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TURKEY'S PURSUIT OF NUCLEAR ENERGY
A CASE STUDY OF THE AKKUYU NUCLEAR POWER PLANT

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Turkey's Pursuit of Nuclear Energy

Scholars have argued that Turkey's stellar history of nonproliferation, commitment to international verification mechanisms of nuclear technology, and reliance on NATO and the U.S. demonstrates the country's stagnant position. Thus, Turkey would only favor an independent weapons capability in the very unlikely scenario of marginalized relations with the United States. Though it is understandable that Turkey is overlooked in the field of nuclear security, the intergovernmental agreement between Turkey and Russia in 2010 exemplifies a strengthened strategic relationship and both countries' quest for an offensive realist approach towards the Middle East. Turkey is not paving a path towards nuclear weapons, yet the hurried process of becoming a nuclear state opens the gate for major vulnerabilities.

The aim of this research is to examine the environmental and security risks posed by the Akkuyu Nuclear Power Plant, in the Mediterranean province of Mersin. A field research was conducted in Mersin late July, 2015. The findings show that despite Turkey's commitments to the nonproliferation regime, the hurried process of pursuing nuclear energy at the Akkuyu site under the Build-Own-Operate model has the potential of breaching Turkey's credibility as an international actor.

During the World Economic Forum in 2012, Turkey's Minister of Energy and Natural Resources Taner Yildiz stated, "We are a country without a nuclear power

plant. However, we are determined to have nuclear power plants. We want to meet our increasing energy needs by erecting at least 23 nuclear units by the year 2023.”¹

As a committed state to the Treaty on Non-Proliferation of Nuclear Weapons (NPT) Turkey defends its right to pursue a peaceful nuclear energy program due to increases in energy demand and expected population growth. Following the Fukushima disaster, Germany decided to begin terminating its successful nuclear energy program. On the other hand, developing countries insist that they need to invest in nuclear energy due to economic development and growing population estimates. The Turkish government has continuously stressed the need to develop nuclear energy. However, considering Turkey’s advantage of being surrounded by water and its Mediterranean climate, the insistence on nuclear energy begs the question: why is Turkey resorting to nuclear energy?²

While Turkey’s dedication to the nonproliferation regime is upheld by its commitment to NATO and the European Union accession process, the government’s aggressive pursuit of nuclear energy and plans to construct three nuclear plants in Sinop, Kırklareli, and Akkuyu pose transnational security risks. As Ankara seeks to develop a nuclear industry funded by intergovernmental agreements with Russia, Japan, and France, the speed of development raises security concerns and necessitates an examination of how the nuclear energy initiative will influence Turkey’s Middle East posture.

¹ *Turkey to Have 23 Nuclear Units, Energy Minister Says*. Hurriyet Daily News: 06 Jun. 2012. Web. <<http://www.hurriyetdailynews.com/turkey-to-have-23-nuclear-units-minister-says.aspx?pageID=238&nID=22486&NewsCatID=348>>

² Erdurmaz, Serdar. "Nuclear Energy in Turkey, Do We Need It Indeed?" *Asian Economic and Social Society* 2.1 (2012): 233-42. Web. 238

Atoms for Turkey

The promises of the Atoms for Peace Program, launched by President Eisenhower in 1953, symbolized a future of modernization for developing countries. It has been argued that this initiative, paradoxically, set nuclear aspirant countries on the path to pursue nuclear weapons programs. Three years after Eisenhower's "Atoms for Peace" address before the United Nations General Assembly, Turkey took its first step toward nuclear energy with the passing of legislation to establish the Atomic Energy Commission (TAEC) under the control of the Prime Ministry. In 1961, the United States provided TAEC with support to launch the Cekmece Nuclear Research Training Center.³ The second research center was founded in Ankara to promote "fundamental and applied research to use nuclear energy and technology for the benefit of the country and to support the national development".⁴ Per the invitation by the Ministry of Energy and National Resources, an investigation led by the IAEA mission was carried out.⁵ Turkey undertook studies to construct a 300 to 400 MWe pressurized heavy water reactor in 1967 with the intention to start generating electricity by 1977. Nevertheless, the initiative was halted due to economic and political developments, such as the 1980 coup.

The consideration of Akkuyu Bay on the Mediterranean coast due to its seismic conditions traces back to 1976 when TAEC issued the bidding for with the assistance of a consortium of one French and three Swiss firm to negotiate the

³ Katz, James Everett. *Nuclear Power in Developing Countries: An Analysis of Decision Making*. Lexington, Mass.: Lexington, 1982. Print. 313

⁴ Kibaroglu, Mustafa. "Turkey's Quest for Peaceful Nuclear Power." *The Nonproliferation Review* Spring-Summer (1997): 33-44. Web. 34

⁵ Katz, James Everett. *Nuclear Power in Developing Countries: An Analysis of Decision Making*. Lexington, Mass.: Lexington, 1982. Print. 313

construction of a 600 MWe nuclear power plant. Though the Swedish firms Asea-Atom and Stal-Laval began the financing of the investment, the military coup in Turkey in 1980 interrupted the process.⁶ In 1981, the United States made allegations of illicit cooperation between Turkey and Pakistan. The alleged shipments from Turkey to Pakistan are thought to have enabled Pakistan in their quest for uranium enrichment technology. Then Chief of the Policy Planning Staff at the Turkish Ministry of Foreign Affairs, Ambassador Omer Ersun, confirmed the US allegations of the \$30,000 shipment of inverters to Pakistan through the channels of a Turkish textile firm to be true.⁷

Since 1982, Turkey's nuclear activities have been subject to a comprehensive safeguards agreement. In 2001, the Additional Protocol entered into force and a broader conclusion on safeguards was awarded by the IAEA in 2012 which means:

For each State with a CSA and an additional protocol based on [540] in force, a broader conclusion can be drawn for the year concerned that all of the nuclear material in the State had been placed under safeguards and remained in peaceful nuclear activities or was otherwise adequately accounted for. To be able to draw this conclusion, the IAEA must draw the conclusions of both the non-diversion of the nuclear material placed under safeguards (as described above) and the absence of undeclared nuclear material and activities for the State as a whole. The conclusion of the absence of undeclared nuclear material and activities is drawn when the activities performed under an additional

⁶ Kibaroglu, Mustafa. "Turkey's Quest for Peaceful Nuclear Power." *The Nonproliferation Review* Spring-Summer (1997): 33-44. Web. 35

⁷ Ibid, 34

*protocol have been completed, when relevant questions and inconsistencies have been addressed, and when no indications have been found by the IAEA that, in its judgment, would constitute a safeguards concern.*⁸

Mustafa Kibaroglu, Chair of the Political Science and International Relations Department at the MEF University in Istanbul and one of the prominent scholars on Turkey's pursuit of nuclear energy stated during our interview in Istanbul that the agreement between Turkey and Russia is an outcome of the longstanding attitude of Americans and Europeans and their dragging their feet in terms of fulfilling Turkey's expectations to transfer technology for benefitting from the peaceful applications of nuclear energy. For so many decades, Kibaroglu continued, Turkey has displayed its interest in having nuclear capacity installed. Starting from the early 70s, Turkey had launched a number of its (nuclear energy projects), among a few which have a resulted in anything concrete. The following is Kibaroglu's portrayal of the Turkey's struggle to pursue nuclear energy:

Americans and Europeans had doubts about Turkey would really like stay on the peaceful track or would it eventually, somewhere on the course, deviate from the peaceful applications, hence has been the case in order countries like Pakistan. Back in the 70s and 80s, especially following the military coup in 1980, the rapprochement between Turkish top generals. The degree of intensified relations between Turkey and Pakistan had become a source of serious concerns, doubts about Turkey's real intentions. I think that the military

⁸ "IAEA Safeguards Glossary." International Nuclear Verification Series, 2010. http://www-pub.iaea.org/MTCD/publications/PDF/nvs-3-cd/PDF/NVS3_scr.pdf.

was a certain degree of reason for the Westerns to be concerned about the rapprochement, which was somewhat unprecedented, in terms of number of readings, in the exchange of visits, General Evren and General Zia al-Haq, almost couple of times a year. So, on one hand the history of Turkey-Pakistan relations would not be a concern anyway.

As far as I can see from my conversations with American authorities, and some European authorities, also from my archival readings, I can say that the attitude of the American government was not to be so enthusiastic in terms of fulfilling Turkey's expectations to get nuclear technology from the West. Well, on the one hand, Turkey remembered that under Article 4 in the NPT, Turkey had rights and therefore no one could say anything to Turkey's bids or Turkey's desire to install nuclear power plants, and therefore no one could mediate or oppose Turkey's request for nuclear power plants. Almost by de facto situation, Americans and Europeans have not fulfilled the necessary steps that would finally result in an agreement between the US or European companies. But they have always come up with certain questions or concerns with regards to some of the missing reports for instance, with respect to the fault lines, passing several hundred kilometers away from the location where the nuclear power plant would be installed etc. So the Turkish government always postponed the bids. As I said, there is a series of bids that have not come to conclusion. And this has been the case and nothing has changed.⁹

⁹ Personal interview with Mustafa Kibaroglu, MEF University, Istanbul, July 21, 2015

Ideological Relations with the East

Turkey's nuclear relations with non-western countries have historically been based on ideological similarities. The Pakistani people found themselves aligned with the revolutionary thoughts of Mustafa Kemal Ataturk, which inspired them to fight against the British. The implementation of the 1964 Agreement of Regional Cooperation for Development would spark the beginning of strengthened strategic relationship between Turkey, Iran, and Pakistan. As a result of the military coup in Turkey on September 12, 1980, the interaction between President General Kenan Evren and President General Zia ul-Haq and their respective countries increased dramatically, leading to enhance trade, civil, and military developments.¹⁰ "Iran, Iraq and Syria, Turkey's Third World neighbors, are extremely concerned with nuclear developments in Turkey," Anoushiravan Etheshami stressed in his work *Nuclearisation of the Middle East* from 1980 when discussing Turkey's contemplation of acquiring nuclear weapons capability.¹¹ The presence of regional worries about Turkey's intentions at the time suggests a distinct narrative that often is overlooked in terms of Turkey's objectives. While the current trajectory of Turkey's nuclear energy policies are undertaken for civilian purposes, the landscape Turkey is surrounded by suggests and raises concerns about long-term objectives.

¹⁰ Kibaroglu, Mustafa. "Turkey's Quest for Peaceful Nuclear Power." *The Nonproliferation Review* Spring-Summer (1997): 33-44. Web. 35

¹¹ Ehteshami, Anoushiravan. *Nuclearisation of the Middle East*. Brassey's for the Gulf Centre for Strategic Studies, 1980. Print.149

Akkuyu Nuclear Power Plant

Russia's commitment to build Turkey's first nuclear power plant in Akkuyu by the Mediterranean coast arguably constitutes the most strategic cooperation between the two countries. The Akkuyu NPP has been awarded \$20 billion, which will finance a capacity of 4,800 megawatts, meeting 16% of Turkey's energy demand. Hence, Rosatom and Gazprom, Russia's state energy companies will dominate 74% of Turkey's energy market.¹² The BOO-model puts all financial risk on Russia and the Turkish electricity company TETAS guarantees to purchase 50 percent of the total production for fifteen years at an average price of 12.35 cents per KWH. It is also assumed that this price will pay back the investment expenditures of the Russian company in fifteen years. It should be noted that even in the scenario of failed revenues, the responsibility to cover costs would remain as Russia's burden.¹³ Russia will technically own the nuclear reactors and the BOO-model has been used in other industries before, but it is the first time the model is applied for a nuclear power plant.¹⁴ Since there is no viable economic advantage for the Russian side, the nature of the project has been framed as political, increasing the interdependencies between Ankara and Moscow.¹⁵

To herald the start of the currently estimated \$22 billion project, ground was broken on April 15, 2015, and the Turkish Energy Minister Taner Yildiz and

¹² Dogan, Zulfikar. "Energy Deals May Make Turkey Irreversibly Reliant on Moscow." *Almonitor - Turkey Pulse* 12 Dec. 2014. Print.

¹³ Ulgen, Sinan, and George Perkovich. "Turkey and Nuclear Energy." *Turkey's Nuclear Future*. Washington DC, 2015. Print. 23

¹⁴ Conant, Eve. "Turkey Goes Nuclear, Thanks to Russia." *Pulitzer Center on Crisis Reporting*. 21 Nov. 2012. Web. <<http://pulitzercenter.org/reporting/russia-turkey-nuclear-technology-energy-reactors-government-economy>>.

¹⁵ Ulgen, Sinan. "Turkey and the Bomb." *The Carnegie Papers Nuclear Policy* (2012). Print. 22

Rosatom director general Sergey Kirienko laid the foundation stone for the construction of the plant. During the ceremony, Yildiz stressed that if the Akkuyu plant had been built a decade ago, Turkey would have saved \$14 billion in natural gas purchases and nuclear power would today cover 28% of the country's electricity demand.¹⁶

Why are Doctors Walking?

In February, 2014, the doctors of the Mersin's Chamber of Medical Doctors walked 65km of the 135km distance to Akkuyu from Mersin as part of a demonstration against the Akkuyu NPP. Dr. Ful Ugurhan, president of Mersin's Chamber of Medical Doctors, has devoted herself to the cause against the Akkuyu NPP and raising awareness among residents of the Mersin province. Since the first license was granted to Akkuyu in 1976, villagers have been against the construction of a nuclear power plant near their homes and lands. The continuous struggle against initiatives to construct nuclear power plant in Akkuyu has taken a different shape this time, Ugurhan argues. This time, the political will to pursue nuclear energy is stronger. Nevertheless, the lack of transparency and the forged signatures of the nuclear engineers that conducted the Environmental Impact Assessment Report suggest that there is a greater necessity to shed light on the risks involved in building a nuclear power plant in Akkuyu.

¹⁶ "Ground Broken for Turkey's First Nuclear Power Plant." World Nuclear News, 2015. <http://www.world-nuclear-news.org/NN-Ground-broken-for-Turkeys-first-nuclear-power-plant-1541501.html>.

“Doctors are there for the people”, Ugurhan stated. That is why the Mersin’s Chamber of Medical Doctors work hard to express their concerns about the Akkuyu project. By collaborating with other groups such as the Mersin Bar Association and the Chamber of Electric Engineers, the doctors strive to make their voices heard. 37 steps, from one end to the other, Ugurhan said during our interview. The demonstrations that have taken place in front of Akkuyu NPP’s Information Center have shown the hostility and unwillingness to confront the concerns of the people. “We have patiently waited for a representative or the director to step out and address our concerns but only seen the faces of the police forces that were guarding the entrance.”¹⁷ Furthermore, she continues, the presence of the police should not be a surprise since the director of the Akkuyu NPP Information Center was assigned this job because he used to be part of Mersin’s police force. Why would one place a cop as the director for the information center of a country’s first nuclear power plant?, Ugurhan asked. “This clearly indicates the fear among them but also that they are well aware of what people think about this project. Polls show that approximately 80% of Mersin’s residents are against the construction of a nuclear power plant in Akkuyu,” Ugurhan affirmed. ¹⁸

The Akkuyu NPP Information Center does not portray a welcoming atmosphere for civilians who seek to know more about the project. When asked about what people think of the information center, Ugurhan said, “They have spent millions of dollars on that center but no one wants to visit it because people do not want a nuclear power plant here.” What is worrisome, according to Ugurhan and

¹⁷ Personal Interview with Dr. Ful Ugurhan, Mersin, July29, 2015

¹⁸ Ibid

others who have expressed similar thoughts, is that the information center brings buses full of university students from regional universities and market the Akkuyu NPP as their inevitable future.¹⁹

The Akkuyu NPP Information Center

“Look at all of this, we are doing a great thing for this country,” Eyup Lutfi Sarici, director of the Akkuyu NPP Information Center said while asking the security guard to turn on the switch for the different reactor simulations and posters. “The advanced nuclear technology Rosatom will bring to Turkey will make this country great again,” he continued. As we began our interview, Sarici instigated that the West has nothing to worry about. By implicitly referring to the Three Mile Island accident, he avowed that they have top of the line technology and safety regulations. After attempting to convince me that the concerns people who are against the nuclear power plant have are based on pure ignorance, Sarici pointed to the wonders they do for the future generation in their brochure:

For the purpose of specialists training the Russian Federation has allocated quotas for citizen of the Republic of Turkey. The first 48 people started their education at the branch of an applied-research Russian university – The National Research Nuclear University MEPhI –in 2011, and 69 people, in 2012. In 2013, admission of students to be trained in Russia continued. The training is focused on disciplines and levels required for work at Akkuyu NPP. Training duration, including one year pre-university course, is 5 years for a bachelor’s degree, 6.5 years for a specialist’s degree and 7 years for a master’s

¹⁹ Ibid

degree. The students are entitled to a monthly scholarship, an annual medical insurance policy and a covered Ankara-Moscow-Ankara flight once a year. After graduation and internship at a nuclear power plant in the Russian Federation the young specialists will work on establishing the atomic industry in the Republic of Turkey.²⁰

According to Mustafa Kibaroglu, Turkey has in the past sent students to study nuclear engineering abroad but due to the lack of an established Turkish nuclear infrastructure they have returned to empty promises. Thus, they have moved to other countries where they can practice their professions. “No one knows what will happen to these students when they finish their studies in Russia,” Kibaroglu stated.²¹ Sabahat Aslan, a machine engineer and concerned citizen, expressed similar thoughts. The students might intern in the analogue nuclear power plant in Novovoronezh, a site that has become vital for the VVER reactor design but it will not provide the students with the necessary knowledge nor experience to tackle the problems they will face in Akkuyu. Most of the planned installations for the Akkuyu site have not been tested anywhere in the world before and the environmental setting is completely different from Novovoronezh, Aslan explained during our interview.²²

On July 1, 2015, the predecessor of Eyup Lutfi Sarici, Faruk Uzel resigned from his position as the director of the Akkuyu NPP Information Center. The development was publicized in September. In his press release, Uzel stated that he

²⁰ Akkuyu NPP Information Center Brochure, Mersin, nd.

²¹ Personal interview with Mustafa Kibaroglu, MEF University, Istanbul, July 21, 2015

²² Personal interview with Sabahat Aslan, July 30, 2015

resigned from his position because he voiced his concerns about the dangers of the nuclear power plant being constructed and operated by the Russian. Uzel also claimed that the conduction of the project involves corrupt practices. In addition to disclosing the financial deficits and management issues, Uzel stated that no one should believe the nuclear power plant will be secure because it will be built on the shore of Akkuyu, a location that is 12 meters below sea level. Uzel claims to have received multiple threats from the Akkuyu NPP company.²³

Akkuyu – Nominee for Fukushima

The core catcher for the Akkuyu project has features that include greater seismic robustness and easier installation than core catchers installed at other Russia-designed plants, Alexander Sidorov, head of AEP's integrated design bureau, said, according to a statement by Rosatom. The "upgraded design" enables the reactor to withstand greater safe shutdown earthquake loads and to run without electricity supply for up to 72 hours, he said. It also has a "more efficient cooling system".²⁴ Rosatom promotes their safety enhancements of the modern Russian power units in the Akkuyu NPP information brochures. In a scenario in which the fuel temperature of the reactor reaches up to 2600 degrees and the core cannot be cooled down, "the bottom of the reactor vessel melts, and all remaining nuclear fuel and the reactor structure flow into a cooled fireproof glass, known as a "the corium trap"". How does this system prevent a fission chain reaction from occurring?

²³ "Akkuyu'nun bilgilendirme bürosu müdürü istifa etti." Sep 4. 2015.
<http://turizmgazetesi.com/news.aspx?id=78159>.

²⁴ "Core Catcher for Akkuyu." World Nuclear News, September 30, 2014.
<http://www.world-nuclear-news.org/NN-Core-catcher-for-Akkuyu-3009201401.html>

According to the brochure, the corium trap is filled with “sacrificial material”, “which prevents a fission chain reaction lowers the temperature of the corium”.²⁵

As the president of Mersin’s Environment and Nature Association and a machine engineer, Sabahat Aslan has been an active opponent of the Akkuyu NPP from the very start. According to Sabahat Aslan, the maintenance of heat removal under this new model poses major environmental dangers that should not be overlooked. The new model of Russian power units will consume approximately 20 billion liters of seawater per day for the cooling system and 2.5 ton of chlorine will be processed on a daily basis. This will contribute to a drastic climate change in the region, with significant impacts on agriculture and the ecosystem, Aslan stressed.²⁶ Cemal Guzu, a professor at the Marine Sciences Institute at Middle Eastern Technical University in Ankara who spoke to Dogan News Agency with regards to the Environmental Impact Assessment Report stated that, “it was impossible to suggest there would be no environmental impact after the release of a million cubic meters of 35-degree water into the sea each for the next 60 years.”²⁷

In a recent piece that Aslan wrote following the 5.2 earthquake in Mersin, she underscores the predominant gaps of the controversial environmental impact report (CED). The possibility of an earthquake and its implications if a nuclear power plant is constructed is a central discourse that is taking place among opponents of the power plant and concerned citizens. The report suggests that the

²⁵ Akkuyu NPP Project in the Republic of Turkey, Rosatom, Project Brochure

²⁶ Personal interview with Sabahat Aslan, July 30, 2015

²⁷ "Environment Report for First Nuclear Plant in Akkuyu Yells Out: 'Don't Build It.'" Hurriyet Daily News, July 18, 2014.

<http://www.hurriyetdailynews.com/environment-report-for-first-nuclear-plant-in-akkuyu-yells-out-dont-buildit.aspx?pageID=238&nID=69306&NewsCatID=340>

site for the Akkuyu NPP lies only on one fault line, the Ecemis. Sabahat Aslan and other critics of the findings of the report affirm that the report lacks scientific and objective analysis. In addition to the Ecemis fault line, Aslan states four fault lines that have historically influenced the seismic conditions of the region: 1. Kıbrıs Dalma Batma Kuşağı, 2. Ölü Deniz Kırığı, 3. Güney Ege Dalma Batma Kuşağı, 4. Doğu Anadolu.²⁸

The Gift To Putin - The Environmental Impact Assessment Report (CED)

“When you look at the data, the report yells, ‘This shouldn’t be built here,’” said Ali Cemal Gücü, a professor at the Marine Sciences Institute at Middle Eastern Technical University (ODTÜ) in Ankara stated.²⁹ Rosatom applied to the Ministry of Environment and Urban Planning to start the environment assessment process in December 2011. Determining the environmental conditions and potential ecological consequences of the nuclear power plant in the region is a crucial pre-requisite in the assessment of the viability of the project. The report has to be completed and approved by the Ministry in order to receive required permits for construction. Although the Ministry of Environment and Urban Planning made it mandatory that the private firms issuing the CED must employ nuclear energy engineers in their study, the report does not provide a credible assessment nor draw critical attention to the potential risks.

²⁸ Aslan, Sabahat. “‘Akkuyu, Fukushima Felaketine Aday’.” Mersin Haberci, August 1, 2015. <http://mersinhaberci.com/akkuyu-fukushima-felaketine-aday/>

²⁹ “Environment Report for First Nuclear Plant in Akkuyu Yells Out: ‘Don’t Build It’.” Hurriyet Daily News, July 18, 2014. <http://www.hurriyetdailynews.com/environment-report-for-first-nuclear-plant-in-akkuyu-yells-out-dont-build-it.aspx?pageID=238&nID=69306&NewsCatID=340>

The CED report was initially submitted to the Ministry of Environment and Urban Planning in July, 2013 but was rejected due to lack of adequate information on July 15. Hours before Vladimir Putin's visit to Ankara on December 1, 2014, the Environmental Impact Assessment Report was approved by Turkey's Ministry of Environment and Urban Planning.³⁰

One of the nuclear energy engineers whose signature was on the initial report, was shocked to find that his signature was on the new report that was sent to the ministry on August 23, despite his resignation from his post on July 31. Additionally, the report had been revised by Akkuyu NPP without notifying the engineers. The request for a criminal investigation was made by the Turkish Union of Engineers and Architects' Chamber (TMMOB) and it was concluded that two of the signatures of the nuclear engineers were forged. Idris Gulluce, Minister of Environment and Planning, rejected the claims and argued that these were plans to obstruct Turkey's development. Gullece tweeted that "no one should think they can hinder the development of growth of Turkey with these types of intentional articles."³¹

Turkey's Nuclear Secret: The Integrated Nuclear Infrastructure Review

In February 2014, Zafer Alper, head of Turkey's Atomic Energy Authority and Metin Kilci, Undersecretary of the Energy Ministry received the Integrated Nuclear

³⁰ "ÇED Raporu, Putin'e Hediye Mi?" Sozcu, December 1, 2014.
<http://www.sozcu.com.tr/2014/gunun-icinden/ced-raporu-putine-hediye-mi-664039/>

³¹ "Signatures on Nuclear Power Plant Environmental Impact Report Forged." Today's Zaman, January 12, 2015.
http://www.todayszaman.com/anasayfa_signatures-on-nuclear-power-plant-environmental-impact-report-forged_369563.html

Infrastructure Review (INIR) report conducted by the IAEA. The report was conducted by the IAEA on the Akkuyu NPP and allegedly contains 24 important advices and 15 recommendations for the Turkish government. As part of the agreement between Turkey and the IAEA, only Turkey is authorized to publicize it. Other states that are currently pursuing nuclear energy and have received their INIR, Poland, Belarus and the United Arab Emirates have decided to share the reports with the public. In Turkey, the attention was drawn to the report only after Mersin's 1st Administrative Court asked the Ministry of Energy to provide the court with the report as part of a longstanding case against the environmental impact report for the Akkuyu NPP, which was approved by the Ministry of Environment. The longstanding legal efforts of 86 concerned citizen, including members of Mersin's Chamber of Medical Doctors, the Mersin Bar Association, and the Ecology Collective to halt the implementation of the nuclear power plant and appealed a file against the ÇED report continues. ³²

In response to the Mersin court's request of the INIR report, the Energy Ministry's Nuclear Project Implementation Department deputy head Sibel Gezer stated that the ministry refuses to send the report on the basis of an article of the law concerning administrative procedure code. The article states that, "the prime minister or concerned minister has the right to not provide the requested

³² http://www.todayszaman.com/anasayfa_turkeys-energy-ministry-refuses-to-deliver-intl-report-on-akkuyu-nuclear-plant-to-court_380066.html

information or document if it involves the security or interests of the state or is about foreign states.”³³

The BOO-Model: Russia’s Buck-Passing Strategy

Russia is applying a buck-passing strategy for survival by assisting several countries in the Middle East in developing nuclear energy technologies to plausibly deter others from increasing their share of power. Mearsheimer justifies how a buck-passer tries “...to get another state to bear the burden of deterring or possibly fighting an aggressor, while it remains on the sidelines. The buck-passer fully recognizes the need to prevent the aggressor from increasing its share of world power but looks for some other state that is threatened by the aggressor to perform that onerous task.”³⁴ Threatened states usually prefer buck-passing to balancing, mainly because the buck-passer avoids the costs of fighting the aggressor in the event of war. ³⁵ Following this theory, it could be argued that Russia seeks to finance nuclear energy programs in the Middle East to deflate US role in the region and reassert its influence.

Relying on the heavy presence of nuclear weapons on its territory was a credible deterrent against the Soviet Union for Turkey. Urging Turkey not accept the US intermediate range nuclear (Jupiter) missiles, the Soviet Union proposed the establishment of a Nuclear Weapons-Free Zone (NWFZ) in the Balkans in 1959.

³³ "Turkey’s Energy Ministry Refuses to Deliver Int’l Report on Akkuyu Nuclear Plant to Court." Today's Zaman, May 7, 2015.
http://www.todayszaman.com/anasayfa_turkeys-energy-ministry-refuses-to-deliver-intl-report-on-akkuyu-nuclear-plant-to-court_380066.html

³⁴ Mearsheimer, John J. "Strategies for Survival." *The Tragedy of Great Power Politics*. 1st Edition ed. New York: U of Chicago, 2001. Print. 157-58

³⁵ Ibid, 139

Without any further success, the Warsaw Pact tried to revive the proposal in the 1980s but did not succeed in obtaining Turkey's commitment to disarmament and a nuclear-free zone in the Balkans.³⁶ Apprehensive about US presence in the Middle East, the rise of Iranian influence, and non-state actors, Russia has come to realize that a strengthened relationship with Turkey must be achieved. With Russia's only naval base in the Middle East, the Tartus Port in Syria at risk due to the civil war, the government seeks to secure its influence in the region by offering technological and financial assistance through the BOO-model to emerging nuclear energy programs.

President Recep Tayyip Erdogan's vision to complete the first reactor within the scope of 10 years, despite IAEA recommendations of 10-15 years, is not unrealistic but it does escalate the security threats. Turkey's interest for nuclear technology has existed for over a decade, and the AKP-led (Justice and Development Party) government is the only government that has managed to overcome political and economic challenges to pursue the nuclear energy initiative. Weak export controls and the increased presence of nuclear materials, however, will increase the probability of illicit trade in the Middle East. More importantly, the strategic relationship between Russia and Turkey that has been secured through the inter-government agreement to construct the Akkuyu NPP is an attempt to reaffirm both nations' Middle East postures.

Preserving the status quo is no longer in the interest of the Turkish government. Self-reliant alternatives have become more appealing than the conventional and nuclear deterrent assortments provided by the US and NATO. The

³⁶ Kibaroglu, Mustafa, and Aysegul Kibaroglu. *Global Security Watch--Turkey a Reference Handbook*. Westport, Conn.: Praeger Security International, 2009. Print. 55

anarchic environment of the international system will continue to allow states to worry about the reliability of alliance commitments and alliance-based security.³⁷ An extension of AKP's populist discourse, the Davutoglu Doctrine, outlines a new strategic vision by referring to the emergence of German, English, Russian and American strategic thought and how a major transformation needs a strategic approach to turn resources into power. The Davutoglu Doctrine was presented as a "grand strategy for Turkey to rise again as a great power in international politics".³⁸ The 'zero problems with neighbors' attitude put forward in the doctrine was intended to safeguard Turkey's economic and security interests in the region. Ankara's ambitions to act as a mediator between Tehran and Washington to curb Iran's nuclear ambitions would advance the policies of the Davutoglu Doctrine.³⁹

The principal strategies applied by great powers to prevent aggressors from upsetting the balance of power are indeed strategies for survival in the international system. To prevent other states from shifting the balance of power against them, great powers seek hegemony in their region of the world⁴⁰. Turkey's quest for regional hegemony is contingent on the changing landscape of the Middle East, marginalized relations with the West and partial alienation by the Arab nations. For the past six decades, Turkey has attempted to initiate a nuclear energy program; it

³⁷ Goldstein, Avery. "Nuclear Weapons States in the Post-Cold War World." *Deterrence and Security in the 21st Century: China, Britain, France, and the Enduring Legacy of the Nuclear Revolution*. Stanford: Stanford UP, 2000. Print. 221.

³⁸ "The Davutoglu Doctrine: The Populist Construction of the Strategic Subject." *Turkey Reframed: Constituting Neoliberal Hegemony*. Ed. Ismet Akca, Ahmet Bekmen, and Baris Alp Ozden. London: Pluto, 2014. Print.

³⁹ Meir, Alon Ben. "Turkey and Iran's Nuclear Challenge: Mediating with the Mullahs." *The World Today* 66.11 (2010): 27-28. Chatham House. Web. 29

⁴⁰ Mearsheimer, John J. "Strategies for Survival." *The Tragedy of Great Power Politics*. 1st Edition ed. New York: U of Chicago, 2001. Print. 138

saw no tangible success until the AKP-led government pledged to invest in developing nuclear energy. The Build-Operate-Own (BOO) model that has been undertaken through an intergovernmental agreement, ratified by Turkey and Russia, enabling the AKP-led government to tackle domestic political and economic obstacles, and, thus, surpassed barriers previous governments could not. While it is crucial to underline that Turkey is in the pursuit of a civil nuclear energy program, the hurried process does raise concerns and suspicions of future intentions.

Turkey's Offensive Realist Approach

According to John Mearsheimer, offensive realists believe that “status quo powers are rarely found in world politics, because the international system creates powerful incentives for states to look for opportunities to gain power at the expense of the rival, and to take advantage of those situations when the benefits outweigh the costs”.⁴¹ It should be acknowledged that Mearsheimer believes that offensive realism is applicable to great powers and whether Turkey falls into this category needs to be addressed. On an international scale, Turkey would not qualify as a great power but the behavior of the state, the domestic and foreign policy of the AKP-led government reflects the cult of a great power. The international system and policies have paved the path for countries to pursue nuclear energy for civilian purposes, and the Turkish government has been able to find the opportunity that will help them gain power at the expense of the rival.

⁴¹ Snyder, Glenn Herald. "Mearsheimer's World-Offensive Realism and the Struggle for Security." *International Security* 27.1 (2002): 149-73. The MIT Press. Web.152

Challenging offensive realism on its own terms, Arash Heydarian

Pashakhanlou's explores what he defines as empirical deficiencies in Mearsheimer's theory. Pashakhanlou concludes that offensive realism is unable to logically generate a security competition and that the empirical evidence of Mearsheimer is impaired with inconsistencies and selection bias.⁴² Glenn Snyder provides a cautious criticism of Mearsheimer's theory by addressing the lack of alliance security dilemma in his work. He further argues that Mearsheimer does not address "the tension between fears of being abandoned or entrapped by an ally."⁴³ Over the recent years, alliance security dilemma has become critical for Turkey to address, as tensions with the West have escalated over the civil war in Syria and the absence of NATO and US strategy.

Prominent scholar of Turkey's nuclear future Sinan Ulgen insists that a distinction between nuclear energy ambitions and nuclear weapons capability must be drawn. In justifying Turkey's policies, Ulgen explains "Turkey's nuclear policy is influenced strongly by the fact that it is a non-nuclear-weapon state seeking to develop an indigenous nuclear energy program".⁴⁴ From a neorealist perspective, Sener Akturk argues in his work *Toward a Turkish-Russian Axis? Conflicts in Georgia, Syria, and Ukraine, and Cooperation over Nuclear Energy* how current events have shaped Russia's commitment to the Akkuyu NPP project and how "...arguably constitutes the most strategic cooperation between the two countries". Akturk also

⁴² Pashakhanlou, Arash Heydarian. "Back to the Drawing Board: A Critique of Offensive Realism." *International Relations* 27.2 (2013): 217

⁴³ Snyder, Glenn Herald. "Mearsheimer's World-Offensive Realism and the Struggle for Security." *International Security* 27.1 (2002): 149-73. The MIT Press. Web. 165

⁴⁴ Ulgen, Sinan. "Turkey and the Bomb." *The Carnegie Papers Nuclear Policy* (2012). Print.

notes a historical resemblance in current relations and the 1920s were both countries perceived the threat of Western powers as aggressors and revisionist states of the international system.⁴⁵

In January 2010, Recep Tayyip Erdogan, Prime Minister of Turkey at the time, paid a significant visit to Moscow where the direct interstate agreement was signed between the countries. Russian President Medvedev stated that he hoped the Prime Minister's visit would promote "stronger ties between two countries," which would translate into "addressing complicated regional problems".⁴⁶ In describing the justification of declared nuclear states, Avery Goldstein states that, "they require these strategically revolutionary weapons because they provide a robust and affordable means to dissuade potentially serious military threats to vital interests."⁴⁷ Thus, the plausibility of a Turkish nuclear weapons capability would provide Turkey and indirectly Russia a superior position in the Middle East.

Nuclear Hedging or Pursuit of Nuclear Weapons?

In a critical attempt to draw attention to Turkey's nuclear past and future, Sinan Ulgen and George Perkovich, along with other scholars, presented the Turkey's nuclear discourse in their work recent book *Turkey's Nuclear Future*. Jessica Varnum addresses the reactions of policymakers to Turkey's nuclear initiative. "Faced with badly deteriorating regional security and a latent Iranian

⁴⁵ Akturk, Sener. "Toward a Turkish-Russian Axis? Conflicts in Georgia, Syria, and Ukraine, and Cooperation over Nuclear Energy." *Insight Turkey, Department of International Relations, Koc University* 16.4 (2014): 13-22. Web. 21

⁴⁶ Erdurmaz, Serdar. "Nuclear Energy in Turkey, Do We Need It Indeed?" *Asian Economic and Social Society* 2.1 (2012): 233-42. Web. 239

⁴⁷ Goldstein, Avery. "Nuclear Weapons States in the Post-Cold War World." *Deterrence and Security in the 21st Century: China, Britain, France, and the Enduring Legacy of the Nuclear Revolution*. Stanford: Stanford UP, 2000. Print. 256

nuclear-weapon program, many policymakers' gut reactions are to assume that Turkey will become a proliferation domino," Varnum argues.⁴⁸ Nuclear wonks Dina Esfandiary and Ariane Tabatabai recently argued that nuclear dominoes would not fall in the Middle East by analyzing civil nuclear programs in the Middle East and urging scholars to reject the conventional wisdom holding that a nuclear Iran will lead to a nuclear proliferation cascade in the region. On Turkey however, they concluded that there are strategic and political explanations for why Turkey would not weaponize. A beneficiary of Washington's nuclear umbrella by being a US and NATO ally; its defense needs are met. So why would Turkey go through the trouble of acquiring its own nuclear capability? the authors implicitly ask.⁴⁹ Turkey is not going through the trouble of developing a nuclear energy program by itself. With the generous help from Russia, the administration has tackled financial and technological obstacles. While Turkey's defense needs are met, the country's offensive and regional strategy needs might require a different approach in order to maximize its relative power.

Other scholars have also urged the academic community to dismiss the conventional wisdom of proliferation dominoes in the Middle East. George Perkovich and Sinan Ulgen stressed in their recent op-ed that Turkey would not go nuclear because it does not lie in line with the state's economic interests and national security. Furthermore, the authors argue that a nuclear Turkey would not

⁴⁸ Varnum, Jessica. "Turkey and Nuclear Energy." *Turkey's Nuclear Future*. Washington DC, 2015. Print. 184

⁴⁹ Esfandiary, Dina, and Ariane Tabatabai. "Why Nuclear Dominoes Won't Fall in the Middle East." *Bulletin of the Atomic Scientists* 22 Apr. 2015. Web. <<http://thebulletin.org/why-nuclear-dominoes-wont-fall-middle-east8236>>.

reduce regional dangers posed by Syria, ISIL, or Kurdish separatists and that it would only aggravate security threats.⁵⁰ Even though Turkey's nuclear energy initiatives has only in the recent years gained the attention of the academic community, a conventional wisdom has already been shaped; the likelihood of Turkey going nuclear because of its commitments to NATO and the US is minimal. The slight deliberation and chance of Turkey pursuing nuclear weapons is explained as a defensive measure only.

Deconstructing Turkey's Nuclear Future

A successful nuclear energy program is thus mandatory for Turkey to pose as a powerful state in the region. In Jessica Varnum's piece, *Debating Turkey's Nuclear Future*, she stresses two critical questions to be asked in order to define Turkey's nuclear intentions. First, is Ankara attempting to strengthen or weaken its alliance with the US and NATO? Second, is the intention of the government to move closer to or to alienate itself from the nonproliferation commitments?⁵¹ While it is fundamental to answer both of these questions, for the latter, intentions can be submissive; thus, the international community relies on what they perceive as a threat and risk. The intention might as well be to only pursue a civilian nuclear program, but there are several factors that will influence the debate. The AKP-led government has been able to overcome economic and political obstacles and achieve what Turkey has not been able to do over the past five decades. As

50 Ulgen, Sinan, and George Perkovich. "Why Turkey Won't Go Nuclear." The Carnegie Endowment for International Peace. 10 Apr. 2015 Web. <<http://carnegieendowment.org/2015/04/10/why-turkey-won-t-go-nuclear/i6og>>

51 Ulgen, Sinan, and George Perkovich. "Turkey and Nuclear Energy." *Turkey's Nuclear Future*. Washington DC, 2015. Print. 184

astonishing it might seem, it is also frightening as it raises a simple question: what's the hurry? To improve impaired relations with Middle Eastern countries and reassert its position, the Turkish government might consider using distinct rhetoric to alienate itself from the West. What might seem as a tactic to signal that Turkey is willing to strengthen relations in the regions will be perceived as an indicator of marginalized relations from a Western perspective.

Enrichment and reprocessing technologies are inherently dual use. The process to enrich uranium for reactors is virtually the same as producing fuel for a nuclear weapon. The difference lies in the percentage of uranium-235 in the fuel. Light-water reactors use 3 to 5 percent enriched uranium fuel, while the core of nuclear weapon uses 90 percent enriched uranium. Reactor fuel is referred to as low enriched uranium, and uranium enriched to the 90 percent level is called highly enriched uranium (HEU). In both cases, uranium gas is fed through a series of centrifuges—rapidly spinning tubes that separate uranium-235 from uranium-238. The heavier U-238 naturally moves to the wall of the centrifuge and the lighter U-235 collects in the center.⁵²

Despite its robust commitment to pursue nuclear energy, Turkey has not announced any plans to pursue enrichment or reprocessing, but has hedged about its future plans, leaving open the possibility that it may decide to pursue these technologies at a later date. In the context of Iran, as the Prime Minister at the time,

⁵² Ulgen, Sinan. "Turkey and the Bomb." *The Carnegie Papers Nuclear Policy* (2012). Print.

Erdogan stated that if needed for its civilian nuclear program Turkey would also go ahead with domestic uranium enrichment.⁵³

In 2012, Ambassador to Turkey Eric Edelman stated that Turkey's solid track record has meant there has been little concern over the country's goals, but a nuclear Iran would change the dynamics. Ambassador Edelman explained that "although for the most part...Turkey is motivated by a genuine interest in developing civilian nuclear power, the context has shifted." He contributes the change to BOO-model and states "You now have to consider their pursuit of reactor deals not just with Russia but also with South Korea as a potential long-term hedging strategy against a possible proliferated Middle East."⁵⁴

On May 8, 2015, Turkey became an Associate Member of CERN – The European Organization of Nuclear Research. CERN announced that the membership will "strengthen the long-term partnership between CERN and the Turkish scientific community".⁵⁵ One of the many indicators of Turkey's progress in the nuclear energy front, the scientific development and commitment to CERN demonstrates that the current government has the political will to expand the nuclear energy initiatives. To maximize its relative power, Turkey has sustained its relations with the West, but also periodically explored alignments with the East and Russia. Though scholars defend Turkey's commitment to nonproliferation and solid track

⁵³ Ibid

⁵⁴ Conant, Eve. "Turkey Goes Nuclear, Thanks to Russia." *Pulitzer Center on Crisis Reporting*. 21 Nov. 2012. Web. <<http://pulitzercenter.org/reporting/russia-turkey-nuclear-technology-energy-reactors-government-economy>>.

⁵⁵ CERN Accelerating science (Turkey becomes Associate Member State of CERN). Web. <<http://home.web.cern.ch/about/updates/2015/05/turkey-becomes-associate-member-state-cern>>

record, policymakers need to acknowledge the inevitable security risks that await if the Akkuyu NPP is built. The adaptation of the BOO to construct and finance the Akkuyu NPP is an ideal opportunity for Russia to gain further influence in Turkey's energy market. Most importantly, if the model appears to be successful, it will become highly desired by other Middle Eastern states like Egypt and Jordan that might consider pursuing civil nuclear energy programs under the BOO model.

Nevertheless, it is up to the international community to make sure that verification mechanisms are in place to monitor the early stages of the program and the excessive role and implications of Russia as the financier, owner and operator of the planned plants. Rightfully, as a signatory of the NPT and as a country that perceives itself to be a modern state with increasing energy demands, Turkey is pursuing nuclear energy. In conclusion, the lack of a sustainable domestic nuclear infrastructure, critical ruptures in the Akkuyu NPP project and the continuation of secrecy will have major political and security implications and thus, the project must be halted.

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