CHAPTER I
INTRODUCTION

1.1 Background

Mankind has enjoyed nuclear technology since mid 19th century, few years later after it was first discovered in early 1901. Fredrick Soddy and Ernest Rutherford believed that nuclear has the ability to make heaven and hell on earth at the same time.[1] Nuclear has contributed both in positive and negative manner toward humanity. Positive contribution is often attributed to peaceful means of nuclear or civilian uses that can save the lives of many through health evolution as well as power generator (electricity). While negative contribution is more attached to military and weaponry usages. Otfried Nassauer illustrated bipolar implication as Siamese twin where one (nuclear power) cannot exist without the other (nuclear weapon).[2]

The later nuclear power adversity has drawn International Relations attention respectively the cause to uphold international security matters. Leaving the international realm not only peaceful advantages but also fear of terror toward future nuclear armageddon. Subsequently, nuclear power is more referred to hostile death and mass destruction that may provoke another type of intrusion to balance of power and balance of threat among states. Nuclear power development

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[1] Richard E. Sclove. "From Alchemy to Atomic War: Technology Assessment of Atomic Energy, 1900-1915". *Science, Technology, & Human Values*, Vol. 14 No. 2 (Spring, 1989), p. 170.
[2] Otfried Nassauer. "Nuclear Weapons and Nuclear Energy – Siamese Twins or Double Zero Solution". *Heinrich Böll Foundation, April 2010*. (available at http://www.boell.org.il/downloads/Nassauer_Nuclear_Weapons_and_Nuclear_Energy_.pdf), p. 46. Accessed on 12th February 2012.

is now becoming international relations studies' concern whereas the world is now facing a big dilemma between preserving the traditional security and pursuing energy security (energy alternative for electricity) that derives from nuclear power.

Ever since, international efforts to curb nuclear power development has been taken seriously and are currently being modified to suit the ongoing challenges of nuclear non-proliferation and nuclear disarmament. Dwight D. Eisenhower, the President of the United States of America at that time, was the first to propose to the General Assembly of the United Nations to promote the idea of Atoms for Peace into concrete international body called International Atomic Energy Agency (IAEA), that was created later on 8th December 1953.[3] Atoms for Peace was intended to promote peaceful use of nuclear energy instead of weaponry or military purposes. IAEA through its statute then successfully called international cooperation in nuclear energy for civilian uses.[4]

After IAEA was initiated, a lot of international organization and agreement was produced within nuclear non-proliferation regime, noting Nuclear Non-Proliferation Treaty (NPT), Nuclear Weapon Free Zone (NWFZ), Comprehensive Test Ban Treaty (CTBT), Fissile Material Cut-Off Treaty (FMCT), Nuclear

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[3] David Fischer. "History of The International Atomic Energy Agency, The First Forty Years". (available at http://www-pub.iaea.org/MTCD/publications/PDF/Pub1032_web.pdf). Accessed on 13th September 2011.

[4] Atoms for Peace Speech addressed by Mr. Dwight D. Eisenhower, President of the United States of America, to the 470th Plenary Meeting of the United Nations General Assembly. (available at http://www.iaea.org/About/atomsforpeace_speech.html). Accessed on 11th February 2012.

Supplier Group (NSG), bilateral treaties and regional treaties.[5] Nuclear non-proliferation regime was then become very prominent in the modern international security discourse where the world has been bequeathed with two-edged-sword nuclear technology.

The latter non-proliferation regime was established to contain the spread of states to posses and develop nuclear technology. Nuclear Non-Proliferation Treaty (NPT) started to take place on 1st July1968 and successfully gained 187 signatories. NPT categorized the world into three major category, the first one is the acknowledged Nuclear Weapon States (NWS) both *de facto* and *de jure*; the second one is the not-acknowledged NWS but *de facto* posses nuclear capability; and the third one is the Non-Nuclear Weapon States (NNWS). The classification was based on the date of first nuclear test on respective countries, NPT stated five NWS (*de facto* and *de jure*): United States (1945), Soviet Union (1949), United Kingdom (1952), France (1960) and China (1964); four NWS (*de facto*): India (1974), Israel (1979), Pakistan (1998), and North Korea (2006); and all states besides these nine countries were automatically recognized as NNWS. Consequently, those four *de facto* NWS and NNWS were pressured to dismantle nuclear weapon and place nuclear materials under international safeguard and to join NPT.[6]

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[5] see Nuclear Non-Proliferation Chronology of Key Events from July 1945 to Present (available at http://www.iaea.org/Publications/Factsheets/English/npt_chrono.html). Accessed on 12th February 2012.

[6] Tariq Rauf. "Successes of the Nuclear Non-Proliferation Regime". (available at http://cns.miis.edu/pubs/ionp/iaea.htm). Accessed on 13th September 2011.

India carries out significant role with ambiguous actions throughout the history of nuclear non-proliferation and nuclear disarmament, as it was the first country to press and end to nuclear weapon testing in 1954 and to reform the previous system into non-discriminatory non-proliferation framework in 1965.[7] India has great intent fighting against nuclear apartheid that reflects discriminatory conduct toward some non-white continent in the field of nuclear technology proliferation.[8] The idea of condemning discriminatory was robustly suggested by Rajiv Gandhi in 1988. Its interest in opposing any kind of discriminatory conduct represent the interests of the NNWS, including Non-Aligned Movement (NAM) which was excluded from the nuclear non-proliferation effort and mostly opposes United States' proposals. Hence India collected quite numerous numbers of states mounting 113 NAM countries that mutually correspond with India's interest in nuclear non-proliferation policy.[9]

As a non-signatory of NPT and CTBT, India showed great interest and satisfactory track records in non-proliferation. India poses as a very strategic anomaly because it is the only *de facto* NWS who prospers rapid growing nuclear technology and still gain nuclear-related resources from NWS countries who principally pledged not to proliferate nuclear know-how to countries who don't

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[7] World Security Network: "India's Paradox and Ambiguity in Nuclear Affairs" (available at http://www.worldsecuritynetwork.com/showArticle3.cfm?article_id=18289). Accessed on 10th February 2012.
[8] see "Govt trying to end regime of nuclear apartheid: PM". Published on 25th August 2010. (available at http://www.ndtv.com/article/india/govt-trying-to-end-regime-of-nuclear-apartheid-pm-46961&cp). Accessed on 9th February 2012.
[9] Jaswant Singh. "Against Nuclear Apartheid". *Foreign Affairs*, Vol. 77 No. 5 (Sep. / Oct. 1998), pp. 41-52. (available at http://www.jstor.org/stable/20049049). Accessed on 3rd February 2012.

abide to NPT.[10] Never even once India spread its nuclear technology to any NNWS country. On the other hand India experience rather rough incidents in nuclear disarmament matter.

The realization was somehow in an inversed manner from its nuclear stance. India conducted so-called Nuclear Peaceful Explosion (NPE) twice in 1974 and 1998. Many regard that the first nuclear explosion was part of India's reaction from China's nuclear test in 1964. Pokhran I or popularly known as Smiling Buddha blast was conducted at 8:05 AM at Pokhran in the Rajasthan desert.[11] The Indian government and Indian Atomic Energy Commission (AEC) insisted that the blast had no association with any intention of producing nuclear weapons.[12] The statement was articulated by Indira Gandhi, Indian Prime Minister, that the explosion was part of normal research and study for the peaceful uses of atomic energy.[13]

Pokhran II was exploded on 11th and 13th May 1998 at the Pokhran range in the same location with Pokhran I in Rajasthan. Pokhran II involved five nuclear tests of 45 kiloton (kt) thermonuclear device or also known as hydrogen bomb, 15 kiloton (kt) fission devise and 0.2 sub-kiloton device.[14] Abdul Kalam as scientific advisor to India Defence Minister, R. Chidambaram as the chairman of India AEC

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[10] India: NTI Country Profile. (available at http://www.nti.org/country-profiles/india/nuclear/). Accessed on 11th February 2012.
[11] see The Times of India: "'Smiling Buddha' had caught US off-guard in 1974". Published on 7th December 2011. (available at http://articles.timesofindia.indiatimes.com/2011-12-07/india/30485174_1_pokhran-ii-nuclear-device-underground-test). Accessed on 9th February 2012.
[12] India: NTI Nuclear Chronology, updated to December 2011, see year 1974-1975. (available at http://www.nti.org/media/pdfs/india_nuclear.pdf?_=1316466791). Accessed on 6th February 2012.
[13] George Perkovich. 1999. *India's Nuclear Bomb: The Impact on Global Proliferation - India Explodes A 'Peaceful' Nuclear Device*. Berkeley: The University of California Press, p.178.
[14] India: NTI Nuclear Chronology. *op.cit*., year 1998.

and Anil Kakodkar as the director of Bhabha Atomic Research Centre (BARC) claimed that the test were successful and attained the desired yield of low device.[15] Pokhran I and Pokhran II resulted in serious backlashes from countries who supplied India with nuclear materials and knowledge. These incidents of PNE caused 36 years embargo and banning of any nuclear trade from and to India.[16]

Surprisingly, India can still survive its civil nuclear capability and regain international trust. India's sense of the unjust nuclear non-proliferation and nuclear disarmament regime still leads India toward keen interest in encouraging the world to perform concrete steps toward equal treatment in nuclear know-how sharing. Thus, India conveys all together the demand for security assurances from NNWS that represents majority of the world compared to the five NWS. Majority support will put mid-power India into great leverage in its bargaining power in non-proliferation regime and gives India a highly considerable influence.

On the other side, states' focuses were shifting from traditional security to the emerging non-traditional security, which is commonly known as energy security. This awareness is raised from the following evidence, 75% growth in electricity demand by 2025 has put the world in the urge to develop nuclear power

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[15] also see The Times of India: "Pokhran II successful, insists Kalam". Published on 27th August 2009. (available at http://articles.timesofindia.indiatimes.com/2009-08-27/india/28154379_1_nuclear-tests-pokhran-ii-nuclear-explosions). Accessed on 9th February 2012.

[16] Nuclear Power Daily Newsletter: "India and Canada sign civil nuclear deal". Published on 28th June 2010. (available at http://www.nuclearpowerdaily.com/reports/India_and_Canada_sign_civil_nuclear_deal_99.html). Accessed on 5th February 2012.

to be utilized in production of inexpensive electricity.[17] India is no exception, India's aggregate power demand exceeds its supply, leaving the approximately 50% unfulfilled. Electricity demand escalates make the 830 billion kilowatt hourly produced in 2008 unable to satisfy the current need.[18] Along with 6.3% electricity consumption annual growth, it is predicted that in 2020 the electricity demand will double from the 700 KWh annual per capita in 2008 and finally amounting approximately 6,000 KWh per capita in 2050. Coal, which serves 68% of the total present electricity production, is running out rapidly. Limited reserves of coal are insisting India to find alternative source of power.[19]

Nuclear appears to be the answer for this skyrocketing electricity consumption when non-renewable energy resources are no longer reliable. According to India Ministry of Power, India expects to have electricity that is generated by nuclear power up to 20,000 MWe in 2020 and around 63,000 MWe in 2032. India is very serious in making nuclear power as single largest energy source by the end of 2015. It is seen that nuclear power will be able to contribute up to 25% by the end of 2050.[20]

However, developing nuclear power reactors will produce plutonium in the spent fuel that will expand the potential usage for weaponry because

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[17] Brian Finlay and Elizabeth Turpen. "The Next 100 Project: Leveraging National Security Assistance to Meet Developing World Needs". *Stanley Foundation,* Feb. 2009.
[18] see "Demand Patterns Boosting Indian Power Sector". Published on 7th October 2011. (available at http://www.rncos.com/Press_Releases/Demand-Patterns-Boosting-Indian-Power-Sector.htm). Accessed on 9th February 2012.
[19] World Nuclear Association: Nuclear Power in India, updated to January 2012. (available at http://world-nuclear.org/info/inf53.html). Accessed on 5th February 2012.
[20] "Seizing Opportunities for Canadians: India's Growth and Canada's Future Prosperity". *Standing Senate Committee on Foreign Affairs and International Trade*, 14th December 2010.

plutonium is one of the main ingredients for atomic bomb.[21] India's dual-use nuclear capability and opportunity cost in restraining nuclear technology proliferation is being collided with its posture toward nuclear non-proliferation and nuclear disarmament. India's interest in keeping nuclear capability primarily for securing energy (civilian uses) will result in proliferation that is clearly against the idea of non-proliferation. On the other side, nuclear disarmament is less popular and is a very sensitive issue for the five NWSs in nuclear regime. Based on the brief explanation above, this research is titled **"The Implications of India's Stance in Nuclear Non-Proliferation and Nuclear Disarmament Policy toward Its Civil Nuclear Capability in Pursuing Energy Security"**.

1.2 Research Questions

Nuclear non-proliferation and nuclear disarmament are inseparable matters. India's posture toward nuclear non-proliferation and nuclear disarmament had always raised the world questions. Its seemingly contradictory commitments in nuclear non-proliferation effort are tackled by its science ambition developing civil nuclear technology as inexpensive energy alternative. At the same time, the explosion of Pokhran I and Pokhran II waived doubt to its nuclear disarmament consistency.

The world constantly sees India as a country with great potential to pursue power through nuclear technology. As its science advances with giant leap leaving

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[21] see How is the Peaceful Use of Nuclear Technologies Linked with Proliferation? (available at http://www.nti.org/threats/nuclear/). Accessed on 12th February 2012.

its regional neighbor as well ass the other developing countries far behind and departing only few steps behind the developed countries, India truly has the leverage of its position in the nuclearised world. India who is also one of the pioneers of the nuclear technology appears to play significant role in influencing the progress of nuclear non-proliferation and nuclear disarmament.

Its promising track record in nuclear non-proliferation together with its status as developing country who has accumulated collective support from NNWS and NAM countries has the ability to set great example for the rest of the world in nuclear matters. In addition, India's interest in achieving energy security also play prominent role in shaping its stance in nuclear non-proliferation and nuclear disarmament. In regards to the determination of the topic, focus, and period of analysis, therefore, the research questions are:

1. What is the standing position (intent and interest) of India on nuclear non-proliferation and nuclear disarmament?
2. What are India's endeavors to pursue its intent and interest on nuclear non-proliferation and nuclear disarmament?
3. How do those interests and efforts affect India's nuclear capability to achieve energy security?

1.3 Objectives

Therefore, several objectives of this research are:

1. to describe India's nuclear intent, interest and rationales related to nuclear non-proliferation and nuclear disarmament
2. to depict India's effort in pursuing it's intent and interest on nuclear non-proliferation and nuclear disarmament specifically in the scope of bilateral, multilateral and regional
3. to portray India's consequences and implications of its preferred intent in nuclear non-proliferation and nuclear disarmament toward its nuclear capability, particularly related to India's energy security

1.4 Significance

This research is arranged to contribute in the international relations studies particularly illustrating the implementation of intertwining traditional security (nuclear weaponry) and non-traditional security (nuclear as energy source). The conflicting of state national interest and the nuclear non-proliferation regime interest will be conveyed through the case of India's nuclear capability correlated with the nuclear non-proliferation and nuclear disarmament issues. The paper will provide comprehensive explanation and description over India's position, intent, policies and rationales of its actions as well as efforts particularly in nuclear regime. Hence, it will provide detailed information on the decision making process before India cooperate or enter into any kind of treaty in the field of nuclear.

Thus, the reader will have sufficient information whether to support the development of India's nuclear or to condemn it. This thesis is aimed to stimulate the readers' awareness of nuclear non-proliferation and nuclear disarmament in nuclear regime. Eventually the readers have considerations on the opportunity cost of developing nuclear by comparing the hostility and benefit to mankind. It is also expected that this thesis will serve as a reliable reference for policy or treaty maker in coordinating international cooperation to support nuclear non-proliferation and nuclear disarmament.

1.5 Thesis Organization

This thesis will be organized into five parts:

Chapter I. Introduction

The first chapter is an introductory part that reveals background, research problems, research questions, significance and finally defines boundaries as well as organizing the whole structure of the thesis.

Chapter II. Analytical Framework

The second chapter will give in-depths comprehension on theories that are relevant to the thesis research through the study of literature. Conceptual framework is supported by various cohesive perspectives such as: international security, regional security complex theory, traditional security (balance of threat

and deterrence), non-traditional security (energy security), nuclear security regime (nuclear proliferation, nuclear disarmament and nuclear material security index), nuclear apartheid and foreign policy. The theories will serve as instruments to answer the research questions through intensive analysis.

Chapter III. Research Methods

The third chapter focuses on describing and defining the process of which the research will be conducted starting from limiting the scope of research, designating research method, stating the source and type of data, explaining the technique of data collection until portraying the technique used in data analysis and processing.

Chapter IV. Results and Discussion

The fourth chapter profoundly discusses the result of the process of correlating conceptual framework to obtained data into intensive discussion and analysis in order to answer the research problems.

Chapter V. Conclusion and Recommendation

The fifth chapter is a closure chapter that will provide brief explanation on the result of the research and recommendations toward the center issue of the thesis.

Bibliography

Appendices