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Egypt and Russia signed an agreement, on November 19, 2015, under which Russia will build and finance Egypt's first nuclear power plant, in a ceremony attended by President Abdel Fattah El Sisi.¹

In addition, a memorandum of understanding was signed between the Russian and Egyptian regulators "in order to facilitate further development of the nuclear infrastructure" required for the project. The documents specified matters including nuclear fuel supply for the planned reactors, as well as responsibilities concerning their operation, maintenance and repair. The intergovernmental agreement also addresses questions concerning the management of used nuclear fuel, personnel training, and support to Egypt in its development of nuclear standards and regulations.²

In a televised speech following the signature of the deal, the Egyptian president said that the cost of the station would be covered by a loan that will last for 35 years through the period of the production of electricity from the Dabaa station. The Egyptian president also made clear that Egypt is committed to the international conventions prohibiting proliferation of nuclear weapons and nuclear plants. El-Sisi stressed that the project is 'for peaceful purposes' and highlighted that Egypt has always had the "dream of a peaceful nuclear program." "This project marks the first step towards our future plans that will entitle us to cooperate more in the nuclear industry with other countries," El-Sisi said.³

El-Sisi highlighted that both sides agreed on the timing of the deal to send a message of "hope" following the terrorist incident that last month and that the signing of such a project following the terrorism incident reveals the strong ties between Cairo and Moscow.⁴

Sergei Kirienko, director general of Russian atomic energy agency Rosatom, said the agreement is for the construction and operation of four 1,200 MW reactors.⁵

"The plant will make Egypt the regional leader in the field of nuclear technologies and the only country in the region that will have a generation 3+ plant," he added.⁶

Kirienko said that the plant in Dabaa, "will be the largest joint project between Russia and Egypt since the Aswan Dam was set up. This is truly a new page in the history of bilateral intergovernmental relations".⁷

The planned plant would be located at an existing nuclear site in Dabaa on the Mediterranean coast, west of Alexandria. The agreement envisages a power plant with four reactors producing 1,200 megawatts each. Along with the reactors, the plant will also have desalination capacities. The project will be completed in 2022.

Following the ouster of former president Mohamed Morsi, Egyptian-Russian relations have been strengthened in terms of diplomatic, economic and military cooperation and the nuclear deal is a part of the strategic cooperation between the countries.

Ambassador Mohamed Shaker, chairman of the Egyptian Council for Foreign Affairs, said that Egypt did not wait for launching bids, but gave the project to Russia with "direct order" just to save time. Egypt chose Russia as the latter produces cheaper nuclear reactors with good quality.⁸

In February 2015, Russian President Vladimir Putin announced that his country would help build “a whole new nuclear power industry in Egypt. We discussed the possibility of cooperation in nuclear power engineering. If final decisions are made, they will relate not only to the construction of a nuclear power plant but also to the creation of a whole new nuclear power industry in Egypt.” Russia would also aid in providing staff and scientific research, added Putin.⁹

Milestones in the Egypt – Russia nuclear deal

On February 10, 2015, Russian President Vladimir Putin and Egyptian President Abdel-Fattah El-Sisi declared that the two countries plan to jointly build Egypt's first nuclear power plant. Egyptian president, El-Sisi told reporters that memorandums of understanding had been signed on the plant's construction.¹⁰

On February 14, 2015, a delegation of Egyptian nuclear power experts and officials headed to Moscow to meet with Russian officials for talks on the Egyptian nuclear power-generation program to be implemented in partnership with Russia.

The delegation in Russia included the head of Egypt’s Nuclear Power Plants Authority, Khalil Yaso, the head of the Egypt’s Atomic Energy Authority, Atef El-Kadim, and the deputy president of Egypt's Nuclear and Radiological Regulatory Authority, Walid Zeidan, in addition to officials from the ministry of electricity. The delegation visited nuclear energy training centers and nuclear power plants in Moscow.¹¹

In October 2015, Anton Moskvin, Rosatom's overseas vice president, announced that talks for a contract to build a nuclear power station in Egypt had reached their final stages. He said that the deal was expected to be signed by the end of the year and the project will be completed in 2022.

In November 2015, Egyptian President Abdel-Fattah El-Sisi has asked Prime Minister Sherif Ismail, Minister of Electricity Mohamed Shaker, Minister of Finance Hani Qadry, and the head of the financial affairs authority for Egypt's armed forces, to finalize all the legal and technical procedures in order to implement a Russian bid to establish a nuclear power plant in Egypt.¹²

Only a week later, Sergey Kiriyyenko, the head of Rosatom, arrived to Cairo to discuss final procedures related to the project.¹³

Back ground

The Egyptian nuclear program, began during 1954–1961 when it acquired from the Soviet Union, the 2-megawatt reactor. Egypt set up its Atomic Energy Commission in 1955, and what became the Atomic Energy Authority the following year, responsible for licensing and regulation.

In 1975, the U.S. agreed in principle on a program to supply Egypt with power reactors. The U.S. promised to provide Egypt with eight nuclear power plants and the necessary cooperation agreements were signed. The plan was subject to a trilateral safeguards agreement signed by the U.S., the International Atomic Energy Agency, and Egypt.

In 1976, the U.S. unilaterally revised the bilateral agreements and introduced new conditions that were unacceptable to the Egyptian government. As a result, the decision was taken to ratify the NPT, with one goal in mind — the implementation of a nuclear power program. Egypt has subscribed to the NPT.

The Egypt government's Nuclear Power Plants Authority (NPPA) was then established in 1976, and in 1978 plans were drawn up for ten reactors by 1999 with 7200 MWe capacity, at Sidi Kreir, Al Arish, Cairo and in Upper Egypt. Talks then with French, German and Austrian interests as well as Westinghouse came to nothing.

In 1983 the El Dabaa site on the Mediterranean coast 250 km west of Alexandria and Zafraana on the Gulf of Suez were selected for nuclear plants.

In October 2007, President Mubarak announced the strategic decision to start a program to construct four nuclear power plants under IAEA supervision. The elements of this strategic decision included: ¹⁴

- The implementation of the necessary steps to construct the first Nuclear Power Plant for electricity generation at El-Dabaa;
- Commencement of legislative and structural procedures related to the energy sector in general, and the mechanisms and bodies specific to nuclear energy in particular, including:
 - Re-structuring the Supreme Council for Peaceful Uses of Nuclear Energy;
 - Drafting the “nuclear law” to regulate the relationship between the various authorities involved in or related to peaceful uses of nuclear energy;
 - Re-structuring the existing concerned agencies and authorities;
 - Enhancing the nuclear regulatory body and ensuring its independence.

On Aug. 25, 2010, Mubarak announced that the IAEA had approved the El-Dabaa site along the Mediterranean coast as an acceptable site for Egypt to build its first nuclear power plant. However, the 2011 Egyptian revolution and Mubarak’s subsequent removal from power have put these plans on hold.

In July 2012, the Egyptian Ministry of Electricity and Energy published a report that argued for the creation of a nuclear program. The report stated that Egypt’s increasing demand for electricity, requiring an additional 300 megawatts annually, cannot be met under the current system. In addition, the drop in both traditional sources of energy and employment opportunities means that Egypt should pursue the more economically feasible alternative of nuclear energy. The project incorporated specifications following the disaster at the nuclear reactor in Fukushima, Japan in March 2011.

The report said that the nuclear plant in Dabaa, on the Mediterranean coastline, will be the first of four nuclear power plants around the country. Under the plan, Dabaa will become operational in 2019 and will create jobs, giving the area a needed economic boost. The last nuclear plant would become operational by 2025.

The first brick of Egypt’s Dabaa nuclear power plant was laid under ousted president Hosni Mubarak. Site development was halted due to disputes with local residents, who accused the state of confiscating their land by force and without proper compensation.

In January 2012, Dabaa locals stormed the construction site, destroying existing infrastructure and refusing to surrender to military police. Low radioactive sources were also looted from the location, according to the International Atomic Energy Agency.

In April 2013, Egypt approached Russia to renew its nuclear cooperation agreement, focused on construction of a nuclear power plant at El Dabaa and joint development of uranium deposits.

In October 2013 the Minister for Electricity & Energy reactivated plans for El Dabaa, and announced a site office there for the Nuclear Power Plant Authority. In January 2014 the Ministry said it would issue a tender at the end of the month and announce the contractor in June. In mid-2014 the target date for the tender was December 2014, and it was made plain that the winner would need to finance the plant. The Russian Foreign Minister said in November 2013 that Russia was ready to finance an Egyptian nuclear plant.

In late 2013, local tribal families from Dabaa and Marsa Matrouh (a sea port 240 kilometers west of Alexandria) relinquished the nuclear construction site to the Egyptian armed forces after months of occupying the controversial area.

The Egyptian government started developing the infrastructure for a nuclear power plant in May 2014 in Dabaa on the Mediterranean coast.¹⁵

In a speech in September 2014, Egyptian President Abdel-Fattah El-Sisi said that electricity production and distribution were not developed enough to keep up with consumption. The speech was a response to a large-scale power outage in various parts of the country, part of an ongoing power crisis that has seen recurrent power outages nationwide throughout the summer.

The scarcity of water has also become a rising concern. The state's statistics agency reported in May 2014 that Egyptians have on average access to 663 cubic meters of clean water annually, well below the international water poverty threshold.

According to Nuclear Affairs and Energy Adviser at the Ministry of Electricity Ibrahim Al-Osery, the project has the potential to provide up to 50% of Egypt's electric energy capacity. He claimed that implementation delays cost the country approximately \$8bn annually, adding that over the past 30 years Egypt has lost approximately \$200bn.¹⁶

Top Egyptian and Russian officials met last November 2014 in order to discuss an agreement to help use nuclear power to generate electricity in Egypt.¹⁷

The motivations and Capabilities

Egypt has experienced periods electricity shortages in recent years, at times causing frequent blackouts but the growing need for energy is not the only motivation behind Egypt's interest in a nuclear power program.

Egypt sees itself as the leader of the Arab world; therefore a decision to pursue nuclear energy serves political purposes domestically as well as internationally. Undoubtedly, Iran's nuclear activities could elicit a regional nuclear race, as Tehran's traditional rivals in the Middle East —Egypt, Saudi Arabia, Turkey, Jordan, and the Persian Gulf states — could counter the Iranian threat with nuclear programs of their own.

The threat of nuclear weapon program

If Egypt were to decide to develop nuclear weapons it would not be starting from zero. Egypt's nuclear program, which began in 1954, features two research reactors and a hot-cell laboratory, all located at Inshas in the Delta.¹⁸ They are used for peaceful purposes and are under International Atomic Energy Agency – or IAEA – safeguards. Analysts agree that Egypt tried to acquire nuclear weapons back in the 1960s, but ultimately decided not to do so because of political and economic reasons.¹⁹

Past nuclear endeavors have left Egypt with an experienced group of physicists and engineers and a number of universities capable of training a new generation of nuclear scientists.

The main Research and Development organization in Egypt is the Egyptian Atomic Energy Authority (EAEA), which comprises three research centers. Its mandate is to achieve the maximum utilization of the peaceful uses of the atomic energy for the welfare of the Egyptian people from the outset. This covers the fields of health, agriculture, food, industry, environment, and water resources.²⁰

Major Research and Development facilities at the EAEA include:²¹

- Two Research Reactors;
- Fuel Manufacturing Plant devoted for the manufacture of fuel for the second research reactor;
- The Radioisotope Production Facility;
- Two Cobalt's radiation facilities;
- Two accelerators;
- Liquid Radwaste treatment facility.

During the rule of Hosni Mubarak, the International Agency for Atomic Energy (IAEA) in 2004 opened an investigation into irradiation experiments and the unreported import of nuclear materials and in 2007 and 2008 found traces of Highly-Enriched Uranium (HEU), all at Inshas.

After each, the IAEA issued brief, bland reports, but the last case is apparently still open, while similar traces of HEU found in facilities in Iran provided the first clue that Pakistan had been aiding Tehran's nuclear program.²²

Egypt was cooperative with the IAEA during the investigation and since then, the IAEA has not had any noted issues with Egypt.

Despite possessing a relatively advanced capability in nuclear technology, Egypt is many years away from the ability to produce nuclear weapons if it chose to do so.

Egypt and the Middle East nuclear-weapons free zone

Since 1974, Egypt has taken the initiative of proposing to render the Middle East nuclear-weapons free zone, calling all countries in the region without exception to join the NPT. In April 1990, Egypt took the initiative to render the Middle East free of weapons of mass destruction.

The 1991 Madrid Peace Conference established a multinational mechanism to work on making the Middle East a nuclear weapons-free zone. This mechanism, however, has stalled as a result of the Israeli position. In April 1996, Egypt hosted the conference for signing the declaration on rendering Africa a nuclear-weapons free zone.

Although Egypt signed the Nuclear Non-Proliferation Treaty (NPT) in 1968, it has refused to sign the NPT's Additional Protocol, which permits spot inspections, as well as treaties banning the possession of chemical and biological weapons.

Permanent Representative of Egypt to the United Nations at Geneva, Amr Ahmed Ramadan called on September 10, 2014, for an international convention to ban the production of fissile materials used in nuclear weapons. Ramadan made the remarks during the closing session of the Conference on Disarmament (CD), 2014 held in Geneva. Also,

Ramadan urged to keep the outer space away from armed conflict, reiterating the importance of giving guarantees by the nuclear States not to threaten other non-nuclear countries.

Ramadan expressed disappointment over failure to carry out the results of the Review Conference of the Parties to the Treaty on the Non-Proliferation of Nuclear Weapons (NPT) held on 1995. The review conference endorsed the aims and objectives of the Middle East peace process and recognized that efforts in this regard, as well as other efforts, contribute to a Middle East zone free of nuclear weapons and other weapons of mass destruction.²³

Summary and conclusions

Russia is one of the main non-Arab supporters of Sisi's government and was among the first countries to endorse Sisi's presidential bid in 2014. Dr. Mohammed Badri Egypt's ambassador to Russia said in October 2015, that bilateral relations between both countries have entered the stage of strategic partnership by virtue of the strong relations between both countries' leaders, indicating that these relations are growing in various fields. He pointed out that the growth of these relations serves the interests of both countries and stability in the Middle East, especially with the presence of a common vision on the need to fight terrorism.²⁴

The nuclear deal is a significant step in the fast-growing strategic alliance between Egypt and Russia. Egypt and Russia have never been that close since the era of late President Gamal Abdel Nasser, referring to the level of economic and military cooperation, which culminated in arm deals and naval maneuvers codenamed "Friendship Bridge 2015."

The US would not oppose a nuclear deal for peaceful purposes, State Department spokeswoman Jen Psaki said on February 10, 2015. "We support peaceful nuclear power programs as long as obligations under the Nuclear Nonproliferation Treaty to which Egypt is a signatory and obligations to the IAEA are fully met and the highest international standards regulating security, nonproliferation, export controls, and physical security are strictly followed," she said.²⁵

Israel has long argued that a nuclear Iran would set off a regional nuclear race, as Tehran's traditional rivals in the Middle East — Egypt, Saudi Arabia, Turkey, Jordan and the Persian Gulf states — would quickly move to respond to the Iranian nuclear program challenge.

Egypt's desire for a nuclear program could also be seen as part of the greater Sunni reaction to Iran's program and what they fear will be a Shia nuclear bomb, which will cast a shadow over the entire region. Iran's program has already triggered a number of "civilian" nuclear programs in other Sunni Arab countries.²⁶

The agreement between Egypt and Russia will provide Egypt a nuclear energy program, one that could potentially be diverted for weapons purposes. Thus, it remains to be seen whether Egypt will change the nuclear policy in the future.

Notes

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- ⁵ Russia signs deal to build Egypt's first nuclear plan, Al Arabiya, November 19, 2015.
- ⁶ Egypt, Russia sign Dabaa nuclear plant deal, Ahram Online, November 20, 2015.
- ⁷ Russia, Egypt sign deal on construction of Egypt's first nuclear plant, CNN, November 19, 2015.
- ⁸ News Analysis: Cairo-Moscow nuclear deal vital for Egypt's development, Strategic Culture Foundation, February 13, 2015.
- ⁹ Ariel Ben Solomon, State Department says US would not oppose a nuclear deal for peaceful purposes, Jerusalem Post, February 11, 2015.
- ¹⁰ Brian Rohan and Vladimir and Sachenkov, Putin's Visit to Egypt Nets Plan to Build Nuclear Plant, Associated Press, February 10, 2015.
- ¹¹ Egyptian nuclear delegation heads to Moscow, Ahram Online, February 14, 2015.
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- ¹³ Head of Russian firm arrives to Cairo for near-end negotiations on Dabaa nuclear plant, ahram Online, November 19, 2015.
- ¹⁴ The Country Nuclear Power Profiles (CNPP) compiles background information on the status and development of nuclear power programs in Member States. The CNPP's main objectives are to consolidate information about the nuclear power infrastructures in participating countries, and to present factors related to the effective planning, decision making and implementation of nuclear power programs that together lead to safe and economical operations of nuclear power plants. Country Nuclear Power Profiles - Egypt, IAEA, Updated 2015.
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- ¹⁸ Raymond Stock, As Obama dithers, Egypt ramps up its nuclear options, FoxNews.com, January 09, 2014.
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- ²¹ Ibid.
- ²² Raymond Stock, As Obama dithers, Egypt ramps up its nuclear options, FoxNews.com, January 09, 2014.
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- ²⁴ Egyptian-Russian relations enters strategic partnership, site of the embassy of Egypt in Moscow –Russia, October 30, 2015.
- ²⁵ Ibid.
- ²⁶ Ariel ben Solomon, Why is impoverished Egypt seeking a nuclear program? Jerusalem Post, April 25, 2013.