ROLE OF UN IN THE ELIMINATION OF THE IRAQI NUCLEAR WEAPON CAPABILITY

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CERTIFICATE

This is to certify that the dissertation entitled "Role of UN in the Elimination of the Iraqi Nuclear Weapon Capability", being submitted by Mr. Karan Chandra Bose, in partial fulfilment of requirement for the award of the Degree of Master of Philosophy in this University, is a record of the student's own work, carried out by him under my supervision and guidance.

It is hereby certified that this work has not been presented for the award of any other degree or diploma.

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Professor M.L. Sondhi
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PREFACE

The world's first post-war experiment in decapitating a country's nuclear weapons capability had begun under the auspices of the United Nations. Three decisive events affected the nuclear non-proliferation regime in 1991 namely the end of the Cold War, Gulf War and disintegration of the USSR. The role of the United Nations assumes significance because until now disarmament had been the prerogative of the US and USSR.

This dissertation is an attempt to analyse the UN role in the elimination of Iraqi nuclear weapon capability.

The first chapter is about how Iraq emerged as a power in the Gulf region and its strategic importance to US and USSR. It also deals with Iraq's oil for arms diplomacy with the European Countries mainly France and Italy.

The second chapter deals in detail about Iraq's nuclear programme. Iraq is not a nuclear power. It is a signatory to NPT. Iraq emerged stronger after its Osiraq research reactor was destroyed, although it led to temporary setback of its nuclear programme.

The third chapter discusses the UN and IAEA's role in the elimination of Iraqi nuclear capability. The UN Security Council Resolution 687 explicitly names the IAEA as being responsible for this experiment.

The last chapter is the conclusion of my dissertation.

I am deeply thankful to my Supervisor, Prof. M. Zuberi. I am ever grateful to his care and guidance, without which I could not have completed

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New Delhi.

K. C. Bose

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CHAPTER - I

RISE OF IRAQ

INTRODUCTION

The State of IRAQ came into existence in 1920, when it was created under British aegis as a mandate. However, the area now incorporated within its borders has been the home of several of humankind's earliest civilizations. With a land area of 170,000 square miles (440,300 sq. km) and a population of over 14 million in 1984, Iraq is the largest of the Fertile Crescent countries rimming the northern edge of the Arabian peninsula.[1]

Lying between the plateau of northern Arabia and the mountain ridge of southwest Iran and Turkey, Iraq forms a lowland corridor between Syria and the Persian/Arabian Gulf. Historically, Iraq has been a passageway between East and West. Its borders are for the most part artificial, reflecting the interests of great powers during the First World War rather than the wishes of the local population. As a result, Iraq's present borders have been continuously challenged by peoples living inside and outside of the country. Much of the eastern border is still in dispute, as illustrated by the Iran-Iraq War that began in 1980. The south-eastern portion of the country lies at the

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1 IRAQ, Ministry of Planning, Statistical Pocket Book, 1982 (Baghdad Central Statistical Organization, n.d), p11.

head of the Gulf. Iraq controls a 26 mile (42 km) strip of Gulf territory, just sufficient to provide an outlet to the sea.

STRATEGIC LOCATION

Iraq's strategic position at the crossroads of three continents and its peculiar geographic features have played an important role in its history. When the local society has had a strong central government, capable of controlling its irrigation system and containing or absorbing its conquerors, it has produced a high civilization, and when it has not, disruption and discontinuity have resulted.

The sixteenth century marked a new era in Iraq. The Ottoman Empire which dominated it for the next four centuries. The impact of British rule (1920-1932) has been second only to that of Ottoman rule in shaping modern Iraq. In 1933, a year after Iraq's, independence, it was estimated that there were 100,000 rifles in tribal hands, and 15,000 in the possession of the government.[2]

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[2] Memorendum by King Fayzal, cited in Abd al-Razzaq-al Hussain, Ta'rikh al-Wizarat al-Iraqiyyah [The History of Iraqi Cabinets] (Sidon : Matba'at al Irfan, 1953-67) 3:287 in Phebe Marr, The Modern History of Iraq, (Bouladar Colorado : West View Press, inc., 1985), p.1.

It was the coup of 17 July 1968, which established a one-party state and gradually concentrated power in hands of one man Saddam Hussain, to a degree not seen since days of Monarchy. Aided by the oil price rise of 1973, which enabled Iraq, like other oil producers, to undertake a major development programme.

In accordence with the Ba'th ideology the party set up a socialist state that heavily emphazized building up the sinews of military and bureacratic power.

By 1980, Iraq had begun to emerge from its earlier regional and international isolation. Iraq also began to exercise a major influence on the Middle Eastern scene, especially in the Gulf, where it expected to play a leading role in the future. The Iraq-Iran conflict halted the economic and social progress of the previous years, undermined the legitimacy of the regime, and decisively checked Iraq's pretensions to leadership in the Gulf and the Arab world in general. Iraq's foreign relations were precarious, allowing its neighbours to intervene in Iraq's internal affairs with destabilizing effects.

The Persian Gulf region has acquired geo-strategic importance not only because it is on the cross-roads of the East and the West and the North and

South but also because it dominates an important sector of the Indian Ocean which has become a major arena of super power rivalry. The Gulf region is important in the context of its oil resources and their further ramifications such as the dependence of the West on the Gulf oil, the question of recycling of petro-dollars, and security of the oil wells and sea-lanes in the Gulf and beyond. The security of the Gulf is also affected by political variables like regional and global rivalries and the linkages between the Gulf states and foreign powers. Thus the global stresses and strains are also reflected in the region. All these factors have influenced the flow of arms into the Gulf region.

During the fifties and sixties, the flow of arms into the Gulf region was regulated because of political and economic constraints on the regional powers, though Iran and Iraq were able to acquire modern arms in substantial quantities. In contrast, it was in the seventies that the region witnessed a massive arms transfer programme, especially in Iran and Iraq. In Iraq, at first it was the Soviet-Iraqi 1972 friendship treaty and in Iran it was the US arms supply to Shah's regime. According to one analysis, "The seven years between 1973 and 1980, were the most dynamic in the Iraqi Army's sixty year history"[3]

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3 John S. Wagner, "Iraq", in Richard A. Gabriel, ed, Fighting Armies, Antagonists in the Middle East : A Combat Assessment (WestPort, Conn: Greenwood Press, 1984), 78.

In this period, for example, Iraq nearly trebled its troop strength to roughly 250,000 men, without extending the length of military service. The rapid acceleration of oil revenues in the 1970s led to purchases of large amounts of more sophisticated equipment for these forces. This in turn led to the influx of thousands of foreign military experts in the region who were responsible for the training, maintenance and sometimes even effective operation of the weapon systems.

US STRATEGIC RELATIONS

More than half the world's proven oil reserves are located in the Gulf region, and on the territory of eight nations - Iran, Iraq, Kuwait, Saudi Arabia, Bahrain, Qatar, the UAE & Oman. Inspite of more than a decade of intense exploration in other parts of the world, the Gulf is still the region with the highest potential for major new discoveries and is the only area in the world where the discovery of new reserves is out-pacing oil production.

The US Department of Energy estimated that nearly 25% of all US oil would come from the Gulf by the late 1990s. The West has done a little better in creating the military forces and regional security arrangements necessary to ensure the security of its leading source of oil imports than it has in its efforts to find substitutes.

The Shah's fall and the Iranian hostage crisis deprived the West of its only regional military pillar in 1979. Since that time, the Iran-Iraq War has created a steadily increasing risk that the Gulf could be dominated by a radical anti-Western power. One of the crucial points to be remembered is that United States and its Western allies concentrated on its strategic relations and military realities with the southern Gulf states (Saudi Arabia, UAE, Bahrain and Kuwait). Nearly 36% of oil production capacity is in in contrast to the Northern Gulf states.[4] Iraq steadily strengthened its relations with the West since the late 1970s, while preserving its ties with the then USSR.

The Army had roughly 3,000 to 5,700 artillery pieces - depending on what calibers were counted and whether the total included weapons in reserve or storage. These included a wide mix of Soviet bloc weapons and multiple rocket launchers. Its surface-to-air missile strength included 120 SA-2 launchers, 150 SA-3 launchers, 60 Roland fire units, and SA-6, SA-7 and SA-9 launchers. Air force has 12 Scud-B surface to surface missile launchers besides at least 20 French Mirage 1E Q5 fighters with Exocet.

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4 Anthony H. Cordsman, The Gulf and the West : Strategic Relations and Military Realities (Bouldar Westview Press, 1988), p.1.

The Iraqi arms policy in the post-October 1973 War period was influenced by its continuing confrontation with Iran, the Kurdish revolt and the desire to match Israel. Of these, the Israeli angle was the most important and probably the basic factor in the Iraqi military buildup, as shall be seen in the subsequent chapter. If Iraq had been arming itself against Iran, the tempo should have slowed down after the detente in 1975. (Algiers Accord of March 1975 between Iraq and Iran on Kurds) But one finds that Iraqi arms procurement policy became more active with a growing friendship between Egypt and Israel. During this period Iraq was fully supported by the then USSR, which led to $4 billion worth arms deal signed in 1976. This arms deal included SAMs as well as Scud SSM (land missiles).[5]

Though the primary focus of the Iraqi arms buildup remained Israel, a power preparing to take on Israel would have developed strength sufficient to frighten small states like Kuwait in the Gulf region. It was centainly reflected in the First Gulf War (Iraq-Iran - 1980-1988) and substantiated in Second Gulf war (Iraq-Kuwait - 1990-1991).

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5 Stockholm International Peace Research Institute
World Armaments and Disarmament, SIPRI Yearbook (Cambridge, Massachusetts, The MIT Press), p.321.

SOVIET POLICY TOWARDS IRAQ

Moscow was linked to Baghdad by a Treaty of Friendship and Cooperation, 1972 and the Soviet Unoin had long been Iraq's main supplier of weaponry. In addition, Iraq had been a leading enemy of the US-sponsored Camp David agreements and, as a nation with pretensions to leadership in the Arab world, could one day become the focus of the "anti-imperialist" Arab front which Moscow sought. Indeed, by its leadership at the two Baghdad conferences, Iraq demonstrated a potential for such a role. From the point of view of the Soviet economy, aid to Iraq would help assure the continued flow of Iraqi oil to the USSR and its allies in Europe.

The Soviet evaluation of both Iran and Iraq was that they seemed far more anti-American than anti-Soviet and both countributed to the weakening of the American position in the Gulf region. Moscow, thus decided to have a good relationship with both and could not afford to alienate either, and as a result, adopted a position of neutrality at the start of the Iran-Iraq War and suspended arms sale to Iraq.

The Israeli bombing of Iraq's nuclear reactor on June 9, 1981, came handy, in building anti-Israeli stand through Arabs by Moscow. Moscow moved quickly to try to exploit this situation, not only condemning the Israeli

raid but also pointing to the fact that the Israeli action was carried out with American-supplied aircraft and that it took place despite or even because of US AWACS radar planes operating in Saudi Arabia.[6] This in turn led President Reagan to postpone his decision to ship additional F-16 fighter bombers to Israel because the attack was deprecated by Moscow. The Soviet Union tried to exploit the Israeli action by using it to focus Arab attention on the "Israeli threat" to the Arab World and to undermine the American position in the region while at the same time improving Soviet-Iraqi relations.[7] Moscow, was less successful in exploiting the Israeli raid to undermine the US position in the Arab world, and in particular to improve Soviet ties with Iraq. This was due to Reagan Administration's decision to join Iraq in a UN Security Council vote condemming Israel seemed to deflate any Arab pressure to enforce oil embargo on the US due to Israeli raid issue.[8]

Iraq appeared to be trying to improve both its ties with the United States as its position in the Iran-Iraq war detoriated and also to drive a wedge between US and Israel, which was unhappy with the US vote in the UN. Despite increased Soviet shipments of arms, especially tanks and planes, the

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6 PRAVDA 10,11 and 16 June 1931.

7 Ibid., 16 June, 1981.

8 Michael J. Berlin, The Washington Post, 19 June, 1981.

Iraqi regime, which also had been receiving sophisticated aircraft from France, moved to further improve its ties with the United States. Russian policy has been primarily reactive in nature as Moscow has sought to overcome the problems to its Gulf position that were caused by the outbreak and continuation of the war. Moscow's central strategy during the Iraq-Iran conflict, besides trying to end the war as soon as possible, an action it proved unable to accomplish, was to try to undermine the strengthened US position in the Gulf.

As in the case of Iraq, Moscow's off-again, on-again arms supply policy during the war had the effect of moving Iraq closer to France, whose super Etenderd jets and Exocet missiles enabled the Iraqis to wage a war of attrition against Iranian oil exports. At the same time, Iraq gradually moved toward a better relationship with the US. The Soviet invasion of Afghanistan in 1979, further alienated it from Iraq as well as Iran. It actually reinforced the old fear of its search for warm-water port facilities in Indian Ocean, as apprehended by US.

IRAQ - IRAN WAR (1980-88)

Although it was clear from the spring of 1980 and certainly after August that a war was brewing between Iraq and Iran, the Security Council

took no action to restrain either side. To a large extent the blame lay on Iran, viz., American hostage crisis.

Moscow supported a unanimous Security Council call for the release of the hostages, but it abstained on a further resolution threatening Iran with economic sanctions. When the Security Council eventually adopted Resolution 479 on the Gulf war in Sepetember 1980, this called only for a ceasefire and did not call for a withdrawal of forces to the international frontier nor condemn Iraq for its act of aggression, so that Iran was left with the impression that the world community had abandoned it to its fate. It was a belief which was enhanced by the fact that the Security Council's collective inability at the start of the war to rescue Iran from the consequences of Iraqi aggression contrasted so greatly with the subsequent determination of individual states to secure their interests in the Gulf.

Another aspect which ought to be remembered is the covert Israeli support to Iran during the war. It was the Israeli's who involved the Reagan administration in the Iran-Contra affair. Eight years after the Iraqi troops first rolled across the frontier to begin their difficult two-year occupation of some

border areas, Iran finally accepted the UN ceasefire Resolution 598[9] which Iraq had enthusiastically endorsed a year earlier.

SECRET ARMS DEAL

One of the early policy decisions of the military wing of the Ba'ath when they took over was to give Iraq a nuclear capability. Though it was claimed to be only for peaceful purposes, but when Saddam Hussein was first put in charge of negotiations to obtain a reactor from France, the suspicion was that the Iraqis were considering nuclear weapons. Iraq is a party to the NPT, while Israel is not. By 1975 when the first agreement was reached with France, suspicion began to harden into certainty as it was noted that France was to supply not only two reactors, but also 84 kilograms of highly enriched, weapons-grade uranium. The moment news of the Iraqi-French deal was leaked, Israel at leart never had any doubt that Iraq intended to produce its own nuclear bombs. It was passed on to Iran and work was stepped up on the nuclear facility being built by the Germans at Bushehr.[10]

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9 S/RES/598 (1987); 20 July, 1987.

10 John Bullock and Henry and Harvey Morris, Gulf War : Its Origins, History and Consequences (Methuen London Limited; 1989), p.180.

Thus, the first steps towords nuclearisation of Middle East started, for it was an open secret that Israel possessed the weapons. Israel certainly intended to maintain its monopoly of the unique weapon it regarded as the ultimate deterrent. Thus it was that the clandestine war began to try to stop Iraq from going ahead with the project.

Israel tried all means including international pressure to halt Iraqi nuclear programme. But Iraq defended that the programme was a peaceful one and its facilities was open to inspection. Iraq thus eventually allowed inspectors from the International Atomic Energy Agency access to the Nuclear Research Institute and these neutral inspectors consistently reported that they found no evidence of any misuse of materials provided. It was the scale of the Iraqi work, which had raised fears. In 1978 the Baghdad government concluded a deal with Italy for a radio-chemistry laboratory capable of extracting plutonium and other fission products from the used fuel, while also providing purified enriched uranium for re-use, both products used to manufacture weapons. At the same time, the reactors from France had been ready and were awaiting delivery.

By April 1979, Israeli having failed to gain international pressure to work, decided to take direct action. It indulged in all means to sabotage Iraqi

efforts to get the reactor from France, but these efforts, also did not succeed. For the French, the deal was worth #700 million in 1975, which they wouldn't lightly discard. Israel made an abortive attack, after the Gulf war broke out, to end the Iraqi nuclear capacity once and for all. They used two Phantoms with Iranian markings[11] penetrated the Iraqi air defence by flying at minimum height, under the radar screen, to bomb the Osirak reactor - so named by the French, though the Iraqis called it Tammuz, after the ancient river god. The bombs little damage and merely alerted Iraqis to the need for additional defences around this important site. The French and the Iraqis had ten months to improve the defences. But they seemed only to have taken particular precautions over small amount of fissionable material then on site, about two kilos.

No doubt, the real strike came on 7 June 1981[12], when fifteen Israeli planes were used, and it was a success. According to the video pictures taken by the attack group, it destroyed the main part of the plant, the reactor itself and various other buildings. Fissionable material was not damaged in the raid, as it was stored in a deep underground canal some way away in the

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11 ibid., p.181.

12 Amos Perlmutter, Michael Hendel and Uri Bar-Joseph, Two Minutes Over Baghdad (London : Valentine, Mitchell and Co. Limited, 1982), p.132.

subterranean link between the main reactor and the second, smaller installation.

Immediately after the raid there was a worldwide outcry at the Isareli action, an apparently unprovoked attack on a facility which Iraq said was for peaceful purposes, a claim supported by France and by the International Atomic Energy Agency (IAEA). Certainly a major public concern was that Israel should apparentlly have been ready to carry through an attack which could have released a radioactive cloud in a densely populated area of the countryside, and close to the capital with its population at that time of 3.5 million inhabitants. Much of the carefully leaked information from Israel about Iraqi intentions was later found to be untrue. Although the then Soviet Union remained Iraq's main supplier[13], but estimates were that about a quarter of all arms imports to Iraq were from France, with a heavy emphasis on the most advanced and sophisticated weapons systems.[14]

By the time Iran had accepted Resolution 598, Iraq was thought to have imported $10 billion - worth of arms from the Soviet Union, $5 billion from

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13 Treaty of Friendship and Cooperation signed by Moscow and Baghdad in 1972.

14 John Bulloch, n.10, p.188.

France, and another $5 billion from various sources. For several years Iraq was spending fifty percent of its budget on arms imports, and was able to do so even when oil exports were severely disrupted in the first year of the war by its inability to export through the Gulf.

The Stockholm International Peace Research Institute regularly noted about fifty countries which sold arms to both sides in the Gulf war.[15] According to the International Institute for Strategic Studies, London in 1983, Israel sold more than $100 million worth of arms to Iran: Israel thus, did what the US could not do in helping Iran in its war efforts.

At the same time the Iraqi President negotiated Iraq's entry into the nuclear field, another secret project was started to give the country the capacity to develop chemical weapons, but no real effort was made to do so until the war began. With no idea how to set about it, the Iraqis at first tried to buy 'off the peg' factories and plants ostensibly to produce pesticides which could be easily converted to produce gas. As a first step, chemists, chemical emgineers and nuclear scientists of the Arab origin were approached and offered remarkably attractive terms to work in Iraq - usually at double the salaries they were earning in the West along with other incentives. Many

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15 ibid.

were tempted and joined, and by the time they realized what they were doing it was too late to back out. The result was that equipment bought mainly in Italy and West Germany, with vital components sent by air from Austria, was assembled in Iraq and produced at least three different kinds of gas. By end of the War Iraq had three plants producing chemical warfare products, one near Baghdad, one at Samarra and one in the Syrian desert at Rutbah, dangerourly near the Jordanian - Syrian borders and thus vulnerable to Israeli attack, but close to the sources of raw materials used.[16]

IRAQI-FRENCH CONNECTION

France led the scramble of Western nations to secure oil supplies after the Yom Kippour of 1973 and agreed in 1975 to supply Iraq with two nuclear research reactors in a series of deals in which France was promised preferential access to Iraqi oil. The first French - built small reactor was activated in February 1980 at Al - Tawit, but it is the larger, a 70 mega watt reactor powered by enriched uranium, that could allow the Iraqis to develop nuclear weapons. The French had also agreed to supply 70 kilograms of

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16 John Bulloch, n.10, p.194.

weapons-grade uranium (enriched to 93 percent) to run the large research reactor, which the Iraqis called Tammuz I (Osriak).[17]

According to Albert Wohlstetter,

> The highly enriched uranium which the French announced they will sell and deliver to Iraq for the purposes of nuclear 'research' has only the remotest application in the civilian economy of Iraq, but such concentrated fissile material is the most important and hardest to produce component of nuclear weapons and can be quickly incorporated in a weapon assembly. Highly enriched uranium makes feasible weapons of the simplest design - the gun as distinct from the implosion-type essential for plutonium.[18]

The French-Iraqi contract provided for international inspection. The French said that not enough enriched uranium would be sent to make weapons, and the International Atomic Energy Agency said the programme was under control. Both Israel and the United States had brought intense

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17 Ben L. Martin; 'Iraq's Nuclear Weapon's : A Prospectus' Middle East Review; Winter 1980-81, p.45.

18 Albert Wohlstetter, "Half - Wars and Half - Policies in the Persian Gulf." In W.Scott Thompson (ed.) National Security in the 1980's : From Weakness to Strength (San Francisco Institute of Contemporary Studies 1980), p.40.

pressure on France to avoid shipping the promised enriched uranium, and France tried to persuade Iraq to accept a newly developed substitute fuel "Caramel", which is only seven percent enriched and unstable for weapons purposes.[19] The Iraqis refused, and insisted that France fulfill its contract for delivery of enriched uranium even though the reactor was delayed two years by sabotage in France. Under the nuclear-cooperation agreement, Iraq reportedly promised to buy French arms and to ensure French its long-term supply of oil.[20]

Iraq's governing elites have always believed that their country had great potential for development and political influence relative to other areas in Middle East. In earlier centuries this potential came from Iraq's renewable water resources and its strategic location; in this century it comes from another resource - oil.

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19 Claudia Wright, "Iraq - New Power in Middle East", Foreign Affairs, v.58, no.2, (Winter 1979/80), pp. 263-264.

20 Ben L. Martin, n.17, p.46.

CHAPTER - 2

IRAQ'S NUCLEAR PROGRAMME

HISTORICAL BACKGROUND

The Iraqi Atomic Energy Commission was established in 1956 under the direction of a respected physicist, Dr. Mohammed Kital. It had the modest objective of using the atom to serve medicine, agriculture and industry. A nuclear institute was opened shortly afterwards in Baghdad, with specialist sections in nuclear physics, chemistry, radioactive chemistry, biology and agriculture. The institute was later moved to a new site, Tuwaitha on the banks of Tigris.[1] In 1959, a year after the pro-western monarchy had been toppled in Baghdad, the first batch of Tuwaitha students was sent to the then Soviet Union for further training. In the same year, the Iraqi government issued Rule No. 45 establishing the Iraqi Nuclear Energy Committee.

Iraq became a member of the International Atomic Energy Agency (IAEA) in 1959. On 29 October 1969 she signed the Non-Proliferation Treaty (NPT) and on 14 March 1972 ratified it. Iraq's interest in nuclear energy can thus be traced back to 1959, when an agreement was reached according to

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1 Al Thawrah (Baghdad), 10 Feburary, 1975 in Shyam Bhatia, Nuclear Rivals in Middle East, (New York, Routledge, 1988), p.74.

which the Soviet Union was to provide Iraq with a small nuclear research reactor. On 20 July 1960, an agreement was reached with the Russians concerning the building of a research reactor. In 1963 work started on the project in Tuwaitha, about 20 km south-east of Baghdad. The Tuwaitha Atomic Center had been built with Western funds, when Iraq was a member of the Baghdad pact.[2]

The Soviet reactor, an IRT-2000, was a small research model, with a rated capacity of only two megawatts thermal [MW (th)]. In addition, the Soviets constructed a small radioisotope laboratory. The reactor began operating in 1968; its output was upgraded to 5 MW (th) in 1978. The Soviets agreed to change the fuel of the reactor. Instead of 10 per cent enriched U235, it was operating on 80 per cent enriched uranium. The IRT-2000 has been used primarily for medical and other civilian research applications on a very small scale.

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2 Congressional Research Service, " Analysis of six issues about Nuclear capabilities of India, Iran, Libya, Pakistan", (Washington : GPO, January 1982), p.7 in Jed C. Snyder, "The road to Osirq : Baghdad's Quest for the Bomb", Middle East Journal, 1983, p.565.

ROAD TO OSIRAQ

Due to Iraq's status as one of the biggest oil suppliers to the West, the Iraqi leaders presumed that they could have a good chance of acquiring installations and nuclear know-how from Western Europe. The Western European counteries, particularly France and Italy, were attractive potential suppliers to Iraq and because : Firstly, they were ready to supply Iraq with the equipment needed to reach a nuclear option. Secondly, their nuclear technology was far more advanced than that of the Soviets, especially in the field of manufacturing weapon-grade enriched uranium and plutonium. On 7 April 1975, a scientific conference was held in Baghdad. Besides Iraqi nuclear scientists, other Arabs as well as American and West European scientists took part. This particular event was certainly a breakthrough in Iraqi efforts to produce the bomb. The first connections between the head of the Italian nuclear fuel department of CNEN (Italian Nuclear energy committee) and Iraqi scientists were forged. The French arms sales policy is known as 'Commercial Pragmatism'. The popularity of French arms evidently results from three key factors : First, the versatility and appeal of French weapons and designs;

secondly competitive prices and terms and "no-questions-asked" merchandizing; and thirdly French government policies which support the export programme.[3]

With respect to the Middle East, arms exports have served as an effective instrument of policy with the complementary purposes of gaining economic concessions and ensuring access to oil supplies.There is also a close correlation between France's arms sales and its oil imports. France has to import over ninety eight percent of the oil which supplies approximately two-thirds of its energy needs.[4] Almost 15.3 percent of oil is supplied by Iraq.[5] It is precisely with Iraq that France has signed its largest contracts for arms since 1974[6]. In December 1974, Jacques Chirac, Prime Minister of France, travelled from Paris to Baghdad. The French were still reeling under the impact of the OPEC price hikes and the 1973 Arab oil boycott, and they

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3 Robert D. Heml. Jr. 'French Armaments Industry Now World's Third Largest," Armed Forces Journal November 1971, in Roger F. Pajak, "French and British Arms sales in the Middle East : A Policy Perspective" Middle Est Review Spring 1978, p.46.

4 Organisation for Economic Cooperation and Development, Quarterly Oil Statistics, Second Quarterly 1978 (Paris).

5 Ibid.

6 U.S Senate, Committee on Foreign Relations, "Prospects for Multilateral Arms Export Restraint, 96th Congress., Ist Session", 1979, p.11 in Edward A. Kolodziej, "France and the Arms Trade", International Affairs,London, vol.5, January 1980, p.63.

were madly scrambling to secure oil supplies and search out new markets for French Weapons and other high technology exports. Obviously nuclear sales was discussed between Chirac and Saddam Hussein. The French had competitors in Germany, Italy and Canada for Iraqi business. French nuclear officials knew that they would have to offer the Iraqis the best nuclear equipment that France could supply in order to get the lucrative contracts in the offing.

In September 1975, Saddam Hussein, at that time Vice-President paid a visit to France. After prolonged discussions, a nuclear co-operation agreement between the two states was signed on 18 November 1975. Even before signing this agreement, the Iraqis were interested in French technology which could be used for military as well as civil purposes. They asked the French to supply them with a 500-megawatt electricity-powered gas graphite reactor, a natural uranium reactor like the one the French military had specially developed to produce plutonium for their own independent nuclear arsenal.[7] This type of reactor had been built in France between 1959-72 and was used not only as a power station but also for plutonium production. Graphite reactors were built in the USA, UK and the USSR. Although they

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7 Amos Perlmutter, et. al., Two Minutes Over Baghdad, (London: Vallentine, Mitchell and Company Ltd., 1982), p.57.

were operated as power stations. Their main function was plutonium production. But by the end of the 1960s, better and much more efficient systems were found for electrogeneration. Most Western states stopped producing this type of reactor and when Iraq demanded a gas graphite reactor, it could be understood only if one took into consideration the fact that this reactor produces 40kg of military-grade plutonium per annum.[8]

This was the reactor the Iraqis wanted and it would have been ideal for making the bomb. But the French scientists had their qualms about the deal. The official spokesmen of both the Foreign office and the Atomic Energy Commission even went as far as to suggest that Chirac had agreed to the sale so readily out of technical ignorance. Later, French diplomats and officials would tell time and again of their concern about nuclear proliferation that the reason the French did not sell the gas-graphite reactor was because they thought it would give the Iraqis the bomb. Later on during interviews[9] with some of the people who had actually been involved in making the decisions about the sale, it was revealed that the question of nuclear proliferation really was not that important. The French concerns were far more prosaic and

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8 Ibid.

9 Steve Wiesmann and Herbert Krosney, The Islamic Bomb, (New Delhi : Vision Books, 1983), pp.111-112.

reflected the kind of practical economic considerations that so often lie behind great political decisions. The French eventually rejected Saddam Hussein's request for a dual-purpose gas graphite reactor. Now the first big problem for Iraqi Nuclear programme was the building the reactor. The special team that had built the gas-graphite reactor for the French military had long since been disbanded, and Framatome, the was big reactor company, busy constructing pressurized light-water power reactors under license from the American giant, Westinghouse. An Iraqi order for a single gas-graphite reactor would require Framatome to reassemble a new production team, and would disrupt the ongoing work. From Framatome's point it was hardly worth the effort, no matter how high the price tag. But Framatome was not the only one with its own reason to oppose selling Iraq a gas-graphite reactor. The state-owned Electricite de France (EDF) also opposed the sale. EDF had just emerged out of a long drawn-out fight with the Atomic Energy Commission over selecting a single kind of power reactor that could be built both for use at home and for export abroad. In this fight, EDF had opposed the gas-graphite reactor in favour of light-water reactors, and very often they saw the Atomic Energy Commission's eagerness to build one for Iraq as a way to bring it in through the back door. In the end, the French President Valery Giscard d'Estaing did intervene, deciding between the two warring factions in favour of EDF. He

decided not to sell the Iraqis the reactor they wanted. And the French could claim they had acted out of concern for nuclear nonproliferation.[10]

France depended heavily on Iraq for its oil supplies, and the Iraqis were linking a permanent and reliable source of oil to the nuclear contract. According to Dr. Francis Perrin, one of the main reason why the French-Iraqi nuclear accords were never published was because this linkage was explicitly spelled out in the contract between the two countries. There were other deals pending, too, in areas ranging from military hardware to petrochemical plants to port development, and the French desperately wanted to keep their commercial and political relations with Iraq intact.

"We knew very well that some of the Iraqis were interested in the military aspect, the military potential of the reactor they wanted to get", Yves Girard, an adviser on nuclear affairs to the French Department of Energy, later on a vice-president at the state-owned Technicatome told authors of a book in an admission startling for its candor. "But those were the Army people. You have to understand that in a country like Iraq, if you have a big budgetary expenditure, the Army has to approve it. That's the way it works". The French suggested that the Iraqis consider the purchase of an advanced

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10 Ibid.

research reactor, since it did have a plutonium-producing capacity and it would give Iraq the "nuclear option". [11]

On August 26, 1976, Iraq signed a contract worth more then one billion Francs with a consortium of French nuclear firms for the construction of two research reactors. The first and most important of these was a seventy-megawatt-thermal experimental reactor, one that was in most ways similar to the Osiris reactor at the Centre for Nuclear Research at Saclay, just outside of Paris.[12]

The second was a tiny 800-kilowatt "critical assembly" of the Isis type, which had the same basis core as the longer reactor and could be used in training Iraqi technicians. It is well known that materials change their properties as a result of extended radiation. Therefore, it is necessary to study the results of radiation on the materials of a reactor's structure. The Osiris belongs to a group of reactors named 'Material Test Reactors' (MTR).[13] This type of reactor is designed exactly for the above-mentioned purpose. But Osiris did have one quality which made it suitable for Iraqi purposes. It was one of

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11 Ibid., p.113.

12 Ibid., p.114.

13 Perlmutter, n.7, p.58.

the best existing research reactors for the production of weapon-grade plutonium in substantial quantities.

ITALIAN CONNECTION

Earlier, on 15 January 1976, an agreement was signed between Italy and Iraq, by which the Italians agreed to supply the Iraqis with the equipment and technical know-how of a vast field of nuclear problems, including the recycling of nuclear fuel and a particular system for reprocessing radiated nuclear fuel. It is nothing else but another name for plutonium separation. While the French consortium was constructing the 17 Tammuz project, contract was signed between the Italian CNEN as well as the Italian firms, SNIA Techint and AMN and the Iraqi government. The name of the new project was'30 July.'[14] For the Iraqis this was almost as important as the Tammuz project. Some other Italian firms were involved into it as subcontractors. It included the following facilities :

A Technological Hall for Chemical Engineering Research, described as a 'cold' facility for training in the cycling of spent fuels of a semi-industrial scale (i.e, 100 - 200kg of uranium per day). It contained most components of a hot facility, as insisted on by the Iraqis who claimed they wanted this lab

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14 Ibi., p.59.

to be as close to a plutonium separation plant as possible. The 30 July project also allowed the Iraqis the option of a MTR production line which was the fuel used in the 'Tammuz' reactor. In order to run this facility, the Iraqi purchased from Italy 6 tons of low-grade uranium, 4 tons of natural uranium and 2 tons of 2.7 percent enriched uranium.[15]

The first twelve kilograms of 93 per cent enriched uranium was shipped from France by the end of 1980. Altogether Iraq was to receive from France about 80 kg of this type of reactor fuel to operate its Tammuz I and Tammuz II research reactors in instalments. Thus, in the long run Saddam Hussein and his colleagues in the Baathist party could expect both projects-the French-made 17 Tammuz and Italian-made 30 July-to be operating by the end of 1981. The combination of both could give them a plutonium cycle immediately. Thus, the Iraqi scientists assured their leader that with facilities acquired from France, Italy and other state, they would be able to manufacture the bomb independently and that the substitution of a less highly enriched fuel like the French-made 'Caramel' which was being offered due to American pressures on France - would not substantially alter the quantity of plutonium which could be produced in the Tuwaitha project.[16]

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15 Ibid, p.59.

16 Ibid., p.61.

A number of essential auxiliary installations were needed to produce the plutonium. All of them required auxiliary installations which were designed and erected by well known Italian and French companies. The increased capacity of the Iraqi installations could in the future enable Iraq to produce even more than 7-10 kg of plutonium per annum. Iraq acquired a semi-industrial installation for the production of PWR fuel from which uranium oxide pellets could be developed to manufacture suitable fuel for irradiation in the Osiraq reactor. This installation, known as a fuel fabrication laboratory could process 25 tons of uranium per annum. Although for the foreseeable future Iraq could have no possible use for the products of this installation, the scientists went on to explain that these products would also be irradiated in the reactor to produce plutonium. They reminded Hussein that Iraq had acquired hundreds of tons of uranium ores from Portugal, Niger and Italy. These acquisition would ensure several year's supply of raw materials for the production installation.[17] The second phase, after the irradiation of the uranium and the production of plutonium, is the separation process. This is a chemical process in which large quantities of highly radioactive substances are dissolved and plutonium is extracted from uranium and fissile materials. To use plutonium for a second time it must be separated from the fissile materials and reprocessed separately. After plutonium is

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17 Ibid.,p.62.

separated and transmitted into metallic form, it can then be turned into the form required for weapons, in small metallurgic installations contained in glove boxes.[18]

In order to master the plutonium separation process, Iraq acquired a small 'hot lab' which permitted the separation of small quantities (several grams) of plutonium. This laboratory enabled Iraqi scientist and technicians to learn separation techniques and the handling of highly radioactive material. But Iraq was supplied by the Italians with a large scale separation laboratory capable of reporting uranium targets at the rate of 25 tons per annum. The problem with this installation was that it was designed without biological shielding, and some of the tanks contained in it could not withstand high irradiation. The Italians were not ready to supply Iraq directly with a separation plant which would allow the Iraqis to operate this separation process plant the minute they had enough materials to make it feasible. In order not to break the IAEA regulations, Italy supplied Iraq with an installation labelled as a 'demonstration' or 'training' facility to study the techniques of plutonium separation. Though both Italian and Iraqi scientists knew that Iraq could overcome this obstacle in two different ways. Firstly, the biological shielding could be installed in the lab and a number of the

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18 Ibid.

tanks could be replaced , thereby converting this facility into a fully operative 'hot' facility. Secondly, the Iraqis were fully capable of making an exact copy of the facility with all the equipment needed for a 'hot' at another site. The scientists concluded that though this was the most normal or regular way to reach the bomb, other channels were also open to them.[19] The first was the easiest from the technological point of view. As already noted the full load of each Osiraq reactor is 12kg of 93 percent enriched uranium 235 which is fully weapon grade. Under normal work conditions the Tammuz I reactor requires approximately three such fuel loads each year. While for the Tammuz II reactor one such fuel load is sufficient for several years. Thus the fuel required for both reactors is approximately fifty kilograms of enriched uranium per annum. This weapon-grade quantity is sufficient to produce at least two relatively simple U-235 bombs. The agreement signed between the Iraqi government and France mentioned a quantity of eighty kilograms of this 93 per cent weapon-grade uranium sufficient to produce at least four U-235 bombs. This certainly was the easiest way for the Iraqis to produce the fissionable materials needed for a U-235 bomb. But with the agreements they had with Brazil which were to supply the Iraqi nuclear project with the facilities and technological information required for uranium enrichment, the

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19 Ibid., p.63.

Iraqi scientists knew that within another few years they might have a third route to produce the bomb.[20]

SABOTAGE IN FRANCE

Although in the summer of 1980 the Iraqis were ahead in their nuclear programmes, they had to cope with many difficulties and delays since the project had begun in 1975. The basic agreement signed between Iraq and France concerning the setting up of the 17 Tammuz project had been attacked on three fronts : First there was internal dissension in France. Immediately after the signing of the deal, Andre Giraud, head of the French Nuclear Energy Committee, protested that it might allow Iraq to join the exclusive nuclear club. An official of the Quai d' Orsay also protested against the deal, claiming that it might lead to similar agreements with other Arab States including Libya. A nuclear West Asia, could be as dangerous to France as to Israel.[21]

In 1976, Jacques Chirac, the then French Premier had his own view of the deal. He perceived Iraq as the future leading Arab state and as France's most important oil supplier. Although, the French Premier could ignore the

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20 Perlmutter, n.7, p.63.

21 Ibid., p.42.

view of professional officials, he could not ignore the American protest. The United States had the power to influence French behaviour, since it supplied France with most of the enriched uranium needed for the operation of the Osiris-type reactors. It certainly appears that the US administration threatened France with an embargo on American enriched uranium transferred to Iraq, but that the French found an effective way to overcome this obstacle : they decided to supply Iraq with the weapon-grade uranium from France's own military strategic stocks.[22]

French President Giscard d' Estaing took personal control over the subject of the French assistance to Iraq, in order to avoid any more pressure and delays in the project. Israel had been worried by the French-Iraqi negotiations, and since the deal had been signed, the Israeli ambassador to France demanded explanations from the France government. In December 1976 another event that showed how serious the Iraqis were in obtaining a nuclear option via the 17 Tammuz project took place. The then American Secretary of State, Henry Kissinger pressed the Western powers to hold a meeting in London to discuss increasing nuclear proliferation in the Third World. The conference, which was set up by the most advanced Western powers included Britain, France, then West Germany, Italy, Canada, Japan

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22 Perlmutter, n.7, p.68.

and USA and all of them agreed that tougher restrictions than those of the IAEA is needed to be imposed against nuclear co-operation with Third World states, France was obliged to sign the general agreement. But strangely enough, France did not say a world concerning the Iraqi project and the Americans also kept quite.[23]

BOMBING OF OSIRAQ

For many months the Israeli press had kept relatively quiet about the Iraqi project, although it was perhaps feared to be the most dangerous threat ever to the existence of the Jewish State. But suddenly in the middle of July 1980, the entire Israeli press and television began discussing the Iraqi project and the co-operation between Iraq, France and Italy. The then Israeli chief of staff, Refael Eitan, when questioned on the Israeli television, he was asked what he though about Iraqi efforts concerning the bomb. He gave a long answer:

'If the Iraqis get the bomb, it will be as though all the countries in this region are hanging from a light sewing thread, high above. Any attempt tow use the nuclear bomb will lead immediately to the tearing of that thread and the crashing of the states'.[24]

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23 Ibid.

24 Perlmutter, n.7, p.74.

In the many articles published both in Israel and in foreign papers one warning constantly recurred : the Iraqi project at Al Tuwaitha was a matter of life and death, and Israel would do her best to prevent the spread of nuclear devices over the Arab world. In the summer of 1980 Israel gave a public declaration of intentions, although it was not an official one. It had given a silent warning that if she considered Iraq close to reaching the bomb, she might use a preemptive strike on Iraq's nuclear facility.[25] This assumption was based on an interview given to the magazine by Shamir, the then Israeli Minister of Foreign Affairs, "The Iraqi nuclear reactor,' he said, 'may ignite the conflict in this region and cancel the efforts to reach peace'. Warned the nuclear expert of Israel, the outspoken Prof. Yuval Ne'eman. "They have everything else at their fingertips." They could use the uranium directly or they could use it in the reactor to irradiate natural uranium and produce plutonium, they could then extract in the chemical laboratories they were getting from Italy.[26]

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25 Time, 11 August 1980.

26 JERUSALEM POST, July 17, 1980 in Wiessman., n.9, p.286.

Edward Luttwak, a Washington based defense analyst nearly a year before the actual bombing raid said that Israelis wouldn't allow Iraq to have the bomb.[27]

The gulf war left its mark on Saddam Hussein's nuclear ambitions. On the ninth day of the war, September 30, 1980, in the early hours of the afternoon, two Israeli F-4 Phantom jets with Iranian markings, armoured with rockets and guns, flew low towards Al Tuwaitha which is just 20 km south-east of Baghdad. They shot their rockets and rest of their ammunition without even a second round of strafing, and disappeared within seconds. The Iraqis did not even have time to react. No anti-aircraft missile was launched and the ZSU-23-4 anti-aircraft guns were kept silent. According to French engineers, the physical damage was less serious than many press reports suggested. Only one of the Rockets exploded, damaging the reactor dome and the cooling system. This set back the start-up of the Osiraq reactor which had been expected by December 1980.

The new situation had some advantages for the Iraqis, they had already operated the small Tammuz II Reactor with the first load of 12 Kg enriched uranium. They removed the rest of the fuel from the reactor, since only a small

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27 Ibid.,p.287.

portion was used and kept it in a safe place.[28] Although Iraq had commited herself to French as well IAEA inspection, she refused any such inspection then claiming that the war with Iran had created a new situation. It indicated to the Iraqis that even their most sensitive project was open to air strike. It is then the Iraqis began playing particular attention to the anti-aircraft defence system of the whole project. In October 1980 Thompson CSF Industries in France signed a $900 million deal with Iraq by which the French company was to set up an electronics industry based at Samara, with intitial manufacturing of radio and radar instrumentation for military purposes. By the terms of another deal, for $800 million, France was to supply Iraq with Magique R-550 air-to-air missiles, Exocet missiles and Crotale or Shain surface-to-air missiles. In January 1981 another deal was signed with Thompson CSF, by which the French consortium was to supply Iraq with special surface to air missiles as well as radar systems which were particularly efficient against American-made electronic systems.[29]

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28 Ibid., p.79.

29 Ibid.

OPERATION BABYLON

The codename was 'Operation Babylon'[30], a 'two minute Entebbe-style raid' - a surgical attack against the Iraqi Tammuz17 70 megawatt nuclear reactor, located in the nuclear research centre at Tuwaitha, 20km south-east of Baghdad. The two minute raid on Tammuz was the culmination of a long and hard planning and preparation process of Israeli Air Force.

After the Israeli military Intelligence and Mossad received alarming information during the spring and summer of 1980 concerning the rapid progress made by the Iraqis with the aid of the French and Italians in the work of their nuclear 'research' programme. The Israeli government prepared for some pre-emptive action to destroy Iraqi nuclear capability and subsequently Osiraq was destroyed.[31]

The consequence was swift to come, Israel was outlawed by the IAEA and condemned by the UN general Assembly. Israel failed to explain why she had needed to do it. The raid on the Tammuz project surprised the whole world. It surprised the Americans as well as the Europeans, China and even

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30 Ibid., p.79.

31 Israeli military intelligence is the largest intelligence organisation in Israel. It is responsible for national intelligence estimate concerning Israel's long-range national security in Perlmutter., n.7, p.91.

Israelis themselves. But most of all it shocked the Arab world and the Iraqi regime. Although for more than two years the Iraqis were well aware that a secret war was being fought against their most ambitious project, and even after the first Israeli air attack in September 1980, the Iraqi defence system as well as the political leadership were still shocked by the Israeli raid.[32] Thus, first gulf war (Iraq-Iran(1980-1988)) left its mark on Saddam Hussein's nuclear ambitions. Nuclear proliferation was in the news, as the entire world debated the rights and wrongs of Israel's "nuclear Entebbe". However much we might fear the spread of nuclear weapons, especially in the explosive Middle East.

From all the evidence, the Iraqis were moving toward nuclear explosives, using their Osiraq reactor, their Italian labs, and their otherwise unexplained purchases of natural and depleted uranium to produce weapons-usable plutonium. But they were still several years away from having even their first nuclear weapon. The threat was not immediate. The Israelis had time to wait, time to give the new French President, Francois Mitterrand, at least a few months or even a year to close the loopholes in the Iraqi nuclear contracts.

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32 Ibid., p.151.

For all the fact that the raid elevated the world's fear of nuclear conflict, paradoxically it had salutary consquences. It dramatized the lack of concern- and therefore the flagrant irresponsibility - of the Western supplier nations, whose help is essential for any Third World country to make the bomb. It challenged the international community and, more specifically, the International Atomic Energy Agency and its system of "safeguarding" the spread of nuclear technology to ensure its peaceful uses.

POST - OSIRAQ PHASE (1982 - 1990)

The Israeli destruction of the Iraqi nuclear reactor had certainly delayed the Iraqi acquisition of nuclear weapons by Iraq.

During early 1980s, Iraq launched an aggressive diplomatic campaign against Israel in the United Nations and the IAEA, seeking to impose sanctions against Jerusalem for its refusal to rule out future military action against nuclear installations in the Middle East. In Iraq 1982 IAEA General Conference, at Iraqi Instigation, which refused to accept Israel's credentials, the United States temporarily withdrew from the agency. This precipitated a crisis that was not finally resolved until the 1985 General Conference when Israel assured that it would not, "attack or threaten to attack any nuclear

facilities devoted to peaceful purposes either in the Middle East or any where else" it was accepted as a basis for its continued participation.[33]

Through a series of interim measures at the 1983 and 1984 General conference of IAEA, a final decision on sanctions against Israel had been postponed to succeeding years, enabling the US to return as a full participant in the IAEA activities in mid - 1985. Anti-Israeli measures were no more successful in 1986 and 1987 sessions. After Osiraq was destroyed, it appears that the Hussein government pursued a separate track for obtaining a nuclear weapons capability.

According to evidence obtained in a 1984 Italian Prosecution, senior Iraqi military figures expressed interest in obtaining 74.6 pounds (33.9 Kg) of Plutonium - enough for several weapons - from an Italian arms smuggling ring purporting to have such material for sale.[34] The deal fell through when , after a third meeting in Baghdad, the smugglers were unable to produce samples of the nuclear material . It is certain that the plutonium offer was a hoax, possibly intended as a ploy for the sales of conventional arms. The episode

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33 Leonard Spector, The New Nuclear Nations, (New York : Vintage Books, 1985), pp. 143-146.

34 Ibid ., pp.44-54.

suggests that through the mid - 82, when negotiations on the matter ended, at least some in the Iraqi government remained interested in nuclear arming .

By early 1989, it appeared that as part of this overall trend, Iraq had revitalized its efforts to acquire nuclear arms. In a testimony before a Congressional Committee in February 1989, Director of Naval Intelligence Rear Admiral Thomas A. Brooks declared that Baghdad was "actively pursuing" a nuclear weapons programme, though he provided no details.[35]

Inspite of several attempts by Iraqis to obtain either from America or Europe, materials required for building an uranium enrichment plant (weapons-grade), Iraq was not known to have begun construction of uranium enrichment plant, until late 1989.

According to western intelligence sources[36] in 1990, Saddam Hussein got serious about acquiring technology and equipment for nuclear weapons in 1987. Iraq had more than one path to possessing nuclear weapons. The first

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35 Subcommittee on Seapower, Strategic and Critical Materials, Committee on Armed Services, US House of Representatives, 101st Cong., 1st Sers Feb 22, 1989(mimeo) in Leonard Spector with Jacqueline Smith, Nuclear Ambitions - The Spread of Nuclear Weapons 1989-90, (Bouldere : Westeview Press), p.375.

36 Spector, n.37, pp.40-41.

1987. Iraq had more than one path to possessing nuclear weapons. The first method was to seize the small amount of highly enriched uranium in its possession, which was under international inspection, and fabricate it into a single nuclear weapon. Another was to acquire more fissile matter clandestinely from other nations. The surest route to nuclear arsenal, however, depended on developing the indigenous capability to produce nuclear explosive material and fabricate it into deliverable nuclear weapons. Iraq appeared committed to do this, even though it signed the Nuclear Non-Proliferation Treaty.

Two different organisations were involved in the procurement and development tasks for this clandestine nuclear programme. The first, Al Qaqaa Etate Establishment, located in Iskandariya near Baghdad, was thought to be in charge of developing the non-nuclear components for a nuclear weapon. The second, Nassr State Enterprise in Taji, also near Baghdad, was said to be responsible for Iraq's uranium enrichment effort.[37] Independently of these organisations, a Baghdad organisation Industrial Project Company (IPC) agents in Europe actively sought weapon and uranium enrichment technology and equipment as well.

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[37] David Albright and Mark Hibbs, "Iraq and the bomb : were they even close?", Bulletin of Atomic Scientists, (Chicago), vol.47, no.2, March 1991, p.17.

WORKABLE WEAPON

The biggest immediate concern was that Iraq would construct one nuclear explosive out of a small amount of highly enriched uranium which remained in its civilian nuclear programme. This material was committed to peaceful uses and inspected every six months by the International Atomic Energy Agency (IAEA), which was last checked in November 1990 and found material intact. But the possibility existed that Iraq would snatch the material between inspections and use it in a bomb.[38]

Design and Development

Many aspects of the design and development of an implosion fission device present special problems : Fissile material : Iraq might not have enough highly enriched uranium for a "crude" nuclear device, one containing just slightly less fissile material than necessary to achieve criticality when the device is assembled.

To make a crude implosion device using weapon grade uranium (enriched to over 90 percent uranium 235), one would have to start out with at least 15 kilograms. A little fissile material would be lost in processing-under many circumstances could reach 10-20 percent. But Iraq had only 12.3

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38 Ibid., p.18.

Kilograms of 93 percent enriched uranium, some of which might fuel the Tammuz II research reactor at Tuwaitha Nuclear Research Center near Baghdad.[39]

Iraq also has about 10 kilograms of 80 percent enriched uranium at the 5 megawatt IRT-5000 reactor supplied by the ex-Soviet Union. Up to two-thirds of the enriched uranium has been irradiated in the reactor and would require remotely operated chemical processing to extract the highly enriched uranium, a step that would have been difficult for Iraq to accomplish quickly, even before the bombing of Tuwaitha. The unirradiated highly enriched uranium, however, could be added to the 93 percent material, possibly providing Iraq with just enough material for a crude bomb.

According to Theodore Taylor, a former nuclear weapon designer: "The minimum amount of material necessary to make a militarily significant bomb is in principle unanswerable. But in practice, there are well-defined quantities of nuclear material that have been used in various devices, but these quantities are secret."[40]

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39 Ibid., p.18.

40 Ibid., p.19.

Building a more sophisticated design places a premium on acquiring advanced electronic and high-explosive capabilities from industralized nations, which Iraq was aggressively pursuing. In the last five years the U.S. government approved the sale to Iraq of 1.5 billion worth of computers, electronic equipment, and machine tools which could be used in its nuclear, chemical, and ballistic missile programmes.[41] In March 1990, Iraq was caught trying to smuggle military-standard and specification detonation capacitors from CSI Technologies of San Marcos, California. The capacitor's many applications include nuclear weapons as well as conventional warheads and military laser systems.[42] In 1989, Iraq was able to buy about 150 lower quality capacitors from Maxwell Electronics, a California-based firm. The head of the company speculated that Iraq may have upgraded these capacitors. William Higginbotham, who headed the electronics group at Los Alamos during the Manhattan Project, thinks it is possible in producing capacitors. But he believes that Iraq could easily have taken six months or longer to make them, even if they had blueprints. Because the status of Iraq's programme to design

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41 Stauart Auerbach, "American Sales to Iraq totaled $5 billion", Washington Post, November 1990, p.c1 in Albright, n.39, p.19.

42 U.S. Customs Service, "News : Customs Uncovers Illegal Scheme to Export Nuclear Devices to Iraq", news release, March 29, 1990 in Albright, n.39, p.19.

and make nuclear explosives is not well known, speculation ranges widely on how long it would take Iraq to make a single weapon.[43]

Direct confirmation of the relevant activities is lacking, as is information about all the types of helpful equipment and technology Iraq obtained before the embargo.

In a National Intelligence Estimate completed in fall of 1990, the U.S. intelligence community estimated that Iraq could build a nuclear explosive device in "six months to a year, and probably longer".[44] This estimate assumed that Iraq would mount a crash programme to build an explosive out of its safeguarded material, and that it possessed advanced bomb-making technology.

A recent German intelligence assessment concluded that Iraq would need considerable help from abroad to complete a successful nuclear weapons programme. The assessment further pointed out, that there were no

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43 Ibid., p.20.

44 Michael Wines "Hard Data Lacking on Iraqi Threat"? New York Times, Nov. 30, 1990 in Albright, n.39, p.21.

indications of direct foreign assistance to Iraq in the development of nuclear weapons.[45]

ENRICHMENT PROGRAMME

For several years Iraq had been pursuing the development of gas centrifuges, which uses rapidly spinning rotors to separate the more desirable U235 isotope from the more plentiful U238 isotope. Any country intent on mastering the gas centrifuge process must go through several time-consuming steps before it can expectt to build a pilot plant containing a few thousand relatively unsophisticated machines.[46]

Bruno Stemmler, a former centrifuge expert at the German firm MAN Technologies GmbH, met secretly with Iraqi centrifuge design engineers in 1988. He said in a December 1990 interview[47] that Iraq appeared to be at an early stage in the development of the centrifuge itself. He described a visit to a secret laboratory on the south east edge of Baghdad, still under construction, in which he was shown a bench centrifuge apparatus, or a "test stand".

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45 Albright, n.39, p.21.

46 Ibid., p.22.

47 Ibid., p.23.

Stemmler said he helped Iraqi experts solve problems in the test stand's vacuum system. He concluded that the test stand could only be used for elementary mechanical tests of the rotor. Certain evidence makes it clear that Iraq tried, with limited success, to acquire technologies and components for the entire enrichment programme, including manufacture of centrifuges.[48] Iraq also was given blueprints for several German centrifuge designs. Stemmler said that Iraqi engineers showed him designs for the G1 - type centrifuges, which Germans developed in the 1960's and early 1970's, with a separative capacity of less than two separative work units.

According to an U.S. nuclear proliferation expert the order was not filled before an U.N. embargo started. There were false claims in the London Times[49] 16 December that Iraq had s cascade operating at Tuwaitha, the location of Iraq's known nuclear facilities, which are inspected by the IAEA.

Iraq submitted to the U.N. Security Council on 7 July, 1991, a 30 page doccunt[50] about its nuclear programme and said that it didnot violate the

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48 Ibid., p.24.

49 Ibid, p.25.

50 David Albritht and Mark Hibbs, "Irāq's Nuclear Hide and - Seek "Bulletin of Atomic Scientyists, (Chicago), vol.47, no.7, September 1991, p.15.

NPT since the programme was for cilivian pusposed. But the report acknowldeged that Iraq had seretey produce oxde and had enriched some uraniuam NPT signatory states which do not have nuclear weapons (Iraq is in this category) are required to report such materials to the IAEA. The IAEA Board of Governors voted on July 18 to condemn Iraq for violating the NPT and safetuards agreement with agency. Further, the report included vague descriptions of Iraq's nuclear activities and lists of equipment and components. US government asked for more clarification and the Iraqi officials provided it. More disclosures were expected before July 25, 1991, the deadline put up by UN Resolution 687. Post-Osiraq phase (1982-90) of Iraq showed that, Iraq was pursuing its nuclear programme through overt and covert means, as some confirmed and unconfirmed reports suggest. Destruction of Osiraq in 1981, along with the Iran-Iraq war during 1980-88, drained Iraq's resources and had considerably affected its nuclear programmes. Imspite of all this setbacks, Iraq still pursued its nuclear option.

CHAPTER III

POST - GULF WAR INSPECTIONS

UN Security Council Resolution 687[1] signified the conclusion of the Gulf war. It established the UN Special Commission (UNSCOM)[2] and empowered it to carry out on-site inspection of Iraq's Biological, Chemical, Nuclear and Missile capabilities and to provide for their elimination. Two plans, one for nuclear weapons and one for non-nuclear weapons, were provided for future monitoring and verification. So that Iraq does not use, develop, construct or reacquire any items specified for elimination. UNSCOM is responsible for chemical and biological, weapons and ballistic missiles while the IAEA has primary responsibility for Iraq's nuclear capability with the assistance and cooperation of UNSCOM. The inspection teams are to have unrestricted access, and Iraq is required to disclose all information about its programmes to develop weapons of mass destruction and ballistic missiles. Iraq has not fully complied with these provisions and it has not been possible to acquire full knowledge of the weapon programmes. UNSCOM is therefore continuing its investigation and expanding its information gathering capability. Only when UNSCOM can adequately assess Iraqi compliance with resolution 687 and

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1 S/RES/687 (1991)

2 Ekeus, Rolf, "The United Nations Special Commission on Iraq", SIPRI Year Book1992: World Armaments and Disarmament, (Oxford University Press, London), pp.509-30.

related resolutions could the embargo imposed by the UN Security Council on Iraq be lifted.

On 6 April 1991,[3] when Iraq notified the Secretary-General and the Security Council of its official acceptance of the provisions of the resolution, a formal ceasefire took effect between Iraq and Kuwait and the UN member states co-operating with Kuwait in the multinational coalition force.

Part C of the UN Resolution 687 (paragraph 7-14) addresses Iraq's weapons of mass destruction : their declaration, identification, location and disposal and the establishment of a monitoring system to ensure that they not be reintroduced to Iraq, either internally or from abroad. Resolution 687 required Iraq to declare the location, amount and type of all items specified under paragraphs 8 and 12 within 15 days of adoption of the resolution. The items thus to be eliminated are all of Iraq's chemical weapons (CW), biological weapons (BW), stocks of agents, related subsystems and components, and all research, development, support and manufacturing facilities. Also included are all ballistic missiles with a range greater than 150 km and related major parts, as well as repair and production facilities. Disposal is to be carried out under

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3 S/22456 and S/22480 containing letters to UN Secretary-General and President of the Security Council.

international supervision through destruction, rendering harmless or removal of the proscribed items. As regards Iraq's nuclear capability, the cease-fire resolution provides that nuclear weapons, ' nuclear-weapons-usable material', any subsystems or components and any research development support and manufacturing facilities related to nuclear weapons and 'nuclear-weapons-usable material' shall be subject to destruction, removal or rendering harmless.

The provisions in part C of the resolution are linked to the economic sanctions against Iraq which are outlined in paragraph 21 and 22, and the Security Council will make its decision to lift its embargo "against the import of commodities and products originating in Iraq and the prohibitions against financial transactions related thereto contained in Resolution 661[4] dependent upon Iraq's completion of the actions defined in part C of Resolution 687.

The resolution provides for two plans, one for nuclear weapons and one for non-nuclear weapons, for future monitoring and verification that Iraq does not use, develop, construct or acquire anew any items specified for elimination. On 11 October, 1991, the Security Council adopted Resolution 715 which approved two plans for compliance monitoring : one for non-nuclear items

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4 UNSC document S/RES/661 (1990), 6 May 1990.

submitted by the UN Secretary - General and one for nuclear items submitted by the Director-General of the International Atomic Energy Agency (IAEA).[5]

FUNCTIONAL ORGANIZATION OF UNSCOM

The United Nations Special Commission on Iraq (UNSCOM) was established in early May 1991 in accordance with paragraph 9(6) of Resolution 687 to carry out immediate on-site inspection of Iraq's biological, chemical and missile capabilities, to provide for the elimination of these capabilities and to perform other functions assigned to it in Part C of the resolution.[6] With the assistance and co-operation of UNSCOM, the Director-General of the IAEA was requested to carry out the corresponding tasks regarding Iraq' nuclear capability.

After extensive negotiations, an agreement was concluded on 14 May 1991 with the government of Iraq concerning the status, privileges and immunities of both UNSCOM and the IAEA. These provisions are recapitulated, elaborated upon and reinforced in the UNSCOM plan for future

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5 United Nation Security Council Document S/RES/715(1991), 11 October 1991.

6 United Nation Security Council S/22614, 19 May 1991.

monitoring and verification of Iraq's compliance with Part C of Resolution 687.[7] An agreement has also been concluded with the Government of Bahrain about the field office at Manama.

The Special Commission, which is a subsidiary organ of the Security Council, consists of 21 individuals appointed by the Secretary-General, each of a different nationality and drawn from all regions of the world, who are experts in nuclear, chemical and biological weapons and ballistic missiles. The Executive Chairman and Deputy Executive Chairman are vested with the responsibility for directing the operations of UNSCOM. They are assisted by a secretariat with head-quarters in New York, a field operations office in Bahrain and a support office in Baghdad. In addition to the executive office, the New York head quarters include an Information Assessment Unit and an Operational Planning and Operations Unit.

The UNSCOM members are organized in four groups - nuclear, chemical/biological, ballistic missiles and future compliance monitoring - which meet regularly to assess progress and to assist the Executive Chairman in the planning of activities. A Destruction Advisory Panel was also established to

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7 United Nation Security Council Document S/22871/Rev.1,2 October, 1991

deal with investigation and recommendation of destruction undertakings as outlined in Resolution 687.

UNSCOM has at its disposal advanced communication systems such as satellite and global-positioning system units. The Special Commission is also able to gather information about sites it deems of interest through high-altitude aerial surveys of Iraq by a U-2 reconnaissance aircraft with crew and support personnel provided by the US. From an airbase in Baghdad, the Special Commission operates its own helicopters service for transportation of its inspection teams and for close - range surveillance of designated targets.

The nuclear and non-nuclear sites to be inspected are those which were declared by Iraq[8] under the provisions of paragraphs 8,12 and 13 of resolution 687 and additional locations which have been designated by UNSCOM for inspection purposes. The UNSCOM and IAEA inspection teams are allowed unconditional and unrestricted access to any and all areas, facilities, equipment, records and means of transport. Iraq is also required to provide full and complete disclosure of all aspects of its programmes to develop weapons of mass destruction and ballistic missiles. No movement or destruction by Iraq

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8 Rolf Ekeus, "The United Nations Special Commission on Iraq", SIPRI Year Book 1992, (Oxford University Press, London), p.511.

of material or equipment relating to the weapon categories under the resolution is supposed to take place without notification to and prior consent of the Special Commission. Furthermore, Resolution 687 provides for the halting of all nuclear activities of any kind except for the use of isotopes for limited purposes.

The Security Council explicitly allowed UNSCOM and the IAEA to conduct flights throughout Iraq for all relevant purposes including inspection, surveillance, aerial survey, transportation on conditions to be determined by the Special Commission. When it has been decided that a site shoud be inspected, the operational and planning unit develops and operational plan which covers the objectives and chronology of the inspection, names a chief inspector and composes an inspection team. The individual inspectors are recruited from various governments, and UN documents and certificates are issued to the inspectors. The team members are assembled at the field office in Bahrain for training, final briefing, preparation and planning. Non-declared designated sites are normally visited with short notice or no notice to Iraqi authorities. The length of missions varies from one to six weeks ; the inspection team reports from the field on a daily basis to headquarters in New York about developments. An Executive Survey Summary of the report is sent to members of the Security Council.

A similar routine exists for the IAEA - led nuclear inspections. Briefly, debriefing, operational planning and reporting are carried out at the IAEA headquarters in Vienna. As a rule the Director- General of the IAEA sends a concentrated report of each inspection to the UN Secretary General for the information of the Security Council.

During 1991 the Special Commission and the IAEA were primarily engaged in carrying out the first two stages of their mission- inspection and disposal- and routines were developed for sending teams for inspection or destruction missions to Iraq and for their functioning in Iraq. As a consequence of continuing Iraqi obstructions, the mandate of the Special Commission defined in the cease-fire resolution was amplified by UN Security Council Resolution 707.[9]

NUCLEAR INSPECTIONS

The IAEA-lead inspections of Iraq's nuclear programme have disclosed three clandestine uranium enrichment programmes for nuclear weapon purposes. The major discovery was Iraq's electro magnetic isotope separation

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9 United Nation Security Council Document S/RES/707(1991), 15 August 1991.

(EMIS)[10] programme. Considerable efforts were made by Iraq to conceal the programme, with equipment being dispersed and in many cases buried in remote areas. With the help of overhead photography it was possible in late June 1991 to locate some of the equipment - the calutrons. An inspection team found the calutrons but was denied control of the equipment when Iraqi security personnel threatened the inspectors with firearms. Despite extensive deception efforts by Iraq, an EMIS facility under construction at Tarmiya was identified as capable of industrial-scale production of highly enriched uranium.[11] On the basis of the design date provided by Iraq, it was estimated that if the Tarmiya facility were fully operational with 90 separators running at design capacity, it could produce up to 15 kg of highly enriched (93 per cent) uranium per year.[12] The Iraqi authorities were also forced to admit the existence of an identical facility at Al Sharqat, a replica of the one at Tarmiya, which was 85 per cent complete when it was destroyed during the war.

In September 1991 an inspection team found a large number of documents relating to Iraq's nuclear programme. The team was initially denied

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10 EMIS is accomplished by creating a high current beam of low energy ions and allowing them to pass through a magnetic field in Ekeus, n.8, p.513.

11 United Nation Security Council Document S/22788, 15 July 1991.

12 United Nation Security Council Document S/22835, 25 July 1991.

access and later subjected to serious harassment by four days of confinement in a parking lot at Iraq's document centre.[13] Some documents collected by the inspectors in the course of the inspection were forcibly confiscated by Iraqi authorities, and some were not returned.

An extensive weaponization programme had been carried out at the Al Tuwaitha nuclear research centre and at the Al Atheer site. Inspectors from the International Atomic Energy Agency (IAEA) had examined twenty-five nuclear-related sites in Iraq by mid-August. Under a "go-anywhere, see anything[14]" mandate from the UN Security Council, the inspectors continued to uncover information that fills in the picture of Iraq's clandestine nuclear weapons programme. The programme violated the Nuclear Non-Proliferation Treaty of which Iraq was a signatory.

The IAEA officials knew in May 1991,[15] that Iraq had separated a small amount of plutonium, but the matter attracted attention only after the media reported that the inspectors had learned of a second small quantity of plutonium, separated clandestinely from unsafeguarded material.

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13 United Nations Security Council Document S/23122, 8 October, 1991.

14 David Albright and Mark Hibbs, 'News the front page missed', Bulletin of Atomic Scientists (Chicago), vol.47, no.8, October 1991, p.7.

15 IAEA/UNSCOM Nuclear p.14-22, May 1991.

The May inspection revealed that Iraq had separated 2.26 grams of plutonium at a small laboratory at the Tuwaitha Nuclear Research Centre. In late July, Iraq revealed to the IAEA that another three grams had been separated in the laboratory. Though 1000 times more plutonium is needed for a weapon, it revealed that Iraq had mastered the basics of plutonium on a laboratory scale. Iraq separated the first quantity some time between 1982 and 1988, after the IAEA exempted from safeguards five fuel elements. This fuel, which contained 10 per cent enriched uranium, was for the IRT - 5000, small, Soviet-supplied research reactor.

Exemptions of this kind are routinely made for research. The second quantity of plutonium was reprocessed some time after 1987. Thus, in that case, Iraq violated its safeguards agreement[16] with the IAEA because it used a safeguarded experimental fuel-fabrication laboratory at Tuwaitha to clandestinely manufacture unsafeguarded uranium fuel for the IRT-5000.

In early August,[17] inspectors discovered that another 8 kilograms of natural uranium had been clandestinely manufactured into fuel and irradiated, but had not been reprocessed, unlike 11 kilograms earlier, which was used to

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16 INFCIRC/66/Rev2 and INFCIR.53

17 IAEA/UNSCOM6 Nuclear 27 April- 10 August, 1991.

retrieve 3 grams of plutonium. If Iraq had produced more unsafeguarded uranium fuel and operated the reprocessing laboratory around the clock to separate the plutonium for a year, it would still have been far from enough for a bomb. There was no evidence that Iraq was trying to scale up the program by secretly building a plutonium production reactor and a larger plutonium separation facility.

A press report[18] stated that Iraq was about to manufacture centrifuges that, within few years could produce enough highly enriched uranium for several bombs. A senior IAEA official immediately corrected this report and clarified that it had overestimated Iraq's program, but his statement received less attention.

In late July,[19] Iraqi officials showed inspectors the large El Pherat workshop, located 30 kilometres south east of Baghdad. Iraqi officials claimed that it would have begun serial production of 200 centrifuges a year in late 1992 or early 1993.The inspectors felt otherwise, that Iraq could not have made so many centrifuges, or even the components. They found two stands for performing mechanical tests on centrifuges. One test stand was for what was

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18 Washington Post, August, 8, 1991.

19 IAEA/UNSCOM6 Nuclear 27 April-10 August, 1991.

believed to be a modified version of an early design Urenco centrifuge called G-1, which experts believe was the centrepiece of the Iraqi centrifuge effort.

The IAEA found centrifuge motors made out of maraging steel, as well as made out of carbon fibers - more advanced than maraging steel motors. Iraq had tested the carbon-fiber roots, rotors, using uranium hexafluoride and was able to enrich some uranium, according to IAEA officials, They do not know whether Iraq manufactured better rotors than they were shown. The inspectors found no information about Iraq's ability to connect centrifuges into cascades, a difficult but necessary step in the production of significant quantities of enriched uranium. Iraqi experts told the IAEA that they had planned to operate a cascade of hundred centrifuges by the end of 1993 and a cascade of five hundred by mid-1996.

Five hundred machines of the type Iraq showed the inspectors might have produced five kilograms of ninety per cent enriched uranium per year, about one-fourth of what Iraq would have needed for a weapon.

But Iraq had to master cascade engineering nearly as fast as it built machines. This would have been unlikely, as experience in other countries suggests.[20]

Iraq's ability to enrich uranium with calutrons ,was also exazggerated. From an estimate of forty kilograms of highly enriched uranium, it dropped to a few kilograms by July 1991, and bottomed out at milligrams in August 1991. According to U S and IAEA officials, Iraq produced few gram quantities of enriched uranium, including milligram quantities of highly enriched uranium (roughly 40-45 percent of U235) in a high-security section of Tuwaitha that was constructed in 1985 or 1986.

At the Tarmiya calutron facility, Iraq began test-operating eight calutrons for producing low-enriched uranium in February 1990, and it could eventually produce about 500 grams, averaging 4 percent enrichment, with a high of about 10 percent. U.S. and IAEA officials confirmed that Iraq is unlikely to have produced significantly more in the calutrons.

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20 Albright, n15, p.8.

According to one UN inspector, Tarmiya[21] was an advanced research and development facility for calutrons.

Iraq was in the process of installing at Tarmiya a racetrack with 17 calutrons designed to produce low-enriched uranium. It intended to install up to 70 low-enrichment units and 20 high-enrichment units. None of the high-enrichment units were installed. IAEA officials estimated that these, when fully operational, might have produced 12-20 kilograms a year of uranium enriched to over 90 per cent.

A U.S. official said the 12 kilogram estimate was based on the assumption that beam currents in the low-enrichment calutrons would have reached the 145 milliamps for which they were designed - a total of 580 milliamps per machine and that 55 per cent of the calutrons would have been operating fully at any given time.[22]

An enrichment expert said that more realistically, the total beam current in a low-enrichment machine would be about 300 milliamps. If 70-80

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21 S/22986, UN Fourth Inspection Team, 27 July to 10 August, 1991.

22 Ibid. p. 8.

per cent of the machines had operated at a given time, the plant would then have produced about 8-9 kilograms of 90 per cent enriched uranium a year.

Later investigations .[23] has revealed that Iraq's calutron program was apparently not entirely indigenous. Probably imported major components early in the programme developed the ability to make then indigenously.

All the aforesaid discoveries were made during the fourth nuclear inspection (27 July to 10 August, 1991).[24] IAEA further added that the activities were on a very limited scale and the reactor used would only have been capable of producing insignificant quantities of plutonium.

FRESH EVIDENCES

After nearly half a year of investigation of Iraq's nuclear programme,the UN and the IAEA inspectors found the biggest remaining piece of the puzzle: details of Iraq's effort to design and develop a nuclear explosive device.

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23 Albright, n.15, p.9.

24 IAEA4/UNSCOM6 Nuclear Inspection 27 July - 10 August 1991.

The sixth inspection team (21-30 Sept. 1991)[25], sent by the U.N. Special Commission to uncover Iraq's weapons of mass destruction- discovered the nuclear weapons program archives at program headquarters in Baghdad. Many of the documents found there recorded Iraq's plans and progress.

Just a week earlier, Rahim Al-Kital, Iraq's ambassador to the IAEA, informed the agency's 1991 General Conference in Vienna[26] that Iraq had already "told the United Nations everything," and that the inspectors were "guessing" about a nuclear weapons program that did not exist. But the find put an end to any doubts that Iraq's secret effort to enrich uranium was for weapon's purposes

The documents showed that since 1988 or 1989 Iraq had invested heavily in facilities to develop and make nuclear weapons. By mid-1990, Iraqi scientists had made some progress in understanding how a relatively crude nuclear explosive device with a core of highly enriched uranium would work, and they had done some experiments on parts of the technology.

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25 IAEA/UNSCOM16 Nuclear 21-30 September 1991.

26 IAEA GC Report 1991.

By that time, an experimental programme was under way for using shaped conventional charges to activate a nuclear explosion by uniformly compressing a uranium sphere. But on the eve of the Kuwaiti invasion, Iraqi experts still had many theoretical and experimental questions to answer. They were also having trouble developing the precision electronic equipment needed in a nuclear weapon and efforts to obtain the equipment abroad had been thwarted.

Western experts have deduced from the documentary evidence, that Iraq would have probably have needed a year or two to master its weapon design if the Gulf war had not occurred.

"UN says Iraq Was Within Months of Nuclear Device",[27]

However, the Bahrain correspondent of the Financial Times quoted David Kay, IAEA Chief inspector, as stating that "Iraq could have been as little as two months away from starting of a nuclear arsenal" - assuming that Iraq had "regular supply of enriched uranium".

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27 Financial Times, (London), October 4, 1991.

Next day, Kay backed away from the estimates. He clarified at a press conference, that Iraq's bomb had been 12-18 months away - highly optimistic estimate. David Kay later reiterated that estimate at a hearing held by the U.S. Senate Foreign Relations Committee. In repeated interviews and testimony, given after the Baghdad documents were found. Kay stressed that Iraq's weapons effort was "highly impressive" and had "considerable breath". All these exaggerated reports of Newspaper headlines were part of the showdown in the parking lot of a building in Baghdad.

The building where the papers were housed was the headquarters of "Petrochemical Three" (PC-3)[28] Iraq's program to design, test, and develop a nuclear weapon. It had employed several thousand people and was under the control of the Iraqi Atomic Energy Commission. It was linked to the Defence Ministry and the Ministry of Industry and Military Industrialization. Iraq is said to have taken pains to hide the names of top weapons officials from IAEA inspectors.

According to David Kay, Iraqi political authorities began to take great interest in the weapons program after the decision was made, some time in 1988 or 1989, to pump money into the enterprise. On May 7, 1990, the

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28 S/23122, p.3, para.3.

minister of industry and military industrialization opened a site 50 kilometres south of Baghdad called Al- Atheer that was to be similar to Los Alamos, the primary site where the United States developed the first atomic bombs during World War II. Early 1990, personnel, equipment and testing systems relevant to weapons effort were transferred from Tuwaitha to Al- Atheer.[29]

The IAEA inspection report, which covers progress made from January 1 to May, 31, 1990, gives a fairly detailed picture of the state of the Iraqi design programme.

Iraq was evidently working hardest on an implosion device. This type of weapon contains a mass of nuclear material (highly enriched uranium) at its center. The Iraqi design was relatively crude by modern standards and was taking longer to work out than western weapons designers would have anticipated. According to the IAEA, Iraqi scientists had not developed a workable design by the time Al- Atheer was bombed in early 1991.

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29 S/22986, p.14, para.23, HIBBS, IAEA p.8.

Theodore Taylor, ex U.S. nuclear weapons designer said the gist of the report was that the "future is much more exciting than the present or past."[30] The January-May 1990 progress report and other sources provide information about Iraq's work in a number of areas essential to developing a bomb.

THEORETICAL CALCULATIONS AND EXPERIMENTS:

An IAEA official said that some of the theoretical work had been going on for a long time.[31] Thorough extensive searches of the public literature going back to 1945 revealed that Iraqi scientists assembled an important volume of information, including weapons-relevant computer programs and many theoretical and practical studies on high explosives. The "Special tasks" section of PC-3 at Tuwaitha was headed by Khalid Ibrahim Said.

The investigations included theoretical studies of the physical and chemical behaviour of materials at high temperatures and pressures, the processes of nuclear fission in an explosion, and theoretical methods to extrapolate laboratory results to the conditions of an actual nuclear explosion

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30 David Albright and Mark Hibbs, "Iraq's Bomb: Blueprints and Artifacts", Bulletin of Atomic Scientists(Chicago), vol.48, no.1, January/February, 1992, p.33.

31 Ibid., p.33.

in which the temperatures and pressures would greatly exceed any conditions produced in the laboratory.

According to Carson Mark, former head of the theoretical division at Los Alamos National Laboratory, the information contained in the January - May 1990 progress report indicated that Iraq would have needed at least a year, working at a fast pace, to complete the design work on a bomb. It is difficult to know, if the Iraqis were prepared to deal with the problems of designing the bomb. The report indicated that Iraq was not ready to select an actual design with a specific amount of highly enriched uranium, high explosives and tamper.

The progress report for the last half of 1989, which the IAEA obtained but has not released, gives specific information about the type of device Iraq was exploring.

One inspector confided that Iraqi scientists were planning a device with a solid core of about eighteen kilograms of weapon-grade uranium ; a reflector of natural uranium metal a few centimetres thick ; and a tamper of hardened iron, also a few centimetres thick.

A device of this type could weigh less than 500 kilograms smaller and lighter than the devices of The Manhattan Project. A possible test site for the entire implosion system was al Hadre, located 200 kilometres north- west of Baghdad. It was believed by the seventh inspection team to have been a suitable site for an open firing range for fuel-air bombs and fragmentation testing.

The progress report also described efforts to make a 600 - kilovolt flash X - ray machine to provide a profile of a mock core used in an implosion test. The X - rays would have had sufficient energy to show whether the core was being imploded uniformly or whether core material was squirting out.

Iraq had imported hundreds of tons of HMX, which is the most desirable conventional explosive for nuclear weapons. Though it was used as aerial bombs in the Gulf war, Iraq still had 250 tons of it, sufficient enough to supply a small nuclear arsenal stored at al Qa Qaa, the military research and development facility forty kilometres north west of Baghdad. "In general, the results of the IAEA inspections suggest that local capabilities in electronics were not on par with the competence in metallurgy, chemistry and detomics", says the Seventh Inspection Report.

The Soviet - supplied IRT - 5000 research reactor, which was safeguarded by the IAEA[32], was nevertheless an important part of the nuclear weapons program. The reactor had produced polonium 210, essential for the internal neutron initiators, by irradiating Bismuth, although it remains quite unclear whether Iraq could have secretly produced enough polonium for a nuclear arsenal over the long term in this reactor. The reactor also produced small quantities of plutonium 238.

An IAEA inspector said that Iraq was believed capable of producing uranium metal about eighteen-twenty four months before the invasion of Kuwait. Metallurgy skills were developed at al Tuwaitha, ostensibly to make uranium - tipped (non-nuclear) shells that could penetrate armour. Iraqi officials admit that about 1000 Kg of uranium metal was produced at Tuwaitha. About a fourth of this was cast, in furnaces, into solid metal shapes. Casting metal of uranium is a necessary step in making bomb components. A semi-industrial uranium metal production capability was being developed at al Atheer.

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32 INFCIRC/153 type agreement in Albright, n.13, p.35.

According to the preliminary sixth inspection report what IAEA inspectors found was a document[33] "suggesting the parallel development of a missile delivery system for the ongoing nuclear weapons program. In the document, the Ministry of Defence instructed the Iraqi atomic Energy Commission to postpone an experiment until after surface-to-surface missile testing."

Iraqi attempts to put chemical warheads on modified Soviet-made Scud-missiles[34] raises questions about whether Iraq would have succeeded in developing nuclear-tipped missiles. Inspectors have been unable to find any evidence that the chemical-tipped Scuds had ever been tested. Components of a nuclear warhead require great protection from gravity forces and other stresses during flight. Available evidence suggests that Iraq was several years away from developing a missile that could hold a nuclear warhead. Iraq was building a similar facility like Tarmiya at al Sharqat, 200 kilometres northwest of Baghdad, which was eighty to ninety per cent complete when it was bombed. According to an IAEA official, Iraqis said a decision had been made in mid - 1989 not to finish this facility because it had been intended as a backup to Tarmiya, which was vulnerable to bombing during the war with

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33 IAEA/UNSCOM16 Nuclear 21-30 September, 1991.

34 UNSC Document S/23165, 25 Oct. 1991, pp.34-35.

Iran. The seventh inspection team found some evidence of construction after a decision to cancel it had supposedly been made. There is no evidence of any calutrons being installed there.

Iraq had a stock of about 1800 kilograms of safeguarded low-enriched uranium which it might have diverted to produce weapon material, but this would have supplied only about enough for one or two bombs. IAEA safeguards inspectors would probably have detected the diversion, perhaps blowing the cover of the entire clandestine enrichment programme. No evidence was cited.

The FOURTH INSPECTION REPORT SAID : "It is possible but by no means certain - that full production operation at Tarmiya might not have been achieved for another 18-36 months". Further it added that "there may have been human resource problems associated with these large facilities. "

"IRAQ's scientific understanding was still limited, with test work only just beginning."

PROCUREMENT POLICY: "ENEMY OF MY ENEMY IS MY CUSTOMER"

After exposing Iraq's efforts to enrich uranium and design an atomic bombs, U.N. and IAEA experts zeroed in on how Iraq put its program together. The inference is that along with determination and persistence, Iraq had a great deal of foreign help. Iraq's " Petrochemical Three," the secret nuclear program conducted under the authority of its Atomic Energy Commission with links to the Defence Ministry and Ministry of Industry and Military Industrialization, received massive infusions of money and resources.

Like the Manhattan Project that built the first atomic bombs in the United States, Iraq's nuclear program simultaneously pursued a number of different technical avenues to the bomb. Without knowing which efforts would succeed, Iraq poured billions of dollars into its multifaceted quest.[35]

Using diplomacy and secrecy, Iraq showed great ingenuity in hiding its purchases behind such innocuous pursuits as automobile manufacturing, dairy production, and oil refining. Inspections after the Gulf war revealed that in some cases, export controls did not suffice. Baghdad's effort to procure remains the most sensitive aspect of its secret nuclear program.

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35 IAEA 8 and 9/UNSCOM 12 January - 15 January & 2 February - 13 February 1992.

On January 12, 1992, armed with information from the German Government, officials of the IAEA accused Iraqi Foreign Ministry officials of failing to declare large quantities of materials and components Iraq had obtained for its centrifuge program. After a threat from Maurizio Zifferero, head of the IAEA's ninth-on-site inspection mission, the Iraqis gave the inspectors the most complete description of program to date.

The Iraqis acknowledged that they had imported German materials and components - and added that they had acquired hundred tons of maraging steel and other raw materials needed to manufacture centrifuge components. They claimed that they had destroyed the materials or had made them unusable.

According to IAEA ninth report[36], Iraqi authorities told inspectors that because export controls had been tightening, they had made "large procurement as opportunities presented themselves, even though they had no immediate plans for the materials in the quantities ordered." Lewis Dumn, a US non-proliferation expert,[37] said at a public meeting in mid-1991 that the history of efforts to tighten nuclear export control is like working down a

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36 Ibid.

37 David Albright and Mark Hibbs, "Iraq's shop-till-you-drop nuclear program", Bulletin of Atomic Scientists, vol. 48, no.3, April 1992. p.29.

"proliferation food chain". The more important an item is for producing plutonium or highly enriched uranium or for making a nuclear weapon, the earlier it was covered by export controls.

Iraq had only limited success in acquiring tightly controlled items. It was more successful in obtaining dual-use equipment. Iraq's export permit applications almost always listed civilian industrial uses for such equipment.

According to the eighth IAEA report, in some cases the presence of application -specific fixtures removes most doubt as to intended use". The specific nature of some of the equipment exported should have aroused the suspicions of companies and export control authorities. Some of the companies supplying this equipment might not have known that Iraq's nuclear program was the final customer. Yet, according to the report, the intermediaries who dealt with Iraq "must have known the intended uses". Before shipment, Iraqi officials insisted on successful demonstrations. An IAEA official asks, "How could they not have known?"

GERMAN CONNECTION

Although most of the key links were in Germany, where until recently both export laws and their enforcement were relatively lax , other countries too were involved.

Interatom : This wholly owned subsidiary of the German firm Siemens AG, got one of the last contracts in mid-1989 from Iraq's Industrial Projects Company (IPC) to build a workshop for "tube processing".

Western intelligence organizations believed at the time that IPC was a procurement operation for Iraq's clandestine centrifuge program. In 1990, Iraqi officials sought from Interatom know-how on design and production of equipment used in removing enriched uranium gas from the cascade.

Germany's export control authority, the Federal Economics Office (BAW), by mid - 1990 cut-off the program, when it learnt the link between Iraq's centrifuge program and IPC.

A sketch of the outside of B-01 (workshop) prepared by IAEA after several inspection visits is nearly identical to a sketch of a building on a map given to Siemens personnel to help them find the site.

H&H METALFORM

According to eighth inspection report of IAEA, an H&H[38] supplied several flow - forming machines to Iraq between 1987 and 1989, it could be used to make a small member of maraging steel motor tubes for centrifuges.

The inspectors found seven other H&H flow-forming machines at the Nassr State Establishment for Mechanical Industries, an important support site for the nuclear program, and two more at a subsidiary establishment at Al Schaula. The Iraqis say these were used to make rocket bodies. The Ninth IAEA inspection report, concluded that with appropriate fittings, all of them would be suitable for making centrifuge rotors. Recent information suggests that H&H, either inadvertently or deliberately, funnelled related technology and equipment to Iraq's nuclear programme.

"Iraqi Centrifuge design conforms substantially to early West European designs," according to the ninth inspection report. Iraq's Nuclear weapons programme could not have made progress without the cooperation of Western firms set to make a quick buck Iraqi authorities acknowledged they had received "advice from abroad"

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38 Albright, n.37, p.31.

AL- ATHEER COMPLEX

During the eleventh IAEA[39] on-site inspection of Iraqi nuclear facilities in April 1992, Iraq followed the familiar pattern of cooperating when it had to, but refusing to cooperate whenever possible.

Despite reluctant cooperation at Al- Atheer, Iraq refused to give inspectors the names of their suppliers, particularly for the uranium enrichment programme. Iraq's calutron program indicated that it was moving at a slower pace than had been feared and was one full year behind schedule in installing calutrons.

The report had suggested that if Iraq had seized its stock of IAEA safeguarded low enriched uranium, and avoided detection by IAEA safeguards inspectors, enough material for an atomic bomb could possibly have been produced in two years.

The IAEA and the UN order to destroy Al-Atheer and the adjacent Al Hatteen high-explosive test establishment followed a week of meetings at Vienna. Iraqi officials steadfastly asserted that Al Atheer was a civilian research facility for materials science and production and contended that it

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39 IAEA 11/UNSCOM April 1992.

should not be destroyed. Two Iraqi documents uncovered by the IAEA showed that Iraq planned to develop a nuclear explosive device at Al- Atheer. During the Gulf War bombing of Al Atheer had been damaged but later construction had resumed, raising fears that Iraq intended to continue the nuclear programme.Only after the eleventh team arrived in Iraq did Baghdad agree to Al- Atheer's destruction. In the end, however, Iraq allowed that destruction of Al-Atheer and Al-Hateen were destroyed.

Pursuant to Security Council resolution 687 (1991) with respect to the facilities at the site of Tarmiya and Ash Sharquat had been communicated to the Iraqi authorities on 15 May 1992.[40] Relevant activities began during the twelfth[41] IAEA inspection mission and continued during the course of the thirteenth mission. At the end of the fourteenth mission all destruction of EMIS facilities at Ash Sharquat and Tarmiya has been completed. Transformer and process buildings have all been destroyed in accordance with IAEA instructions.

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40 IAEA S/24110 17 June, 1992.

41 IAEA12/UNSCOM 26 May - 4 June, 1992.

ACTIVITIES RELATED TO RADIOMETRIC HYDROLOGIC SURVEY

The purpose of this survey was to establish a radio nuclide and stable isotope composition baseline in the major watershed regions of Iraq in order to detect changes resulting from acqueous effluent of nuclear related facilities.[42]

First, the data could measure the impact of nuclear related facilities in Iraq on surface water system receiving their aqueous effluent; Second, possible unknown nuclear facilities may be detected ;Third, a set of data will be provided,from which changes in composition can be easily detectable for interpretation.

This sampling network is based upon a detailed hydrologic survey compiling the water discharges in the Tigris and Euphrates basins for selected gaging stations in Iraq. A total of 43 sampling sites were selected.

The sample analysis data will be coupled with the physical measurements to establish a baseline of the present hydrologic and radiometric

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42 IAEA 14/UNSCOM 31 August -7September, 1992, Gov/INF/667 30 September, 1992.

conditions from which present and future indications of sizable nuclear activity in Iraq can be determined.

FIFTEENTH IAEA ON-SITE INSPECTION (8-18 November 1992)

This inspection[43] was headed by Demetrius Perricos as the Chief Inspector. It consisted of twenty-eight inspectors and ten support staff comprising twenty nationalities.

Final conclusions and recommendations are still awaited for the evaluation of the sample analysis data. Planning for the longer term monitoring regime includes two hydrologic sampling operations per year. The sampling operations would be carried out against about fifteen key monitoring sites with spot checks at other more isolated locations.

IRRADIATED FUEL

Certain conclusions drawn out by experts regarding removal of irradiated fuel are that all fuel assemblies are accessible and can be removed without major difficulties. The irradiated fuel is stored in two pools at the IRT-

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43 IAEA15/UNSCOM 8-18 November 1992; GOV/INF/677, 17 December 1992.

5000 reactor facility and fifteen concrete storage tanks at Location B (Tuwaitha).

ENRICHMENT PROGRAMME

The Iraqis in a series of meetings gave full details regarding the centrifuge work for enrichment programme. The lack of any reference to the centrifuge programme among the myriad of activities described in the various PC-3 progress and topical reports were discussed at length.

The Iraqi side's explanation began with a description of a series of high level meetings in mid-1987 where Iraqi Atomic Energy Commission (IAEC) management acknowledged the efforts with gaseous diffusion had failed, that the EMIS programme was not making the expected progress because of difficulties with the ion source and that the small centrifuge development programme was showing promise. This led to a decision to cancel the gaseous diffusion programme and to dramatically increase support to the centrifuge development effort.

Technical discussions were useful and provided a more consistent picture of the Iraqi centrifuge development program.

Iraqis refused to give further any detail regarding specific procurement and procurement practices. This remains the last puzzle in the Iraqi nuke program.

MONITORING PLAN

Several meetings were held with the Iraqi side on the declaration required under the revised Annex 3 to the IAEA long-term monitoring plan. The general requirement was emphasized that under UN Security Council resolution 715[44], the Iraqi side is to update every six months, a declaration regarding facilities, materials and equipment starting from the situation as it existed on January 1, 1989 for the whole of Iraq. Documents were provided with respect to equipment already tagged with IAEA seals for further evaluation by the IAEA Action Team. The Iraqi side informed the inspection team that they will officially submit a declaration covering the IAEC facilities as soon as possible after the inspection and an amended declaration, covering the country as a whole, by the end of year.

The Iraqis accepted random, short notice inspections and expressed their willingness to create and maintain a system of records and logbooks, to

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44 Adopted on 11 Oct 1991 by UNSC.

declare in advance and continuously document the use of monitored equipment.

DESTRUCTION PLAN

UNSCOM has faced difficulties to take decision about the extent to which the cease-fire resolution requires destruction of such items or permits their diversion to civilian use - subject to future monitoring to ensure that they are not diverted to military programmes.

Refusal by Iraq in February 1992 to go along with destruction of missile production facilities, including buildings and equipment, led to strong reactions by the Security Council, condemning Iraq's failure in this regard and to a statement on 28 February by the Council that Iraq's behaviour constituted a material breach of Resolution 687.[45]

After Special Security Council meetings on 11 and 12 March 1992,[46] Iraq presented its case. It accepted the demands for the destruction of Iraq's missile production capability, to followed later by uncontested destruction of essential installations related to Iraq's nuclear weapon development programme.

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45 UNSC : S/23663-28 February, 1992.

46 UNSC : S/PV 3059; S/PV 3059 (Resumption 1); and S/PV 3059 (Resumption 2)

CHAPTER - IV

CONCLUSION

From its very inception, the United Nations was concerned with nuclear proliferation. Fears that uncontrolled proliferation could lead to nuclear war focused attention on the need for remedial action. The earliest reports of the United Nations Atomic Energy Commission unambiguously suggested that this required the "control of atomic energy to the extent necessary to ensure its use only for peaceful purposes and for elimination from national armaments, of atomic weapons".[1]

UN Security Council Resolution 687 is a very simple document compared with recent bilateral and multilateral arms control treaties. In the text there is no discussion nor were any arrangements made in advance about the amount of time for notification before an inspection or about the long-term access. This lack of specificity in implementation, coupled with the intransigence of Iraqi officials, has complicated the UN inspection process. The inspectors would have a formidable task before them. The United Nations in

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1 United Nations Atomic Energy Commission, official Records, Supplement No.1. pp.1-2 T.T. Poulose, The United Nations and The Maintenance of International Peace and Security UNITAR (Dordrecat: Martinus Najhoff, 1987).P.240.

Resolution 687 imposed upon itself an unrealistic time span of forty-five days either to take possession of the weapons or to actually destroy them.

International Atomic Energy Agency's "Action Team", the small group charged with managing inspections in Iraq, has conducted 15-on-site inspections till 8-18 November 1992, searching out secret facilities and activities, and destroying key buildings and equipment. The team has also inventioried and tagged hundreds of pieces of "dual-use" industrial equipment, which was or could have been intended for nuclear weapons development.[2]

Through the spring and summer of 1991, the inspectors found a multi-billion dollar, Manhattan project-style atomic bomb programme in Iraq, aimed at establishing the knowledge and infrastructure to build several nuclear bombs a year. For more than a decade, Iraq had devoted massive economic and technical sources to its bomb effort but for interruptions of Iran-Iraq War (1980-1988) and the Gulf War (1990-91), it had made considerable progress towards its ultimate goals of enriching uranium to weapons-grade and fashioning it into nuclear weapons.

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2 David Albright and Mark Hibbs, "Iraq's Quest for the Nuclear Grail; What can we learn"? Arms Control Today July/August 1992. p.3.

With determination and financial resources, even a country with little industrial infrastructure such as Iraq was able to circumvent international non-proliferation efforts, inspite of being a party to NPT and came as close as it did to gaining a nuclear weapons capability. Experts, then believed that it would have taken atleast three or four years to produce its first nuclear weapon (by 1993-94).

The relationship between the IAEA inspection teams and New York based UNSCOM, has been uneasy, hindered by competition over, space and responsibility. Since, the tenth nuclear inspection, the IAEA has assumed a stronger roles in assessing the available information before UNSCOM picks a site for inspection.[3] IAEA officials believe that the most important aspects of Iraq's programme have been uncovered. Certain unanswered questions remain particularly as to who provided Iraq with some of the critical imported technologies and components for its programme but IAEA officials believe they have found the key facilities and traced out the main lines of the Iraqi efforts. The real surprises was on the scale of Iraq's massive calutron effort. If long-term monitoring is firmly in place, they are confident that no major nuclear weapon effort could resume without detection.

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3 Ibid., p.4.

Iraq has stiffened its resistance to the inspection effort in the last few months, particulary during the last few inspection missions. Iraq followed IAEA and UN orders to destroy buildings and equipment clearly linked to its nuclear programme during the twelfth inspection in late May and early June, Iraqi officials tried to stop or limit the team's efforts to take photographs and place tags on critical equipment. Most of the high-tech equipment Iraq has declared to the inspectors has been subsequently destroyed. One inspector was told by a senior Iraqi official that Iraq does not want to reveal its procurement networks because it is now using them again.[4]

The summer of 1992 marked an important change in the inspection effort, as the IAEA and the UNSCOM plan to shift the focus from a "research and destroy" [5] mission to long term monitoring of Iraq's industrial activities, to ensure that it does not resume its quest for weapons of mass destruction. But, Iraq has so far refused to accept the long-term monitoring programme required under the U.N. Security Council Resolution 715.[6] This monitoring programme would provide on-going verification of Iraq's compliance with Resolution 687 and the Gulf War cease-fire, which forbids any restart of the

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4 Ibid., p.5.

5 Ibid., p.5.

6 S/RES/715 (1991); 11 October 1991.

nuclear weapons programme. Iraqi officials contend that the conditions imposed under Resolution 715 would be too intrusive and would violate Iraq's sovereignty .

The monitoring programme calls for the IAEA to send inspection teams periodically, to verify that Iraq is not using its facilities or equipment to make nuclear weapons. The IAEA is preparing a list of sites and dual-use equipment that will require periodic monitoring.

Some analysts have argued that Iraq's reliance on unclassified calutron technology suggests that there is now little that controls on technology and materials can do. Because Baghdad was so dependent on foreign suppliers and technology, trade restrictions on equipment and technologies slowed Iraq's programme substantially, despite inadequate controls in some areas and spotty enforcements in others. The UN-mandated economic embargo, imposed in late 1990, hindered the Iraqi effort even more. U N. trade sanctions prevented an entire list of equipment-from spectrometers to centrifuge valves to half-finished calutron magnets - from reaching Iraqi scientists.

In April 1992, the member states of the Nuclear Suppliers Group (except China), agreed to extend nuclear export controls to much of the dual-use

equipment Iraq obtained during the 1980s. Permission to export dual-use items is not predicated on full-scope safeguards in the recipient state. This type of preferential treatment enabled Iraq to acquire considerable military equipment and technology during the 1980s.

Because the IAEA's routine safeguards in Iraq failed to detect anything untoward going on, there has been much criticism of its efforts. But Iraq's development of nuclear weapons was hindered by IAEA safeguards. Safeguards prevented Iraq from irradiating significant amounts of fuel in research reactors and recovering the plutonium.[7] Post-war inspections also revealed that Iraq took advantage of loopholes in the standard safeguards agreement, gaining nuclear expertise relevant to military use.

Advanced nuclear states, such as US, Germany, and Japan have paid lip service to strengthening IAEA safeguards and have also refused to significantly increase funding. The Board of Governors approved a slight increase in 1983 safeguards budget at its June 1992 meeting.[8]

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7 Ibid., p.9

8 Ibid.,p.10.

Although the UN Security Council declared that proliferation "constitutes a threat to international peace and security", giving it the power under the U.N. charter to authorise military force to stop it, well placed officials at the Security Council doubt that a sufficient consensus to approve a Gulf-style military operation could be brought together in the absence of clear aggression. Suppose a suspected state was not a member of the NPT and hence was not clearly violating international law by trying to build a nuclear weapon, summoning military force under a U.N. mandate would be even more difficult.[9]

The UN experience in Iraq is rather mixed regarding its future role in inspection and verification. It is no wonder that Ronald Lehman, director of the U.S. Arms Control and Disarmament Agency, referred to the U.N. Security Council's programme to investigate and eliminate Iraq's weapons of mass destruction following the Gulf War (1990-91) as the "most dramatic arms elimination and verification regime imposed upon a nation."[10] The United Nations is discovering that it is quite difficult to implement an agreement when few instructions are given, especially when they have not been agreed

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9 Ibid., p.11.

10 Dorinda G. Dallmeyer,' The Future Role of the United Nations in Disarmament: The Iraq Experience' p.1 (unpublished paper) presented at University of Georgia, Dean Rusk Centre, US.

upon in advanced. There is no clear idea on how it should respond when faced with non-compliance.

Inspite of the requirments of Resolutions 687, 707 and 715, while UN had no clear idea of what it wanted to accomplish in its implementation process which was vague and ripe for the creation of disputes with the Iraqi Government which has proved to be true. We ought not to be too critical of the United Nations for making this "random Walk" through unchartered territory of non-consensual disarmament. Though the motion of the collective security has been in the United Nations Charter since 1945, it has had very little experience how this concept should be put to work.

US role in providing intelligence and the perceived the US influence over the UN Special Commission and UN Security Council can compromise the perception of the United Nations as an impartial monitor and an equitable enforcer. According to an old saying: "If you don't know where you're going any road will take you there".

The long term health of the non-proliferation regime will not be served by unsubstatiated claims about the alleged nuclear capabilities of state which are perceived to be security threats to the U.S. There can be little doubt that

the inspectors finds in Iraq warrant modification to the body of international norms, rules and agreements which constitutes the nuclear non-proliferation regime. The Iraqi experience should lead to vigilant international inspection and export control regime along with an international effort to delegitmize nuclear weapons and eventually totally eliminate them.

APPENDICES

Resolution 687 (1991)

Adopted by the Security Council at its 2981st meeting,

on 3 April 1991

The Security Council,

Recalling its resolutions 660 (1990) of August 1990, 661 (1990) of 6 August 1990, 662 (1990) of 9 August 1990, 664(1990) of 18 August 1990, 665 (1990) of 25 August 1990, 666 (1990) of 13 September 1990, 667 (1990) of 16 September 1990, 669 (1990) of 24 September 1990, 670 (1990) of 25 September 1990, 674 (1990) of 29 October 1990, 677(1990) of 28 November 1990, 678 (1990) of 29 November 1990 and 686 (1990) of 2 march 1991,

Welcoming the restoration to Kuwait of its sovereignty, independence and territorial integrity and the return of its legitimate Government,

Affirming the commitment of all Member States to the sovereignty, territorial integrity and political independence of Kuwait and Iraq, and noting the intention expressed by the Member States cooperating with Kuwait under paragraph 2 of resolution 678 (1990) to bring their military presence in Iraq to an end as soon as possible consistent with paragraph consistent with paragraph 8 of resolution 686 (1991),

Reaffirming the need to be assured of Iraq's peaceful intentions in the light of its unlawful invasion and occupation of Kuwait,

Taking note of the letter sent by the Ministries for Foreign Affairs of Iraq on 27 February 1991 and those pursued to resolution 686 (1991),

Noting that Iraq and Kuwait, as independent sovereign States, signed at Baghdad on 4 October 1963 "Agreed Minutes Between the State of Kuwait and the Republic of Iraq Regarding the Restoration of Friendly Relations, Recognition and Related Matters", thereby recognizing formally the boundary between Iraq and Kuwait and the allocation of islands, which were registered with the United Nations in accordance with Article 102 of the Charter of the United Nations and in which (Iraq recognized the independence and complete sovereignty of the State of Kuwait within its borders as specified and accepted in the letter of the prime Minister of Iraq dated 21 July 1932, and as accepted by the Ruler of kuwait in his letter dated 10 August 1932,

Conscious of the need for demarcation of the said boundary,

Conscious also of the statements by Iraq threatening to use weapons in violation of its obligations under the Geneva Protocol for the Prohibition of the Use in War of Asphyxiating, Poisonous or Other Gases, and of Bacteriological Methods of Warfare, signed at Geneva on 17 June 1925, 3/ and of its prior use of chemical weapons and affirming that grave consequences would follow any further use by Iraq of such weapons,

Recalling that Iraq has subscribed to the Declaration adopted by all States participating in the Conference of States Parties to the 1925 Geneva Protocol and other Interested States, held in Paris from 7 to 11 January 1989, establishing the objective of universal elimination of chemical and biological weapons,

Recalling also that Iraq has signed the Convention on the Prohibition of the Development, Production and Stockpiling of Bacteriological (Biological) and Toxin Weapons and on Their Destruction, of 10 April 1972, 4/

Noting the importance of Iraq ratifying this Convention,

Noting moreover the importance of all States adhering to this Convention and encouraging its forthcoming Review Conference to reinforce the authority, efficiency and universal scope of the convention,

Stressing the importance of an early conclusion by the Conference on Disarmament of its work on a Convention on the Universal Prohibition of Chemical weapons and of universal adherence thereto,

Aware of the use by Iraq of ballistic missiles in unprovoked attacks and therefore of the need to take specific measures in regard to such missiles located in Iraq.

Concerned by the reports in the hands of Member States that Iraq has attempted to acquire materials for a nuclear weapons programme contrary to its obligations under the Treaty on the non Proliferation of Nuclear Weapons of 1 July 1968, 5/

Recalling the objective of the establishment of a nuclear-weapons-free zone in the region of the Middle East,

Conscious of the threat that all weapons of mass destruction pose to peace and security in the area and of the need to work towards the establishment in the Middle East of a zone free of such weapons,

Conscious also of the objective of achieving balanced and comprehensive control of armaments in the region,

Conscious further of the importance of achieving the objectives noted above using all available means, including a dialogue among the States of the region,

Noting that resolution 686 (1991) marked the lifting of the measures imposed by resolution 661 (1990), in so far as they applied to Kuwait,

Noting that report the progress being made in fulfilling the obligations of resolution 686 (1991), many Kuwaiti and third country nationals are still not accounted for and property remains unreturned,

Recalling the International Convention against the Taking of Hostages, 6/ opened for signature at New York on 18 December 1979, which categorizes all acts of taking hostages as a manifestations of international terrorism,

Deploring threats made by Iraq during the recent conflict to make use of terrorism against targets outside Iraq and the taking of hostages by Iraq,

Taking note with grave concern of the reports of the Secretary-General of 20 March 1991 and 28 March 1991, and conscious of the necessity to meet urgently the humanitarian needs in Kuwait and Iraq.

Bearing in mind its subjective of restoring international peace and security in the area as set out in recent resolutions of the Security Council,

Conscious of the need to take the following measures acting under chapter VII of the charter,

1. Affirm all thirteen resolutions noted above, except as expressly changed below to achieve the goals of this resolution, including a formal cease-fire;

2. Demands that Iraq and Kuwait respect the inviolability of the international boundary and the allocation of islands set out in the "Agreed Minutes between the state of Kuwait and the Republic of Iraq Regarding the Restoration of Friendly Relations, Recognition and Related Matters", signed by them in the exercise of their sovereignty at Baghdad on 4 October 1963 and registered with the United Nations and published by the United nations in document 7063, United Nations, Treaty Series, 1964;

3. Calls upon the Secretary -General to lend his assistance to make arrangements with Iraq and Kuwait to demarcate the boundary between Iraq and Kuwait, drawing on appropriate material, including the map transmitted by Security Council document S/22412 and to report back to the Security Council within one month;

4. Decides to guarantee the inviolability of the above- mentioned international boundary and to take an appropriate all necessary

measures to that end in accordance with the Charter of the United nations;

5. Requests the Secretary-General, after consulting with Iraq and Kuwait, to submit within three days to the Security Council for its approval a plan for the immediate deployment of a United Nations observer unit to monitor the Khor Abdullah and a demilitarized zone, which is hereby established, extending ten kilometres into Iraq and five kilometres into Kuwait from the boundary referred to in the "Agreed Minutes Between the State of Kuwait and the Republic of Iraq Regarding the Restoration of Friendly Relations, Recognition and Related matters" of 4 October 1963; to deter violations of the boundary through its presence in and surveillance of the demilitarized zone; to observe any hostile or potentially hostile action mounted from the territory of one state to the other; and for the Secretary-General to report regularly to the Security Council on the operations of the unit, and immediately if there are serious violations of the zone or potential threats to peace;

6. Notes that as soon as the Secretary-General notifies the Security Council of the completion of the deployment of the United nations observer unit, the conditions will be established for the Member States cooperating with Kuwait in accordance with resolution 678 (1990) to bring their military presence in Iraq to an end consistent with resolution 686 (1991);

7. Invites Iraq to reaffirm unconditionally its obligations under the Geneva protocol for the prohibition of the Use in War of Asphyxiating. Poisonous or other Gases, and of Bacteriological Methods of Warfare, signed at

Geneva on 17 June 1925, and to ratify the Convention on the prohibition of the Development, Production and Stockpiling of Bacteriological (Biological) and Toxin and on their Destruction, of 10 April 1972;

8. Decides that Iraq unconditionally accept the destruction, removal, or rendering harmless, under international supervision, of;

(a) All chemical and biological weapons and all stocks of agents and all related subsystems and components and all research, development, support and manufacturing facilities;

(b) All ballistic missiles with a range a greater than 150 kilometres and related major parts, and repair and production facilities;

9. Decides, for the implementation of paragraph 8 above, the following:

(a) Iraq shall submit to the Secretary-General, within fifteen days of the adoption of the present resolution, a declaration of the locations, amounts and types of all items specified in paragraph 8 and agree to urgent, on-site inspection as specified below;

(b) The Secretary-General, in consultation with the appropriate Governments and, where appropriate, with the Director-General of the World Health Organisation, within forty-five days of the passage of the present resolution, shall develop, and submit to the council for approval, a plan calling for the completion of the following acts within forty-five days of such approval;

(i) The Forming of a Special Commission, which shall carry out immediate on-site inspection of Iraq's biological, chemical and missile capabilities, based on Iraq's declaration and the designation of any additional locations by the Special Commission itself;

(ii) The yielding by Iraq of possession to the Special Commission for destruction, removal or rendering harmless, taking into account the requirements of public safety, of all items specified under paragraph 8 (a) above, including items at the additional locations designated by the Special Commission under paragraph 9 (b) (i) above and the destruction by Iraq, under the supervision of the Special Commission, of all its missile capabilities, including launchers, as specified under paragraph 8 (b) above;

(iii) The provision by the Special Commission of the assistance and cooperation to the Director-General of the International Atomic Energy Agency required in paragraphs 12 and 13 below;

10. Decides that Iraq shall unconditionally undertake not to use, develop, construct or acquire any of the items specified in paragraphs 8 and 9 above and requests the Secretary-General, in consultation with the Special Commission, to develop a plan for the future ongoing monitoring and verification of Iraq's compliance with this paragraph, to be submitted to the Security Council for approval within one hundred and twenty days of the passage of this resolution;

11. Invites Iraq to reaffirm unconditionally its obligations under the Treaty on the Non-proliferation of Nuclear Weapons of 1 July 1968;

12. Decides that Iraq shall unconditionally agree not to acquire or develop nuclear weapons or nuclear-weapons-usable material or any subsystems or components or any research, development, support or manufacturing facilities related to the above; to submit to the Secretary-General and the Director-General of the International Atomic Energy Agency within

fifteen days of the adoption of the present resolution a declaration of the locations, amounts, and types of all items specified above; to place all of its nuclear-weapons-usable materials under the exclusive control, for custody and removal, of the International Atomic Energy Agency, with the assistance and cooperation of the Special Commission as provided for in the plan of the Secretary-General discussed in paragraph 9(b) above; to accept , in accordance with the arrangements provided for in paragraph 13 below, urgent on-site inspection and the destruction, removal or rendering harmless as appropriate of all items specified above; and to accept the plan discussed in paragraph 13 below for the future on going monitoring and verification of its compliance with these undertakings;

13. Requests the Director-General of the International Atomic Energy Agency, through the Secretary-General, with the assistance and cooperation of the Special Commission as provided for in the plan of the Secretary-General in paragraph 9 (b) above, to carry out immediate on-site inspection of Iraq's nuclear capabilities based on Iraq's declarations and the designation of any additional locations by the Special Commission; to develop a plan for submission to the Security Council within forty-five days calling for the destruction, removal, or rendering harmless as appropriate of all items listed in paragraph 12 above; to carry out the plan within forty-five days following approval by the Security Council; and to develop a plan, taking into account the rights and obligations of Iraq under the Treaty on the Non-proliferation of Nuclear Weapons of 1 July 1968, for the future ongoing monitoring and verification of Iraq's compliance with paragraph 12 above, including an inventory of all nuclear material in Iraq subject to the Agency

verification and inspections of the International Atomic Energy Agency to confirm that the Agency's safeguards cover all relevant nuclear activities in Iraq, to be submitted to the Security Council for approval within one hundred and twenty days of the passage of the present resolution;

14. Takes note that the actions to be taken by Iraq in paragraph 8,9,10,11,12, and 13 of the present resolution represent stage towards the goal of establishing in the Middle East a zone free from weapons of mass destruction and all missiles for their delivery and the objective of global ban on chemical weapons;

15. Requests the Secretary-General to report to the Security Council on the steps taken to facilitate the return of all Kuwaiti property seized by Iraq, including a list of any property that Kuwait claims has not been returned or which has not been returned intact;

16. Reaffirms that Iraq, without prejudice to the debts and obligation of Iraq arising prior to 2 August 1990, which will be addressed through the normal mechanisms, is liable under the international law for any direct loss, damage, including environmental damage and the depletion of natural resources, or injury to foreign Governments, nationals and corporations, as a result of Iraq's unlawful invasion and occupation of Kuwaiti;

17. Decides that all iraqi statements made since 2 August 1990 repudiating its foreign debts are null and vied, and demands that Iraq adhere

scrupulously to all of its obligations concerning servicing and repayment of its foreign debt;

18. Decides also to create a fund to pay compensation for claims that fall within paragraph 16 above and to establish a Commission that will administer the fun;

directs the Secretary-General to develop and present to the Security Council for decision, no later than thirty days following the adoption of the present resolution, recommendations for the fund to meet the requirement for the payment of claims established in accordance with paragraph 16,17 and 18 above, including; administration of the fund; mechanisms for determining the appropriate level of Iraq's contribution to the fund based on a percentage of the value of the exports of petroleum and petroleum products from Iraq not to exceed a figure to be suggested to the council by the Secretary-General, taking into account the requirements of the people of Iraq, Iraq's payment capacity as assessed in conjunction with the international financial institutions taking into consideration external debt service, and the needs of the Iraqi' economy; arrangements for ensuring that payments are made to the fund; the process by which funds will be allocated and claims paid; appropriate procedures for evaluating losses, listing claims and verifying their validity and resolving disputed claims in respect of Iraq's liability as specified in paragraph 16 above; and the composition of the Commission designated above;

20. Decides, effective immediately, that the prohibition against the sale or supply to Iraq of commodities or products, other than medicine and health supplies, and prohibitions against financial transactions related

there to concerned in resolution 661 (1990) shall not apply to foodstuffs notified to the Security Council Committee established by resolution 661 (1990) concerning the situation between Iraq and Kuwait or, with the approval of that Committee under the simplified and accelerated "no-objection" procedure, to materials and supplies for essential civilian needs as identified in the report of the Secretary-General dated 20 March 1991, and in any further findings of humanitarian need by the committee;

21. Decides that the Security Council shall review the provisions of paragraph 20 above every sixty days in the light of policies and practices of the Government of Iraq, including the implementation all relevant resolutions of the Security council, for the purpose of determining whether the reduce or life the prohibitions referred to there in;

22. Decides that upon the approval by the Security Council of the programme called for in paragraph 19 above and upon Council agreement that Iraq has completed all action contemplated in paragraph 8, 9, 10, 11, 12 and 13 above, the prohibitions against the import of commodities and products originating in Iraq and the prohibitions against financial transactions related there to contained in resolution 661 (1990) shall have no further force or effect;

23. Decides that, pending action by the Security Council under paragraph 22 above, the Security Council Committee established by resolution 661 (1990) shall be empowered to approve, when required to assure adequate financial resources on the part of Iraq to carry out the

activities under paragraph 20 below, exceptions to the prohibition against the import of commodities and products originating in Iraq;

24. Decides that, in accordance with resolution 661 (1990) and subsequent related resolutions and until a further decision is taken by the Security Council, all states shall continue to prevent the sale or supply, or the promotion or facilitation of such sale or supply, to Iraq by their nationals, or from their territories or using their flag vessels or aircraft, of;

(a) Arms and related material of all types, specifically including the sale or transfer through other means of all forms of conventional military equipment, including for paramilitary forces, and spare parts and components and their means of production, for such equipment;

(b) Items specified and defined in paragraph 8 and 12 above not otherwise covered above;

(c) Technology under licensing or other transfer arrangements used in the production, utilization or stockpiling of items specified in subparagraphs (a) and (b) above;

(d) Personnel or materials for training or technical support services relating to the design, development, manufacture, use, maintenance or support of items specified in subparagraphs (a) and (b) above;

25. Calls upon all states and international organisations to act strictly in accordance with paragraph 24 above, notwithstanding the existence of any contracts, agreements, licences or any other arrangements;

26. Requests the Secretary-General, in consultation with appropriate Governments, to develop within sixty days, for the approval of the

Security Council, guidelines to facilitate full international implementation of paragraphs 24 and 25 above and paragraph 27 below, and to make them available to all states and to establish a procedure for updating these guidelines periodically;

27. Calls upon all states to maintain such national controls and procedures and to take such other actions consistent with the guidelines to be established by the Security Council under paragraph 26 above as may be necessary to ensure compliance with the terms of paragraph 24 above, and calls upon international organization to take all appropriate steps to assist in ensuring such full compliance;

28. Agrees to review its decisions in paragraphs 22, 23, 24 and 25 above, except for the items specified and defined in paragraphs 8 and 12 above, on a regular basis and is any case one hundred and twenty days following passage of the present resolution, taking into account Iraq's compliance with the resolution and general progress towards the control of armaments in the region;

29. Decides that all States, including Iraq, shall take the necessary measures to ensure that no claim shall lie at the instance of the Government of Iraq, or of any person or body in Iraq, or of any person claiming through or for the benefit of any such person or body, in connection with any contract or other transaction where its performance was affected by reason of the measures taken by the Security Council in resolution 661 (1990) and related resolutions;

30. Decides that, in furtherance of its commitment to facilitate the repatriation of all kuwaiti and third country nationals, Iraq shall extend all necessary cooperation to the International Committee of the Red Cross, providing lists of such persons, facilitating access of the International committee of the Red Cross for those Kuwaiti and third country nationals still unaccounted for;

31. Invites the International Committee of the Red Cross to keep the Secretary-General apprised as appropriate of all activities undertaken in connection with facilitating the repatriation or return of all Kuwaiti and third country nationals or their remains present in Iraq on or after 2 August 1990;

32. Requires Iraq to inform the Security Council that it will not commit or support any act of international terrorism or allow any organization directed towards commission of such acts to operate within its territory and to condemn unequivocally and renounce all acts, methods and practices of terrorism;

33. Declares that, upon official notification by Iraq to the Secretary-General and to the Security Council of its acceptance of the provisions above, a formal cease-fire is effective between Iraq and Kuwait and the Member States cooperating with Kuwait in accordance with resolution 678 (1990);

34. Decides to remain seized of the matter and to take such further steps as may be required for the implementation of the present resolution and to secure peace and security in the area.

RESOLUTION 707 (1991)

Adopted by the Security Council at its meeting
on 15th August 1991

The Security Council,

Recalling its resolution 687 (1991), and its other resolutions on this matter,

Recalling the letter of 11 April 1991 from the President of the Security Council to the Permanent Representative of Iraq to the United Nations (S/22485) nothing that on the basis of Iraq's written agreement (S/22456) to implement fully resolution 687 (1991) the preconditions established in paragraph 33 of that resulitoin for a cease-fire had been met,

Noting with grave concern the letters dated 26 June 1991 (S/22739), 28 June 1991 (S/22743) and 4 July 1991 (S/22761) from the Secretary-General, conveying information obtained from the Executive Chairman of the Special Commission and the Director-General of the IAEA which establishes Iraq's failure to comply with its obligations under resolution (687 (1991),

Recalling further the statement issued by the President of the Security Council on 28 June 1991 (S/22746) requesting that a high-level mission consisting of the Chairman of the Special Commission, the Director-General for Disarmament Affairs be dispatched to meet with officials at the highest levels of the Government of Iraq at the earliest opportunity to obtain written assurance that Iraq will fully and immediately cooperate in the inspection of the locations identified by the Special Commission and present for immediate inspection any of those items that may have been transported from those locations,

Dismayed by the report of the high-level mission to the Secretary-General)S/22788) on the results of its meeting with the highest levels of the Iraqi Government,

Gravely concerned by the information provided to the Council by the Special Commission and the IAEA on 15 July 1991 (S/22788) and 25 July 1991 (S/22837) regarding the actions of the Government of Iraq in flagrant violation of resolution 687 (1991),

Noting also from the letters dated 26 June 1991 (S/22739), 28 June 1991 (S/22743) and 4 July 1991 (S/22761) from the Secretary-General that Iraq has not fully complied with all of its undertakings relating to the privileges, immunities and facilities to be accorded to the Special Commission and the IAEA inspection teams mandated under resolution 687 (1991),

Affirming that in order for the Special Commission to carry out its mandate under paragraph 9 (b) (i), (ii) and (iii) of resolution 687 (1991) to inspect Iraq's chemical and biological weapons and ballistic missile capabilities and to take possession of them for destruction, removal or rendering harmless, full disclosure on the part of Iraq as required in paragrph 9 (a) of resolution 687 (1991) is essential,

Affirming that in order for the IAEA, with the assistance and cooperation of the Special Commission, to determine what nuclear weapons-usable material or any subsystems or components or any research, development, support or manufacturingfacilities related to them need. in accordance with paragraph 13 of resolution 687 (1991), to be destroyed, removed or rendered harmless, Iraq is requird to make a declaration of all its nuclear programmes including any

which it claims are for purposes not related to nuclear-weapons usable material,

Affirming that the aforementioned failures of Iraq to act in strict conformity with its obligations under resolution 687 (1991) constitutes a material breach of its acceptance of the relevent provisions of resolution 687 (1991) which established a cease-fire and provided the conditions essential to the restoration of peace and security in the region,

Affirming further that Iraq's failure to comply with its safeguards agreement with the International Atomic Energy Agency, concluded pursuant to the Treaty on the Non-Proliferation of Nuclear Weapons of 31 July 1968, as established by resolution of the Board of Governors of the IAEA of 18 July 1991 (GOV/2532), consitutes a breach of its international obligations,

Determined to ensure full complaince with resolution 687 (1991) and in particular its section C,

Acting under Chapter VII of the Charter,

1. Condemns Iraq's serious violation of a number of its obligations under section C of resolution 687 (1991) and of its undertakings to cooperate with the Special Commission and the IAEA, which constitutes a material breach of the relevant provisions of resolution 687 which established a cease-fire and provided the conditions essential to the restoration of peace and security in the region ;

2. Further condemns non-compliance by the Government of Iraq with its obligations under its safeguards agreement with the International Atomic Energy Agency, as established by the resolution of the Board of Governors of 18 July, which constitutes a violation of its committments, as a party to the Treaty on the Non-Proliferation of Nuclear Weapons of 1 July 1968 ;

3. Demands that Iraq

i) provide full, final and complete disclosure, as required by resolution 687 (1991), of all aspects of its programmes to develop weapons of mass destruction and ballistic missiles with a range greater than 150 km, and of all holdings of such weapons, their components and production facilities and locations, as well as all other nuclear programmes, including any which it claims are for purposes not related to nuclear weapons-usables material, without further delay ;

ii) allow the Special Commission, the IAEA and their Inspection Teams immediate, unconditional and unrestricted acfess to any and all areas, facilities, equipment, records and means of transportation which they wish to inspect ;

iii) cease immediately any attempt to conceal, or any movement or destruction of any material or equipment relating to its nuclear, chemical or biological weapons or ballistic missile programmes, or material or equipment relating to its other nuclear activities without notification to and prior consent of the Special Commission ;

iv) make available immediately to the Special Commision, the IAEA and their Inspection Teams any items to which they were previously denied access ;

v) allow the Special Commission, the IAEA and their Inspection Teams to conduct both fixed wing and helicopter flights throughout Iraq for all relevant purposes including inspection, surveillance, aerial surveys, transportation and logistics without interference of any kind and upon such terms and conditions as may be determined by the Special Commission, and to make full use of their own aircraft and such airfields in Iraq as they may determine are most appropriate for the work of the Commission ;

vi) halt all nuclear activities of any kind, except for use of isotopes for medical, agricultural or industrial purposes until the Security Council determines that Iraq is in full compliance with this resolution and paragraphs 12 and 13 of resolution 687 (1991), and the IAEA determines that Iraq is in full compliance with its safeguards agreement with that Agency ;

vii) ensure the complete implementation of the privileges, immunities and facilities of the representatives of the Special Commission and the IAEA in accordance with its previous undertakings and their complete safety and freedom of movement ;

viii) immediately provide or facilitate the provision of any transportation, medical or logistical support requested by the Special Commission, the IAEA and their Inspection Teams ;

4. Determines that Iraq retains no ownership interest in items to be destroyed, removed or rendered harmless pursuant to paragraph 12 of resolution 687 (1991) ;

5. Requires that the Government of Iraq forth with comply fully and without delay with all its international obligations, including those set out in the present resolution, in resolution 687 (1991), in the Treaty on the Non-Proliferation of Nuclear Weapons of 1 July 1968 and its safeguards agreement with the IAEA ;

6. Decides to remain seized of this matter.

RESOLUTION 715 (1991)

Adopted by the Security Council at its 3012th meeting,

on 11 October 1991

The Security Council,

Recalling its resolutions 687 (1991) of 3 April 1991 and 707 (1991) of 15 August 1991, and its other resolutions on this matter,

Recalling in particular that under resolution 687 (1991) the Secretary-General and the Director General of the International Atomic Energy Agency were requested to develop plans for future ongoing monitoring and verification, and to submit them to the Secueity Council for approval,

Taking note of the report and note of the Secretary-General, 1/ transmitting the plans submitted by the Secretary-General and the Director General of the International Atomic Energy Agency,

Acting under Chapter VII of the Charter of the United Nations,

1. Approves, in accordance with the provisions of resolutions 687, (1991) 707 (1991) and the present resolution, the plans submitted by the Secretary-General and the Director General of the Internationsl Atomic Energy Agency; 1/

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2. decides that the Special Commission shall carry out the plan submitted by the Secretary-General, 2/ as well as continuing to discharge its other responsibilities under resolutions 687 (1991), 699 (1991) and 707 (1991) and performing such other functions as are conferred upon it under the present resolution;

3. Requests the Director General of the International Atomic Energy Agency to carry out, with the assistance and cooperation of the Special Commission, the plan submitted by him 3/ and to continue to discharge his other responsibilities under resolutions 687 (1991), 699 (1991) and 707 (1991);

4. Decides that the Special Commission, in the exercise of its responsibilities as a subsidiary organ of the Security Council, shall :

(a) Continue to have the responsibility for designating additional locations for inspection and overflights ;

(b) Continue to render assistance and cooperation to the Director General of the International Atomic Energy Agency, by providing him by mutual agreement with the necessary special expertise and logistical, informational and other operational support for the carrying out of the plan submitted by him ;

(c) Perform such other functions, in cooperation in the nuclear field with the Director General of the International Atomic Energy Agency, as may be necessary to coordinate activities under the plans approved by the present resolution, including making use of commonly available services and information to the fullest extent possible, in order to achieve maximum efficiency and optimum use of resources ;

5. Demands that Iraq meet unconditionally all its lbligations under the plans approved by the present resolution and cooperate fully with the Special Commission and the Director General of the International Atomic Energy Agency in carrying out the plans ;

6. Decides to encourage the maximum assistance, in cash and in kind, from all Member States to support the Special Commission and the Director General

of the International Atomic Energy Agency in carrying out their activities under the plans approved by the present resolution, without prejudice to Iraq's liability for the full costs of such activities '

7. Requests the Committee established under resolution 661 (1990), the Special Commission and the Director General of the International Atomic Energy Agency to develop in cooperation a mechanism for monitoring any future sales or supplies by other countries to Iraq of items relevant to the implementation of section C of resolution 687 (1991) and other relevant resolutions, including the present resolution and the plans approved hereunder ;

8. Requests the Secretary-General and the Director General of the International Atomic Energy Agency to submit to Security Council reports on the implementation of the plans approved by the present resolution, when requested by the Security Council and in any event at least every six months after the adoption of this resolution ;

9. Decides to remain seized of the matter.

BIBLIOGRAPHY

PRIMARY SOURCES

UN Documents

Security Council Resolutions

UN Security Council Resolution 687 S/RES/687 (1991), 3 April 1991.

UN Security Council Resolution 707 S/RES/707 (1991), 15 August 1991.

UN Security Council Resolution 715 S/RES/715 (1991), 11 October 1991.

Security Council Letters

UN Security Council Letter S/22508, 18 April 1991.

UN Security Council Letter S/22788,11 July 1991.

UN Security Council Letter S/22872, 27 August 1991.

UN Security Council Letter S/23102, 30 September 1991.

UN Security Council Letter S/23110, 2 October 1991.

UN Study Document

Study on the Consequences of the Israeli Armed Attack Against the Iraqi Nuclear Installations Devoted to Peaceful Purposes, A/38/337 (1983).

UN Research Papers

UNIDIR Reesearch Paper no.-11, Implicattions of IAEA Inspections Under Security Council. Resolution 687. by ERIC Chauvistre, February 1992.

UNIDIR Research Papper no.-12, Security Council Resolution 687 of 3 April 1991 in the Gulf Affair: Problems of Res6toring and Safeguarding Peace, Serge Sur, 1992.

UN Books

UN As a Political Institution, Nicholas, Oxford University Press, 1971.
UN And Disarmament 1945-1985, New York. UNDepartment of Disarmament Affairs, 1985.

IAEA Documents

Report on the Fourteenth IAEA on-site Inspection in Iraq under UNSC 687 (1991). 31 August-7 September 1992, GOV/INF/677 30 Septeember 1992.

Report on the Fifteenth IAEA on-site Inspection, GOV/INF/ 677 17 December 1992.

UN Year Book 1991 New York. 1991.

Secondary Sources
Books

Axelgard. W. Freedrick, A New Iraq ?
Washington Papers (CSIS), 1987.

Barnuby, Frank, The Invisible Bomb, London, IB Tauris, 1989.

Bhatia, Shyam, Nuclear Rivals In The Middle East, London, Routledge, 1988.

Bulloch John and Morris Harvey, Gulf War-Its Origin History And Consequences, London, Methuen, 1989.

Cordesman H. Anthony, Gulf And The West : Strategic Relations And Military Realities, Boulder, Westview, 1988.

Etheshami, Anoushirvan, Nuclearisation Of The Middle East, London, Brassey's, 1989.

Feldman, Shai, Israeli Nuclear Deterrence:AStrateegy For The 1980s, New York: Colombia University Press, 1982.

Goldblat, Jozef (ed.), Non- Proliferation : The Why And The Wherefore, London: Taylor and Francis, 1985.

Jabber, Faud, Israel And Nuclear Weapons, London: Chatto and Windus, 1971.
Muttam, John, Arms And Insecurity In The Persian Gulf, New Delhi, Radiant, 1984.

Olson, J, UN Strategic Interests In The Gulf Region, Boulder, Westview Press, 1987.

Pajak, Roger F. Nuclear Proliferation In The East, Washington DC: National Defense University Press, 1982.

Perlmutter Amos, Handel Michal and Bar-Joseph Uri, Two Minutes Over Baghdad, Valentine, Mitchell and Company Limited, London, 1982.

Shelly, A. Stahl and Kemp, Geoffrey, Arms Control And Weapons Proliferation In The Middlee East And South Asia. New York St. Martin's Press, 1992.

Singh, K.R., Persian Gulf Crisis, Canberra (SDSC, ANU), Hertage, 1983.
Spector, Leonard, Nuclear Proliferation Today, New York: Vintage Books, 1985.

_____, Going Nuclear, Ballingeer, Cambridge, Massachusetts, 1987.

_____, and Smith R. Jacqueline, Nuclear Ambitions, Boulder, San Francisco, Oxford, Westview Press, 1991.
Szasz, C. Paul, The Law And Practices of The IAEA, Legal Series no. 7, IAEA, Vienna, 1970.

Weissman Steve and Krosney, Herbert, The Islamic Bomb, New Delhi, Vision Books, 1983.

Articles

Albright, David and Hibbs, Mark, "Iraq and the Bomb were they Even Close",? Bulletin of The Atomic Scientists; vol.47, no.2, March 1991, pp.16-25.

_____, "Hyping the Iraqi Bomb", Bulletin Of The Atomic Scientists; vol.47, no.2 March 1991 pp.26-28.

_____, "Iraq Nuclear Hide- and Seek", Bulletin Of The Atomic Scientists, vol.47, no.7 September 1991, pp.14-23.

_____, "News The Front Page Missed", Bulletin Of The Atomic Scintists, vol.47, no.8, October 1991. pp.7-9.

_____,"Iraq's Bomb: Blueprints and Artifacts", Bulletin Of The Atomic Scientists; vol.48, no.1, Januarary/February 1992, pp. 30-40.

_____,"Iraq's Shop-Till-You-Drop Nuclear Program", Bulletin Of The Atomic Scientists vol.48, no.3, April 1992. pp.27-37.

_____, "It's All Over at Al Atheer", Bulletin Of The Atomic Scientists, vol.48, no. 5, June 1992, pp.8-9.

Iraq's Quest for the Nuclear Grail: What can we Learn ? Arms Control Today; July/August; p.3-11.

Albright, Madeline and Gocdhan, Allan "US Foreign Policy After the Gulf Crisis", Survival vol32, no.6, November, December 1990, pp.533-42.

Barnaby, Frank, 'Arms Control After the Gulf War", Conflict Studies no.240, April 1991.

Claudia, Wright, "Iraq-New Power in the Middle East", Foreign Affairs, Winter, 1979-80, pp.263-264.

Cloffi-Revilla (CLAUDIO) "On the Likely Magnitude, Extent and Duration of Iraq-UN War", Conflict Resolution, vol.35 no 3, September 1991, pp.387-411.

Deutch M. John, "The New Nuclear Threat", Foreign Affairs, Fall 1992; pp.118-134.

Ekeus, Rolf,"The United Nations Special Commission on Iraq", Sipri Year Book, 1992, (London; Oxford University Preess) pp.509-530.

Milhollin, Gary, "Building Saddam Hussein's Bomb" New York Times Magazine, New York, March 8, 1992 pp.1224-29.

Pilat, J.F., "Iraq and the Future of Nuclear Non-proliferation: The Roles of Inspections and Treaties, Bibl Of Science. March 6, 1992, pp.1224-29.

Snyder,C. Jed, "The Road to Osiraq. Baghdad's Quest for the Bomb," The Middle East Journal, Autumn 1983, pp.43-49.

Newspapers and Magazines

Military Balance (IISS), (London).

International Herald Tribune, (New York).

SIPRI Year Book, (London).

Newsweek, (New York).

New York Times.

The Times, (London).

Time, (New York).

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2357