

CHAPTER III

ISRAEL AND NUCLEAR WEAPON CAPABILITY

A. The Program of Israel's Nuclear Weapon

Israel is the smallest countries in the Middle East, but their military power is the strongest. Supported by the close ally, United States, their conventional forces are beyond its neighbors. Moreover, Israel is the only countries in the Middle East that is universally believed possessing nuclear weapons. Israel is believed acquiring nuclear weapons capability since the late of 1960. They are considered as the first state in the Middle East and the sixth nation in the world with nuclear weapons (Mearsheimer & M. Walt, 2006).

The Israel's nuclear weapons possibility has been strengthened by the statement from one of the Israeli leaders. The Former of Israel's Defence and foreign minister had ever made the controversial statement to the New York Times in 1981, precisely after Israel destroyed Irak's nuclear reactor. He said "We do have the capacity to produce nuclear weapons, and if the Arabs are willing to introduce nuclear weapons into the Middle East, then Israel should not be too late in having nuclear weapons, too" (Wisconsin Project, 1996).

B. The History of The Israel Nuclear Program

The nuclear weapon program was initiated by two Israelis, David Ben Gurion as the Israel's first prime minister and Ernst David Bergmann known as the father of the Israeli Bomb. The reason behind Israel in pursuing nuclear weapons can't be separated from the Jews history. In the past, Israel had experienced a tragedy for being massively slaughtered by The Germany NAZI. Learning from the Jews history, David Ben Gurion and Ernst David Bergman initiated two programs. The first was the establishment of the state of Israel as the Jewish homeland. Therefore, the Jewish people are never again susceptible for massive killings in other countries. The second was to build a weapon that is powerful enough to deter their enemies, thus the nuclear weapon option was taken (Leith, 1993).

The nuclear weapon program of Israel was chosen under the code name Samson Option. The word Samson was taken from the biblical story symbolizing the huge destruction of the enemies (Leith, 1993). According to Steinbach, Ernst David Bergman as the chairman of the Israel Atomic Energy Commission (IAEC) advocated about Israeli bomb, as what he said: "The State of Israel needs a defense research program of its own so that we shall never again be as lambs led to the slaughter" (Steinbach, 2011). It means Israel needs to pursue nuclear weapons in order to get the ultimate self-security assurance against the obliteration.

In 1948, Israel became an independent state. The Israel nuclear program began not so long from the establishment of the state of Israel. In 1952, the Israeli Atomic Energy

Commission was created along with the Israel's desire to build the nuclear weapon. In 1955, Israel got help from the United States in developing the nuclear energy. At the time, Israel and Iran were the close partners of United States. Thus, United States shared the nuclear technology for a peaceful purpose to Iran and Israel. Iran and Israel signed Washington's Atoms for Peace was given 5 megawatts highly enriched uranium reactor. This was the first time when Israel got in touch with nuclear technology. However, this program was not enough for Israel to get to the level that was capable of producing nuclear weapons (Steinbach, 2011).

Now, Israel has become an independent state with its strong military power. However, they are living in the area surrounded by dangerous neighbors. Israel is much more vulnerable from the external threats. Thus, the Isreal nuclear program is essential to preserve their country's survival and sovereignty. Israel must be able to defend itself from any threats toward their country. Israel's nuclear choice is conceived as the weapon of the last resort or states' last line of defense that can be used if the worst scenario happened (Shalom, 2016).

In the mid of 1950s, Israel collaborated with French in the French bomb project. Both countries came to an agreement after they were forced to withdraw their troops from Suez. The aftermath of the Suez Crisis in 1956 had accelerated the Israel-French nuclear cooperation. Both France and Israel are still in the early stage of building nuclear infrastructure. These two countries shared commercial and strategic interests. Israel had become an active participant in the French nuclear program by providing

technical experts. While French play important role in the construction of Israel nuclear reactor in the remote Negev desert Diamona or known as the Negev Nuclear Research Center (Bahgat, 2007).

The nuclear program that was built in Israel can be said as the extension from their nuclear collaboration. French gave Israel the heavy water reactor for producing plutonium and reprocessing plant. However, French under the new president, Charles De Gaulle reconsidered its nuclear cooperation with Israel. President de Gaulle officially ended the French involvement in Diamona's construction and nuclear program. Furthermore, he demanded Israel to submit its nuclear program to the international inspections (Bahgat, 2007).

Beside French, Israel also reported that it had established the nuclear cooperation with other countries. South Africa, during apartheid regime, was one of the examples. In order to get access to uranium and missiles launch test facilities, Israel provided them with nuclear technical and economic assistance. During their cooperation, South Africa was the main supplier of uranium materials for Israel. Not only depending on South Africa, Israel also looked for other uranium and heavy water suppliers in the following years. Israel got the numbers of uranium and heavy water sources both from foreign countries and the black market. One of them was Norway. Norway had provided tons of heavy water to Israel. (Bahgat, 2007).

Diamona reactor began to operate effectively in 1964. Shortly after, Israel started to produce plutonium. By 1966, Israel had built first nuclear bomb. Until 1973,

Israel believed to possess several dozen of nuclear weapons. U.S intelligence agency actually had been aware of the Israel's nuclear weapon even since before 1970, but they assumed that Israel nuclear arsenals still in the level of primitive nuclear bombs (Steinbach, 2011).

Israel had obtained all materials needed to build the sophisticated nuclear weapon, but there was no strong evidence that Israel had conducted a full-scale nuclear test. Some analysts assumed that Israel has relied on computer simulations and nuclear test information from other states. According to the book *The Bomb in the Basement* written by Michael Karpin, Israel had successfully conducted a sophisticated laboratory test during their cooperation with French. Israel also had been fully participated in the Algerian nuclear test conducted by French. From the French nuclear test, Israel is able to collect the data and information and Israel does not need to actually test its nuclear weapon (Steinbach, 2009). Some also argued that Israel with South Africa had conducted a nuclear test on the southern coast of Africa in September 1979. This assumption was due to the information from American Vela Satellite detecting the nuclear flash coming from the Indian Ocean (Bahgat, 2007).

C. The Israel's Nuclear Revelations

In 1986, for the first time, the Israel nuclear weapons program was publicized to the world. One of the Diamona nuclear technicians, Mordechai Vanunu smuggled out the detailed accounts of the Israel underground bomb factory with 60 colored

photographs to the London Sunday Times. His data could be accepted by some weapons experts. Vanunu showed that Israel had produced 200 advanced fission bombs at the time and had mastered a thermonuclear program. By then, Israel had produced a number of hydrogen bombs that were ready to use (Wisconsin Project, 1996).

The pictures and the data successfully demolished the U.S. intelligence's estimations about Israel nuclear arsenals. Vanunu claimed that Israel had been manufacturing the nuclear weapons for 20 years. Some of the nuclear experts analyzed those pictures and estimated that Israel had possessed highly sophisticated nuclear arsenal with quite number of hydrogen bombs (Steinbach, 2011). After the revelation, Vanunu was hiding in London. He was lured out by a female Israel secret agent and being drugged. The agent successfully brought Vanunu back to Israel. Vanunu was jailed for 18 years in solitary prison. He was reported that he had been released in 2004, but Vanunu was banned from leaving the country and talking to foreigners (Bahgat, 2007).

Until today, there is no accurate estimation regarding how many nuclear arsenals that have been made by Israel because it is one of the world's top secret. Most of the scholars get the data from non-Israel sources. The consensus among expert and media estimate that Israel possesses nuclear arsenal near two hundreds, though some proposed higher number. The sources mostly rely on the U.S government officials combined with the data revealed by Mordechai Vanunu (Addis, 2011). With hundreds

of modern nuclear weapons and sophisticated delivery system, Israel is capable of targeting its nuclear arsenal to the entire the Middle East and Europe.

D. The Israel's Nuclear Arsenals

State seeks nuclear weapon capability must acquire three capacities: The first is the production of the fissile materials. The second is the development of the explosive performance. The third is the development of the existing delivery system to bring nuclear explosive devices into target and explode it there. By acquiring the first two capacities, state is sufficient enough to produce nuclear explosive device, and the last capacity will turn the explosive device into military weapon (Asculai, 2008).

The core of the nuclear explosive devices is usually created from two materials, uranium and plutonium. Uranium and plutonium is fissile material. It means when these two are enriched, it can be used for nuclear fission. Uranium is enriched in the isotope 235 then into a high concentration or HEU (High Enriched Uranium). Plutonium is materials produced from uranium-fuelled nuclear reactors with minimum isotop 239. The enrichment of uranium is a vital process in producing nuclear bomb. According to IAEA's standard, 25 kilograms of HEU or 8 kilograms of plutonium are sufficient enough to be the core of the nuclear explosive devices (Asculai, 2008).

In John Steinbach's research paper, Israel had been conducting a big nuclear bomb project by using plutonium reprocessing, uranium enrichment, fuel rod fabrication and deuterium (material used for more advance nuclear bomb). Israel had

been able to acquire thermonuclear weapon reactor. By using lithium deuteride, Israel could produce hydrogen bomb (Steinbach, 2009).

Israel has two nuclear facilities. They are the Nahal Soreq Nuclear Research Center and the Dimona Nuclear Research Center. The Nahal Soreq Research center has five megawatt nuclear reactor. It is the enriched uranium research reactor provided by the United States as part of the Atoms for peace program. The Nahal Soreq is widely reported to be a major nuclear weapons research, involved in plutonium reprocessing and nuclear weapons research and design. The other Israel's nuclear facilities is in the Negev Desert called as the Dimona Nuclear Research Center. It is known as the largest nuclear site in Israel. From the information provided by Vanunu, Dimona plutonium reprocessing plant was completed in the mid-1960s. Dimona nuclear reactor is able to produce 40-60 kg of plutonium each year which make Israel able to make 5-10 nuclear bomb per year (Steinbach, 2009).

By 1970, Israel had been considered as one of the Nuclear Weapon States by the U.S intelligence agency. Forty years later, the Federation of American Scientists made consensus that put Israel nuclear arsenals around 200 and Israel was considered as the sixth largest nuclear states in the world. It also had developed its nuclear delivery systems both in airborne and its ballistic system (Ami, 2009).

The Israel nuclear bomb has been stationed on the three units of the delivery system which consists of the bomber aircraft, land-based ballistic missiles, and submarine-based cruise missiles. For the bomber aircraft, Israel uses fighter bombers

F-4E 2000, F-15I, and highly modified F-16-I. For ballistic missiles arsenal, Israel has Jericho missiles-1, Jericho missiles-2, and Jericho missiles-3. The last is thr Israel nuclear submarines (Steinbach, 2009).

Here are the specification of Israel's nuclear launcher from aircraft bomber, missiles, and submarines:

a. F-4E 2000

This bomber aircraft was bought from the United States in 1968. At that time, F-4E 2000 is considered as the most advanced aircraft. It had been modified with more advanced radar, new turbojet engines with the range up to 1.600 kilometers and 7.200 kg payload. F-4E 2000 reportedly had been positioned for nuclear alert in the Yom Kippur War in 1973 (Steinbach, 2009).

b. F-15I

It is the largest aircraft in the Israel Air Forces. It began to operate since 1999. Its capacity of range is 4.450 km that was able to fly to Tehran and return without any refueling. In 2003, Israel had tested F-15I by flying to Poland in one way without refueling. This aircraft had been operated in order to deal with the threats from Iran (Steinbach, 2009).

c. F-16I

This is the more recent advanced aircraft of Israel compared to F-4E 2000 and F-15I. Combined with F-15I, these aircraft took part in the military

exercises held in Mediterranean and Greece in June 2008. Both F-15I and F-16I are nuclear capable (Steinbach, 2009).

d. Jericho-1

It is the Israel's short-range ballistic missile (SRBM). It was developed during the Israel's nuclear cooperation with France. Jericho-1 was reported of having range in 480-750 kilometers with 500 kg payload, making it able to reach Cairo and Damascus. It was designed to bring nuclear, chemical and conventional warheads. Some reports say that Jericho-1 had been deployed 20 km east of Jerusalem. Other reported that these missiles do no longer operate (Steinbach, 2009).

e. Jericho-2

This is the intermediate range of the ballistic missiles (IRBM). It was developed during the Israel's collaboration with the South Africa Apartheid Regime. According to Jane's Intelligence Review, Jericho-2 had been modified by extending the range of 5000 kilometers with 2500 kg payload. With its range capability, Jericho-2 is able to target the entire Middle East. Some reported that this missile had been deployed in the late of 1990s (Steinbach, 2009).

f. Jericho-3

This is the last Israel's missiles types included in Long Range Ballistic Missiles. Reportedly, this missile resembles the South African RSA-3 ballistic missile. Jericho-3 is still under development and currently not yet deployed.

Though no accurate data about its range capability, but cities like Moscow and Islamabad are within the range of Jericho-3 (Steinbach, 2009).

g. The Submarine Launcher

The last system is the submarine-based cruise missiles. Israel has five Dolphin-Class submarines in which the three of them have been deployed. These super sophisticated submarines were purchased from Germany. They were capable of launching torpedoes, mines, and the cruise missiles with an approximately range about 8.000 kilometers. Two of the submarines which have not been deployed yet were designed to have more extensive range for about 10.000 kilometers (Steinbach, 2009).

The new submarines will be equipped with super quiet new air-independent and fuel cell based propulsion system that enabling them to submerged for an extended time. Reports said that Israel currently stationing its submarines in the Persian Gulf and the Red Sea targeting on Iran. Soon, Israel will be capable of targeting the whole Europe, Middle East and most of the African states (Steinbach, 2009).

E. The Nuclear Policy of Israel

As a nuclear weapon state that is widely recognized, Israel has different behavior compared to the other nuclear weapons states such as India, Pakistan, and North Korea. While these three countries had publicly declared their nuclear weapon possession,

Israel prefers to remain silent and maintain the policy of *nuclear opacity* based on the principle stating that Israel will not be the first state in the Middle East to introduce the nuclear weapons. Israel has maintained the certain level of ambiguity regarding their nuclear program for more than 50 years. The Israel nuclear weapon program remains taboo both internationally and domestically (Ami, 2009).

Israel government officials have never publicly acknowledged or denied their possession of the nuclear weapon, but one of the Israeli officials Shimon Peres highlighted the motive of the Israel's nuclear policy "A certain amount of secrecy must be maintained in some fields. The suspicion and fog surrounding this question (nuclear weapons) are constructive because they strengthen our deterrent" (Bahgat, 2007). Opacity can be said of the situation when the leaders of the state have not been confirmed their possession of the nuclear weapons but the evidence of those weapon's existence is strong enough to influence other states' action and perception.

The United States had also taken part in shaping the nuclear policy of Israel. The United States and Israel had conducted an agreement in 1969 stating that both states will never acknowledge the Israel nuclear arsenals in public. The agreement signed by the Israel's Prime Minister Golda Meir and the U.S. President Richard Nixon (Meir, 2010). Israel would not be condemned by the United States for nuclear weapon proliferation if Israel did not declare its weapons. The U.S. would pretend that Israeli's did not have nuclear weapons. Opacity and weapon of last resort had become the main

principle of Israel's nuclear policy. These policies cannot last until this very day if it is not because of the U.S. diplomatic umbrella (Miklos, 2012).

As long as Israel committed to keeping their bombs in their basement, U.S will get along with Israel's policy. It means that Israel must keep their promise not to be the first state in the Middle East to introduce nuclear weapon or conduct nuclear testing. They will not threaten any country by using their arsenals. If talking about nuclear proliferation treaties, Israel was willing to sign the Comprehensive Nuclear Test Ban Treaty (CTBT) instead of the Nuclear Non-Proliferation Treaty (NPT). It was because the CTBT is consistent with Israel's commitment to the policy of opacity for not conducting the nuclear test. Meanwhile, NPT required its member to agree toward IAEA's nuclear inspection and supervision. Until today, Israel continues to refuse joining the NPT (Ami, 2009).

Israel never really trusts the global instruments of non-proliferation, such as NPT. For Israel, NPT is still susceptible for the misapplication of the nuclear technology. Iran and North Korea had been managed to outsmart the nuclear safeguards. The Israel's government is more favorable toward the creation of the Weapon of Mass Destruction Free Zone (WMDFZ) in the Middle East. However, the condition is the Arab states must fully establish the regional comprehensive peace with Israel before the denuclearization agreement (Ami, 2009).

The Different view between Israel and Arab states is that the Arab states prioritize the denuclearization in the first place and a peace settlement with Israel later. Israel

prefers to do the peace agreement first and denuclearization after that. According to the speech from the Israel's Prime Minister Ehud Barak in 1999, "Israel will not enter the serious discussion on denuclearization in the Middle East or accept the IAEA safeguards until the Middle Eastern peace agreement has been reached. Israel will keep a strategic deterrent potential for as long as necessary in terms of geography and time" (Ami, 2009, p. 3).

The nuclear opacity gives Israel some military strategic benefits with less political cost. Furthermore, due to the support from the United States, Israel can enjoy the privilege without any obligation to open its nuclear facilities to the international inspection. By not admitting its nuclear weapons, Israel will not be subjected from violating the non-proliferation regime. At the same time by not denying their possession of nuclear weapons, Israel has been able to deter their enemies in the region from carrying the threat toward Israel. Thus, it can prevent the Arab states for initiating wars with Israel in the first place (Bahgat, 2007). Another reason is to avoid the escalation of the regional conflict. The nuclear declaration from Israel may provoke the Arab states withdrawing from NPT and lead into the regional nuclear arms conflict (Rabinowitz & Dombey, 2011).

However, there is some weaknesses from the policy of opacity. It has not worked to prevent the Israel's rival from acquiring nuclear weapons. Otherwise, the Israel nuclear weapons capability has stimulated other countries in the Middle East to consider the nuclear weapon option as well (Bahgat, 2007). For example, Egypt in the

era of Gamal Abdul Nasser had pursued the nuclear weapon program in the late of 1960. Irak, under the Saddam Husein, had strong motive to build a nuclear weapon as well. The mass proliferation of chemical weapons by Egypt, Syria, and Irak. Iran, in 2002 is strongly believed pursuing nuclear weapon capability since Iran intentionally did not declare or submit its two nuclear facilities to the IAEA's inspection. The Israel's nuclear opacity also insulted the NPT regime since Israel is the only state in the Middle East who has not signed the treaty (Miklos, 2012).

A nuclear weapon remained as a taboo in the international arena as well as it is within the state of Israel. No legislative branch of Israel is able to exercise its control over the nuclear program. No motion concerning about the Israel nuclear program has ever passed in the parliamentary debate. No question regarding the safety of the Israel's nuclear program on the environment is opened to the public. The public debate on nuclear weapons in Israel will not be allowed. It can be said that the Israel nuclear policy is one of the black holes in the Israel's democracy (Ami, 2009).