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CIVIL NUCLEAR LIABILITY

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ABSTRACT

India is a de facto weapons power which has accomplished its main aims of creating present-day strategic weapons technology. It additionally has a significant civil nuclear and space enterprise. The target of this report is to inspect the partition amongst civil exercises and military exercises in India, featuring territories of concern in India's endeavours to join nuclear administration measures. The report uses an extensive variety of open sources to look at the connections and linkages amongst entities and individuals in India. Open sources utilized to incorporate the full scope of scientific logical research literature, online networking, legal tenders, provincial conventional media sources, and defence journalism. India has a developed however inadequately isolated civil and strategic space and nuclear program. With regards to India's endeavours to re-engage with the international community, including nuclear administration and markets, India has acknowledged limited non-proliferation commitments, incorporating concerning send out controls. Be that as it may, India's nuclear self-assurance and in addition its interests in keeping its future alternatives open will probably keep the nation from consenting to other non-proliferation duties, such the Comprehensive Test Ban Treaty (CTBT) and Fissile Material Cut-off Treaty (FMCT). With this unique situation, this report features that universal exchange and other collaboration with India is adding to India's key projects both straight forwardly and in a roundabout way.

Keywords- Civil Nuclear Liability, Non Proliferation, Nuclear Weapons, Civil Liability for Nuclear Damage Act 2010

RESEARCH METHODOLOGY

Subject- Political Science & Civil Nuclear Liability Law

Topic – *Non Proliferation & Civil Nuclear Liability in India*

The method of research opted by me in this project was doctrinal research from both primary and secondary sources. Majority of research work has been done via Articles, Journals and Case Laws available in online databases. Other sources like various works by learned authors have also been referred.

SCOPE AND OBJECTIVE OF THE STUDY

The objective of this research project is to analyse the nuclear capability & non-proliferation of the nuclear weapons in India. Whether India should completely sign up for the Non-Proliferation Treaty or not? A relationship between the Indian Space Research Organisation (ISRO) and Defence Research and Development Organisation (DRDO) on the separation of civil space missile programmes and military missile programmes can be

observed. This paper seeks to explore the relationship and provide information on the same. This paper will also submit recommendations for India to engage in the global effort toward reduction of nuclear weapons.

MODE OF CITATION

A uniform system of citation is followed throughout in the contents.

HYPOTHESIS

Non-Proliferation is an important factor in a world full of countries possessing nuclear weapons. World War 1 and 2 were great examples of the kind of death, destruction and catastrophe wars bring along with them. The loss of lives, property, money and humanity in wars is unbelievably high. Nuclear weapons exist for the sole purpose of protection of a country. The word protection is subjective as these weapons can physically and economically destroy other countries to protect its own. The paper talks about the capability of India in terms of nuclear power and also suggests remedies to it. For if a war was to break out in this modern era full of diplomats with modernized weapons, the world will face an issue never faced before and never to be rivalled again, considering the destructive force available currently.

RESEARCH QUESTIONS

1. Whether India should limit its fissile material production and reduce its nuclear arsenal?
2. Whether India should engage in the Global Effort towards reduction of Nuclear Weapons?
3. Whether India should increase its nuclear arsenal and not participate in Non-Proliferation of nuclear weapons?
4. Whether the Civil Nuclear Damage Act can be slightly amended?

PREAMBLE

The USA and India reached are obligated towards an agreement on the business liability of suppliers for nuclear incidents in India. The operators of nuclear facilities in India might again be the primary culprit for a nuclear incident and the residual liability of suppliers for damage from a nuclear incident will be mitigated by an insurance pool, funded by insurers from India and the Government of India.[1] According to the Treaty on the Non-Proliferation of Nuclear Weapons there are a couple of "official" nuclear-weapon states in this world - United States (US), the United Kingdom (UK), France, Russia, India, Pakistan, China, Israel and North Korea. These said countries possess nuclear weapons outside the jurisdiction and purview of NPT. India commenced its first ever nuclear test in 1974. In 1998 only India had carried out five of nuclear tests. The process of weaponisation of a country is an exhausting and expensive affair and could involve various other activities from deciding on the yield and output necessity, device design, and resource and material acquisition and processing and many other processes. In summation, it would mostly depend on the weapon being produced by the country through its resources.

INDIA'S STRATEGIC STATUS

OVERVIEW OF INDIA'S STRATEGIC PROGRAMMES

India's Nuclear Program India has an impressively considerable atomic infrastructure driven by the nation's prerequisites for nuclear energy and its need to keep up a dependable nuclear deterrent. India's atomic program is semi-

[1] See, "Nuclear Insurance Pool Dilutes Risk for Indian, US Suppliers < http://www.newindianexpress.com/nation/2015/feb/09/Nuclear-Insurance-Pool-Dilutes-Risk-for-Indian-US-Suppliers-714974.html>

translucent with a considerable lot of its offsite and onsite facilities scattered over the nation. The program, be that as it may, likewise utilizes many engineers, a considerable lot of whom work the nation's affable civil energy program which has 21 operational reactors in 7 nuclear power plant sites. The civil energy program in mid-2016 created under 7 GWe (GWe= Gigawatt-Electric), contrasted with the nation's full limit of 300GWe (210 GWe from petroleum products, 40 GWe from hydro, and 43 GWe from renewables) with nuclear accounting roughly 2.3% of aggregate.[2]. The extent of energy produced by atomic means is anticipated to ascend, with government designs expecting to create up to 9% of the nation's capacity by atomic power. In any case, this figure remains a low contribution to the country's expanding energy utilization needs.

India has grasped the three-staged atomic power program, imagined by Homi Bhabha. The primary stage uses pressurized heavy water reactors (PHWR) consuming natural uranium with heavy water as a moderator and producing plutonium-239. The second stage uses fast breeder reactors (FBR) either expending mixed oxide (MOX) fuel produced using recuperated plutonium-239 from the 1st stage to breed extra plutonium-239 from uranium-238 in the MOX fuel load or devouring a thorium cover plutonium centre to breed uranium-233[3]. The third stage, still in the plausibility cycle, uses advanced heavy water reactors (AWHR) consuming a blended cover of thorium-232 and uranium-233. India likewise as of late reported aspiring plans to manufacture an extra 10 control reactors as a major aspect of this fuel cycle by including a further 7000 GW of power from PHWRs.[4]

HISTORICAL ORIENTATION

India's atomic program has its evolution in the prime of the 'Atoms for Peace 'activity of the 1950s, amid which India got the CIRUS research from Canada. Institutionally, the Indian Atomic Energy Commission (AEC) made by the Atomic Energy Act 1948 and imagined by PM Jawaharlal Nehru to investigate logical research in "exceedingly specified ways". Most commentators concur that the civil and defense parts of the Indian atomic program can't be unravelled. As the CIRUS reactor deal was executed before the presence of a formal international nuclear energy administration, almost no protections concurred casually (with a desire for re-arrangement when the IAEA was established) by the bilateral partners were implemented. Subsequently, plutonium delivered as a result of the CIRUS reactor was not safeguarded and could offer an innovative alternative for an atomic explosive. One historical estimate places the essential measure of plutonium gathered for one weapon (5-10kg) to have been accomplished by 1965, with an appropriate store amassed by 1967.

India tried its first atomic explosive in July 1974. The 'peaceful nuclear explosion' (PNE) 'Smiling Buddha' was given the thumbs up by PM Indira Gandhi. Planning work in the Thar desert n Rajasthan express, the Pokhran site, and metallurgical work was directed by the Bhabha Atomic Research Center (BARC) with non-atomic parts of the atomic device, (for example, a

[2] Figures from, World Nuclear Association: Country Profiles, India, See, http://www.world-nuclear.org/informationlibrary/country-profiles/countries-g-n/india.aspx

[3] Some commentators might describe the first plutonium-uranium-238 core as a 'military mode' because it produces additional plutonium-239, and the second thorium-plutonium core as a 'civilian mode'; see: Alexander Glaser and M.V. Ramana, 'Weapon-Grade Plutonium Production Potential in the Indian Prototype Fast Breeder Reactor', Science and Global Security 15:85-105 (2007)

[4] Narendra Modi, "Boost to transform domestic nuclear industry", 17 May 2017. Available online at: http://www.narendramodi.in/boost-to-transform-domestic-nuclear-industry--535463

conventional explosive lens for implosion-style device) finished by the Defense Research and Development Organization (DRDO). Raja Ramanna, Director of BARC at the time, supervised all fundamental weaponisation work. India started the second series of five atomic tests, Pokhran II, on the 11 May to 13 May 1998. Government press at the time portrayed the tests as overt weapons tests. It is indicated that the tests were two-stage thermonuclear weapons, with little yield tests. The assessed yields are indicated to be Shakti I (45 kt), Shakti II (15 kt), Shakti III (0.3 kt), Shakti IV (0.5 kt), Shakti V (0.2 kt). It has additionally been implied that the tests built up the feasibility of small physics package designs to be mounted on airplane delivered bombs or missiles. Pokhran II was set up by the 58 Engineering Regiment of the Indian Army, with DRDO engineering inputs. It was regulated by A.P.J. K. Abdul Kalam (Director DRDO), R. Chidambaram (Head AEC/DAE), and Anil Kakodkar (Director BARC).

Assents had been forced in 1997 by the United States, a year preceding the 1998 tests, and incorporated the designation onto the Bureau of Export Administration's Entity List of four Indian associations with "an unacceptable risk of diversion to developing weapons of mass destruction (WMDs) or missiles used to deliver those weapons". Additionally, sanctions following Pokhran II test were collected on more than 200 Indian substances, some of whom with no connection to key weapons. Assents were casual in 2000, with huge numbers of those elements without any connections expelled, leaving substances the US Government accepted to be connected to the atomic and rocket programs in India. Those elements are this current investigation's gauge. Authorizations were again eased in 2001 under the Bush organization's rapprochement with India; leaving a centre gathering of missile research facilities and their supporting elements, centre Department of Atomic Energy sub-elements, and some safeguard enterprises. In 2010, more noteworthy rapprochement prompted the expulsion of for all intents and purposes all assents in 2011 as nine elements in DRDO, and ISRO were evacuated. On 18 July 2005, PM Manmohan Singh and US President George W Bush put forth a joint expression flagging their ability to collaborate on common atomic vitality. Following the 'India-US Joint Statement', PM Manmohan Singh reported the 'Detachment Plan' in 2006 sketching out the administration's goal to proclaim isolated regular citizen and military nuclear projects. Accordingly, the NSG issued the 'perfect waiver' for India allowing atomic supply from remote providers to India.

In 2009, India concluded a continuous safeguards agreement with the IAEA[5], and submitting certain facilities to international safeguards.[6] This, however, excluded a large number of facilities and implied a division of civilian and military-use facilities that was not originally written into the IAEA agreement[7]. The facilities in India's completely indigenous nuclear fuel cycle are now described.

[5] 'Agreement between the Government of India and the International Atomic Energy Agency for the Application of Safeguards to Civilian Nuclear Facilities', IAEA INFCIRC/754 (29 May 2009)

[6] Most up-to-date, 'Agreement between the Government of India and the International Atomic Energy Agency for the Application of Safeguards to Civilian Nuclear Facilities: Addition to the List of Facilities Subject to Safeguards', IAEA INFCIRC/754/Add.7 (5 February 2015)

[7] Kalman Robertson and John Carlson, 'The Three Overlapping Streams of India's Nuclear Program', Project on Managing the Atom, Belfer Center for Science and International Affairs, Harvard Kennedy School (April 2016), See, http://www.belfercenter.org/sites/default/files/legacy/files/thethreesoverlappingtreamsofindiasnuclearpowe rprograms.pdf

URANIUM MINING AND MILLING

India works various uranium mines and related plants through the Uranium Corporation of India (UCIL), for the most part situated in the Singhbun Thrust Belt region in Jharkhand state yet with recent expansion in the course of ten years in Andhra Pradesh, Telengana, Karnataka, and Meghalaya states. Indian uranium mines have worked since 1967, and as indicated by collated open source data, uranium plants may create around 730 tonnes each time of uranium peroxide (yellowcake). New uranium deposits, specifically at Tumalpalle, offer India a potential pipeline of all natural uranium supply yet extraction in the close term won't coordinate current utilization.

IMPORTS OF FOREIGN FISSILE MATERIAL

While India has huge uranium reserves, the deficiency between potential natural resources to be misused and current extraction limit has brought about India looking for uranium imports from the worldwide market. Canada (April 2015) and Australia (November 2015) have dealt bilateral agreements with India to supply uranium. Canada vowed for Cameco Corporation to supply 3,220 metric tonnes over five years. In January 2009, India closed an agreement with Kazakhstan in (lapsed 2014) for the joint extraction of uranium in Kazakhstan and the supply of yields to India. India finished up an agreement with Russian organization JSC TVEL in 2009 for the supply of uranium dioxide and low-advanced uranium. In 2015, an understanding was made with Kazakhstan for the supply of 5,000 tons more than five years. Between the years 2008-2014, imported products counted as Kazakhstan (2,100t), Russia (2,058t), and France (300t). In 2015-2016, the tallies were from Russian (345t) and Canada (250t). The foreign fissile material is utilized as a part of India's defended reactors and facilitates India's vitality utilization burden. Mitigating the supply of uranium through foreign supply gives India the adaptability to utilize its naturally sourced uranium for military purposes as required. In any case, it is hard to find out how much privately sourced uranium is used in this way. A December 2014 estimate stated that 40% of defended reactors worked on imported uranium, with the rest depending on natural uranium reserves in India.[8]

URANIUM CONVERSION

India can principally attempt work to change over uranium peroxide to the uranium hexafluoride at Nuclear Fuel Complex, Hyderabad. The conversion is taken at the Uranium Oxide Plant and the "New" Enriched Uranium Oxide Plant. The Uranium Oxide Plant has an expected yield of 450tons/year. Extra uranium conversion activities happen at the Indian Rare Metals Plant (RMP; otherwise called: Rattehali Rare Metals Plant) where uranium hexafluoride yields are nourished into adjacent course halls for enrichment.

URANIUM ENRICHMENT

Uranium hexafluoride feedstock isenriched at two key areas, with a future third possibly to being development sooner rather than later. The two operational offices at the Rare Metals Plant (RMP) and a pilot office at the Bhabha Atomic Research Center (BARC) give India a humble capacity to improve uranium. The yield limits of these offices are unknown. Construction at the RMP office for an asserted second-cascade hall would possibly twofold India's current limit. The RMP office gives profoundly advanced uranium (HEU) for use in the Arihant-class maritime reactors yet has abundance limit in the wake of meeting

[8] World Nuclear Association, Country Profile: India, Nuclear reactors deployed in India, See, http://www.worldnuclear.org/information-library/country-profiles/countries-g-n/india.aspx

maritime reactor needs. Development of a third facility, which still can't seem to start, at the 'Challakere complex' in Karnataka will incorporate another 'Special Material Enrichment Facility' which won't be protected and will create advanced uranium for military and regular citizen purposes. The Challakere complex additionally incorporates an assortment of DRDO labs, including an extensive airstrip for UAV research, and portions for private research institutions, for example, the Indian Institute of Science at Bangalore.

INDIA'S ENGAGEMENT WITH NUCLEAR GOVERNANCE

India's connections with international export control administrations and atomic governance agreements are best described as partial commitment/engagement. India has customarily restricted the NPT and saw it as deficient, referring to non-proliferation and disarmament sequencing issues, and has looked to seek after its own particular image of self-determination and proliferation management.

Since the US-India nuclear deal, this has changed. India is currently a participating member of the Missile Technology Control Regime (MTCR) and remains an exception to the Treaty on the Non-Proliferation of Nuclear Weapons (NPT). India has interacted with and applied to the Nuclear Suppliers Group (NSG), an export control regime that a few cases include the criteria, that all NSG individuals should be adherents to the NPT[9]. India has not engaged with either Fissile Material Cut-Off Treaty (FMCT) or Comprehensive Test Ban Treaty (CTBT).

Given that local Indian strategic discourse seems to centre on Indian freedom of nuclear decision leadership, Indian ascension to both of those agreements stays impossible. This cluster of partial commitments has confounded international endeavours to work with India on non-proliferation and will keep on plaguing Indian desire for global acknowledgment and acceptance. Accordingly, the standpoint for Indian integration into formal agreements seems to stay dependent upon the key needs of constituent individuals as opposed to India's unequivocal selection of atomic non-expansion agreements. This renders India's future in worldwide nuclear administration as questionable and justifying close consideration in the short-to-medium term.

INDIA'S NUCLEAR SELF DETERMINATION

Since 2007, India's part in atomic administration developed generously. This was prompted by the US/India atomic agreement and the 2008 Nuclear Suppliers Group exclusion to the prerequisite of full-scope safeguards as past areas sketched out. In the decade that has taken after, India has found a way to take part in global nuclear commerce and governance. Notwithstanding isolating its common and vital atomic projects as set out in Part 1 Section 2, this incorporates:

- Concluding nuclear cooperation concurrences with 10 states and agreements for the supply of uranium and tech. It is remarkable that notwithstanding this, foreign supplied reactors in India are at considerable risk. This was first halfway a consequence of India's dubious nuclear liability laws however more as of late is an

[9] There is some ambiguity about whether there is a formal criterion for membership. INFCIRC 539 Rev 6 state that "factors taken into account for participation include… adherence to one or more treaties, such as the NPT". However, the phrase "taken into account" implies that the listed criteria are not absolute. In practice, the NSG membership can choose to interpret or change its criteria however it wishes. INFCIRC 539 Rev 6. Available online at: <https://www.iaea.org/sites/default/files/infcirc539r6.pdf>

aftereffect of the financial troubles of Toshiba.

• Aligning its rundowns to those of the export control regimes. Nonetheless, consistent with the idea of Indian atomic self-determination, India has picked to adjust its rundowns while utilizing an altogether extraordinary way to deal with export control records than some other state. The list, known as SCOMET is a unique Indian instrument. SCOMET has advanced over time and where it has been out of track with the list of export control regimes, it has made positive strides towards arrangement.

• India connected and was acknowledged into the Missile Technology Control Regime and connected to join the Nuclear Suppliers Group. It participated in the Obama Administration's Nuclear Security Summit Process.

In any case, there are critical advances that India has not taken nor has been required to take to get the concessions made to it:

• India has not marked the Comprehensive Test Ban Treaty (CTBT). India is right now executing a ban on atomic testing. Be that as it may, it is a long way from clear whether this ban will be seen in the medium-to long haul if the key condition moves radically.

• India has not resolved to end creation of fissile material for use in weapons programs. Surely, it is conceivable that India has possessed the capacity to exploit the common atomic concurrence with the US to extend its creation of fissile material for weapons purposes. This is obviously unwanted given the troublesome territorial issues that India faces.

LEGAL FRAMEWORK IN INDIA

The issue of civil liability in the event of nuclear catastrophes affecting the public at large drifted for quite a while in the policies of India yet out of nowhere effectively popped up in the year 2006 when India set in motion its intend to have civil nuclear concurrence with the USA. The agreement was at long last accomplished in 2008 famously alluded to as the Indo-US Civil Nuclear Agreement. One of the terms of the contract ordered for the law of civil liability with respect to nuclear episodes of disasters in India. Accordingly, around 2 years later, The Civil Liability for Nuclear Damage Act of 2010 (in the future alluded to as 'The Act') was passed by the Parliament. The Act by a wide margin is the most thorough enactment that inter alia manages remuneration for the casualties of such debacles.

NATURE OF LIABILITY UNDER THE NUCLEAR LIABILITY ACT

Since its origin, the Act has been liable to much contention and controversy over the issues that emerge because of the provisions for liability enumerated under the act. A portion of the related issues that look for consideration are:

MONETARY LIMITATION ON REMUNERATION

The act settles the liability to a specific financial limit. On account of operators, the limit is Rupees 15 billion and for the Government, the cap is settled to 300 million dollars of Special Drawing Rights of the IMF[10] which according to the present rates turns out to be about 420 million US Dollars. The most serious issue with such capping is the circumstances when the harm or damage caused surpasses the cut-off. The Act does not explicitly furnish for any provision regarding harms over the cut-off which makes the execution subjective in

[10] International Monetary Fund

instances of serious atomic misfortunes and losses.

PRIVATE CONTENDERS

Another issue that encompasses the liability is the activity of such nuclear plants. In India, these plants are state-owned and worked through NPCIL[11] thus; at last, the duty regarding such disasters will be borne by regular Tax-payers. The operators additionally being a state entity in India influences the financial burden of remuneration to fall on the common man. Opening the area to private players has its own particular points of interest and detriments that should be investigated.

DISREGARD OF THE ADDITIONAL COSTS:

The incidents in the past, for example, the Fukushima and Chernobyl have demonstrated that apart from giving compensation or remuneration there are numerous extra costs which the party to blame needs to take up /bear. These expenses are also inclusive of the costs required to clean up and safe disposal of the atomic waste. These exercises request a great deal of money alongside a high-level of alert and care. The Act does not give any provision to these extra costs which can be a menace to the government.

So, in summation, the act does not consider the costs regarding cleaning and disposal of the nuclear waste which is highly radioactive and can destroy the organs of any human being.

Also, to point out, the Doctrine of Strict Liability remains at the core of the Act. Taking awareness of the prior occurrences of man-made calamities, for example, the Bhopal gas disaster, the parliament considered strict obligation to be better for the substantive purpose behind the Act i.e. empower victims to get remuneration. The Act forces strict risk upon the administrator of the plant[12], just in instances of 'Act of God' or power majeure events the govt. can be committed to bear the costs. [13]

INTERPRETATION OF INDIA'S ACTIONS

India's cooperation in trade of atomic products is set to increase, yet its future role in the worldwide nuclear governance or its level of inclusion stays questionable. Certain sequencing conditions exist:

To start with, India will try to join nuclear governance arrangements as though it was a party to the NPT. As India is an atomic holder state from outside the Treaty, and it remains very improbable it will consent to the Treaty through nuclear rollback, the admission of India to nuclear government institutions would absolutely incorporate concessions on this criterion.

Second, India's specific commitment with non-proliferation agreements may demonstrate the Government of India's needs to satisfy its atomic supply needs while keeping up, unhindered nuclear decision-making freedom. India's non-engagement with the Comprehensive Test Ban Treaty is indicative of this strategic priority. Particular commitment with nuclear governance institutions and agreements, for example, the NPT and CTBT, should cast a doubt on the genuineness of India's pledge to non-proliferation. An Indian duty to non-proliferation ought to be steady and fair. The threat of normalizing India's default military atomic power is undermining international agreements that have looked for wide bases of aid and support from the

[11]Nuclear Power Corporation of India

[12] Section 4 of the Civil Damage for Nuclear Damage Act, 2010 states the" Liability of The Operator"

[13] Section 5 of the Civil Damage for Nuclear Damage Act, 2010 states the "Operator not Liable in Certain Circumstances"

Member States and therefore acquired substantive authenticity. In any case, the potential consideration of India into the Nuclear Suppliers Group for the motivations behind anchoring its atomic goods supply line may thus additionally anchor India's industrial base from the export of sensitive atomic and missile goods to different nations.

Third, with a view to business risk, foreign investment in India's atomic power framework is probably going to have indeterminate yields. Following the historical backdrop of US nuclear exchange with India since NSG exception in 2008 does not promptly show benefit, proposing a key estimation as the supporting element. This does not look good for future foreign investment in India's atomic power foundation, particularly considering the moderately small national share of power production that is required to be received from nuclear power (starting at 2016, it has been 2.3% of the nation's net power generation). Hurdles, for example, India's civil nuclear liability laws have been mostly resolved, however, a long-term perspective of hazard in the area recommends that any reorientation of India's strategic nuclear apparatus to a more forceful stance, for example, the critical development of the atomic weapons stockpile, will jeopardize business collaboration. All things considered, close term investigation of benefit must be careful about longer-term risks.

Fourth, India's application to the NSG has drawn sharp resistance from Pakistan and China, and the rebuff of India's offered will constitute a setback for Indian aims international acceptance of its atomic program. For future US organizations, the balance should be struck between key needs to improve India's situation as a partner, while regarding the criteria of non-proliferation courses of action. This will turn out to be progressively troublesome even with provincial enmities amongst India and Pakistan, and China.

CURRENT SCENARIO IN INDIA

India sees its atomic weapons and missile programs as essential segments of its strategic doctrine. New Delhi rejects the Treaty on the Non-Proliferation of Nuclear Weapons (NPT) in light of the fact that it sustains—at any rate for the time being—a low qualification between the five states that are allowed by the agreement to have atomic weapons, while requiring all other state parties to the treaty to remain non-nuclear weapon states.

India has additionally been profoundly condemning of the pace of the atomic weapon states disarmament movement, contending that they have not satisfied their duties under Article VI of the Treaty on the Non-Proliferation of Nuclear Weapons (NPT). Be that as it may, India has as of late found a way to coordinate into the more extensive non-proliferation regimes, accepting a waiver in 2008 from the Nuclear Suppliers Group (NSG), going into bilateral civilian nuclear agreements, approving a form of the Additional Protocol, and communicating interest for joining the significant export control administrations/regimes.

NUCLEAR

India isn't a member of the Treaty on the Non-Proliferation of Nuclear Weapons (NPT) or the Comprehensive Nuclear Test Ban Treaty (CTBT), however, it is a state party to the Partial Test Ban Treaty (PTBT). New Delhi set out on an energy program in 1948 and a nuclear explosives program in 1964.[14] The latter finished in the May 1974

[14] George Perkovich, India's Nuclear Bomb: The Impact on Global Proliferation (Berkley: University of California Press, 1999), pp. 17-18 and 82-83.

trial of a "peaceful atomic blast." Following five atomic tests in May 1998, India formally announced itself an nuclear weapon state. [15]

India and the United States reported an atomic collaboration initiative in July 2005 that would allow New Delhi to take an interest in international atomic trade, under certain conditions. In 2008, New Delhi negotiated a limited safeguards agreement with the International Atomic Energy Agency (IAEA).[16]

India is extending its submarine-launched ballistic missile (SLBM) ability with a specific end goal to supplement its land and air-based atomic weapons. In order to meet the increased amount of uranium, India has multi-year enrichment capacities at the Indian Rare Metals Plant close Mysore in Karnataka.[17] There is fear, notwithstanding, that the uranium hexafluoride could be redirected to India's thermonuclear weapon capability. [18]

BIOLOGICAL WEAPONS

Albeit some knowledge predictions recommend that India has bio-weapons, there is extremely restricted open-source data accessible about a feasible Indian biological weapons program. India's Defense Research and Development Establishment have directed research on distinguishing and countering different infections. India approved the Biological and Toxin Weapons Convention (BTWC) in 1974.

The U.S. Department of State found India to be compliant with its goals to the BTWC in 2010 and 2011, and has not addressed India in its "Adherence to and Compliance with Arms Control, Non-proliferation, and Disarmament Agreements and Commitments" report since 2012. India has an extensive dual-use capability in its advanced pharmaceutical industry.

CHEMICAL

After numerous years of precluding the presence from securing a chemical weapons program, India uncovered in June 1997 that it had chemical weapons. Under the terms of the Chemical Weapons Convention (CWC), which India marked in 1993 and sanctioned in September 1996, India had annihilated roughly 75 percent of its reserve of Schedule 1 synthetic substances before the finish of 2006. In March 2009, India declared that it had devastated the majority of its compound weapons stocks as per the CWC. [19]

RECOMMENDATIONS

1. India can limit its fissile material production and reduce its nuclear arsenal- The most recent India-US nuclear deal does not impose limitations or restrictions or limit India's fissile material production or in any way reduce the number of nuclear weapons it aims to produce in the near future. The international community should urge India to not to take the step of increasing its nuclear arsenal as nearly all the major nuclear powers are taking the path of limiting their nuclear production. Supplementation or assistance to New Delhi's civilian nuclear program should be

[15] See images at: "First Nuclear Test at Pokhran in 1974", Federation of American Scientists, 4 July 2000, www.fas.org.

[16] International Atomic Energy Agency, "Nuclear Verification: The Conclusion of Safeguards Agreements and Additional Protocols," (Agreement Text), 9 July 2008, www.isis-online.org.

[17] Brian Cloghley and Robert Kelley, "Nuclear Option – India Increases its Uranium Enrichment Programme," Jane's Intelligence Review, 5 June 2014, www.janes.ihs.com.

[18] Brian Cloghley and Robert Kelley, "Nuclear Option – India Increases its Uranium Enrichment Programme," Jane's Intelligence Review, 5 June 2014, www.janes.ihs.com.

[19] "Update on Chemical Demilitarisation," Organisation for the Prohibition of Chemical Weapons, 21 April 2009, www.opcw.org.

contingent on the fact that whether the program is willing to halt nuclear weapons production in India. More importantly, measures should be taken by the government to make sure that a real separation or division exists between India's military and civilian nuclear programs.

2. India & The Comprehensive Test Ban Treaty- In September 1996 India voted against the UNGA (United Nations General Assembly) resolution which endorsed the CTBT, objecting to the lack of laws for the universal nuclear disarmament "within a time-bound framework"[20] India demanded that the treaty should ban laboratory simulations and disagreed with the provision in Article XIV of the treaty that needs India's ratification for the treaty to come into effect officially and worldwide.[21] Requirement of nuclear weapons may be a reasonable thing in the modern era but India's suggestions were that they could establish a time-bound framework for nuclear disarmament. Having a timeframe for worldwide nuclear disarmament would make it easier to keep the progress in check and ensure that members of the NPT act on their commitments pave a way for disarmament.
3. Proliferation Concernsin Myanmar, Burma- Indian military intercepted a North Korean ship in August, 2009, going to Myanmar[22] and it applied Resolution 1874 which particularly states to scrutinize North Korean ships and vessels.[23] Considering the increasing concerns that North Korea may be exporting nuclear technology to Myanmar[24], India should become more involved and cautious in surveil and oversee developments at its borders and figuring out Myanmar's nuclear intentions due to India's obligation as a country possessing nuclear weapons.
4. Engaging India in the Global Effort towards reduction of Nuclear Weapons- India's previous evidence as a disarmament advocate and its geographical position next to Pakistan, China, and Myanmar, speaks to India's serious capabilities to provide to reducing nuclear proliferation. As the weapons state to have proposed the proposals leading to the NPT and CTBT[25], India should be majorly engaged in issuing efforts globally towards non-proliferation alongside the United States and Russia. New Delhi in particular, is qualified enough to address the issues and concerns of the member states of Non-Aligned Movement, which is, for now, left out of the global disarmament effort and strongly opposes many US policyinitiatives.

[20] "Negotiating the CTBT: India's Security Concerns and Nuclear Disarmament," Journal of International Affairs, Summer, 1997, 51, no. 1. 0.

[21] "Comprehensive Test Ban Treaty," Embassy of India, Policy Statements, See, http://www.indianembassy.org/policy/CTBT/ctbt_index.htm

[22] India Inspects North Korea Ship for Nuclear Material, Reuters, August 10, 2009

[23] "Security Council, Acting Unanimously, Condemns In Strongest Terms Democratic People's Republic Of Korea Nuclear Test, Toughens Sanctions," United Nations, Security Council, 6141st Meeting, See, http://www.un.org/News/Press/docs/2009/sc9679.doc.htm.

[24] Nicholas Kristof, "Suspect Building in Burma," New York Times, August 8, 2009. See, http://kristof.blogs.nytimes.com/2009/08/08/suspect-building-in-burma/?scp=1&sq=Burma%20nuclear&st=cse

[25] N. D. Jayaprakash, "Nuclear Disarmament and India," Economic and Political Weekly, Vol. 35, No. 7 (Feb. 12- 18, 2000), pp. 525-533.

BIBLIOGRAPHY

1. India's Nuclear Exceptionalism- Fissile Materials, Fuel Cycles, and Safeguards by Mansoor Ahmed

See, https://www.belfercenter.org/sites/default/files/files/publication/India%27s%20Nuclear%20Exceptionalism.pdf

2. India's Nuclear Program, By Volha Charnysh, NAPF Intern, September 3, 2009

See, http://nuclearfiles.org/menu/key-issues/nuclear-weapons/issues/proliferation/india/charnysh_india_analysis.pdf

3. The Nuclear Policy of India and Pakistan, IZUYAMA Marie and OGAWA Shinichi

See, http://www.nids.mod.go.jp/english/publication/kiyo/pdf/bulletin_e2002_3.pdf

4. India, P. (2010). Highlights of the Nuclear Liability Bill. *PRS India*.

See,<http://www.prsindia.org/billtrack/the-civil-liability-for-nuclear-damage-bill-2010-1042/

5. Mitra, D. (09th February 2015). Nuclear Insurance Pool Dilutes Risk for Indian, US Suppliers. *New Indian Express*.

See,<http://www.newindianexpress.com/nation/2015/feb/09/Nuclear-Insurance-Pool-Dilutes-Risk-for-Indian-US-Suppliers-714974.html>

6. Norris, H. M. (2017). Indian nuclear forces, 2017. *Bulletin of the Atomic Scientists, Taylor and Francis Online*.

See, < See https://www.tandfonline.com/doi/full/10.1080/00963402.2017.1337998

7. Thakur, A. (June 18, 2016). Critical Analysis of India's Civil Nuclear Liability Law. *Pleaders- Intelligent Legal Solutions*.

See, < https://blog.ipleaders.in/critical-analysis-indias-civil-nuclear-liability-law/>