STANDOFF BETWEEN IRAN AND US AND ITS ALLIES ON NUCLEAR ISSUES
A Perspective

M.M.K. Sardana*

***[Abstract**: Iran's nuclear programme has become one of the most polarising issues in the world today. While American, Israeli and European allies believe Iran is planning to build nuclear weapons, Iran's leadership says that its goal in developing a nuclear programme is to generate electricity without dipping into its oil resources which it wants to sell abroad, and to provide fuel for its research and medical reactors. Iran had been a strong and trusted ally of US and Israel during the regime of Shah (1953 to 1979), who was installed when UK and US collaborated in overthrowing the democratic government in Iran. During the Shah's rule, US provided facilitations to Iran under its 'Atoms for Peace' policy to set up its nuclear programme. The Shah envisioned the generation of 23000 MW of Power by establishing 23 nuclear reactors despite sitting on huge reserves of oil and gas with a view to designing better industrial uses of oil. Many European companies scrambled to sign contracts with Iran on handsome advances. Iran was also offered 10% of output of a French Uranium enrichment facility. US government, besides providing a Research Reactor with enriched uranium, also cleared a proposal to provide reprocessing facility for extracting plutonium from used nuclear fuel. However, the Shah was toppled by an upsurge in Iran in 1979 and a theocratic Islamic regime has been ruling Iran since then. 'The new regime started with a 444 day siege of the American Embassy in Iran when 52 diplomats were held as hostages. The diplomatic relations between the two countries have remained frozen and US has been clamping sanctions on Iran. Ever since the regime revived its nuclear programme to include a complete 'nuclear fuel cycle'—in the wake of denial it faced from world community in getting necessary technology and materials—its attempts have been viewed with utmost suspicion all along and it is feared that Iran may seek to build nuclear weapons, which would set in motion dangerous and destabilizing nuclear proliferation. Despite US sanctions and subsequent UN sanctions and trade restraints from European Union countries, Iran is making steady progress in its efforts to produce enriched uranium which has dual use—to produce fuel for nuclear reactors or produce nuclear weapons. US and its allies want Iran to stop its uranium enrichment plan to assure the world community that it has no nuclear weapons programme. However, Iran is unwilling to give up because, according to Iran, such an activity is not disallowed even in the terms and conditions established by the NPT, of which it is a signatory, and reiterates that its intentions are entirely peaceful. IAEA has not been able to conclusively confirm whether Iran is currently enriching uranium for making nuclear weapons. However, it reported UNSC in 2006 that Iran has been hiding some of its activities from IAEA which would be in breach of its obligations under the NPT. Consequently UN has been imposing sanctions on Iran. The Iranians have, however, gone ahead in their programme which has prompted imposition of further bilateral sanctions by US. Its allies have also followed suit. The sanctions have affected Iranian economy and weakened its military capabilities. Israel, which is situated a good 1000 miles from Iran has been raising the pitch by calling for pre-emptive strikes on Iranian nuclear sites before it is too late. It is being counselled restraint by allies like US and the Europeans.*

This paper examines the issues involved in perspective and suggests an approach of negotiated judicious approach in larger interests failing which resultant conflagrations may not be easy to manage.]

* The author is a Visiting Fellow at the Institute.

To accord a perspective to the ongoing standoff between Iran and US and its allies over the Nuclear Power ambitions of Iran, it is necessary to spell out the events and the reasons for their occurrences giving threshold capacity to Iran in this field. It may be recalled that Iran had never been colonalised and was ruled by successive royal dynasties. In the early years of the 20th century, there were movements for constitutional reforms seeking to have greater role of the public in the affairs of the state by establishing an elected Parliament while maintaining monarchy. In fact, Iran had its first Parliament in 1906. Iran and US had established diplomatic relations in 1856. In 1909, Howard Baskerville, an American teacher and Princeton graduate on a Presbyterian mission in Tabriz, Iran, instantly became an Iranian national hero where after joining the Constitutionalists during the Constitutional Revolution of 1905–11, lost his young life while fighting the Royalists. He is remembered having said, "The only difference between me and these people is my place of birth, and this is not a big difference." To this day, he is revered by the Iranians.[1]

Until the Second World War, the US had no interest or an active policy vis-a-vis Iran and the relations between the countries remained cordial. In 1951, Iran's oil industry was nationalized with near-unanimous support of Iran's parliament in a bill introduced by Prime Minister Mohammad Mossadegh, who headed the National Front party—a socio democratic, liberal, secular nationalist party of Iran,. In August 1953, with encouragement from Britain, CIA orchestrated a successful Coup d'état from the American Embassy in Tehran, deposing the democratically elected government derailing nascent democracy in Iran. The Shah of Iran, Mohamed Raza Pahlavi, was reinstalled. CIA played an active role in training and firmly establishing Iran's intelligence agency SAVAK, an arm of the state which Iranians came to recognise as the most hated and feared institution for its brutal crackdown on political opponents.[2]

[1] Shoamanesh, Sam Sasan, "History Brief" Timeline of US-Iran Relations until the Obama Administration – Key Facts & Catalysts," N.d., *IT International Review*, available at web.mit.edu/mitir

[2] *Ibid*.

At about the same period, US was intensely locked in a Cold War with the USSR and its concern was to contain the influence of the USSR over the newly emerging regimes in Asia who had freed their territories of colonial rule/influence of the Europeans and were seeking to ameliorate the blot of their people. US had demonstrated its mite in nuclear power by bombing Hiroshima and Nagasaki in 1945, causing untold misery, unprecedented in history, to the millions of people and havoc over extended territories around the sites of attacks. Soviet Union had also come to acquire matching capabilities by 1953 when it exploded a thermonuclear bomb preceded by an atomic explosion in 1949.

Appreciating, the destructive capacity of technology, US had exercised utmost secrecy around the Manhattan project (1941–46) whose purpose was to develop a nuclear bomb. The project grew to employ 1,30,000 people spread over more than 30 institutions in US, Canada and U.K., and cost $2 billion ($ 26 billion at 2012 prices). In fact, its secrecy was such an obsession with the overseers of the project that even Vice-President Truman was unaware of the bomb's existence until after the death of President Roosevelt. The fear of diffusion of the technology beyond the closed club was so intense that Manhattan Project included in its ambit the task of destroying the capable scientific institutions in Germany and capturing their enabling scientists. During the cold war period, with USSR demonstrating its capabilities, it became essential to devise strategies to contain the spread of this technology even by working out arrangements with its arch rival USSR, appreciating at the same time that it is difficult to contain the spread of enabling science among the scientists across the continents. After ordering the nuclear attack on Japan, then-President Truman, asserted that Americans alone "must constitute ourselves trustees of this new force" and directed his State Department to devise an international control plan. The resultant Acheson-Lilienthal report cautioned that "development of atomic energy for peaceful purposes and the development of atomic energy for bombs are in much of their course interchangeable and interdependent;" and concluded that no country could be trusted to develop atomic power because even a primarily peaceful programme might provide fissionable materials to build bombs. Despite such clear warnings, the policy formulations had to take into consideration

geopolitical and commercial interests also. US policy makers were aware that to sustain US Nuclear Power reactor industry on a long term basis, it would have to go global and would need to have in other countries a trained manpower to receive their systems for sustaining their Commerce. Thus the US policy was to embrace within its fold scientific, commercial and political aspects and foregoing in the process a tight hold on strategic aspects. President Eisenhower, in his address to the UN on 8th December 1953, bared his policy of 'Atom for Peace' and proposed to allocate fissionable material (for peaceful uses) from a bank under international atomic energy agency control and provide special safe conditions under which such a bank of fissionable material can be made essentially immune to surprise seizure. He vowed that his country's focus and dedication would shift to finding inventive ways to use the great potential of atomic energy for peaceful and constructive means. U.S. was aware that forming of such an international arrangement and agency would take years but geopolitical concerns and commercial interests needed to be addressed expeditiously. In August 1954, US Atomic Energy Act of 1946 was revised to allow nuclear technology and material exports if the recipient country committed not to use these items to develop weapons. US companies were now free to sell nuclear technology to "strengthen American world leadership and disprove the communists' propaganda charges that the US is concerned solely with the destructive uses of the atom". Because US power reactor programmes were unlikely to produce economically competitive atomic power for a decade or more, Washington increased funds for its own reactor programmes, reoriented these programmes to foreign requirements and initiated foreign aid and information programmes to make potential recipients interested in US technology. It also provided friendly nations nuclear training, technical information, and help in constructing small research reactors. In March 1955, Eisenhower intensified his efforts to promote peaceful nuclear uses, directing the Atomic Energy Commission to provide "free world" nations "limited amounts of raw and fissionable materials" as well as generous assistance for building power reactors. These exports were

intended to maintain US global leadership, reduce Soviet influence, and assure continued access to foreign uranium and thorium supplies[3].

Iran, under the rule of Shah, was a trusted and dependent ally and was geographically located on the periphery of the oil-rich Middle East and was adjacent to the USSR territory. Therefore, it was a rightful candidate where American influence could be given a new dimension by encouraging it to join the American led initiative of Atom for Peace and also could be trusted to believe that Atomic Energy would be more economical even though the country is known to possess the 2nd largest reserve of natural gas and fourth natural reserve of crude oil.

In 1957, a Civil Nuclear Programme was established and the US Atom for Peace Programme[4] in Iran with the avowed objective of making adequate amounts of fissionable material with which Iranian scientists would test and develop their ideas with a view to converting this resource into efficient and economic usage[5]. This programme enabled Iran and other participant countries in the programme to avail of training facilities at US institutes like School of Nuclear Science and Engineering at Argonne laboratory, where access was available to declassified hundreds of nuclear studies and reports. Thus, the United States would be responsible for whetting the appetites for nuclear research and development in many countries like Iran, Argentina, Brazil, Pakistan etc., having no prior nuclear programme[6]. There was sufficient trained manpower available in Iran to establish, in 1967, the Tehran Nuclear Research Centre (TNRC) with US assistance and fuelled by enriched uranium to be run by its Atomic Energy Organisation. Iran also became a signatory to NPT in 1968 to be ratified by it in 1970, submitting itself to the scrutiny of IAEA.

During the world oil crisis in 1973–74, the Shah of Iran propounded that oil was too precious a resource and need not be burnt but should be uses for high end user like petrochemicals. He spelled out his vision of setting up 23 nuclear reactors by the

[3] Lavoy, Peter R. (2003), "The Enduring Effects of Atoms for Peace,"Arms Control Association.
[4] "Nuclear Energy in Iran," World Nuclear Association, March 2012.
[5] *Atoms for Peace*, Address by Mr. Dwight D. Eisenhower, President of the United States of America, to the 470th Plenary Meeting of the United Nations General Assembly, 8th December 1953.,
[6] *Op. Cit.*, 3

year 2000 A.D. capable of generating 23000 MW of power which would save the depleting oil resources for better use or higher exports[7]. He became the poster boy of American nuclear-power companies in their advertisement campaigns for spread of nuclear energy. The text of their advertisement ran as follows[8]:

> "GUESS WHO'S BUILDING NUCLEAR POWER PLANTS.
>
> The Shah of Iran is sitting on top of one the largest reservoirs of oil in the world. Yet he's building two nuclear plants and planning two more to provide electricity for his country. He knows the oil is running out--and time with it. But he wouldn't build the plants now if he doubted their safety. He'd wait. As many Americans want to do. The Shah knows that nuclear energy is not only economical, it has enjoyed a remarkable 30-year safety record. A record that was good enough for the citizens of Plymouth, Massachusetts, too. They've approved their second nuclear power plant by a vote of almost 4 to 1. Which shows you don't have to go as far as Iran for an endorsement of nuclear power."

Eyeing the deep pockets of Iran and close ties with the west, US and European companies scrambled to do business in Iran. Bushehr was finalised as a site for two nuclear plants of 1200 MW each to be set up by Siemens KWU to supply power to inland city of Shiraz and was to be completed by 1981. The contract for these plants at Bushehr was signed in 1976 but the construction was commenced in 1975. Iran paid an advance of $3 billion. Another contract was signed in 1977 with the French Company, Framatome, for setting up two reactors at Darkhovin for a sum of $2 billion for which construction commenced in January 1979.

The Shah also lent $1 billion in 1975 and contributed further $180 million in 1977 as equity for the construction of Eurodif factory, a Uranium enrichment plant in France, to have the right of buying of 10% production at the site.

[7] "Nuclear Program of Iran," Wikipedia.
[8] "Guess Who's Building Nuclear Power Plants," Wikipedia.

In 1976, President Ford of US signed a directive offering Tehran the chance to buy and operate a US built reprocessing facility for extracting Plutonium from nuclear fuel, and, the accompanying strategy paper for the White House sated that the introduction of nuclear energy will both provide for the growing needs of Iran's growing economy and face oil reserves for exports or for conversion to petrochemicals.

The Shah also contracted for import of Uranium from South Africa and Namibia around the same period[9]. Such arrangements were being arrived at post 1974 explosion by India which was demonstrative of the apprehensions of Acheson and Lilienthal[10] that the courses of development of peaceful uses of Atomic Energy and other uses are interchangeable and interdependent and also particularly even in the face of a 1974 CIA proliferation assessment which stated, "If the Shah is alive in the mid 1980s.... and if other countries, particularly India [read also Israel and Pakistan], have proceeded with weapons development, we [the CIA] have no doubt that Iran will follow suit." However when the then Secretary of State, Kissinger, was confronted with this in 2005, he did not think that the issue of proliferation came up when President Ford offered a complete Nuclear Fuel Cycle to Iran in 1976.[11]

While on the one hand, unmindful of proliferation possibility, Iran's determination to advance its Nuclear Programmes as Saudi Arabia was being encouraged to emerge as a supplemental supplier of oil to the international market came a considerable cost, its revenues were also adversely affected since the Shah of Iran had refused the suggestion of reducing its oil prices during the 1973 oil Crisis. Such a refusal was taken as an affront by the US Department of State and 'overnight turned the Persian monarch from "Gendarme of the Persian Gulf" and a ruler who Henry Kissinger had lauded as the "rarest of leaders, an unconditional ally, and one, whose understanding of the world enhanced our own" to "a brilliant but dangerous megalomaniac, who is likely to pursue his own aims in disregard of US interests'.[12]

[9] *Op. cit.*, 7
[10] *Op. cit.*, 3
[11] *Op. cit.*, 7
[12] *Op.cit.*, 1

Uncovering the secret documents of US of that period mark that Shah was being abandoned by the US by colluding with Saudi Arabia in keeping the oil prices down and hitting Iran's revenues at a time when its international commitments had been hiked. Some analysts believe that the Shah being squeezed by the encouragement of Saudi Arabia to lower down their prices of crude has been a significant milestone in understanding the origin of the Iranian Resolution of 1979 as this action contributed significantly to the destabilisation of the Iranian Economy which weakened the Shah's hold on power.

It may be instructive at this stage to recall the status of Israel-Iran relationship. From the establishment of the State of Israel in 1948 until the Iranian Revolution in 1979, Israel and Iran maintained close ties. Iran was the second Muslim majority country to recognise Israel as a sovereign nation after Turkey. Israel viewed Iran as a mature ally, as non-Arab power on the edge of Arab world—alliance of the periphery. Israel had a permanent delegation in Teheran which was an unofficial *de facto* embassy. After the six day war in 1967 (June 5 – June 10), Israel took effective control of the Gaza Strip and the Sinai Peninsula from Egypt, the West Bank and East Jerusalem from Jordan, and the Golan Heights from Syria, and, Iran supplied Israel with a significant portion of its oil needs. It was a swift and decisive victory for Israel. Brisk trade continued between the two countries until 1979. Besides, there was co-operation between the two countries and sometimes in secrecy for strategic construction and military projects such as Project Flower, an Iranian-Israel attempt to develop a new missile. In spite of trade and strategic ties between the two countries, Iran supported the 1975 UN Resolution equating Zionism with racism—a Resolution later revoked in 1991 which was opposed by Iran[13].

While the Shah was laying the foundations of Nuclear Energy and Nuclear cycle, the US was abandoning Iran slowly on the economic front; the Shah was also losing his hold on power. Massive public demonstrations against the Shah's repressive regime started in October 1977, developing into a campaign of civil disobedience that was partly secular and partly religious. The demonstrations took the form of strikes which

[13] "Iran–Israel Relations," Wikipedia.

paralysed the country between August 1978 and December 1978. The Shah left Iran for exile in mid January 1979 and religious leader Ayatollah Khomeini returned from exile to a greeting by several million Iranians.

The royal regime collapsed shortly after on February 11 when Guerrillas and rebel troops overwhelmed troops loyal to the Shah in armed street fighting. In a referendum on April 1, 1979, a new theocratic Constitution was approved which made Ayotallah Khomeini the Supreme leader of the country in December 1979. The revolution was unique in many ways as it was not born out of any of the conventional reasons such as defeat in war, disgruntlement of troops, financial crisis, peasant movement, etc. The speed was profound, upheaval was massive and popular. A westernising monarchy was replaced by an inward looking regime ruled by the clergy who brought a series of enhancements to the socio-political life in Iran, which include: termination of SAVAK's [Iran's intelligence agency (under the last Shah's reign) created with American encouragement and assistance] repressive practices; ending the irresponsible fiscal spending of the monarchy; ending the widening disparities between the rich and the poor; and, making Iran a stronger independent nation by rejecting self-serving foreign intervention in the country.[14]

Since 1953, when US collaborated with UK in overthrowing the democratic regime of Mosadegh, the Iranian people perceived the US embassy as a 'nest of spies' who would be a threat to the raging revolution taking place in Iran in 1979. The revolutionaries stormed into the US embassy on 4th November 1979 taking 52 Americans as hostages who were held for 444 days. Such an act was blatantly illegal under International law and was perceived by the American public as an act of barbarism of the 'Orient'. The hostage crisis remains the cause of much rift between Tehran and Washington and the diplomatic ties between the two remain disrupted[15]. With the installation of the theocratic regime in Iran, the Iranian government severed its links with Israel also and adopted a strong anti-Zionist stance. However, Iran's strategic interests compelled the Khomeini regime to

[14] *Op. cit.*, 1
[15] *Ibid*.

maintain clandenstine ties with Israel while hoping that periphery doctrine will be resurrected, motivating Israel's continued assistance[16].

Obviously Iran's nuclear programme, which was at nascent stage and was totally dependent upon foreign firms and their technology and supplies, would come to a standstill with the onset of revolution in 1979. Soon Iran was sucked into Iraq-Iran war of 1981–88 which severally damaged the works at Darkhovin where they had just begun.

Thus, Iran was able to take stock of its nuclear energy programmes only after 1988, which were at a nascent stage and were hit by the strikes during the Iran-Iraq war. Iran was suffering from international isolation because of sanctions imposed by US and also the latter's action of seizing the Iranian assets worth $12 billion. The French and German companies, who were contracted for setting up power reactors and had received funds in advance, did not resume the work and also did not refund the advance money. Its only nuclear plant at Tehran installed in 1967 and run by Atomic Energy Office (AEO) of Iran was shut down for a number of years because the US cut off the supply of highly enriched uranium. It was not easy to have/renew international collaboration because of the US pressure on the countries wishing to extend their help on commercial terms. For example, China did enter into a contract in 1992 to build two 300 MWE reactors at Darkhovin but withdrew from the same before construction started. A French company which was committed to supply 10% of its production of enriched uranium to Iran also refused to honour the same. If Iran truly wished to have having Nuclear Power, then it had to have an indigenous Nuclear Cycle starting from Mining of Uranium to making its own nuclear fuel and also setting up its nuclear reactors and that, too, under the watchful eyes of IAEA as it was a signatory to NPT.

From the beginning of 1990s, Russia formed a joint research organisation with Iran which provided Iran with Russian nuclear experts and technical information under its 'two track policy' offering commercial nuclear technology to Iran and discussing the issues with Washington.

[16] *Op.cit.*, 13

In 1992 itself, media started speculating about Iran's undeclared nuclear activities as soon as Iran started working on its mining project at Saghand. Iran invited IAEA inspectors who visited all the sites including the mining site at Saghand and declared that all the nuclear programmes were for peaceful purposes. However, Argentina cancelled a deal, under US pressure, of supplying civilian nuclear equipment worth $18 million. Under its two track policy, Russia, in 1994 agreed to complete unit 1 at Bushehr nuclear power plant with VVER-1000 pressurized water reactor (PWR), using mostly infrastructure already in place. After a number of hiccups, eventually the reactor started on 8th May 2011, and was on stream in February 2012—the project took as long as 38 years to finish while Unit II has been abandoned. IAEA remained associated with the project to supervise the safety aspects.

Under NPT obligations, Iran was not required to report to the IAEA the existence of nuclear facilities until six months before nuclear material is introduced into a facility, yet on the basis of a statement of an Iranian dissident group, IAEA, which had otherwise been frequently inspecting Iranian sites, sought information on the construction of sites for uranium enrichment at Natanz—an activity which is not debarred under the NPT—and a heavy water production plant at Arak. However, IAEA reported in November 2003 that it had discovered highly enriched uranium at one of Iran's nuclear facilities and complained that Iran had hidden parts of it nuclear programmes from inspectors.

Highly enriched uranium is not necessary for nuclear power, but is a critical component of the nuclear weaponry. Although enriching uranium is not forbidden under the terms of the NPT, of which Iran is a signatory, it did suggest that Iran might be developing fissile material suitable for use in nuclear bomb and would be in contradiction to the contention of Iran towards peaceful uses of the nuclear energy[17]. It may be noted that there are many countries, enriching uranium other than the Nuclear 5, such as Argentina, Brazil, China, France, Germany, Japan, Netherlands, etc., and they are all signatories to the NPT. Merely attaining the capability to enrich Uranium and that too when the activity itself is not in violation of

[17] *Op.cit.*, 4. See also, *Op. cit.*, 7

NPT, cannot by itself be an indicator of the intention to weaponize. There have to be capabilities beyond the capability of enriching Uranium before forming a view on the intention to weaponize.

It may be recalled that when Atom for Peace policy was being formulated, there were many informed views that the capacity to use nuclear energy would also equip the nuclear empowered states with weapons. However, taking into consideration strategic, political and commercial interests, it was decided to go ahead with the programme of disseminating technology with the attending proliferation risks. To minimise the risk of proliferation, IAEA has been in place and UN Security Council has been empowered to take punitive measures against nations diverting from peaceful nuclear uses. Such a state of affairs would require IAEA to do its utmost to act neutrally and with uniform firmness in reporting the matters to the Security Council. It should save itself from being an instrument in the hands of powerful nations and groups to sub serve their political interests. However, there have been instances when the conduct of a country in producing highly enriched uranium was sought to be explained as an act of oversight and was believed to be not in the knowledge of the governing regime of the State[18]. Nuclear arsenal of a state has been sought to be kept away from public knowledge officially[19]. Iran has been subjected to much closer scrutiny even since 1992, when on empirical and logical deduction, the nuclear programme of Iran would at best have been in its infancy as Iran was recovering from Iran-Iraq war and would need to re-organise its nuclear programme in the face of an environment of isolation in international affairs making procurement of technology and material difficult. Faced with such a situation, it needed to have a complete nuclear cycle of its own to sustain its nuclear energy plants and it was to virtually begin from scratch in the year 2000 or so and implement various components of nuclear cycle such as mining, processing of uranium mineral, separation of fissile uranium and enriching the same initially to 3 to 5% and further in stages for power, research and radio isotopes for medical uses, setting up of enabling reactors and plants. It had in its inventory, at that stage, 450 tonnes of

[18] "Nuclear Power in South Korea," Wikipedia.

[19] Lake, Eli (2009), "America has protected Israeli nuke program for 40 years," *The Washington Times*, May 6.

uranium (531 to U_3O_2) from South Africa procured in 1980 of which some 366 tonnes was converted to UF_6 at Esfahan Nuclear Technology Centre started up in 2004 under the safeguards of IAEA. By 2009, according to IAEA, it procured 366 tonnes of uranium as UF_6.

In about 2000 Iran started building at Natanz, a sophisticated enrichment plant, which it declared to IAEA only after it was identified in 2002. This is known as the Pilot Fuel Enrichment Plant (PFEP), which is a test, research, development and pilot enrichment facility located aboveground in the complex that also houses the Fuel Enrichment Plant (FEP) at Natanz. In May 2010, environmental samples confined that both enrichment plants were operating as declared, FEP producing less than 5% enrichment (LEO). 1950kg of LEU was taken from FEP to PFEP where two cascades have been set up for production of LEU up to 20% for Tehran Nuclear Reactor set up in 1967, and the balance of the plant is designated for R&D. From February 2010 to May 2011 574 kg of LEU has been converted to 56.7 kg of LEU (19.7%). The operations at PFEP have been under advanced surveillance and checks since May 2010. On 23 June 2011, the head of Atomic Energy office of Iran (AEIO) had said, “we have the ability to produce 5 kg (of 20% enriched uranium) each month”. In August 2011, he confirmed that Iran had more 20% LEU than it needed for Tehran Research Reactor, and for security reasons sensitive part of the facilities would be transferred to underground buildings at Fordow.

International concerns have been built up on the surge of activity in enrichment to about 20% U-235 and the capability is about 90% of the way to weapons grade material; and thus would require a small and clandestine plant to bridge the gap. By October 2011, 3.94 kg/month of 19.75% enriched material was being produced, making a total of 79.7 kg of this so far, using 765.5 kg of 3.5% LEU.

At the main underground FEP at Nataz, in November 2011, 6208 centrifuges were operating in 37 cascades and the plant was producing 145 kg LEU per month.

At Fordow FEP, came into the knowledge of IAEA in September 2009, IAEA confirmed that in 2012 the plant was producing uranium enriched up to 20%, using IR-1 centrifuges, with all material under safeguards.

In June 2011, the head of the AEOI announced it was installing advanced centrifuges at the hidden Fordow enrichment plant (FFEP), and would triple its output of 19.75% low uranium (LEU) by the end of the year. However, IAEA reported in August 2011 that Iran had deployed one IR-1 cascade but no advanced centrifuges at the Fordow plant[20].

Iran would have to augment its supply of uranium indigenously or otherwise as the supply from South Africa would have nearly exhausted. Iran has very small reported Uranium resources, all in a high cost category. There is some open cut and underground mine development at Saghand, and in June 2009, IAEA reported "ore recovery activities" there. Work is in progress to set up another mining site at Ardakan. The main mining and milling is at Gachin, near Port of Bandar Abbas on the Persian Gulf. The Bandar Abbas Uranium Production Plant (BUPP) began production in 2006, and operations continue with a production capacity of 18 tU/year, as reported by AEIO in 2011. This is delivered to the conversion plant at Esfahan, that started in 2004 and is under IAEA safeguards and it has been engaged in processing earlier supplies from South Africa.

Besides, four small Nuclear research reactors, all supplied by China are being operated by the Nuclear Technology centre at Esfahan.

Iran is also building a 40 MW heavy water moderated 'research' reactor at Arak fuelled by natural uranium. In July 2011 AEOI reported it as 75% complete. It is to replace old Tehran reactor and would be under IAEA safeguards and has been subject to IAEA inspections during the construction. A heavy water plant at Arak is already under operation to which access has been denied to IAEA.

[20] *Op. cit.*, 4

A fuel manufacturing plant has been constructed at Esfahan to serve IR-40 reactor and TRR. An initial fuel assembly has already been produced there. A plant for making research reactor fuel plates for TRR has also seen commissioned.

In June 2010, AEOI announced that it planned to build four new research reactors for production of medical isotopes including a 20 MW one to replace TRR. This plan would justify production of more 20% enriched Uranium at Natanz, but is giving rise to international concerns[21].

From the above outline of the Nuclear Programme in Iran, it would appear that inventory of Uranium with Iran is on the wane and accretion to it from its indigenous resources, if economical, is far away. The enrichment of Uranium up to 20% is also being done through first and second generation techniques, though claims have been made of deploying third generation techniques. The programme, quantity-wise, would reach its limit unless fresh Uranium is available. Enrichment of Uranium up to 20% would not be termed as 'weaponizing category' and would be needed for production of isotopes for medicinal purposes and also for TRR and other research reactors. The progress of Heavy Water Reactor is 'midway' only.

As stated in the preceding paragraphs, Iran originally attracted world attention in 2002 when some previously undeclared nuclear facilities became the subject of IAEA inquiry. On Investigation, IAEA found inconsistencies in Iran's declaration to the Agency and raised questions as to whether Iran was in violation of its safeguards agreement, as a signatory to NPT. An IAEA report in November 2003 showed that Iran had, in a series of contraventions of its safeguard agreement, over years systematically concealed its development of key techniques which are capable of use for nuclear weapons. In particular, that Uranium enrichment and plutonium separation from used fuel were carried out on a laboratory scale. Iran admitted to the activities and termed them as trivial (cf. with the plea of South Korea in 2004 on enriching Uranium to 77% on laboratory scale – which was not considered worth reporting to UNSC). The US, in the case of Iran, wanted Iran to be brought immediately before the UNSC. However, European Union opted to engage Iran in

[21] *Ibid*.

further dialogue. In October 2003, EU convinced Iran to agree to suspend its enrichment programme and sign an additional protocol to the NPT that would permit more through inspections of its facilities. This Tehran agreement was, however, short lived and reports came in September 2004 that the enrichment programme had been started again by Iran. US pressed further for a referral to UNSC but EU countries still pressed for further negotiations. Iran again agreed to suspend its enrichment programme by accepting EU assistance in building a light water reactor for civilian energy purposes and a resumption of trade and investment tasks. This was termed as Paris Agreement. The negotiations following the Paris Agreement got complicated because in the 2004 Parliamentary elections, reformists in the Iranian regime got a set back and conservatives became more predominant. The scene was further compounded with the ascendancy of radical conservative Mahmoud Ahmadinijad. EU insisted that Iran would have to agree to a permanent suspension of all enrichment activities, while Iran argued rather that it would provide objective guarantees that its fuel cycle would not be directed to make nuclear weapons. Finally in August 2005 with the backing of US, EU offered "Framework of a Long-term Agreement" which would have facilitated the entry of Iran to WTO and sale of spare parts to Iranian civil arteries and in lieu there of Iran would have to ensure permanent cessation of its enrichment activities. Iran's rejected the agreement on the basis that it cannot give up its right to enrich uranium because it was an infringement of its sovereign rights. As the negotiations reached deadlock, Iran resumed its enrichment activities in January 2006. European incentives appeared too feeble to convince Iran to abandon its nuclear programme. The sticking point in negotiations, time and again, has been the European demand for a permanent suspension of the enrichment process. Europe was unable to compromise on this condition because of US pressure. On several occasions during the negotiations, Germany did attempt to table proposals that would have left Iran with a limited enrichment capacity, only to be severely reprimanded by the US and its European partners. Iran's national sentiments would not allow surrender of its

'sovereign rights' to enrich uranium, an activity which was prohibited under the NPT[22].

In February 2006, the Board of IAEA voted 27-3 with 5 abstentions to report Iran to Security Council. It was a rare precedent as normally reference to UNSC is by building up a consensus in IAEA. In response, Iran gave up its additional protocol. UNSC, in its Resolution, directed Iran to end its enrichment programme by August 2006. That was not to be. Following an intense debate in UNSC, it was decided to impose limited economic sanctions on Iran to the extent of banning the import and export of nuclear related activities, and freezing assets of related Iranian companies and individuals. In yet another resolution in March 2007 the ban was extended to include arms exports and travel bans and further widened the list of organisations and individuals in freezing their assets.

The publication of the US Intelligence Estimate (NIE) on 3rd December 2007 seemed to seriously damage President Bush's intended course which asserted with high confidence that Iran halted its nuclear weapons programme in 2003. The report conceded that it did not know whether Iran currently intended to develop nuclear weapons; it was moderately confident that Tehran had not restarted its nuclear weapons programmes as of mid-2007. Despite the US intelligence assessment, President Bush maintained that Iran remained a serious threat and refused to rule out the use of military force. The force of UN sanction, however, was not effective because Russia did conclude a deal with Iran to finish the Bushehr Nuclear Reactor and which they finally became operational in 2011 end[23].

In February 2010, Iran ordered the AEOI to commence enriching Iranian Uranium to 19.7% for TRR, thereby, in the minds of sceptics, significantly closing the gap between its normal law enriched material and weapon grade uranium. The 1950 kg of LEU (<5%) moved to PFEP would be enough for vastly more 19.75% enriched uranium than TRR could conceivably use. In August 2011, the AEOI confirmed that

[22] "Europe's Iran Diplomacy," European Union Center of North Carolina, EU Briefings, March 2008.
[23] *Ibid*.

Iran had more 20% LEU than it needed for TRR, and that security measures required that sensitive part of the facilities be moved to underground buildings at Fordow[24].

The UN sanctions against Iran have continued to be progressively stringent because, despite preceding sanctions, Iran has been going ahead with its enrichment programme. At present, member-nations have been called upon to monitor the activities of Iranian banks as well as movement of individuals involved with the programme through their territories, and inspect Iranian ships and aircraft. Ballistic missile programme is under restrain and so are its banks and financial institutions. Besides the UN sanctions, European Union has imposed restrictions on Iran in foreign trade, financial services, energy sectors and technologies, banned the provisions of insurance and reinsurance, embargo on oil imports effective July 2012 and to freeze assets of Iran's Central bank.

There have been bilateral sanctions also from countries like Australia, Canada, Israel, Japan, South Korea, Switzerland and US. The extent of sanctions is broadly spread to put brakes on Iran's nuclear ambitions and also to throttle its economy by isolating it in the International Commerce. Even India has announced a ban on export of all items, materials equipment, goods and technology that contribute to Iran's nuclear programme. However, it is not inclined to expand the scope of sanctions and has rather planned a delegation to Iran to further bilateral economic ties. US has been threatening India with reciprocal action unless it adopts sanctions imposed by US on Iran.

Russia has rejected any further sanctions against Iran. On 18th January 2012, Foreign Minister Sergei Lavrov said that the scope for sanctions over Iran's nuclear programme had been exhausted and any additional measures were probably intended to provoke discontent in the Iranian population. China, like India, does not propose to curb Iranian oil imports. On January 16, 2012, the Chinese Foreign Ministry said that Beijing objected to placing a country's domestic law above international law (referring to US law enabling its exact compliance of its sanctions from other countries) and forcing other countries to accept it. Turkey, too, has

[24] *Op. cit.*, 4

signalled that it will not adopt any oil embargo. On January 12, 2012, Energy Minister Taner Yildiz said that any decisions on sanctions taken outside the UN were not binding for Ankara.

Japan and South Korea, which together account for 26% of Iran's oil exports have expressed their willingness to consider reducing Iranian oil imports while warning that possible economic repercussions must be taken into account.

The sanctions do affect Iranian economy as there is declining trend of exports of oil exports. Nuclear programme would be handicapped as it would be hard to acquire any specialised equipment or material. The social and economic effects have been severe and some have termed them brutal. Flow of essential investments in the oil and energy sectors has suffered, bringing about a decline in oil production. The sanction will also reduce Iran's military capabilities. Rial has suffered a massive blow and interest rates were hiked up to 6 percentage points to curtail depreciation. Inflation is unchecked and unemployment is on the rise. Even the tankers to export oil are hard to come by since the EU sanction disallowing insurance and reinsurance to them for their services to Iran.[25]

Besides facing sanctions which are weakening its economic strength, military capabilities and retarding its nuclear ambitions, Iran is also facing threats of armed action against it from Israel, US and its allies which are becoming sharper and shriller by the day. Israel has gone to the extent of threatening pre-emptive strikes at Nuclear Sites in Iran and destroying its nuclear establishments. Some Iranian scientists have been killed under suspicious circumstances in recent months. EU, Russia, China and India have been counselling restrain and preferring solutions through negotiations[26]. It is perceived that Iran still relies an old technology to expand its nuclear programme, in what may be a sign it is having difficulties developing modern machines that could speed up production of potential bomb material. Contrary to hysteria being raised by Israel and some media that Iran was fast approaching the zone of immunity unless an effective military intervention is

[25] "Sanctions against Iran," Wikipedia.
[26] "Iran may be 'struggling' with nuclear machines," *Daily Times*, 28 February 2012.

brought about, the latest IAEA report made in February 2012 mentions that Iran does not yet seem ready to deploy advanced enrichment equipment for large-scale production despite years of testing. Instead IAEA document showed that Iran was preparing to install thousands more centrifuges based on erratic and outdated design, both in its main enrichment plant at Natanz and in a smaller facility at Fordow buried deep underground. "It appears that they are still struggling with advanced centrifuges," opines Olli Heininen, former chief nuclear inspector of IAEA and further adds, "We do not know whether reasons for delays are lack of new materials or design problems." Tehran often trumpets technical advances in its nuclear programme, including the development of new centrifuges machines that spin at supersonic speed to increase the concentration of fissile material in Uranium. In mid-February 2012 President Mahmoud Ahmadinejad said that Iran had now a 4th generation centrifuge that could refine uranium three times faster than previously. "Iran unravelled a 3rd generation model two years ago and then never said more about it," says Mark Fitzpatrick of the International Institute of Strategic Studies, USA . "Now it says it has a 4th generation model, which is probably a variation of problematic 2nd generation machine." In an environment of 'continued sanctions' and which are becoming rigorous by the day, it is improbable that Iran would be able to surprise the international community by suddenly exhibiting its technological sophistication of weapons capabilities. On the other side, by all accounts, Iran is having problems even in full scale operation of IR-2 centrifuges and Iran's capacity to mass produce them is uncertain. IAEA report of February 2012 suggests that Iran was encountering problems testing the various types of centrifuges in interlinked networks known as cascades. IAEA also noted that it planned to install new types of centrifuges IR-5 and IR-6 as single machines at Nantaz R&D. When so many models are tested simultaneously, it "indicates that Iran has not yet reached a point where it can decide which would be the next generation centrifuge to be deployed."[27]

It appears that Iran is beset with many constraints and even if determined efforts are mounted by the Iranian's they would take many more years before they go towards weaponization. Not surprisingly, despite deafening voices by Israel in public for pre-

[27] *Ibid*.

emptive strikes, a cautious approach is being counselled by EU, Russia and China (in spite the fact all these countries have abided by UN sanctions and some of them have gone in for additional sanctions). Previously, the IAEA complained that Tehran had not fully co-operated with its inspectors, but in March 2012, it was announced that Iran had agreed to take part in fresh six-party talks and allow IAEA inspectors to visit its key military research site at Parchin, under certain conditions.

Israeli Prime Minister Natanyahu constantly stresses what he sees as a potential existential threat from Iran, so the possibility of an attack by Israel at least remains. In March 2012, Prime Minister Natanyahu said that time was running out to stop Iran from developing a nuclear weapon, before any such programme became too advanced or went underground. He said that he will never allow Israeli's "to live in the shadow of annihilation." American officials have stressed the instability that would result from any attack on Iran. They appear to be getting round to the belief that even if Iran continues to develop its nuclear expertise, it will not try to build a bomb. US President Obama feels that there is still a window that allows for a diplomatic resolution. He has also warned that "loose talk of war" was playing into Iran's hands, but stressed that all options remain open. It is heartening to note that President Obama has been able to overcome the Alarmist Approach being adopted by many of the senators, from both the sides, in the US Congress when thirty two of them introduced a resolution to rule out "any policy that would rely on containment as an option in response to the Iranian Nuclear Threat" and that of Prime Minister Netanyahu. An alarmist view was also reflected in the worlds of British Foreign Secretary William Hague when he mentioned that nuclear Iran would spark off "the most serious round of nuclear proliferation since nuclear weapons were invented." He also felt that the event would result in "a new cold war in the Middle-East" lacking all the "safety mechanisms" of the US-Soviet rivalry. Alarmist pronouncements need to be contained as much as Iran's ambitions, if any, of becoming a nuclear weapon state but it should be recognised that it is eminently containable despite it attaining capability like many other countries. Nations need not harbour prejudices permanently and be damned forever—being too crazy to handle the power they acquire. When Soviets had their 1st nuclear explosion, Stalin

ruled them and the Americans believed that' Moscow is animated by a new fanatic faith, antithetical to their own. Let it be recalled that Mao Tse-tung, when China was yet to acquire its bombs, welcomed a nuclear war in which "imperialism would be razed to the ground; and the whole world would become socialist." Some senators have remarked that containment might have been possible for the Soviet Union during the cold war, but it is not going to work with the current fanatical Islamist regime in Tehran. It is true that the regime did go through a phase in the beginning and also later when their own actions and omissions caused undue hardships to hapless diplomats and marines. If such wounds are left open, they stall peace efforts and will set in motion a process of trading charges and counter charges. The other side may recall the overthrow of a democratic regime in 1953, etc. If the world is to move forward in a peaceful way, then fanatical beliefs should be converted into 'nationalist' beliefs. After all even the best of fanatics would not wish to be suicidal

In February 2012, two American intelligence officials told a senate hearing two important things. First, any Iranian decision to build a nuclear weapon would be based "on a cost benefit analysis. Second, Iran is unlikely to initiate or intentionally provoke a conflict. If Iran is deemed to be unlikely to start a conventional war, it is not going to start a nuclear war. There is a reason for this. The area around Tehran contains a fifth of Iran's population, and half of the country's industry and also important nuclear establishments. A single Israeli thermonuclear bomb would wipe this out in the blink of an eye. Iran's abhorrent calls to wipe Israel off the map are gestures as empty as Mao's nuclear posturing[28]. In March, 2012 even Mossad, Israel's intelligence agency, opined that Iran is yet to decide on weaponisation[29]. On balance, it needs to be recognised by the International Community that for countries like South Korea, Japan, Brazil, etc., who are capable of enriching uranium and yet have contained themselves, it would be possible to contain the capabilities and ambitions of Iran by a judicious approach by responsible nations through a negotiated process. Perhaps time for such an approach has not run out as is being

[28] Joshi, Shashank (2012), "Nuclear alarmism over Iran is backing us into a corner," *The Guardian*, February 20.

[29] Haaretz (2012), "MOSSAD, CIA agree Iran has yet to decide to build Nuclear weapon," www.haaretz.com

made out by the alarmists. Moreover, political processes everywhere, including in Iran, are always dynamic even in their apparent stability. There are many shades of rulers even in a so-called fanatic set up. There was a phase in 2003, when there was possibility of an understanding when others did not see the window opening. International relations, if they are to be lasting, should be regime independent as regimes come and regimes go, but people would always be there. Thus primacy should be given to the people to people contacts when best would come out of the two interacting sides .Such a realisation from all concerned will be in the spirit motivating an American citizen Baskerville to lay down his life in far away Iran for Iranian cause.

If, however, the ultimate aim of the powerful nations and their allies is towards establishing control over resources, both material and geopolitical, the negotiating table will only provide a breather before the conflagration whose end result is not always in manageable limits for the parties in the conflict and others, not directly involved, also getting sucked in.