahlavi on August 14, 1977 (Prime Minister's Office, 68171).

Under the agreement, the Germans committed themselves to Iran's nuclear energy sector and continued to do so until the victory of Islamic revolution in 1979, after which problems started to surface. Gerhard Ritcel, then German ambassador to Iran, sent a letter to Prime Minister Gholamreza Azhari to highlight these problems. He regretted that foreign workers and experts who didn't have work permits could soon lose their jobs, urging him to renew their work permits. The workers had been employed by the Kraft Union Company. The company was contracted by the Atomic Energy Organization of Iran to build two 1,300 Megawatt nuclear power plants in Bushehr. Some 7,000 Iranian workers and 3,000 foreign experts and engineers were in charge of building these two nuclear power plants. About the negotiations with Germany, Akbar Etemad wrote in his memoirs: "The negotiations with the Germans took some more time. This was because the conditions of nuclear countries became gradually harder. However, we finally managed to sign the much anticipated contract with Germany." (Etemad, n.d)

After the victory of Islamic revolution, the Germans halted all their activities in Iran's nuclear sector without any constructive gains.

France

Iran and France began to cooperate in the field of civilian nuclear energy in late 1960s. On May 3, 1968, they signed a protocol in Paris for exploration and exploitation of uranium mines in Iran. In relation to the protocols inked in Paris on economic and industrial cooperation and also a proposal they offered to Mohammad Reza Pahlavi during his stay in Switzerland, the French officials sent a delegation to Tehran to hold talks on issues related to atomic research works, training of scientific and technical personnel as well as the

framework and the method of collaboration in building atomic power plants. In addition, the Iranian officials held talks with the head of French nuclear-processing company Framatome, which builds PWR reactors. Both sides agreed to submit written proposals to Tehran for further examination (Intelligence Office, 712).

In March 1974, the Nuclear Corp International Company proposed to establish a consortium in collaboration with the Iranian government to produce and rent nuclear fuel (Prime Minister's Office, 70900). Also a French delegation visited Tehran for talks on nuclear energy cooperation. During these negotiations they did stressed that nuclear cooperation with Iran was their top priority.

In addition, on June 30, 1974, Houshang Ansari, former minister of economy and finance at Hoveyda's cabinet, outlined few points in relation to a protocol signed by him and his French counterpart Jean-Pierre Fourcade:

1. Opening an account in a French bank on behalf of that country's treasury with an amount of one billion dollars;
 2. Using the deposit to purchase equipment for civilian use of nuclear energy;
 3. Getting interest from the outstanding deposit amount;
- (Prime Minister's Office, 67490)

Following the communiqué, on June 27, 1974, the French government signed a cooperation contract with Iran on the civilian use of nuclear energy (Prime Minister's Office, 62985). The following highlights the key points of the deal:

1. Iran agreed to open a deposit account in US dollars in France on behalf of that country's treasury. Over a period of three years it will deposit one billion dollars in three installments. The first payment should not run short of \$300 million, to be deposited before October 1, 1974. The second deposit has to be \$400 million;
2. The interval for each deposit is 12 months and after that it could be renewed if agreed by both sides. Also, Iran has the right to withdraw the money by giving a six-month notice in advance to the French bank;
3. Iran has the right to use these deposits to pay in advance for purchasing French equipment and services related to

scientific, industrial and technical cooperation in civilian nuclear energy field. Also, Iran could use these deposits to purchase other goods and services within the framework of future agreements that might be finalized between the two governments;

4. Under the agreement, an interest rate of two percent should be paid to the remaining deposit every three months based on the average rate of interests offered by the French banks for dollar based deposits as well as the current rate of interest for the US treasury bonds;

5. France has the right to repay Iran's deposits with a three-month notice in advance;

6. The representatives of the two countries agree to meet before August 1974 in Tehran for further talks on the details of implementing the protocol and finalizing a financial agreement within its specified framework (Prime Minister's Office, 67490).

In October 1974, Akbar Etemad visited France to hold talks with the French officials on setting up an atomic centre in Iran (Prime Minister's Office, 74703). He held talks with a representative from the French company Eurodif¹ on purchasing services for enriching uranium. Both parties agreed to re-discuss the issue in Paris and let Tehran know under what circumstances and how much they could produce enriched uranium for Iran (Intelligence Office, 712). Iran agreed to pay \$792,000 in advance and 536,580,000 Iranian Rials according to the contract (Intelligence Office, 61793). Soon after, the nuclear agreements between Tehran and Paris became a hot topic of discussion among the media outlets the world over. For instance, on October 20, Israeli daily *Al Hemishmar* wrote in an article: "Despite the exceptional and warm welcome to the French president in Iran as well as the important and superb agreements between Tehran and Paris, the major parts of the deals will see the light of day. This is because the French government is still cynical about selling factories which could reprocess the uranium and plutonium waste and Paris will sustain its current policy in this regard."

French daily *Le Monde* also laid emphasis on the Tehran-Paris nuclear deals and wrote: "The sweet smell of tens of billions of dollars is fine for a commercial diplomacy that does not take into

consideration the ethics" (Intelligence Office, 65342). However, the media pandemonium failed to deliver as Tehran and Paris continued to cooperate in the field of nuclear energy. On June 30, 1978, Mohammad Reza Pahlavi signed the executive order to implement the protocol signed by the Iranian and French companies for setting up and exploiting two nuclear power plants (Intelligence Office, 61491).

Overall, Akbar Etemad was satisfied with the Tehran-Paris nuclear talks. In his memoirs he wrote: "When we began the talks to finalize the deals, I remember that whatever we said, they agreed. That contract was exceptional. France made the commitment to give all kinds of technology to us, except the one to build nuclear bombs. Of course, because of international pressures and issues related to the nuclear non-proliferation as well as policy changes in the nuclear countries, the deal was not enforced according to our desire. However, it was a framework based on which we could later have extensive atomic deals with France." (Etemad, n.d)

Sweden

Iran and Sweden did not have extensive cooperation in the field of nuclear science. During a visit to Tehran by the Swedish foreign minister in 1974, two countries agreed to cooperate in the use of nuclear energy. Following the initial agreement, Tehran held two rounds of talks with the Swedish industrial group ASEA, which builds boiling water reactors (BWR). Tehran asked the company to send written proposals for further consideration (Intelligence Office, 712).

England

Since England had borrowed its nuclear technology from the United States, it was not capable enough to cooperate with Iran in this particular field like the US. However, in light of the soaring oil prices in international markets, London began nuclear talks with Tehran in the 1970s. Of course, the two countries had cooperated in the sector under the CENTO security treaty. During the second round of trade talks between the British and Iranian ministers in June 1973, the

British envoy proposed that two countries cooperate in the field using fast-track nuclear reactors (Intelligence Office, 3091).

Moreover, the British energy minister met with Mohammad Reza Pahlavi on January 7, 1976 in which he said: "Iran plans to replace fossil fuel with nuclear energy and in this respect it has already initiated negotiations with France and Germany. If necessary, it will hold similar talks with Russia. In fact, Tehran will negotiate with any party." The British official said London was ready to cooperate with Tehran in the use of nuclear energy (Winston, 1996: 342). Sir Anthony Parsons, then British ambassador to Tehran, met Jamshid Amouzegar, then Prime Minister for building British-style schools and nuclear power plants in Iran as well as Margaret Thatcher's scheduled visit to Tehran (Prime Minister's Office, 65772).

However, despite their growing interests, London never got the chance to cooperate extensively with Iran in the field of nuclear energy. This is because their cooperation was concurrent with the start of revolution in Iran in 1979.

India

India had always tried to have the upper hand militarily, given its geopolitical situation as well as its relations with Pakistan. Therefore, the former Soviet Union and the United States, striving to incorporate new allies into their bloc, took note of such a need and tried to win New Delhi's coalition. Although the Americans had a close collaboration with India in nuclear field, it was the Russians who finalized their nuclear deals with New Delhi.

Being aware of the Indian nuclear breakthroughs, Tehran began talks with New Delhi. The Statesman Daily in an article by David Gosling on September 30, 1972 under the topic of "Iran's Nuclear Programs and the Possibility of Indian Cooperation" commented that despite the international drive to restrict construction of nuclear power plants or production of nuclear energy, the cooperation proposal between Iran and India is significant. The Iranian and Indian scientists have agreed to cooperate in building a number of reactors and nuclear power stations. The United States,

Russia and Britain are secretly trying to restrict India's nuclear programs through different means. In general, the superpowers are trying to be in command of the nuclear programs of other nations (Prime Minister's Office, 66108).

During a visit to Tehran by the late Indian Prime Minister Indira Gandhi, the two sides agreed to cooperate in nuclear field. Also, the Head of Atomic Energy Organization of Iran Akbar Etemad was invited to India to tour its nuclear facilities and attend meetings on the possibility of cooperation (Intelligence Office, 712). During his visit, Etemad held talks with the Indian officials, including the prime minister. He also signed a cooperation agreement that was later approved by Mohammad Reza Shah Pahlavi (Intelligence Office, 118; Prime Minister's Office, 65858). Despite the importance of India for Iran, the Indian-Pakistani tensions and their historic hostilities restricted atomic relations between Tehran and New Delhi (Etemad, n.d).

Australia

Iran and Australia agreed to cooperate in nuclear energy in August 1978. However, their finalized nuclear deal was never approved by Iran's Legislative Assembly as it was concurrent with the events leading to the Islamic revolution in Iran in 1979 (Prime Minister's Office, 67427).

Canada

During his visit to Canada, then Iranian minister of industries and commerce held talks with Canadian officials on nuclear energy. They agreed to make proposals based on Iran's program (Intelligence Office, 721). The outcome of the visit was a cooperation agreement between Iran and Canada on the peaceful use of nuclear energy. The agreement was approved by Iran's Senate on November 28, 1972. The permission was also given to exchange its documents (Prime Minister's Office, 64761). Mohammad Reza Pahlavi gave the go ahead for its implementation on February 10, 1972 (Intelligence Office, 65071). The Canadians were desperate to cooperate with Iran in the

use of civilian nuclear energy, so much so that they even tried to bribe Akbar Etemad. He wrote in his memoirs: "One time the Canadian representative unexpectedly said 'OK, once the deal is done, you will get a generous commission. We are ready to give you a ten-percent commission.'" (Etemad, n.d)

International Atomic Energy Agency

The International Atomic Energy Agency was established in 1956 following an international conference at the United Nations headquarters in New York (The History of Nuclear Energy in Iran and the World, 2007, P. 424). The organization's statute was ratified by Iran's Senate and National Council on October 26, 1959. In the same year, Iran paid its membership fee to the organization. Iran was paying an annual voluntary membership fee of \$3600 to IAEA (Prime Minister's Office, 56201).

In a letter dated July 19, 1958, the Iranian Ministry of Foreign Affairs wrote to the Senate that it was sending the IAEA statute for ratification. It also asked the Senate to ratify the following single article act:

"Single Article Act: The IAEA Statute, ratified on October 26, 1956 at the UN in New York with 23 Articles and an additional protocol, has been signed by Iran's representative. It is ratified and the government is allowed to join the international treaty (Prime Minister's Office, 22062)."

The National Legislative Assembly and the Senate both ratified the single article act and on May 31, 1958, upon the approval of Mohammad Reza Pahlavi, the Article became a binding law (Prime Minister's Office, 26579).

Following these developments, on November 7, 1959, a delegation of IAEA Board of Governors paid a visit to Tehran and at the end of their mission they released a report. The IAEA report referred to Iran's activities in nuclear energy. In addition, Iran and the IAEA signed an agreement based upon the agency had to build a nuclear reactor for the country within two years (Prime Minister's Office, 14284). Since then, Iran broadened its activities with the atomic

agency. At times, Iran also represented a number of countries at the IAEA meetings. For instance, during the 12-day meetings of IAEA Board of Governors in Vienna on June 19, 1963, the Iranian representative participated as the head of Middle Eastern and African nations. He also took part in important discussions and decisions (Prime Minister's Office, 56205). During the same sessions, in addition to the current affairs, a bilateral agreement on the peaceful use of nuclear energy between Iran, the US and the IAEA was reviewed and discussed (Prime Minister's Office, 56201).

As proposed by the Iranian delegation - also backed by the IAEA developing country members - a resolution was approved during the 10th general session, urging the agency to provide greater assistance to the developing nations in the field of nuclear energy. The IAEA director general was asked to seek the opinion of member states and prepare a report on that for the next session. Under the rules of the resolution, the director general asked the members to give their opinions about providing further assistance to the developing nations before December 12, 1966 (Prime Minister's Office, 20974).

Under the nuclear Non-Proliferation Treaty (NPT) ratified on July 1, 1968, the member states which did not have nuclear weapons, had to sign a number of agreements with the IAEA to provide security guarantees on the peaceful use of nuclear energy as per the Statute of the International Atomic Energy Agency (Prime Minister's Office, 61957). On June 12, 1968, the nuclear Non-Proliferation Treaty was approved at the UN General Assembly. The main text of the treaty was available as of July 1, 1968 for observation for the member states in Washington, Moscow and London. The Iranian representative also voted in favor of the treaty at the UN General Assembly (Prime Minister's Office, 67278). Under paragraph 4 of Article 3 of the treaty, the signatories which did not possess nuclear weapons had to sign a number of agreements with the IAEA to give security guarantees that they would only use nuclear energy for civilian purposes. For the same reason, Iran and the IAEA signed an agreement on June 18, 1973 on security guarantees related to nuclear non-proliferation in Vienna. In addition, under Article 23 of the agreement, the previous security guarantees between Iran and the agency had to be cancelled.

Concurrent with signing the main agreement, the abrogating protocol of trilateral agreement among Iran, the US and the agency on March 3, 1970 in Vienna for implementing the security guarantees was also signed between Iran and IAEA (Prime Minister's Office, 61957). Henceforth, Iran started to seriously cooperate with the International Atomic Energy Agency.

Central Treaty Organization

The core of Central Treaty Organization (CENTO) was the 1955 Baghdad Pact or Middle East Treaty Organization (METO) the signatories of which were Iran, Pakistan, Turkey and Iraq. In 1958, the United States joined the treaty as an observer member (Fereidoun Zandfard, 2004: 78). After the pro-Russian coup in Iraq and its subsequent withdrawal from the treaty, the remaining signatories formed the Central Treaty Organization or CENTO.

After the Iraqi coup the treaty's atomic centre had to be transferred to one of the member states. Iran's Foreign Ministry laid great importance to the atomic centre and took a number of steps in order to transfer it onto its soil. One of the main duties of CENTO, in addition to extending peaceful nuclear energy to the regional states, was to offer training courses. These training courses were offered every four months for the trainees of all regional states. The quota for each country was four trainees. Based on a pre-designed program, courses were offered on electronics and application of radioisotopes in different fields of industry, medicine and other sciences. To offer these training courses and also in order to continue the activities of the centre, the British officials had to set up the necessary machineries and laboratories in Iran (Prime Minister's Office, 27922). In the meantime, the atomic centre was transferred to Tehran after which the CENTO technical assistance in collaboration with the British government was also set up (Fereidoun Zandfard, 2004: 80).

4. National Atomic Energy Commission

The National Atomic Energy Commission was formed under ratification by the cabinet ministers on June 24, 1957. The foremost duties of the new commission were as followed:

1. Creating coordination for nuclear energy works by governmental organizations;
2. Devising a program for training technical staff;
3. Preparing and devising the rule and regulation on the application of nuclear energy (Prime Minister's Office, 55676).

Key measures taken by the National Atomic Energy Commission were:

1. Iran's membership at the IAEA;
2. Exploration of radioactive materials;
3. Establishment of Tehran University Atomic Centre;
4. Providing nuclear reactor to Tehran University;
5. Signing a trilateral nuclear pact with the US and the IAEA;
6. Signing a nuclear pact with the US;
7. Offering research scholarships in nuclear fields;
8. Paying dividends
9. Dispatching Iranian experts abroad (Prime Minister's Office, 58511).

Initially, the commission paid a great attention to the usage of radioisotopes and entered negotiations with the International Atomic Energy Agency on training technical staff as well as the governments of US, Britain and France (Prime Minister's Office, 56201). Despite the efforts, the atomic energy commission did not go far enough and this led to discontentment of then Minister of Economy Alinaqi Alikhani towards the commission and the general feeling was to make certain changes in the commission. Therefore, Akbar Etemad was asked to find a solution and to come up with a new plan (Etemad, n.d). Consequently, and as approved by the cabinet ministers, the Nuclear Energy Council was formed to centralize all nuclear energy activities. With prime minister as its chairman, the council members were minister of economy, managing director of Planning Organization, chancellor of Tehran University, and other national universities as

well as four atomic experts chosen by prime minister (The History of Nuclear Energy in Iran and the World, P. 590). The commission was in charge of Iran's nuclear energy until 1973 when the Atomic Energy Organization of Iran was established.

5. Establishment of Atomic Energy Organization of Iran

On March 8, 1973, Mohammad Reza Pahlavi ordered Prime Minister Amir Abbas Hoveyda to set up an establishment that could coordinate and supervise all issues related to the country's use of nuclear energy. The new organization also had to build nuclear power plants, water desalination plants and lay scientific and technical foundations for implementing the interrelated projects. He also commissioned Akbar Etemad to work out a plan for setting up an organization within 30 days. At the bottom line of the directive Mohammad Reza Pahlavi wrote: 'Given its importance, this establishment will have to carry out its duties under our direct supervision' (Intelligence Office, 1020).

To put into action the directive, the nuclear energy sector had to make fundamental changes and also join the newly-established Atomic Energy Organization of Iran. In this respect, the chancellor of Tehran University wrote a letter to Shah in which he talked about transferring the Tehran University Atomic Centre to the new Atomic Energy Organization.

Shah referred to the Tehran University Atomic Centre as a unique place and added: "We have to do this even if it is for the interim. However, the situation for the scientific and administrative staff of the atomic centre as well as those who are working in the atomic field should be clear so as to prevent any damages to the work. Also, all specialized training courses in atomic field will have to continue under direct supervision of the university, using the necessary labs and facilities. We must either bring in the required specialists from abroad or train them within the country". Nosratollah Moeinian, chairman of Shah's Special Information Office, wrote a letter to the prime minister, explaining Shah's directive: "The prime minister is required to give the necessary orders to the minister of

energy and the Atomic Energy Organization to implement the work in collaboration with Tehran University," (Intelligence Office, 712).

Consequently, the Atomic Energy Organization of Iran was established. Headed by Akbar Etemad, the new organization was under direct supervision of Mohammad Reza Shah Pahlavi. After its formation, international companies which were building nuclear facilities announced that they were ready to enter negotiations with Iran. Akbar Etemad wrote in his memoirs: "In the early months, the vultures started to come to Tehran. Different companies selling nuclear facilities invaded the country. Plane after plane they came to Tehran and I also had to meet them nonstop." (Etemad, n.d)

The establishment of Atomic Energy Organization of Iran was concurrent with the soaring oil prices in the world markets and the consequent increase in Iran's oil export revenues. Iranian officials had become a snub, feeling that they were free to act the way they liked. However, the exporters of nuclear technology increased the prices of services drastically. Akbar Etemad referred to these two points in a report to prime minister:

"There is no special issue regarding the atomic cooperation between Iran and France. It is business as usual. During talks with the French minister of industries and research in Paris, I was told frankly that France is willing to develop Iran's atomic programs. However, given the recent developments in nuclear relations between different countries as well as Iran's policy of independence in its atomic energy program, I emphasized that Tehran wishes to consider stronger foundations for cooperation so that the implementation of its atomic programs, especially its nuclear technology development and growth, would not be jeopardized at any time and under any circumstances. The French minister of industries got the point and promised to help accordingly."

He added, "I am of the opinion that we have to make clear our positions to Germany and France. We are in a special position now. Given the political circumstances and the special role we are now playing in the complex market of nuclear energy, we can act much more steadily and potent. As far as the German-Brazil nuclear pact is concerned, I do believe that the Brazilian government has accepted

certain conditions that are totally undesirable to us. We should stop playing the role of exclusive atomic customer for France and Germany. We should be an informed and knowledgeable player in the global nuclear energy market" (Prime Minister's Office, 63460).

As the events leading to the Islamic revolution which threatened the very foundation of Pahlavi regime, Iran's Atomic Energy Organization was among the first foundations that were changed as a result of the revolution. For instance, as per a ratification dated June 25, 1978 by the cabinet ministers, all issues and responsibilities related to the atomic power plants including construction, completion and exploitation phases, were handed over to the Energy Ministry. In the second half of 1978, Jahangir Mahd-Mina, energy minister at Jafar Sharif Emami's cabinet, outlined the ongoing projects by his ministry in a special report. The following briefing summarizes the main points of his report:

1. Bushehr Nuclear Power Plant (Iran 1 and 2): Building construction of this power plant began in October 1974. The German company of Kraft Werk Union was the plant's main contractor. The total value of the contract was 7,778,759,000 Deutsche Marks. Almost 75 percent of the plant's construction works have been completed thus far. Based on the schedule, the plant will become operational in 1981.

2. Karun 2 Nuclear Power Plant (Iran 3 and 4): Building construction of the power plant began in July 1977. The contractor of the plant is a consortium of French companies Alton, Atlantic, DEPI, Batitol, and FRAMATECH headed by Framatome. The value of the contract is 8,950,290,000 French Francs plus 31,733,300,000 Rials. Construction works including soil exploration, excavation and laying foundations have finished already. They are now waiting for permission from the International Atomic Energy Agency to lay the concretes.

3. Isfahan and Central Province Nuclear Power Plant (Iran 5, 6, 7, and 8): The initial agreement to purchase electric and mechanical parts of the power plants was signed between Iran's Atomic Energy Organization and the German company Kraft Werk Union in November 1977. The preliminary works for finding a location in Isfahan and the central province are still underway. Total

price of electrical and mechanical equipment for the four units each with a 1,200 megawatts capacity is around nine billion French Francs based on prices for 1977. Some 35 million Marcs have also been paid in advance to the company.

4. North West Nuclear Power Plant (Iran 9 and 10): The Energy Ministry sent a letter to the German company of Braun Bavary in June 1978 for purchasing two 1,200 megawatt units. There have been no commitments in this respect yet.

5. Nuclear Fuel Issue: All issues related to nuclear fuel remain at Iran Atomic Energy Organization. Several contracts on purchasing uranium, enrichment-related services and collaboration in uranium mines and the Eurodif factory have been signed.

Prime Minister Sharif Emami in reply to this report issued a directive urging the nuclear officials to carry on their works. However, he also said that no new commitments should be made (Prime Minister's Office, 66977).

In conclusion, it should be reminded that the Pahlavi regime, despite suspicions of the Western powers, was not trying to build a nuclear weapon. Akbar Etemad once said to find out about the hidden motives of Shah in this respect, one day he tried to bring up the subject matter at a casual meeting with him. He wrote:

"His Highness said let's sit down and talk. He explained for two hours his philosophy and views on Iran's military security as well as security threats against the country and explained the strategies to confront them. He said, 'in such doctrine, I don't see any place for an atomic bomb. This is because if we occupy all the surrounding states of Afghanistan, Pakistan, the Persian Gulf Sheikdoms, Saudi Arabia, Iraq and Turkey, none could match Iran's growing military prowess. Therefore, military advantage in the region belongs to Iran and we don't need nuclear weapons.' He then said, 'it would be useless to build one or two or even ten nuclear bombs against the Soviet Union, since we cannot protect ourselves from Russia with nuclear weapons. Therefore, having nuclear bombs will only create trouble and put unnecessary pressure on our civilian nuclear program'" (Etemad, n.d).

Final Word

In sum, the Pahlavi regime had ample time and chance to develop Iran's nuclear program between the end of the Second World War until 1979. A number of officials always urged the government to pay greater attention to this particular field. Sadly enough, the officials neglected the issue in those years. A quick comparison with Pakistan and Israel (Prime Minister's Office, 66108) demonstrates that at least Iran had the upper hand financially, yet failed to make optimum use of it in thrusting forward its nuclear program. An Iranian Legislative Assembly member once said at a meeting that the government's negligence was more than its works (Prime Minister's Office, 64151). At the same time, the governments of Pakistan and the occupying regime of Al-Quds managed to master nuclear technology amid myriad obstacles, especially given the fact that Iran had broader ties with the countries that had the technology.

More to the point, the United States and other nuclear powers, or those who are in the nuclear club, are now trying to maintain their monopoly on nuclear technology (Intelligence Office, 1376). For that reason and no other, they are exerting efforts to stop the talented nations from mastering the technology. Their excuse for stopping others from gaining access to the technology is the so-called concern about diversion towards building nuclear weapons. This is amid the fact that some of them are producers of nuclear weapons and have even used weapons of mass destruction in the past. It goes without saying that this is just an excuse as the only concern for them is to keep their nuclear science domination. It is safe to conclude that this is very important for them, so much so that they are prepared to massacre a nation in order to obstruct it from development and growth.

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¹ Eurodif or European Gaseous Diffusion Uranium Enrichment Consortium is a subsidiary of the French company AREVA.