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THE NEGOTIATIONS BETWEEN CANADA AND INDIA FOR THE SUPPLY OF THE N.R.X. NUCLEAR RESEARCH REACTOR 1955-56 A CASE STUDY IN PARTICIPATORY INTERNATIONALISM

BY

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A thesis submitted to the Faculty of Graduate Studies and Research in partial fulfilment of the requirements for the degree of Masters of Arts

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ABSTRACT

The thesis is a detailed account of the 1955-56 diplomatic negotiations between Canada and India for the supply of a 40MW natural uranium heavy water research reactor. Special attention is given to the theme of participatory internationalism in Canadian diplomacy; to diplomatic decision-making; and to the "special relationship" between Canada and India. The thesis concludes that Canadian diplomats acted with an eye to short-term interests and goals, leaving aside the long-term non-proliferation implications of nuclear power. In the final analysis, the special relationship came down to conceptions of self-interest and Canada was badly out-maneuvered.

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To Terrence, Oliver and my mother.

> In short, 'participatory internationalism' to maintain and strengthen world peace was a principal objective of Canada's national policy. We always asked ourselves not only 'what kind of a Canada do we want?' but 'what kind of a world we want?' This world view was consistent with a proper regard for our own interests. We did not confuse short-term opportunities with long-run realities or allow our international preoccupation to obscure domestic concerns.
>
> Lester B. Pearson[1]

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[1] John Munro and Alex. I. Inglis (eds.), Mike: The Memoirs of the Right Honourable Lester B. Pearson, Vol. II, 1948-1957 (Toronto, 1973), p. 32.

INTRODUCTION

On May 18, 1974, India detonated an underground nuclear device in the Rajasthan desert. In its official announcement, the Indian government laconically stated that it had conducted a "peaceful nuclear explosion experiment".[1] Speaking to the press, Defence Minister Jagjivan Ram said that the experiment had been intended "solely for peaceful purposes and not for military uses".[2] It would help India in underground research and projects in the fields of mining and oil exploration. The test, nevertheless, had enormous significance. On that day, India crashed into a most exclusive club. It became the sixth nation to possess a demonstrated nuclear explosive capability.[3]

The explosion had immediate reverberations in Canada. For eighteen years, Canada and India had cooperated closely and extensively in the field of nuclear research and

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1 The New York Times, May 19, 1974.

2 The Globe and Mail, May 23, 1974

3 The Non-Proliferation Treaty (N.P.T.) (1968-70) recognizes only five Nuclear Weapons States (the United States, the Soviet Union, Great Britain, France, and China). India, Israel and the Republic of South Africa, which are alleged also to have nuclear weapons capability, do not have the status of Nuclear Weapons States.

power. Bilateral cooperation had begun in 1956 when Canada supplied the N.R.X. (National Research X-perimental), a 40MW pressure tube reactor using natural uranium and moderated by heavy water, to the Indian Atomic Energy Commission.[4] Together the two countries had built India's main research facilities in Trombay and they were, at the time of the explosion, completing the construction of R.A.P.P. 1 and 2 (Rajasthan Power Projects), a CANDU-type power station, located in the state of Rajasthan.

The agreement negotiated and signed between Canada and India for the supply of the N.R.X. is crucial to the understanding of the Indian nuclear detonation of 1974. Negotiations between the two governments began in the early spring of 1955. They formally ended on April 28, 1956 when Jawaharlal Nehru, the Indian Prime Minister and Escott Reid, Canada's High Commissioner in New Delhi, signed the bilateral nuclear cooperation agreement on behalf of their respective governments.

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[4] The N.R.X. was specifically designed for research in physical, chemical, biological and metallurgical problems. It also produces isotopes for medical therapy, agriculture and general industrial use. Finally, as any other nuclear reactor, it produces plutonium, which is a fissile material that can be used in atomic weapons.

In the official files the supply of the N.R.X. reactor to India was referred to as the C.I.R. project, (Canada-India Reactor). It later became known as the C.I.R.U.S. project, (Canada-India Reactor Uranium System). In this thesis, the acronym C.I.R. designates the project per se, whereas N.R.X. refers to the nuclear reactor.

The main object of this thesis is to make a detailed analysis of the diplomatic negotiations surrounding the supply by Canada of a nuclear research reactor to India. The C.I.R. (Canada-India Reactor) was an important international development initiative for Canada, one of its major early undertakings under the auspices of the Colombo Plan. The project represented a gesture of goodwill and cooperation towards the emerging countries of the southern hemisphere as well as a commercial venture. The reactor project reveals some of the goals and motivations implicit in Canada's foreign policy.

First, Canada's foreign policy tacitly incorporated the principle of participatory internationalism. In the thesis, this principle is used as an analytical tool because it illustrates the Canadian desire to follow an independent foreign policy and have the best of both worlds: Canada was inspired by idealistic goals but sought to pursue its commercial and economic interest at the same time. In addition, much post-war Canadian foreign policy can be written around this principle. Second, the negotiations shed light on the way diplomatic decisions were made in Ottawa in the mid-1950s. The C.I.R. project helps to understand the perceptions and goals of the men of External Affairs and their strengths and weaknesses. Third, the negotiations provide

interesting insights into Canada's "special relationship" with India.

This thesis relies principally on the official files of the Canadian government. Canadian law stipulates that, after 30 years have elapsed, official documentation can be declassified. The most important documents from the Department of External Affairs pertaining to the nuclear negotiations between Canada and India thus became, although not without some effort, accessible for historical inquiry.[5] Access to A.E.C.L. records was unfortunately much more restricted; only two letters were made available. To add depth to the analysis, interviews were conducted with some of the key Canadian participants and their written recollections reviewed.

The 30 year rule explains, at least in part, why there are as yet few Canadian historical case studies relating to events of the 1950s. Nevertheless, secondary sources were of some assistance because Canadian historians interested in that period have provided valuable overviews of Canada's role

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[5] Subject: Colombo Plan Technical Assistance India: Provision of an Atomic Energy Reactor by Canada. The file consists of six parts. RG 25, Vol. 353, file No. 11038-1-13-40. Department of External Affairs, National Archives of Canada. Unless otherwise specified, all documents quoted in this thesis come from this file.

and presence in the international community.[6] They explain the context in which the negotiations took place. Most important among them was Robert Bothwell's Nucleus which records the history of Atomic Energy of Canada Limited (A.E.C.L.).[7] Bothwell, with full access to company records, has followed the Crown Corporation over a period of thirty years, from its beginnings as a war-time "allied" laboratory in Chalk River to its development into a major international company supplying nuclear power reactors and nuclear technology around the world. Bothwell dealt with the Canada-India negotiations and used some of the documents which are examined in this thesis. He did recognize that the N.R.X. project was significant but paid limited attention to it because the scope of his study was much larger.

The concept of participatory internationalism has not received a great deal of attention from historians. R.D.

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[6] For example, James Eayrs, Canada in World Affairs: October 1955 to June 1956, Vol. 9 (Toronto, 1959); Blair Fraser, The Search for Identity, Canada 1945-1967 (Toronto, 1967); John W. Holmes, The Shaping of Peace: Canada and the Search for World Order, 1943-1957, Vol. II (Toronto, 1982).

[7] Robert Bothwell, Nucleus: The History of Atomic Energy of Canada Limited (Toronto, 1988). A.E.C.L. was established in 1952 and is the most important nuclear research and development institution in Canada. In 1955 the company was still in its infancy. The Zero Energy Experimental Pile (Z.E.E.P.) which started up in 1945 was the first reactor built outside the United States. Its technology was critical in the development of the N.R.X. which became operational in 1947. The National Research Universal (N.R.U.) began operating in 1957.

Cuff and J.L. Granatstein refer briefly to it in American Dollars-Canadian Prosperity, stating that the objective was to avoid becoming too dependent on the United States. They underline that participatory internationalism had its origins in economic self-interest and retained an undertone of tough realism. The policy was also to provide a counterweight to the big powers. Canada wanted to have influence in world affairs. It would not again be put in that "degrading position" in which the major nations arrogated power solely onto themselves as they had done during and after the war.[8]

As a topic, the Canadian bureaucracy of the 1950s is covered more extensively. Among the first studies is The Vertical Mosaic, a comprehensive analysis undertaken by John Porter in 1965.[9] Porter stressed how the anonymity and neutrality of Canadian public administrators had promoted continuity in the running of the country. He stated that during the mid-fifties the conduct of Canadian foreign policy reflected the talents of the senior civil servants in External Affairs, their intellectual strength and their knowledge of world affairs and of the mechanics of government. External Affairs had a reputation, at least from the 1940s on, for

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[8] R.D. Cuff and J.L. Granatstein, American Dollars-Canadian Prosperity, Canadian-American Economic Relations 1945-1950 (Toronto, 1978), p. 187.

[9] John Porter, The Vertical Mosaic: An Analysis of Social Class and Power in Canada (Toronto, 1965).

independent thought and positive action. When Lester B. Pearson was promoted from Under-Secretary to Secretary of State for External Affairs in 1948, that reputation seemed likely only to be enhanced. Neither the management of business nor the habits of the Department were disrupted.[10]

Denis Olsen's The State Elite, which was published in 1980, surveys the same terrain from a sociological perspective.[11] With majors in the humanities rather than the sciences, often as graduates of Oxford or Cambridge, the Canadian bureaucrats were among the most highly educated men in Canada. Olsen writes that, before the 1960s, they were inspired by the British tradition that a civil servant should be "the gentleman generalist and the gifted amateur administrator".[12] Unlike their British peers, however, Canadian government officials were often sensitive to business interests. J.L. Granatstein's The Ottawa Men: The Civil Service Mandarins, 1935-1957, published in 1982, is a prosopographical examination of Canadian bureaucrats like Norman Robertson, Arnold Heeney and Escott Reid and provides

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[10] The same themes are examined in Colin Campbell and George J. Szablowski's The Super-Bureaucrats (Toronto, 1979). Their study reveals that the government protected the work and initiative of its civil servants by cloaking them in anonymity and shielding them behind a minister who was solely and fully responsible to the public.

[11] Denis Olsen, The State Elite (Toronto, 1980).

[12] Ibid., p. 67.

a welcome complement to these earlier surveys.[13] Granatstein confirms and develops Porter's analysis in regard to the similarity of background and the high standard of education received in England, frequently as Rhodes scholars. He somewhat contradicts Olsen by stating that the Canadian bureaucrats shared the slight British lean towards left-wing politics. This thesis is a contribution to the literature of Canadian bureaucracy, particularly that of External Affairs, because it examines its mixture of idealism and realism and calls into question the generally-accepted view of its unalloyed competence.

The special relationship between Canada and India has received some attention from historians. M.S. Rajan's article on "The Indo-Canadian Entente" explains that the Commonwealth was an important instrument at the time because it provided an "inter-continental bridge" between East and West.[14] In spite of remarkable differences in culture and philosophy, Canada and India had a common outlook on foreign affairs. He adds that their statesmen envisioned the world in terms more complex than the simple bi-polar rivalry between communism and capitalism and had an idealistic approach to the

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[13] J.L. Granatstein, The Ottawa Men (Toronto, 1982).

[14] M.S. Rajan, "The Indo-Canadian Entente", International Journal, Vol. 17, No. 4 (Autumn, 1962), 359.

resolution of international problems. Their willingness to build and to cross bridges cemented the relationship.

Dale Thomson's article, "India and Canada: A Decade of Cooperation 1947-1957", offers another look at the relationship.[15] While pursuing inherently national interests in the Commonwealth, such as guaranteeing that the "Canadian view" was heard and respected, Canada wanted to secure an equal status for all members. Thomson notes that India had similar goals and thus found it possible to join this new Commonwealth because each member could express his own opinion. Canadian statesmen offered their hand in friendship and India eagerly reciprocated. Thomson also points out that there were more differences than similarities between Canada and India but there was agreement in the basic tenets of their foreign policy during the post war period. In addition, both felt that a "spirit of understanding and tolerance" would be extremely beneficial for the resolution of international problems.[16]

In his study Envoy to Nehru, Escott Reid argues that the interest in a special relationship between old and new

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[15] Dale C. Thomson, "India and Canada", International Studies (July 1967-April 1968), 404-430.

[16] Ibid., 420.

democracies came from both sides.[17] India was "the keystone of the arch of the new Commonwealth" because it enabled the Commonwealth to capture the public's imagination.[18] In his view also, Canada and India had similar goals in international affairs and were respected by the international community. They could work in tandem to achieve their common objectives and to promote smoother relations between North and South or East and West. For Reid this was a key aspect of the bilateral relationship. Canada could, for instance, influence its close ally the United States during the Indo-China crisis, while India, as a non-aligned nation, could influence China. Here too this thesis is revisionist, showing some of the hard realities behind the rhetoric of India-Canada relations; Canada's woolly thinking where India was concerned; and the way in which India was prepared to pursue its self-interest.

Chapter one of this thesis reviews the political setting in Canada, stressing that the 1950s were not only a time of great ambitions but also a time of fear, above all that the strength and dynamism of communism might mesmerize the newly formed nations. The chapter also briefly discusses the multiracial Commonwealth, the Indian-Canadian "special

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17 Escott Reid, Envoy to Nehru (Toronto, 1981), p. 19.

18 Ibid.

relationship", looks at Indian politics and examines the motivation of some of its main governmental spokesmen.

The bulk of the thesis relates to the negotiations themselves. Chapters two, three, and four deal successively with Canadian preparations, the first contacts and the discussions which followed until the reactor reached criticality. These three chapters also look into the problems that were encountered, such as the safeguards on the nuclear materials, the access to nuclear technology provided to foreign (i.e. non-Indian) scientists and the financing of the project, and examine how they were dealt with. The aim is to show what actually happened, to draw attention to the premises, goals and methods of the Canadians who conceived the project and negotiated the agreement, and to comment on Indian aims and negotiating skills. Unfortunately, Indian diplomatic files are accessible only up to 1913, and historians are therefore at a disadvantage when dealing with that aspect of the study.

In the conclusion, an assessment is made of the significance of the C.I.R. project for Canada's foreign policy and for the special relationship with India. The purpose is to bring to light how and where Canadian hopes and calculations met with success and how and where they floundered.

CHAPTER I

The Broad Political Context

Introduction

In the early 1950s Canada was experiencing unprecedented economic growth and urbanization, and was absorbing an enormous flow of immigrants. The building of the Trans-Canada Highway was under way to accommodate the automobile boom. Culturally, with the creation in 1951 of the National Ballet School and the opening of the Stratford Festival in 1953, Canada was no longer an hinterland. The frictions between English and French which had proven almost intractable for Prime Minister W.L. Mackenzie King had to some extent been assuaged. Canada's politicians could afford to cast their glance beyond the country's immediate problems, perceiving a sense of duty towards the world community. Confidence about the future was strong enough to give Canadian diplomacy a style of responsible and constructive internationalism. A positive tone rings, for example, through the 1950 report of the Colombo Plan, a major international cooperation initiative. The Canadian Douglas LePan assisted the committee in drafting the final constitution of the Colombo Plan. For him the Plan was conceived in a spirit of the possible so people could:

> contribute towards the self realization of individuals, towards the fulfilment of national aspirations and towards the enhancement of the lives of other people throughout the world. The progress of science and technology has suggested ways in which this may be done, and in an age when other countries are reaping the advantages of scientific and industrial advances, the hastening of a similar process in Asia cannot safely be delayed.[1]

Canada would attempt to foresee and to facilitate the emergence of a wider, more complex and more equal pattern of international relationships. One of the fundamental assumptions was that Canada might help to bridge over the suspicion and differences that existed between ex-colonial powers and the newly independent countries.

This chapter outlines the background against which the C.I.R. negotiations took place. What follows is a discussion of Canada's foreign policy, which tacitly incorporated the principle of participatory internationalism; the men of the Department of External Affairs, at that time a strong and energetic group of internationalists; the transformation of the Commonwealth which, by 1955, had become multiracial and had launched the Colombo Plan (under which the N.R.X. reactor was financed and supplied to India); the policies and politics of India, the newly independent giant

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[1] Douglas LePan, The Bright Glass of Memory (Toronto, 1979), pp. 212-213. LePan also provides an interesting personal account of the three meetings to establish the Colombo Plan: Colombo in January, Sydney in March, and London in September 1950.

and leader of South and South East Asia; and the "special relationship" that Canada hoped to maintain with India.

Canada's Foreign Policy and Participatory Internationalism

The years 1945-1957 were the apogee of Canadian diplomacy.[2] Canada had emerged from World War II unscathed economically, more powerful and socially cohesive.[3] The post-war period challenges--the settlement of an exhausting conflict; the split of Europe; the reconstruction of a world order; the communist threat; the emergence of the developing world--were sources not only of tensions but, for Canadian diplomats, new opportunities for action. To be actively involved was to be at the leading edge of Canadian diplomacy. In using the United Nations and the multiracial Commonwealth to build bridges to the world, the diplomats sought to bestow benefits on Canada. They were thus guided by idealism although their fervour was affected by hard economic interest and, no doubt, by the awareness that the successful completion of projects such as the C.I.R. would boost careers.

Canada had other reasons for wanting to pursue constructive policies. The immediate post-war years were

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[2] See for example the study by J.L. Granatstein, The Ottawa Men, The Civil Service Mandarins 1935-1957 (Toronto, 1982).

[3] J.L. Granatstein, Canada's War; the Politics of the Mackenzie King Government, 1939-1945 (Toronto, 1975), pp. 419-424.

marked by a great fear of communism. Few escaped the frenzy. In Ottawa as in Washington, communism was perceived as the great threat to western democracy and liberalism. For the first time, Canadians felt under a direct, and nuclear, threat. Although there had been intermittent warnings of Nazi U-Boats sightings during World War II, Canada had never before actually felt endangered. This time the peril was factual rather than fictitious. Both the United States and Soviet Russia had the bomb and Canada's land mass stood in between, under the flight path of the bombers, under the trajectory of the missiles. The government sensed its vulnerability and could not maintain its isolationism.[4] After the Igor Gouzenko Affair, an almost irrational fear of communism gripped Canadians.[5] The Soviet Union, on the march in Europe, seemed an imminent threat. The United Nations did not fulfil the hopes of world peace and security. To reduce the risk, Canada decided, for the first time in its independent history, to

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[4] Edgar McInnis, "A Middle Power in Cold War", in Hugh L. Keenleyside et al., The Growth of Canadian Politics in External Affairs (Toronto, 1960), pp. 142-163.

[5] Igor S. Gouzenko was a cypher clerk at the Soviet Embassy in Ottawa who defected in 1945 with documents revealing that the Soviets were operating a spy network in Canada.

join a military alliance in peacetime.[6] The North Atlantic Treaty Organization (N.A.T.O.) was created in 1949.

The world of the middle 1950s, however, was less menacing. Stalin's death in 1953 and the Russians' agreement to grant Austria its independence, the resolution of the Korean and Indochinese wars and the 1955 Geneva "Summit Conference" between the Super Powers, had somewhat dispelled international tensions. "There is no doubt," Pearson affirmed with confidence, "that recent developments give us ground for satisfaction and some optimism. But it would not be wise to go overboard with exultation yet."[7]

The hopes and perceptions of that period were also based on the sense that Canada was a power of some importance. It had contributed to the restoration of the world's political and economic order after 1945. Pearson used the idea of

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[6] For a good understanding of the times and what propelled Canadian statesmen into signing this alliance, see Escott Reid's essay on "Canada and the Creation of the North Atlantic Alliance, 1948-1949", in Michael G. Fry (ed.), Freedom and Change (Toronto, 1975). The decision to join N.A.T.O. had significant consequences. Canada had to assume greater military and financial commitments. In 1953, it was spending eighty percent more on defence than it had in 1939. See L.B. Pearson, "The International Situation", in Henry T. Head and H.L. Enman (eds.), Canada Nation on the March (Toronto, 1953), p. 7.

[7] Lester B. Pearson quoted by the Ottawa Journal, May 18, 1955.

participatory internationalism to describe Canada's role in this new and complex world:

> In short, 'participatory internationalism' to maintain and strengthen world peace was a principal objective of Canada's national policy. We always asked ourselves not only 'what kind of a Canada do we want?' but 'what kind of a world we want?' This world view was consistent with a proper regard for our own interests. We did not confuse short-term opportunities with long-run realities or allow our international preoccupation to obscure domestic concerns.[8]

Participatory internationalism was not a slogan that can be found strewn across countless speeches and declarations or memoranda and telegrams. It was a broad principle, an underlying theme that inspired Pearson and his colleagues because it summarized their viewpoint of what the world needed and of the contribution that Canada ought to make. The Second World War had demonstrated that cooperation worked, no matter how difficult the situation. Canadians wanted to harness this newly found international collaboration and to promote world peace. John Holmes states that "Canadian designers were genuinely interested in creating a workable framework for peace, which they regarded as the first priority in the Canadian national interest".[9] Ambitious and innovative

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[8] John Munro and Alex. I. Inglis (eds.), Mike, Vol. II, p. 32.

[9] John W. Holmes, The Shaping of Peace: Canada and the Search for World Order 1943-1957, Vol. I (Toronto, 1979), Preface p. x.

projects such as the C.I.R. were undertaken in this spirit. Nevertheless, they were motivated by more than selflessness and meant to pursue Canada's commercial interest. The successful completion of the project would establish Canada as an independent supplier of high technology in a very competitive field. It would diversify Canada's trade and reduce its commercial dependency on the United States.

The Stafford Little Lecture which Pearson read at Princeton University in April 1955, when the negotiations with India were still at an embryonic stage, discussed his world view. All regions were tied into a global symbiotic relationship:

> We are now emerging into an age when different civilizations will have to learn to live side by side in peaceful interchange, learning from each other, studying each other's history and ideals and art and culture, mutually enriching each other's lives. The alternative, in this overcrowded little world, is misunderstanding, tension and clash.[10]

What part was Canada to play "in this overcrowded little world"? It was in that context that Pearson spoke in his memoirs of the principle of participatory internationalism which combined self-interest and idealism. Nuclear

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[10] Lester B. Pearson, "Stafford Little Lecture", Princeton University, April 12-14, 1955, L.B. Pearson Papers, MG 26, N9, Vol. 10. National Archives of Canada. Published as Lester B. Pearson, Democracy in World Politics (Princeton, 1955).

cooperation with India was an experiment in participatory internationalism because it aimed both at national interest and world cooperation and peace. The transfer of western technology would enrich the East and South but, equally, and to everyone's advantage, would encourage the interchange of ideas and knowledge. The Canadian "participatory" outlook in foreign affairs was generous, equitable and modern, but it was not purely altruistic. In the eyes of its practitioners, the principle of participatory internationalism was supposed to be consistent with Canada's interests. As Pearson stated, Canadians must also have a "proper regard for [their] own interests".[11]

At the basis of the principle of participatory internationalism was a rational calculation that Canada would do far better in a peaceful and prosperous world. Even if the world conflict had ended, there was widespread distrust as well as major obstacles to overcome before true peace and security could be attained. Canada no longer accepted to be silent in international fora. Its advice was sound and it was important therefore that its voice be heard. One of the first successes of Canada's new foreign policy after 1945 was to

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[11] In his essay, "The International Situation", Pearson outlines the three main objectives of Canadian foreign policy as he saw them in 1953. They are economic development, international peace and security and internal social unity. Henry T. Head and H.L. Enman (eds.), Canada Nation on the March (Toronto, 1953), pp. 3-11.

participate in the five-power committee of the United Nations Atomic Energy Commission.[12] Canada played a positive role in the search for world order, attempting to encourage reconciliation between opposing or warring factions and applying "mediatory middle-power-manship".[13] It proved adept at this, for example, when it grappled with the Palestinian question in 1948-49.[14] However, Canadian statesmen ensured that when they took such initiatives in serving as a "helpful fixer" in world affairs, they also heeded Pearson's advice: "to keep in mind the effect on our own country".[15]

Canada's foreign policy and its impact did not go unnoticed. In 1957, the Economist wrote of the country's unique ability to carry out a middle power role:

> Since the war, Canada has come to occupy a unique international position. A keystone in the North Atlantic bridge, it has also helped to ease tensions between the West as a whole and those Asian and African countries that suspect both European

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[12] It should be borne in mind that three-way nuclear exchanges among Canada, the United States and the United Kingdom date back to the Second World War and the project, code-named Manhattan, to build and test the world's first nuclear weapon.

[13] David B. Dewitt and John J. Kirton, Canada as the Principal Power (Toronto, 1983), p. 21.

[14] David J. Bercuson, Canada and the Birth of Israel: A Study in Canadian Foreign Policy (Toronto, 1985), pp. 224-240.

[15] John Munro and Alex. I. Inglis (eds.), Mike, Vol. II, p. 35.

colonialism and the new power of the United States.[16]

The Men of External Affairs

The C.I.R. negotiations also provide an interesting and valuable look into diplomatic decision-making in Canada because the nuclear negotiations were conducted primarily by a small group of officials working in Parliament's East Block building.

When St. Laurent had assumed the leadership of the government in 1948, he had asked Pearson to become Secretary of State for External Affairs. This had marked the beginning of a new era in which the Department would be "active and innovative".[17] The two men could exercise their leadership effectively and as a result, "in the latter period of the Liberal tenure", External Affairs was able to give Canada "a prestige and influence unwarranted by her physical resources in international affairs".[18] The Canadian historian James Eayrs notes that "Mr. St. Laurent had a sound appreciation of its [the Department] importance, without allowing his interest to cause him to intrude upon the Foreign Secretary's

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16 The Economist, June 15, 1957.

17 John Munro and Alex. I. Inglis (eds.), Mike, Vol. II, p. 29.

18 John A. Munro, "The Difficult Art of Canadian Foreign Policy 1957-63", Masters Dissertation (University of British Columbia, 1965), p. 29.

preserve"[19]. Pearson's good personal rapport with St. Laurent gave him extra leeway, "Don't worry", St. Laurent once told Pearson, "Do what is best. Do the right thing and I'll back you".[20] Pearson had other backers. In the House of Commons, he could take advantage of a large measure of consensus on foreign affairs that existed among the political parties.

In the Department, Pearson was supported by Jules Léger as Under Secretary of State and by "a small group of men of undisputed ability and great power",[21] many of whom he had first met during his days as a foreign service officer. Most of the civil servants who assisted him were middle-class like him, shared his social and educational background and had joined the government for service and, one can doubtless add, for prestige. A remarkable collegiality existed between "Mike" and External's senior echelon. Pearson was effective and influential because he was sensitive to Canada's international needs and interests, was an expert in his metier and knew how to motivate, guide and utilize his "boys".[22] Among Pearson's close colleagues were ministers and bureaucrats such as C.D. Howe, Jules Léger, Escott Reid, A.E.

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19 James Eayrs, Canada in World Affairs, October 1955 to June 1956 (Toronto, 1959), p. 7.

20 Ibid., p. 8.

21 J.L. Granatstein, The Ottawa Men (Toronto, 1982), p. 1.

22 John Porter, The Vertical Mosaic, p. 431.

Ritchie, Arnold Heeney and A.F.W. Plumptre. They had a direct hand or an important word of advice to offer on the nuclear negotiations.

Enjoying support and friendship from the Prime Minister, and the confidence of the "mandarins"[23] in External Affairs, Pearson could well envisage that an activist policy "was unquestionably the proper role for Canada to play at that time".[24] Pearson, however, was not a man who had "illusions" about Canada's importance. The country's strong position was only a temporary situation but it would allow the Secretary of State and his advisers to be useful.

The reputation of these men overwhelmed Alistair Buchan, a former Director of the Institute for Strategic Studies, who thought that "[they] comprised perhaps the most brilliant and influential collection of minds in the world... and [they] appeared to give Canada an influence in world

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[23] The term was used by J.L. Granatstein in The Ottawa Men. Granatstein notes that by "the mid-1950 the heyday of the mandarins was nearing its end...[yet some still] remained in harness." (pp. 253-254). Listed among these mandarins are: Escott Reid, High Commissioner in New Delhi; N. Robertson, High Commissioner in London; A. Heeney, Ambassador to Washington; and A.F. Plumptre, Assistant Deputy Minister in the Department of Finance, all of which were intimately connected with the nuclear negotiations between Canada and India.

[24] John A. Munro and Alex. I. Inglis, Mike, Vol. II, p. 29.

politics out of all proportion to her physical resources"[25]. Other Canadian historians have stated that, from 1945 to 1957, the officers of External Affairs ranked high among the bureaucrats who "helped to alter the way Canadians lived, acted and thought about themselves; [and] played a large part in transforming the country."[26] In the context of these negotiations, however, Pearson and Canada's diplomats do not appear to merit unalloyed praise.

A key player in Canada's diplomacy was Escott Reid, who by the mid-1950s had become Canada's High Commissioner in New Delhi. Granatstein describes Reid as a man with tragic asymmetries: gifted but drawn at all times in conflicting directions by overt idealism, by a jealousy that could be petty, and by his own regard for what was important and what was not.[27] Like many of his contemporaries he had studied in England on a Rhodes scholarship and had socialist leanings. He entered the Department of External Affairs in 1939 after having spent seven years in Toronto as the national secretary for the Canadian Institute of International Affairs.[28] Reid

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[25] Robert Spencer, "Let's Get Rid of our Phoney Image", Toronto Telegram, March 23, 1963, as cited in John A. Munro, "The Difficult Art of Canadian Foreign Policy 1957-1963", p. 29.

[26] J.L. Granatstein, The Ottawa Men, p. 282.

[27] Ibid., pp. 237-252.

[28] Ibid.

worked under Pearson in Washington and quickly rose through the ranks. Perhaps driven by his well-known nervous energy, he seems to have participated in most of the important multilateral discussions in the late 1940s and early 1950s.[29]

Reid can be described as a fervent nationalist who wanted Canada to have power and influence in the world. He was fearful of the customary ascendancy of British over Canadians and preferred Canada to be more distant from the mother country and more self-interested in its foreign policy.[30] Nor did he trust the United States, which he viewed as an expansionist power and a danger to world peace, particularly if its hegemony was in any way challenged, above all by the Soviets.[31] Reid was a crusader. Having witnessed two world wars, he believed that lasting international peace could only be achieved through international cooperation. Throughout his career, he preached the feasibility of world

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[29] He had the distinction of having attended the 1945 Preparatory Commission of the United Nations in London and the San Francisco Conference on the United Nations, had directly participated in the establishment of N.A.T.O. during the late 1940s and dealt with the Korean War crises in 1950-51.

[30] Escott Reid, On Duty (Toronto, 1983), p. 7.

[31] Don Page and Don Munton, "Canadian Images of the Cold War, 1946-1947", International Journal, Vol. 32, No. 3 (Summer, 1977), 571-604.

government.[32] Reid could not have asked for a better vehicle to put his ideals into practice. The C.I.R. probably meant more to him than any another aid project. It would promote international cooperation and help to transform the awesome destructive power of the atom into a benefit for mankind.

It was an auspicious time to be the Canadian High Commissioner in New Delhi. The United States, the new hegemon, was not trusted by India's leaders. Britain, the former colonial ruler, had left and its influence over Indian affairs had greatly diminished. Reid was able to establish a very close rapport with his hosts and, above all, develop a personal relationship with Prime Minister Nehru. "I'm not the kind of person who is interested in jobs which are mostly reporting and representation" he wrote in 1959, "I want to be in a place where I have a good chance to influence the thinking of government on the bigger issues of foreign policy".[33]

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[32] Upon hearing of Hiroshima, Reid wrote to his wife "I just haven't enough faith in man or God to believe that we have enough time or intelligence or goodwill to reach the goal of world government before we obliterate civilization in another war. But there is nothing to do except live as if it were possible and try one's best to make it possible. Shelagh D. Grant, "Escott Meredith Reid: The Making of a Radical Diplomat", Queen's Quarterly, Vol. 91 No. 3 (Autumn, 1984), 605.

[33] Reid to Robertson, January 8, 1959. Quoted by J.L. Granatstein in The Ottawa Men, p. 248. It should be noted that Reid, after having returned from India two years before, was actively trying to procure another Ambassador appointment. While in India he petitioned Pearson for a position of head

For Reid diplomacy was a difficult art which required its practitioners to possess conflicting qualities. "Diplomats must have," he argued, "cool brains to assess dangers and opportunities in foreign affairs [and]... must have warm hearts in order not to be paralysed by dangers but to seize and to create opportunities".[34] The supply of the N.R.X. reactor created for Reid an opportunity to show his empathy towards the Indians and perhaps to influence the thinking of his government on a major and innovative project, to beat the great powers in a major technological field and to gain a strong position in a key and newly-independent country. The negotiation might also have allowed him to use the experience he had acquired as Canadian delegate at the U.N. Atomic Energy Commission in New York in 1946, although the documentation makes no reference to his technical expertise.[35]

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of post in either London or Washington, but was not successful in this bid. He also tried to convince Pearson, that for the benefit of the Canadian-Indian relationship, that either Arnold Heeney or Norman Robertson should replace him in New Delhi. Letter from E. Reid to L.B. Pearson, September 13, 1956. MG 26, N 1, Vol. 12, External Affairs Records, National Archives of Canada.

[34] Escott Reid, "The Conscience of the Diplomat: A Personal Testament", Queen's Quarterly, Vol. 74, No. 4 (1967), 591.

[35] Escott Reid, On Duty, p.13.

Reid also saw the C.I.R. project as an inducement to lead India away from the temptation of communism.[36] Later that year, he wrote that he feared, "if Canada and the United States cannot or will not grant India the large development loan which it needs, a train of events may be set in motion which will result in our "losing" India."[37] He was sensitive to Nehru's advice to the western democracies that "the best defence against communism was to raise living standards" in less developed countries.[38]

Pearson, apparently, was not operating from the same political premise. In the early spring of 1955, he was preparing his set of lectures on "Democracy in World Politics", in which he would assert that the West must "guard against any false idea that we can purchase or should try to purchase allies".[39] To provide aid for purely "cold war motives", Pearson warned, would inevitably lead to failure "in

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[36] The first telegram from Reid, after the proposal had been broached to him, ended with the sentence, "It would be difficult for our friends in India to contrast our generosity with the full payment required by Russia for a steel plant which it may be erecting in India." Telegram 204, from the High Commission in New Delhi, March 28, 1955.

[37] Letter from E. Reid to L.B. Pearson, December 13, 1955. MG 26, N 1, Vol. 10. Pearson Papers, National Archives of Canada.

[38] Escott Reid, Envoy to Nehru, p. 22.

[39] Lester B. Pearson, "Stafford Little Lectures", April 12-14, 1955.

achieving any good and permanent result".[40] Pearson was thinking of building a new world rather than defeating Marxist ideology. He stated that economic assistance should be based on three principles: humanitarianism, "a sincere desire on the part of those who are more favoured to help those who have less"; recognition that it was in Canada's interest to "live in a world where prosperity is more universal"; and finally, "the hope that economic aid can serve the cause of peace".[41]

The New Multiracial Commonwealth

The new multiracial Commonwealth was to open vistas for Canada. In the words of Bruce Williams, who was Deputy High Commissioner in New Delhi at the time, "In those days, the Commonwealth meant something".[42] As Britain was still recovering from the war, Canada's position in the organization was very strong. The entry of India, Pakistan and Ceylon (now Sri Lanka) into the Commonwealth meant that this organization was in a position to provide, as Pearson wrote in 1955, "a bridge of understanding between West and Asia and Africa [whose value] is very great in this age of suspicion and strain where there are few such bridges".[43] The Commonwealth

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40 Ibid.

41 Ibid.

42 Bruce Williams interviewed on August 8, 1988.

43 Lester B. Pearson, "The Stafford Little Lectures", April 12-14, 1955.

would also serve Canadian interests because, in the words of Reid, it would be "a method of keeping countries such as India as potential allies and of turning potential allies into real allies".[44]

An important element of the Commonwealth as it was evolving was economic cooperation. The meeting of prime ministers held in 1949 passed the resolution that foreign ministers should gather periodically to discuss common problems. When the ministers assembled in Colombo in January 1950, their agenda did not include the serious economic situation faced by South and South-East Asia. Nevertheless, the delegates "incidentally" discussed the topic and decided to establish the Colombo Plan to help relieve the plight of these countries.[45] Within that year, two further meetings had been held in Sydney (May) and London (September). The ministers now appreciated fully that economic development was a leading issue and that Asian countries had three common problems: poverty, illiteracy, and over-population. The

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[44] Telegram 807, from the High Commission in New Delhi, November 20, 1956. RG 25, Vol. 10, file 1617-40. External Affairs Records, National Archives of Canada.

[45] Represented at the Colombo meeting were Australia, Canada, New Zealand, the United Kingdom, Ceylon, India, the Federation of Malaya, Pakistan, and Singapore. The United States joined the Colombo Plan in 1951, as did eventually Cambodia, Laos, and Vietnam (1951), Burma and Nepal (1952), Indonesia (1953), and Japan, the Philippines, and Thailand (1954).

region accommodated one quarter of the world's population and a large majority of all Commonwealth citizens.[46] The Ministers were also aware that the problem was fundamentally economic not political. They perceived that the terms of trade were stacked against the developing world and that it was imperative to improve living standards because the "political stability of the area, and indeed of the world, depends upon it and nothing could do more to strengthen the cause of freedom".[47]

The Colombo Plan was a radical scheme which promised to tear down walls of ignorance and to reduce inequalities among nations and people. The Plan made two broad assumptions: transfers of resources from the West would have a rippling effect in the entire area and would thus accelerate development and the recipients were expected to help one another, either by sharing the particular expertise that they had acquired, or by offering direct aid. The Colombo Plan was conceived and set up as a multilateral organization. Each year, a meeting was held to coordinate all assistance programmes. The actual workings of the Plan were bilateral, however, in acknowledgment that, for all the social

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[46] Commonwealth Consultative Committee on South and South-East Asia (The Colombo Plan for Co-operative Economic Development in South and South-East Asia), (London, 1950), p. 1.

[47] Ibid.

similarities among these countries, their needs and priorities varied considerably. A recipient country would present aid projects to a donor who, in turn, would try to match them up with its particular expertise.[48] This feature allowed for great, and needed, flexibility. The cost and responsibility were to be shared between the donor and recipient countries and full title and control was to be transferred to the recipient country once the project was completed. It was under the Colombo Plan that Canada supplied the N.R.X. to India

India's Place within the World of the 1950s

Another element of the broad political picture was India, no longer the "Jewel in the Crown" but a power in its own right. A natural leader among the de-colonized, a fertile field for development projects, potentially a powerful friend and partner, India held many attractions and had many devoted admirers. Not the least was Reid, the self-portrayed Envoy to Nehru.[49]

India was proud of its ancient civilization and traditions, yet was beset by serious economic and political problems. Its situation called for immediate attention. With

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[48] The Colombo Plan: Facts and Figures (Colombo, 1960), pp. 1-2.

[49] Escott Reid, Envoy to Nehru (Toronto, 1981).

a teeming population of 400 million, many different religions, cultures and castes, draught and shifting monsoons and a diverse topography ranging from high mountain ranges to large and dry plains, India posed a formidable challenge. The sub-continent undermined every attempt at rational and long-term planning and would have exhausted the patience of the most efficient governmental administration. High population growth against a background of poverty, illiteracy and malnutrition only added to the general despair of running this huge nation.

After two hundred years of British raj, India had gained its independence peacefully. A bloody conflict ensued, however, not with the former colonial ruler, but with newly-created Pakistan. During the 1950s both countries were placed on a permanent war footing. The scars of partition and the unresolved dispute over Kashmir created tensions and drained the national treasury.[50] Danger and competition came from other areas as well. India shared a 1,200 mile border with China. The two countries had started on friendly terms. But unfortunately, thanks to modern technology, the Chinese had been able to occupy Tibet and had proven the vulnerability of the once impregnable Himalayas. Further to the north was the

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[50] Michael Brecher, Nehru: A Political Biography (London, 1959), p. 576. In part the fault lay with Nehru, because, both in 1948 and 1949, he refused to hold a plebiscite in Kashmir, which had been agreed to by both parties and would have been supervised by the United Nations.

Soviet Union which, as czarist Russia, had shown a keen interest in the raj and in gaining a foothold on the sub-continent by way of Persia. Nehru, however, remained pragmatic about any immediate armed threat. "I do not conceive of any kind of invasion or attack on India", he stated, "because it will bring them no profit".[51] Nevertheless, India could not ignore the industrial and military strength of its two giant communist neighbours.

India had taken two steps to protect itself. Its foreign policy sought to maintain a balance between East and West. Its economic policy was to promote economic growth at home and to draw on every external opportunity for financial assistance and technology. In these circumstances, it seemed a natural decision to chose non-alignment. First, it strengthened India's ability to act as a bridge between the two dominant political forces. Second, and more important, India could reap technical benefits from both worlds.[52]

Nehru himself symbolized the bridge. He shared much of his country's philosophical outlook yet was "the most Westernised of Indian statesmen".[53] In spite of his austere

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[51] Ibid., p. 566.

[52] Ibid., p. 559.

[53] Ibid., p. 561.

attire, the Gandhi cap and white Ashkan robe and trousers, Nehru was a man of the world. Always impeccably groomed, he could speak eloquently on virtually any topic. A literate and charming man, he would use his effortless rapport and his command of the English language to impress, to cajole, and to convince. His mind, like his manners reflected the influences of two worlds.[54] He had read chemistry at Cambridge, but he also embraced the basic principles of eastern wisdom. Thus, having to define what he meant by peaceful coexistence, he had formulated his ideas in the form of a Panch Sheel, the traditional Asian set of five complementary principles.[55] Idealism was always in balance with political realism. After the conflict with China, Nehru was heard to say "there is no Panchil (sic) vis-à-vis China".[56] While he felt apprehensive towards his communist neighbours, he held Yankee "materialism" in contempt.[57] This contempt turned to anger and distrust

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[54] Escott Reid, "Farewell Essay", May 1957, MG 26, N 1, Vol. 12. Also Michael Brecher, Nehru, pp. 559-561.

[55] Nehru's five guiding principles of peaceful coexistence were: 1) mutual respect for territorial integrity and sovereignty; 2) non-aggression; 3) non-interference in the international affairs of others; 4) equality and mutual benefits and; 5) peaceful coexistence. Panch Scheels are still used today, for instance, the preamble of the Indonesian constitution which lists the five fundamental principles of the State and people is called the Pancasila.

[56] A.G. Noorani, "India's Quest for a Nuclear Guarantee", Asian Survey Institute of International Studies (July, 1967), 490.

[57] Michael Brecher, Nehru, p. 560.

when in 1954 the United States signed a military agreement with Pakistan, India's perennial enemy. It forced India to increase its defence expenditures and consequently to slow down its internal economic development programmes.[58]

The international community may have been perplexed by Nehru's character, misjudging him, and maybe hoping that he was an idealist like Gandhi.[59] But Nehru was also a realist. He was a pragmatic statesman whose chief objective was the well-being of his state. He dominated India's foreign policy, and was both its architect and prime executor.[60] He sought advice, of course, from people such as his outspoken and anti-American roving Ambassador, Krishna Menon, or the head of the Indian Atomic Energy Commission, Homi Bhabha. In the end, however, Nehru had the final word, particularly on political matters. According to Michael Brecher, Nehru tried to balance "idealism" with "realism" in order to achieve an effective foreign policy. Nehru candidly admitted, "in the final analysis, all foreign policy concerns itself chiefly with the national interest of the country concerned".[61]

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58 Ibid.

59 Ibid.

60 Ibid., p. 559.

61 Ibid., p. 566.

Nehru's balanced approach to the world ills and to those of his own country had great appeal in the world community. India's voice was heeded, its advice sought and respected even in such turbulent areas as Korea and Indochina. Some western world leaders, however, were annoyed with Nehru's high sounding principles and non-alignment. They were also critical of his leniency vis à vis Stalin whom he praised as a leader who had made a "great contribution to peace.[62] Nehru never publicly expressed his abhorrence for Stalin's ruthless rule.

Nevertheless, Nehru appeared determined and able to keep India from falling prey to communism.[63] He was respected by the public and had a stabilizing influence among the diverse and divided classes and interests groups within Indian society. If the Socialist and Communist parties had been able to make inroads during the 1954 by-elections of Travancore-Conchin,[64] Nehru nevertheless could, just a few months later,

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[62] Escott Reid, "Farewell Essay", May 1957, MG 26, N 1, Vol. 12. L.B. Pearson papers, National Archives of Canada.

[63] The danger was real. The Soviets took the developing world seriously and were making a concerted effort to sign on new converts. In 1953, the U.S.S.R. had concluded a trade agreement with India and it was contributing to India's defence in an effort to offset Chinese and American military aid to Pakistan. In the fall of 1955, Nikita Khrushchev reciprocated Nehru's earlier state visit and received a tumultuous welcome in New Delhi.

[64] Michael Brecher, Nehru, pp. 470-471.

say to Reid that the opposition was "in a state of intellectual confusion"[65]. The 1955 election in Andhra had proven that the Congress Party could quash the leftist opposition.[66] No doubt he relished his victory because the elections had been fought over the "threat of communism".[67] Nehru seemed a solid wall against Marxism. In his youth he had, like Reid, been influenced by his Cambridge dons and flirted with Marxist dialectics.[68] However, he was, as Reid put it, a socialist of the Stafford Cripps School in the tradition of the "nineteenth century Christian socialism of Great Britain and Ruskin socialism".[69] Nehru disdainfully explained to Reid that these rigid theories written over 100 years ago had very little relevance to the 1950s and least of all to a developing country in Asia.[70]

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[65] Despatch from the High Commissioner in New Delhi, April 4, 1955. RG 25, Vol. 414, file 14003-J2-1-10. External Affairs Records, National Archives of Canada.

[66] Out of 196 seats, the Congress Party received 119. Michael Brecher, Nehru, p. 473.

[67] Ibid.

[68] Nicholas Mansergh, The Commonwealth Experience (London, 1969) p. 389.

[69] Escott Reid, "Farewell Essay", May 1957, MG 26, N 1, Vol. 12. L.B. Pearson papers, National Archives of Canada.

[70] Despatch from the High Commission in New Delhi, April 4, 1955. RG 25, Vol. 414, file 14003-J2-1-40. External Affairs Records, National Archives of Canada. Reid's own infatuation for socialism ended when Ribbentrop and Molotov signed the Nazi-Soviet Pact in 1939. See J.L. Granatstein, The Ottawa Men, p. 250.

Such reassurance was welcome by Canadian officials. In the House of Commons, Pearson had warned of unflagging Soviet efforts to convert developing countries to their system of government. "It is quite true," he said, "that when you travel through Asia, if you happen to stop at a station in India, in Pakistan or in any Asian country, you will see a lot of literature, Marxist literature, or communist propaganda literature sometimes disguised, that sells commercially for a penny or two."[71] For most western diplomats India's position was critical. "If India goes the wrong way", the entire region, except for Japan, would fall under the communist spell.[72] Canadians were well aware that China and India were the two born-leaders of the Afro-Asian group of nations. China had already made its choice and was now lost. India might only be half committed to capitalism and most of its industries might end up publicly owned, nevertheless, it could be persuaded to remain within the western ambit.[73]

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[71] House of Commons, Debates, Lester B. Pearson (Member of Parliament for Algoma, Secretary of State for External Affairs), August 2, 1956. At the time of the negotiations, uranium was already mined in the district of Algoma. Pearson must have been aware of the employment and income potential of the mine on his electors.

[72] Telegram 807, from The High Commission in New Delhi, November 20, 1956. RG 25, Vol. 10, file 1617-40. External Affairs Records, National Archives of Canada.

[73] Ibid.

Even if the Indians appeared politically undecided between East and West, their main problem nevertheless was how to bring India into the 20th century. Throughout his life, Nehru strongly believed in the benefits of science, in particular to help India attain its rightful place within the developed world. "It is science alone", declared Nehru passionately during one of the sessions of the Indian Science Congress:

> that can solve the problem of hunger and poverty, of sanitation and illiteracy, of superstition and deadening custom and tradition, of vast resources running to waste, of a rich country inhabited by starving people. Who indeed can afford to ignore science today? At every turn we have to seek its aid. The future belongs to science and to those who make friends with science.[74]

Nehru was supported in this quest by Dr. Homi Bhabha, an Indian nuclear physicist, who had also studied at Cambridge. Bhabha was considered a "brilliant scientist" and had been made a Fellow of the Royal Society in 1947 for his work on cosmic rays.[75] In 1948, Nehru had appointed him Chairman of the Atomic Energy Commission of India and given him the mandate to bring his country into the nuclear age. For Bhabha atomic energy was the future as he vehemently argued at the United Nations in 1955. "For the

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[74] David Hart, Nuclear Power of India (London, 1983), p. 34.

[75] Memorandum from the Secretary of State for External Affairs to the Prime Minister, October 7, 1955.

industrialization of the underdeveloped areas, for the continuation of our civilization and its further development, atomic energy is not merely an aid; it is an absolute necessity".[76]

The Special Relationship

Reid believed that India's future lay in the West, "because of its history, its traditions and its interests.[77] For Reid, it was imperative that Canada and the west should support the "political, economic and strategic" interests of India and that they come to its economic assistance.[78] This led him to suggest bilateral initiatives and to inform his superiors that, "Pressure to transfer Goa to India, participation in a drive at the U.N. against the evils of apartheid in South Africa would pay large profits in terms of Canadian national interests".[79]

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[76] Ibid.

[77] Telegram 807, from the High Commission in New Delhi, November 20, 1956. RG 25, Vol. 10, file 1617-40. External Affairs Records, National Archives of Canada.

[78] Ibid.

[79] Ibid. Reid received no encouragement to develop trade from his commercial staff. India's official policy of promoting local industry and self-sufficiency acted as a barrier to international commerce. Memorandum from R. Grew, Commercial Counsellor in New Delhi, to Escott Reid, March 4, 1955.

Although many Canadian officials found it easier to work with the Pakistani Moslems than the Indian Hindus,[80] they responded very positively to India because, like Canada, it had recently emerged on the world scene, had a parliamentary system of government and pursued an independent foreign policy.[81] India was a member of the Commonwealth, the multilateral institution which Louis St. Laurent had called the "instrument which, in cooperation with like-minded people, we could use for our common purpose".[82] St. Laurent personally knew India. In 1954, he had been the first Canadian Prime Minister to make an official visit to that country. Canadian officials were impressed that India, the largest democracy in the world, sought to maintain a balance between the "free world" and communism. India's Prime Minister preached pacific cohabitation and believed, as the Canadians did, in the

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[80] O.G. Stoner interviewed on June 23, 1988. He was the External Affairs Officer responsible for the administration of the Colombo Plan in 1955. Williams expressed similar views when interviewed on August 8, 1988.

[81] Louis St. Laurent stated that Canadians "have consistently sought and found friends amongst those of like political traditions". Louis St. Laurent, The Foundation of Canadian Policy in World Affairs (Duncan and John Gray Memorial Lecture, Toronto, 1947), p. 21.

[82] Ibid., p. 27. It should be noted that Louis St. Laurent was the Secretary of State for External Affairs at that time. He became Prime Minister in 1948.

principle of mediation.[83] India's willingness to play a positive role in the international forum also appealed to Canadians, because they saw it as the natural complement of their own efforts. Their common interest for the peaceful resolution of international problems made a new generation of internationalists from both countries eager to work together.[84] Reid was able to benefit from this empathy and, by the end of his term, was able to remark that:

> Nehru has a very great respect for the Prime Minister and yourself [Pearson]. He trusts the judgment of both of you. He looks on you both with something close to affection. He considers to use his highest term of praise that Canada is "a good country" and the Prime Minister and yourself "good men".[85]

Canadians perceived a "kinship" with India and, as Dale Thomson has pointed out, the "initiative appears clearly to have come from Canada".[86] Indian officials were eager to return the friendship. In the early 1950s Canada and India

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[83] The other factors that shaped India's world view were principles that Canada could easily identify with, for example, anti-colonialism, anti-racism, the recognition of an independent Asia. Michael Brecher, Nehru, pp. 563-564.

[84] Dale C. Thomson, "India and Canada: A Decade of Co-operation 1947-1957", International Studies, Quarterly Journal of the Indian School of International Studies, Vol. 9, No. 4 (July 1967-April 1968), 420.

[85] Telegram 793, from the High Commission in New Delhi, November, 17, 1956. RG 25, Vol 10, file 1617-40.

[86] Dale C. Thomson, "India and Canada: A Decade of Co-operation, 1947-1957", 404.

had demonstrated that the bridge could function. During the Korean War, for example, Canada and India jointly worked on the United Nations (U.N.) Ceasefire Commission. Canada also supported India's resolution at the U.N. on the exchange of prisoners. On that occasion, Canada even incurred the wrath of the United States because Pearson had declined to back an alternative American formula.[87] Yet there were shadows in the relationship and Canada and India did have fundamental differences. These became particular apparent when India was nominated as chairman of the International Control Commission (I.C.C.) while Canada and Poland became its two other members. Canada followed the policies of a western state: communism was a threat to liberalism, democracy and freedom. On March 24, 1955, speaking of Canada's role on the I.C.C., Pearson stated in Parliament that "our right to be neutral has been limited by our desire to strengthen the security of our country".[88] India, for its part, clearly "sympathized with the political objectives of the North Vietnam--reunification and elimination of Western influence".[89] The experience created tensions between Canada and India. Pearson went as far as to say that relations with India came under

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[87] Paul Martin, A Very Public Life, Vol. II (Toronto, 1985), p. 152.

[88] Ibid.

[89] Ramesh Thakur, Peacekeeping in Vietnam; Canada, India, Poland, and the International Commission (Edmonton, 1984), p. 253.

considerable strain because India, "tended to be unfair and difficult" particularly about Cambodia.[90] These experiences nevertheless were considered important by Canadians because they gave the country a role to play during an international crisis, and because they encouraged Canada as a Pacific nation gradually to readjust its myopic vision and to include distant Asia into its political calculations.

Scientific and technological cooperation appeared the ideal instrument to further strengthen the bonds between Canada and India. In the early 1950s, atomic energy was perceived as a vital tool for under-developed countries. It would be a powerful engine for the development of scientific and technical knowledge. It would enable the developing world to gain admittance into the industrial world. The power reactors would generate cheap and plentiful electricity, the research reactors would stimulate scientific research in medicine and agriculture. As early as 1945 Homi Bhabha wrote:

> when nuclear energy has been successfully applied for power production in say a couple of decades from now, India will not have to look abroad for its experts but will find them ready at hand.[91]

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[90] James Eayrs, In Defence of Canada, Indochina: Roots of Complicity (Toronto, 1983), pp. 191-218.

[91] Business India, 4-17 September 1978, quoted by David Hart, Nuclear Power in India (London, 1983), p. 3.

Pearson felt that massive and indiscriminate aid would have a detrimental affect and even create suspicion between the developing countries and the West. He realized that the donor must "go about it in the right way and the right spirit, in order to achieve maximum impact".[92] Local tools and methods and the slow introduction of change into the developing society would be more beneficial. Nevertheless, he thought that the one area where, "it will be practicable to transfer or transplant the technology of the West directly to the East is that of atomic energy".[93]

Conclusion

Such was the context in which Canada's foreign policy for a new era was established. The post-war period presented new opportunities and vehicles for cooperation. Many of these were created or strengthened by the post-war reconstruction effort which stimulated fast and widespread economic growth, by technological advances which, after years of war service, were starting to make an impact on everyday life and by new international institutions that promised freer exchanges and greater cooperation among the nations of the world. Nuclear power was conceivably the most dramatic

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[92] Lester B. Pearson, speech given at the Conference of the United Nations Association of Canada, May 27, 1955. MG 26, N. 9, Vol. 10. L.B. Pearson papers, National Archives of Canada.

[93] Ibid.

manifestation of the possibility of leaping forward with the help of science and technology. The multiracial Commonwealth was perhaps the most visible and dynamic of the regional institutions that promised to tear down walls of ignorance and to reduce inequalities among nations and peoples. It was therefore fitting that the N.R.X. reactor be offered to the Indians under the Colombo Plan.

For the Canadian bureaucrats and diplomats of the mid-fifties, the C.I.R. project held out the promise of reaching out further than immediate history, beyond the neat and secure political and social neighbourhood in which Canada had been born. The special relationship with India would be evidence to the world that countries could learn and benefit from each other. Building a bridge to India, harnessing nuclear technology to the service of man, creating a new and more equal world were not fantasies but the various facets of a single vision held by men who at heart were builders. But the building was not primarily meant for India. The C.I.R. project would enhance Canada's reputation as a major political and technological nation. Canada's nuclear industry would get an enormous boost. The project would illustrate Canada's willingness to play an independent and constructive role in international affairs. It would enable the officers of External Affairs to continue to influence the course of the post-war world. Thirty-three years later, Ritchie, who was

Head of the Economic Division during that time and who handled the negotiations, still feels it had been the most exciting time of their lives, the most dramatic part of their careers.[94] The Canadians were not only embarking on a project, they were also fulfilling a vision of Canada's place in the new world order.

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[94] A.E. Ritchie interviewed on June 16, 1988.

CHAPTER II

The First Phase of the Negotiations

Introduction

Hoping to identify feasible aid projects and to spend wisely the funds allotted by Parliament for the Colombo Plan, two Ottawa bureaucrats left Ottawa in late December 1954. They were O.G. Stoner, the desk officer for the Plan in the Department of External Affairs and Nik Cavell, the Head of the Colombo Plan Administration in Canada (a unit of the International Economic and Technical Cooperation Division of the Department of Trade and Commerce). Proceeding in "Santa Claus" fashion, the two flew over South and South East Asia for three months on a quest to spend $25 million. Projects had to be identified and monies committed before the end of the fiscal year or the funds would lapse.

From the vantage point of the late 1980s, it is easy to assume that the Canadian government should have sought to carry out a large technical assistance project within years of the establishment of the Colombo Plan. In reality, the C.I.R. was a unique and innovative undertaking. Forty years ago, Canada had almost no concrete development experience. Furthermore, projects that would be beneficial to the

recipient country and attract political and public support back home were difficult to find.[1]

Canadian Attitudes on Aid in the 1950s and the N.R.X. Project

In the early 1950s, the attitude of Canadians towards the needs of Third World countries was not very generous. When it came to funding an aid programme, Canadians seemed to clap with one hand only. Critics, such as the outspoken Minister of Agriculture, J. Gardiner, charged that these countries did not properly handle their economic problems and devoted too many resources to status-oriented goals. The funding of the Kashmir conflict, for instance, received priority over the welfare of the poor. To resolve the economic plight of the sub-continent, Gardiner proposed selling the jewels of the Maharajahs.[2]

In these circumstances, Canada's development assistance programme was initially predicated on tied-aid conditions. During fiscal year 1951-52, for example, India was under an obligation to purchase Prairie wheat with its Canadian Colombo funds.[3] Pakistan had to accept a second-hand

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[1] John W. Holmes, The Shaping of Peace: Canada and the Search for World Order, 1943-1957, Vol. II (Toronto, 1982), p. 176.

[2] Ibid.

[3] Ibid., p. 177. From these funds, India had to purchase at least $ 10 million worth of Canadian wheat.

power plant. By the mid-1950's, however, the Canadian economy was significantly stronger than it had been five years before, at the time the Colombo Plan had been conceived. The public was becoming more optimistic. Canadians were richer and felt a greater receptivity to the needs of others, including the poor of the Third World. Opposition to an aid programme was softening although the question was still hotly debated in the House of Commons.[4] While Canada continued to supply tied aid, its effectiveness and its reputation gradually improved with the delivery of needed and well-executed projects, such as aerial surveys, biological pest control and new transmission lines.[5] However, by the time of the C.I.R. project, in 1955, Canada still did not have a well-defined aid strategy and there was little domestic pressure for an active policy of development assistance. During the 1954 Colombo Plan

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[4] In the House of Commons, an M.P. stated that, "We must appear ridiculous and parsimonious to the world when we grudgingly increase our contribution by a million dollars a year". House of Commons, Debates, S.E. Law (Member of Parliament for Peace River), January 10, 1955. Other members complained, "that Canada was permitting $3 million of its Colombo Plan money to be used for hydroelectric development in India. It is quite ironical when you think that we in New Brunswick are asking to assistance with respect to our hydroelectric power development and cannot seem to get anywhere". House of Commons, Debates, T.M. Bell (Member of Parliament for Saint John-Albert), January 18, 1955.

[5] A.E. Ritchie interviewed on June 16, 1988. He stated that the Canadian public was of two minds. It did not quite understand what international aid was all about, nevertheless, it had begun to sense a responsibility towards the poorer nations of the world.

Conference in Ottawa, Pearson was reflecting the Canadian collective view when he said:

> The Colombo Plan is not by its very nature dramatic or the subject of sensational headlines, but it can show a record of steady and gratifying progress in promoting human well-being.[6]

Canadian bureaucrats, however, were of a different mind. Having experienced ten years of active internationalism, they wanted a dynamic policy that would catch the imagination of the public. They were planning new and original enterprises in a number of less-developed countries.[7] By April 1955, Pearson felt that technical training and financial assistance were not enough and that there must be a concerted effort and "more effective planning...[and the] tasks are measured not in years but in decades".[8]

The Canadian bureaucrats were the first to realize the potential of nuclear cooperation between Canada and India

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[6] Speech December 25, 1954, MG 26, N 9, Vol. 10. L.B. Pearson papers, National Archives of Canada.

[7] The C.I.R. project was not Canada's only major international cooperation undertaking in 1955. In Pakistan, plans were being drawn up for the construction of the Warsak dam on the Kabul river. March 21, 1955, RG 2, B 2, Vol. 5830. Cabinet Conclusions, National Archives of Canada.

[8] House of Commons Debates, Lester B. Pearson, (Member of Parliament for Algoma, Secretary of State for External Affairs), April 21, 1955.

and thus were the force behind the C.I.R.. For them, the project had éclat. It would enable India to take a first step in the use of nuclear technology for peaceful purposes. In the eyes of economic planners in the 1950s, nuclear applications would resolve major agricultural and health problems, power reactors would furnish abundant electricity at low-cost. For the arid sub-continent which could not rely on hydro-electric stations, nuclear energy would open the road to sustained industrial development. The project had other benefits. It would demonstrate that the Colombo Plan and the Commonwealth could make important contributions to development and would serve Canadian interests. The Canadian nuclear industry would be strengthened and have a far better chance of rapidly becoming financially self-sufficient. Finally, Canada would carry out its foreign policy of building bridges to the developing world and apply the principle of participatory internationalism.

In Nucleus, Bothwell states that the C.I.R. was Nik Cavell's idea.[9] This may not be so. Ritchie and Stoner are adamant that the project was initially proposed by the President of A.E.C.L., W.J. Bennett.[10] Ritchie also stated that he and Bennett drew the original outline of this project.

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[9] Robert Bothwell, Nucleus, p. 352.

[10] A.E. Ritchie interviewed on June 16, 1988 and O.G. Stoner interviewed on June 13, 1988.

Both Ritchie and Stoner recognize that Cavell was a competent technocrat who could carry out any task to a successful completion and that he enjoyed one important asset: an intimate knowledge of India gained while he served in the Indian Army. They consider however that he was not an innovator. Bennett, on the other hand, had the talent, the interest and the opportunity to launch the C.I.R.. During the war, he had been Howe's Executive Assistant. In 1947, he became president of Eldorado Mining and Refining Ltd. and, in 1953, also president of A.E.C.L..[11] Although not formally educated in science, Bennett was conversant in and enthusiastic about nuclear technology. He appreciated its benefits for Canada as much as he recognized its potential for countries that were poor in hydro-electric power.[12]

The project had perhaps been fermenting for some years already in the minds of the Technical Director of A.E.C.L., Dr. W.B. Lewis, and of Dr. Homi Bhabha. They had been colleagues at Cambridge. They had rowed in the same boat and they liked the same western art and music.[13] The two had kept in touch after university and Lewis was aware that the

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[11] Eldorado is a Crown Corporation. Its activities include mining and refining uranium in Ontario.

[12] Robert Bothwell, Nucleus, pp. 208-211.

[13] O.J. Stoner interviewed June 13, 1988.

Indian Atomic Energy Commission was establishing its first nuclear research centre in Trombay, near Bombay.[14]

The Stoner-Cavell Mission

Shortly after their arrival in New Delhi in early 1955, Stoner and Cavell met with the Counsellor for Economic Affairs at the American Embassy in New Delhi. They were informed that the United States had been "quite disturbed about the recent Soviet Loan [to India] for a steel plant"[15] and told that the Americans were troubled by the idea that the Soviets might be contemplating assisting India in the nuclear field. Subsequently, Stoner and Cavell learned that the Americans had similar designs and it now seemed that the field was already crowded and that Canada would face formidable competition. Knowing that Ottawa was ready to support a nuclear cooperation project that had a certain dash, Stoner and Cavell must have felt somewhat dispirited.[16] Stoner reported the news to his superiors. This prompted Ritchie to ask the Defence Liaison I Division what might be "the reaction of the Canadian authorities if either the U.S.S.R. or the United States were to assist the Indian Government in

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[14] Letter from W.J. Bennett to A.E. Ritchie, March 21, 1955.

[15] Memorandum from Economic Division to Defence Liaison I Division, March 15, 1955. D.L. 1 Division was responsible for N.A.T.O. and other strategic and military questions.

[16] A.E. Ritchie interviewed on June 16, 1988 and O.G. Stoner interviewed on June 13, 1988.

establishing atomic energy facilities".[17] Ritchie's memorandum, dated March 15, 1955, constitutes the first piece of correspondence on the departmental file on nuclear cooperation between Canada and India. The memorandum quoted the American Counsellor in New Delhi as saying that:

> [he] admitted that the United States had been caught off base by the [Soviet] offer. Their Embassy here [New Delhi], however, had recommended to Washington that serious consideration should be given to the immediate provision to India by the United States of an atomic reactor unit. The United States Embassy here [New Delhi] had reason to suspect that the Soviets might be toying with a similar proposal.[18]

The Canadians had not expected to compete with the two super-powers. As much as the Americans, they were "caught off-base". The Canadians had hoped for so much. Ritchie's memorandum now went on to speculate whether Canada might still be interested in the supply of atomic "by-products" such as radioactive isotopes for medical uses. The memorandum ended with the remark that the question "must be of interest to our own authorities in this field".[19] Two days later, discussions were held between Bennett and Ritchie. The

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[17] Memorandum from Economic Division to Defence Liaison I Division, March 15, 1955.

[18] Ibid.

[19] Ibid.

outcome was positive and the Canadian Government decided to pursue the project and challenge the two powers.[20]

Preliminary Phase

These first discussions between A.E.C.L. and External Affairs were followed by Bennett's formal reply to Ritchie.[21] Bennett concurred with External and stated that Canadian assistance to India in nuclear energy was practical. His opinion that "a research reactor of the N.R.X. type would be of interest to India" was based on information he had received that Bhabha was "anxious to build up a strong scientific team as a preliminary to the development of atomic power for use in India".[22]

Jules Léger first raised the matter with Pearson on March 21. His Memorandum to the Minister, an eight page document, is very significant.[23] The memorandum outlines the Canadian position vis-à-vis India and Asia and the benefits that India would derive from the project, but more important, it sets down the first parameters of a Canadian policy on the

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[20] Letter from A.E. Ritchie to W.J. Bennett, March 22, 1955, which alludes to their conversation of "last Thursday" (March 17, 1955).

[21] Letter from W.J. Bennett to A.E. Ritchie, March 21, 1955.

[22] Ibid.

[23] Memorandum to the Minister, March 21, 1955.

peaceful uses of nuclear energy. The concept "participatory internationalism" is implicit and Léger lists the many advantages: commercial, technical and political, that would accrue to Canada if such a project were offered to India.

Léger added that, from a commercial perspective, Canada could not afford to lag behind in the very competitive field of atomic energy. Léger hinted that if Canada persevered, it could achieve a preferred position. The Canadian firms which would oversee and build the reactor would derive great advantages and would gain valuable experience in building a reactor outside Canada, under different circumstances. The scientific community would also welcome the opportunity to see the N.R.X. function under different climatic and topographic conditions.

In addition, the offer had international political merit. It would testify to the West's willingness "to cooperate with friendly Asian countries in developing atomic energy for peaceful purposes".[24] It was also to serve as a counter-point against the prevailing impression in Asia that the West was only interested in the destructive power of atomic energy and it would assuage fears that nuclear weapons might once more be used against Asian populations. Canada was

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[24] Ibid.

trusted by India who would find it "less embarrassing to receive direct assistance from us in this rather delicate field than from either of the larger atomic powers whose motives might be questioned by groups in India as well as by other Asian countries".[25] The memorandum proposed that scientists from other Colombo Plan countries could train at the Indian site in order to gain some experience on a reactor operating under local conditions. Jules Léger ended by mentioning that rumours were circulating that the Soviets were in fact assisting China in the development of atomic energy but solely for peaceful purposes.

Léger's memorandum did not treat substantively the risk of horizontal proliferation nor the fuel ownership question. Safeguards are summarily covered in a single paragraph which states that, with an N.R.X. type reactor, "there would apparently be no significant security problem".[26] It appears that the officials at External Affairs were not really cognizant of the security and proliferation risks that were entailed. The Canadians were venturing into a new field. There were no precedents for nuclear cooperation between the West and Asia and no international agency to monitor peaceful

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[25] Ibid.

[26] Ibid. Safeguards are "accounting checks...to detect the diversion of nuclear material to nuclear explosives production". David Hart, Nuclear Power in India: A Comparative Analysis, (London, 1983), p. 43.

nuclear activities. The memorandum only said that the security aspect was negligible because most designs and components of the reactor had been declassified. Only the "performance data" continued to be restricted.[27] It was understood that plutonium[28] was one of the key elements in the manufacturing of an atomic weapon and that the problems related to its control had to be resolved. However, the reasoning was that "this presumably could be surmounted, especially if we assume that one way or another a country like India will acquire a reactor from some source (friendly or otherwise) and will be producing this material".[29] Also, sooner or later, an international agency would be established whose sole purpose would be the verification of peaceful uses of nuclear energy. Clearly, the issue had not been thought through and it seems that the Canadians did not expect it to cause them major problems during their negotiations with India.

In a hand written comment at the bottom of the memorandum, Léger praised the initiative and said,

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[27] Ibid.

[28] Plutonium does not exist in nature. It is a by-product of the irradiation of uranium in a nuclear reactor. It is a fissile material, i.e. a material that self-detonates and produces a nuclear chain reaction when it reaches its critical mass. Ronald A. Knief, Nuclear Energy Technology, (New York, 1981), pp. 4-21.

[29] Memorandum to the Minister, March 21, 1955.

"Politically, it could do more to strengthen our relations with India than anything I could think of".[30] He also suggested that the project could be financed over and above the Colombo Plan appropriation, and that the public would support it. Léger, who seldom showed enthusiasm, had abandoned his studied imperturbability and signed a document that is animated by an undercurrent of excitement.

The memorandum also injected a note of urgency. The Minister was told that the Canadian High Commissioner in New Delhi, Escott Reid was planning to return to Canada on home leave in early April. Officials of the Department were anxious that the matter be raised with the Indian Government prior to his departure. In addition, the Minister of Trade and Commerce, C.D. Howe, had expressed an interest in the venture and hoped to meet his Indian counterparts on his return from Australia and New Zealand in early May.[31] It seemed obvious that Howe should be privy to the negotiations because they involved trade in a potentially lucrative field. Nuclear technology was considered part of Howe's administrative empire and he had a formidable reputation for getting things done.

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[30] Ibid.

[31] C.D. Howe would not visit India unless the Indian Government had been offered the project and was in a position to make a considered reply.

On March 21 and before cabinet was informed, Jules Léger called an informal meeting to discuss the project with Bennett and with the Secretary to the cabinet, R.B. Bryce; the Associate Deputy Minister of Trade and Commerce, M. Sharp; and the Assistant Deputy Minister of Finance, A.F.W. Plumptre. The proposal was received with great interest and the officials agreed that it should "be explored further as a matter of considerable urgency".[32] Bennett stated that Sharp and he had already informed Howe. They had found him "keen" and "interested". Plumptre stated that the Minister of Finance, W.E. Harris, would probably have no objections if the project could be financed under the Colombo Plan.[33]

Shortly thereafter, a memorandum was sent to cabinet.[34] Titled "Atomic Energy and Canada's Colombo Plan Contribution", the document stressed many of the points which had been included in the March 21 Memorandum to the Minister. Mentioned again were arguments of commercial advantage to Canada and of competition with the United States and the United Kingdom. The memorandum recommended that Reid raise the matter with the Indian government (particularly with Nehru) and make five points. First, the atomic research

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[32] Memorandum to File, March 21, 1955.

[33] Ibid.

[34] Memorandum to Cabinet, undated, but probably written between March 21 and 25, 1955.

reactor offered by Canada under the Colombo Plan was similar to the N.R.X. which had been operating successfully in Chalk River. Second, at this stage, a research reactor was probably more versatile than a power reactor and India could effectively build a solid body of knowledge by using such a good learning tool.[35] Australia, Belgium, Denmark, and Switzerland were following this very road. Third, as a Colombo Plan project, the reactor should be considered a regional venture. Other Asian scientists would join in the research or receive training at the site. This would spread the knowledge across Asia. Fourth, Indian scientists would be allowed to train in Canada in order to become proficient with the reactor and be able to run it by themselves. Fifth, the project would be funded under the regular Colombo Plan appropriation and would therefore be at the expense of other projects under discussion. The Indian authorities would need to indicate which projects were to be dropped.[36]

The proposal did not encounter any major objection within cabinet. Pearson and Howe were both strong ministers and they could easily have overcome opposition from their

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[35] The Canadian atomic energy industry considered that the Indians did not have adequate personnel nor facilities to operate and maintain a complex pile such as a power reactor. By comparison, the N.R.X. would be simple to operate. Memorandum to file, May 4, 1955.

[36] Memorandum to Cabinet, undated, but probably written between March 21 and 25, 1955.

colleagues.[37] Cabinet was also preoccupied with other business, particularly the extension of the temporary emergency powers to Howe, and the pipe line debate.[38] It took only one week to obtain the approval. The proposed project was handled in an almost perfunctory manner and Ritchie cautioned, "In view of the character of the brief discussions on this subject in cabinet this morning you may think it desirable that this message [the telegram of instructions to Reid] be approved by the Minister himself".[39]

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[37] St. Laurent was also in favour of the C.I.R.. Ritchie stated that Léger, who was "on good terms" with the Prime Minister, had no doubt already recommended the project to him. A.E. Ritchie interviewed on June 16, 1988.

[38] These temporary emergency powers had been granted to Howe in his capacity of Minister of Defence Production at the time of the Korean War. Almost no soldiers remained in Korea and the opposition in the House of Commons was demanding that these powers be terminated. The pipe line debate was the other major problem confronting the government. Howe's dream was to bring gas from Alberta to Ontario. It was an enormous financial and logistical undertaking and its American backing was condemned by the opposition as a sell out. The actual debate began on March 10, 1955 when Howe came under fire from the opposition. There was a brief respite while Howe was in Australia and New Zealand, and the debate was taken up with greater vehemence after the minister returned. It was probably these two problems that lay uppermost in the mind of Cabinet members and the Prime Minister. See Robert Bothwell and William Kilbourn, C.D. Howe, A Biography (Toronto, 1979), pp. 283-298. The Pipe Line Debate would haunt the Liberals until the end of their mandate and, not surprisingly, the negotiations for the N.R.X. would hardly receive any attention from the House of Commons or be covered by the press in any substantive manner.

[39] Memorandum from A.E. Ritchie to the Under-Secretary, March 30, 1955.

Early Negotiations

This is where matters stood in late March 1955. The Secretary of State for External Affairs had raised the subject with the Prime Minister (March 25,1955), cabinet had been informed and the strategy for dealing with the Indians had been approved. The cost of the project to Canada was estimated to range between five and ten million dollars.[40] It had been agreed that Lewis should write informally to Bhabha to inform him of the various features of the N.R.X. and to inquire whether there would be any interest on the part of India to obtain one (without however stating outright that India might be able to acquire it through the Colombo Plan).[41]

On March 26, 1955 the telegram of instructions was sent to the Canadian High Commission in New Delhi. Reid was asked to take the project into account as he scheduled his appointments before his home leave. He was urged to "leave any calls on Mr. Nehru or [the Finance Minister] Mr. [Chintaman Dwarkanath] Deshmukh until the near end in case the decision of our Ministers is delayed or is late in reaching

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[40] Memorandum to the Prime Minister, March 25, 1955. First cost estimates were very rough. In the early months, it was reckoned that the entire project would cost around $15 million of which Canada was expected to pay about half. See letter from Pearson to the Minister of Finance, W.E. Harris, June 14, 1955.

[41] Letter from W.B. Lewis to Dr. H. Bhabha, April 5, 1955.

[New Delhi]".[42] A few days later Reid enthusiastically replied that the proposal would have a very favourable "impact on public opinion in India".[43] Although the High Commissioner was aware that Canadian public support for aid was still soft, he suggested to Ottawa that the reactor be an outright gift.[44] As he stated, this would mean that "we would pay all the costs, the local costs, the costs in Canadian dollars, and the freight". He emphasized that "[t]he local costs can all be paid out of our counterpart funds which will over the next two years amount to 12 million dollars".[45] He urged that an exception be made for this project because it "would not be difficult for our friends in India to contrast our generosity

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[42] Telegram 185 to the High Commission in New Delhi, March 26, 1955.

[43] Telegram 204 from the High Commission in New Delhi, March 29, 1955.

[44] Reid stated he was aware that it was not easy "for the government of Canada to recommend to Parliament that the taxpayers of Canada make a gift of money to the governments of South and South-East Asia" and that it would have been impossible if the Colombo Plan had not been a Commonwealth concept. Escott Reid, "A Note on Canadian Foreign Policy". MG 26, N 1, Vol. 12. L.B. Pearson papers, National Archives of Canada.

[45] Telegram 204 from the High Commission in New Delhi, March 29, 1955. Under the Colombo Plan, local costs, mainly labour, freight, and insurance were to be incurred by the recipient country. More shall be said about the apportionment of costs later. A counterpart fund is normally created when a development project entails the sale of goods or services in the recipient country. All surplus (i.e. revenue exceeding administration costs) is deposited in the fund rather handed over to the department of national revenue of the recipient country. Monies in the counterpart fund are used to finance further development projects.

with the full payment required by Russia for the steel plant which it may be erecting in India".[46]

On March 30, Escott Reid received a second telegram from Pearson giving him the approval to raise the subject with India. Discussions were to be kept on a confidential basis until it was confirmed that India was interested in the N.R.X. and not conducting similar arrangements with another country.[47] No publicity was to be given to the project to avoid arousing undue suspicion in other Asian countries. It was expected that "exploratory conversations" would not take more than a "few weeks" and that "adequate publicity" could then be given to the project. Canada still hoped that Howe could visit New Delhi on his return from Australasia and thus give a formal character to the negotiations.[48]

At about the same time a letter was sent to the Canadian High Commissioner in Karachi, S. Morley Scott, to inform him of the project and to assure him that it did not in any way undermine the relationship between Canada and

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[46] Ibid. The Soviets helped construct the Bhilai steel plant. The bilateral agreement was signed in 1955.

[47] On that day, Cabinet had concurred that the proposal should be formally raised with India. Record of Cabinet Decision of March 30, 1955 (dated April 14, 1955). Telegram 197 to the High Commission in New Delhi, March 30, 1955.

[48] Telegram 197 to the High Commission in New Delhi, March 30, 1955.

Pakistan.[49] All communications between Ottawa and New Delhi had so far been conducted by telegram. The slow route chosen for communications with Karachi suggests that Ottawa expected to receive a strong negative reaction from Scott. Without doubt, the project would make his position in Pakistan rather awkward. Furthermore, the Pakistanis might attempt to delay the negotiations between Canada and India. In the letter, Ottawa asserted that once the project became public, "it should be presented in a manner which would be satisfactory to other Asian countries and particularly to Pakistan".[50] The letter finally stipulated that one of the conditions to be demanded of India was that other countries be able to receive training at the facilities. Thus Pakistan would not be left out.

Reid first presented the Canadian offer to his friend the Secretary General for External Affairs, Sir Raghavan Pillai, on April 1, 1955. The Indian official was "delighted to learn of the offer especially since he felt it would be much easier to accept this kind of assistance from Canada than either the United States or the United Kingdom".[51]

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[49] Letter to S. Morley Scott, High Commissioner to Pakistan, March 30, 1955.

[50] Ibid.

[51] Telegram 218 from the High Commission in New Delhi, April 1, 1955.

Astutely, Pillai immediately raised three obstacles. First, it might be "politically embarrassing" for India to train scientists from other Colombo countries at the Trombay nuclear facility. Second, if other Asian scientists received their training there, the project would be beneficial to the rest of the region and its cost should not be borne solely by India. Third, India's acceptance of the offer should not have a deleterious effect on other projects about to be undertaken with Canada under the Colombo Plan.[52]

A few days later, during a second informal conversation with Reid, Pillai stated that after careful consideration he thought that it would not be "politically embarrassing" for his government to let scientists from any other Colombo Plan country train at the new atomic centre.[53] The way now seemed open for negotiations but, in fact, the "exploratory conversations" would take months rather than "weeks" as Ottawa had anticipated. The Canadians pressed for a quick resolution but India was in no hurry. The Indian reaction seemed to fit the description made by the Canadian Trade Commissioner in New Delhi who would write in his annual report that, "Indian mental processes in practically all types

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[52] Ibid.

[53] Telegram 227, from the High Commission in New Delhi, April 5, 1955. Pillai was directly quoted by Reid who placed the two words between quotation marks.

of negotiations are geared to the 'bazaar' or bargaining approach".[54] At first glance the explanation does appear to have merit but, in this case, it would be an over-simplification of Indian negotiating tactics. The Indians were aware of Canada's sense of urgency and may have sought to exploit it. They obviously would not waste a good opportunity to haggle, but they had other and more direct preoccupations and objectives. Under the provisions of the Colombo Plan, India would be responsible for all internal expenses and would therefore have to defray approximately half of the cost of the project. India had to be fiscally conservative and really stretch its meagre financial resources.

Second Stage

After giving this sympathetic but guarded preliminary reaction, the Indians procrastinated. Three weeks later, while Reid was sailing back to Canada, the Acting High Commissioner, Bruce M. Williams, sent Ottawa a telegram that did not hide his disappointment.[55] Perhaps put off by the

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[54] Annual Trade Report, New Delhi, 1956, RG 20, Vol. 1496 file 18-1-45. Department of Trade and Commerce Records, National Archives of Canada.

[55] Telegram 259 from the High Commission in New Delhi, April 19, 1955.

offer of a research rather than a power reactor[56], perhaps hoping for a better deal, the Indian Secretary General for External Affairs was now proposing a new gambit. Williams reported:

> Pillai then said (speaking off the record) that if the reactor were an outright gift and India's acceptance of it was not at the expense of other projects for Canadian assistance to India under the Colombo Plan, there would be no difficulty in arriving at a decision. If, however, the gift of the reactor were at the expense of other projects, then it would be necessary to consider it in the light of the projects which the Indians have put forward and in the context of whatever recommendations Bhabha might make after seeing it.[57]

The Indians also suggested that they had "some question whether the N.R.X type reactor was not becoming obsolete".[58] In these circumstances, Canadian officials decided that it was unnecessary for Howe to visit New Delhi. Somewhat

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[56] There were domestic political motives behind Ottawa's decision to supply India with a research reactor. It would be politically unacceptable for the government to offer India a power reactor at concessionary terms, when one had been refused to Nova Scotia. Furthermore, it was thought that the principle "of learning to walk before attempting to run" ought to apply. Memorandum for the Minister, March 21, 1955.

[57] Ibid. It may seem curious that the negotiations did not include the Indian High Commissioner in Ottawa, Dr. M.A. Rauf. Pillai, however, had insisted that secrecy should be maintained throughout the negotiations and had glibly stated that, "in all probability anything which we might say to Dr. Rauf would become known to the other Ministers in New Delhi fairly quickly." Ottawa did not think it was its job to inform the Indian High Commissioner. His home office should do it. Memorandum for the Under-Secretary from A.E. Ritchie, April 20. 1955.

[58] Ibid.

ambiguously, the Indians had also intimated that they were looking at the technology of other countries. The Canadians not only had to face a delay, they now had to hope that their project could withstand the pressures of international competition.

The Indians had thrown down a challenge. If Canada wanted to obtain an understanding quickly, all of Pillai's conditions, including the outright grant of the reactor, would have to be met. On the other hand, if time was not of the essence, Bhabha would have to be convinced that the N.R.X. was indeed what India's young atomic industry needed.[59] Another important factor was that Prime Minister Nehru was on a trip to Eastern and Western Europe and that no final decision could be taken before his return.[60] External Affairs and A.E.C.L. officials could only hope that Bhabha would soon visit Canada and get a close-up look at the N.R.X.. Bhabha, however, would not commit himself. He was scheduled to preside over the first Atomic Energy Conference to be held in Geneva during the summer. For the time being, he simply requested that the "data sheet and specifications of the reactor" be forwarded

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[59] Bhabha had heard of the N.R.X. accident but the Canadians had assured their Indian colleagues that the reactor has been completely rebuilt "with many new features". Telegram 243 to the High Commission in New Delhi, April 19, 1955.

[60] Telegram 347, from the High Commission in New Delhi. May 27, 1955.

to him.[61] Finally, in a letter to Lewis, Bhabha had hinted that he was more interested in the United Kingdom reactor which he considered a more advanced design.[62]

On June 8, a memorandum was sent to Pearson to recapitulate the progress made during the informal negotiations and to outline the problems that had been encountered. Again, the Department argued the economic and political benefits of the deal. It was recommended that the proposal be recast and re-submitted even before Nehru's return from his European tour. The memorandum reveals some anxiety about the competition among western atomic powers. In Paris, Bhabha had met an A.E.C.L. representative, Dr. David Keys. He had again spoken of his preference for the British reactor and stated that India was considering obtaining a "swimming pool" type reactor from the United States. There was thus fear that the Indians might chose British or American technology if the N.R.X. were financed out of normal Colombo Plan funds and therefore at the expense of other aid projects.

There seemed to be a concerted effort on the part of the Indians to raise the anxiety level of the Canadians.

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[61] Telegram 299 from the High Commission in New Delhi, May 3, 1955.

[62] Memorandum to file, May 4, 1955.

The effort bore fruit and the Canadians attempted to make the offer more appealing. The memorandum said that:

> [T]he United Kingdom and the United States are showing great interest in the development of atomic energy in Asia and you may be sure that Canadian companies would welcome an opportunity to gain a foothold in this part of the world. The commercial interest which the United States is taking in the development of atomic energy in Japan makes it perhaps all the more imperative why Canada should assist India in making comparable advances in this field.[63]

The memorandum argued that since the research reactor would be a training facility for other Asian scientists in accordance with the "spirit of the Colombo Plan", it should be considered a "regional project". It concluded that if the Government was "prepared to vote additional funds in the order of approximately $10 million for the reactor, there is good reason to suspect that India would be very pleased to accept the Canadian offer".[64]

The Canadians buckled. On June 14, in a letter to Howe who had just returned from his trip, Pearson stated that Canada should make the offer "more precise and more attractive".[65] He also made reference to a statement made a

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[63] Memorandum to the Minister, June 8, 1955.

[64] Ibid.

[65] Letter from L.B. Pearson to C.D. Howe, June 14, 1955. MG 27 III, B 20, Vol. 87, C.D. Howe papers, National Archives of Canada.

few days before by the President of the United States. Dwight Eisenhower had given another "Atoms for Peace" speech in which he had recommended that his country provide nuclear reactors to other nations:

> First, we propose to offer research reactors to the people of free nations who can use them effectively for the acquisition of the skills and understanding essential to peaceful atomic progress. The United States in the spirit that moves us, will contribute half the cost. We will also furnish the acquiring nation the nuclear material needed to fuel the reactor.
>
> Second, within prudent security considerations, we propose to make available to the peoples of such friendly nations as are prepared to invest their own funds in power reactors, access to and training in the technological processes of construction and operation for peaceful purposes.[66]

According to Pearson, competition came not only from Canada's old nuclear allies but, in addition, from the Soviet Union which was "contemplating some dramatic gestures".[67] He underlined the importance of India as "a key country in Asia and in the Commonwealth, and a country with which we have

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[66] The New York Times, June 12, 1955. This "Atoms for Peace" address was delivered at the Commencement ceremonies at Pennsylvania University. Two years before, President Eisenhower had made his original "Atoms for Peace" speech at the United Nations General Assembly. On that occasion he had declared: "It is not enough to take this weapon out of the hands of the soldier. It must be put into the hands of those who will know how to strip its military casing and adapt it to the arts of peace". The New York Times, December 9, 1953.

[67] Letter from L.B. Pearson to C.D. Howe, June 14, 1955. MG 27 III, B 20, Vol. 87, C.D. Howe papers, National Archives of Canada.

developed particularly important relationships in recent years".[68] Pearson added that Canada, "should offer all, or a substantial part, of the cost of the reactor over and above the present total of our Colombo Plan contribution".[69] Pearson wrote virtually the same letter to the prime minister and to the finance minister.[70]

Ottawa had moved substantially closer to the proposal that Reid had originally made on March 29 that all costs be incurred by Canada. The reactor would be offered as an outright grant and financed with new funds over and above the yearly Colombo Plan allotment for India. India, however, would still be responsible for local costs. Canadian officials were anxious to emphasize that the project should still fall within the framework of the Colombo Plan, lest it be "misunderstood" by the Asian community.

In his reply to Pearson, Howe agreed that it would be very advantageous to get a good trading position in the area, "rather than allow the United States or the United

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68 Ibid.

69 Ibid.

70 Letter from Lester B. Pearson to Prime Minister St. Laurent, June 14, 1955 and letter from Lester B. Pearson to the Minister of the Department of Finance, W.E. Harris, June 14, 1955.

Kingdom to do so".[71] He added that the sum of $7 million seemed a fair estimate of the costs to be incurred by Canada. He felt, however, that Canada should be responsible for building the reactor and India should supply:

> the necessary land... and also undertake to build the water and sewage pipelines to and from the reactor...In this case, I would favour the inclusion of freight on materials shipped from North America. We could also arrange for at least the initial charge of uranium rods, sufficient to put the reactor in operation.[72]

In his letter to Pearson, Harris agreed to make the "offer...more attractive and precise" but stated that Canada should not assume the shipping charges, thereby creating a precedent" unless there is a particular advantage to be gained".[73]

On July 10, a second memorandum was sent to cabinet.[74] Recapping events since cabinet was last informed on March 30, Pearson said that India's hesitancy was not due "to a lack of interest", but to a fear of losing conventional projects which it had been allotted under the Colombo Plan

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71 Letter from C.D. Howe to L.B. Pearson, June 15, 1955.

72 Ibid.

73 Letter from W.E. Harris to L.B.Pearson, June 28, 1955.

74 Memorandum from L.B. Pearson to Cabinet, July 10, 1955.

that fiscal year.[75] He further reasoned that it would not be "unsatisfactory" for Canada if India were to procure a reactor from the United States or Great Britain, but the possibility that India might procure one from the Soviet Union was anathema to both Canada and the West. Pearson argued that Canada had substantial reasons to take the initiative. Commercially, Canadian firms would be stimulated and Canada would gain a leadership position. Politically, the project would cement the Canada-India relationship and make Canada the first nation to have set up an experimental nuclear reactor in the Third World.

Pearson seems to have been more sensitive to the project's immediate economic benefits for Canada. His memorandum devotes far more space to economic factors and underlines that Canadians were interested in taking this lucrative trade away from the British and Americans. Pearson concluded by urging cabinet to allot "supplementary funds" to the project. Ministers were obviously convinced because the next day the Registrar of the cabinet, W.E.D. Halliday, recorded the following three decisions:

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[75] Canada was planning to finance two major projects in India under the Colombo Plan: the Kundah Hydro-electric Project in the State of Madras and the Aero-magnetic Survey of Western Rajasthan and the Uttar-Pradesh Province. Canada's contribution would amount to $20 million to be spent over a period of two years (1955-57). Memorandum to Cabinet, March 21, 1955. RG 2 B 2 Vol. 5830. Cabinet Conclusions, National Archives of Canada.

> (a) that a message be sent to the Indian Prime Minister restating the offer, that "Canada was prepared to provide a research reactor out of funds supplementary to the present total of the Colombo Plan contributions, but within the framework of the Plan as a whole;
> (b) that it be suggested that India might permit scientists from other countries in the area to use the facilities which would become available; and
>
> (c) that this project, if accepted, be taken into account in the determination of Canada's participation in the extension of the Colombo Plan to be considered in the meeting next autumn.[76]

On July 15, a formal offer, which included the new financial considerations, was sent to India in the form of a letter from St. Laurent to Nehru. The missive underlined the benefits which India would gain if it considered Canada's offer positively. "[T]he tremendous potentialities offered by atomic energy...would seem to hold the promise of altering radically the economic aspects of power production in India".[77] The Canadian prime minister added that if Nehru "decided to accept the proposal made above", India "would be prepared to permit scientists from other Asian countries in the Colombo Plan to benefit from the facilities available at any atomic energy research centre in India where the research reactor from Canada might be installed".[78] Finally St.

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[76] W.E.D. Halliday, the Registrar of the Cabinet, Record of Cabinet Decision, July 11, 1955.

[77] Telegram 454 to the Canadian High Commission in New Delhi, July 15, 1955. The entire text was to be relayed to Nehru.

[78] Ibid.

Laurent announced that the reactor would be funded "in a manner which would leave virtually unchanged the amount of funds available for assistance to India in financing conventional development projects".[79]

Ottawa had more than broad political considerations in mind. While the message to Nehru was replete with altruistic rhetoric, a separate telegram spelled out that the public announcement of the project should be timed for maximum impact and outlined such mundane details as the sharing of the costs of the reactor. A communique issued at some time between the Geneva Conference on Atomic Energy and the forthcoming Colombo Plan meeting in Singapore would be most effective.[80]

Negotiations now took on a formal character. The initial phase had been entirely conducted orally. Sending a diplomatic note placed India under an obligation to react. Thus India could no longer hedge and the negotiations could be expected to proceed at a faster pace.

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[79] Telegram 455 to the High Commission in New Delhi, July 15, 1955.

[80] Ibid.

The Element of Competition

The Indians were favourable to the project but, as the Acting High Commissioner reported, there remained Pillai's original objection regarding the foreign scientists.[81] The Indian Secretary General had vacillated on the question. On April 1, he had stated that it would be "politically embarrassing" for India, to have non-Indian scientists train at the site. Only four days later, Pillai had recanted and said that India would not object to foreigners training at the centre. Now, in mid-July, he was hardening his position again, saying that India must weigh the consequences of such openness. In all probability the Indians had decided, upon furthe examination, that they did not want non-Indians within the perimeter of their main nuclear research installation. As a compromise, Williams suggested that foreign scientists might have limited access to the facilities and be barred from areas considered secret.[82]

Again Pillai raised the spectre of competition. He communicated to Williams that while the Prime Minister and he were visiting the Soviet Union, they had been impressed by the Russians' technical expertise in the field of hydro-electric power. The Indians were extremely proud that, during the

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81 Telegram 467 from the High Commission in New Delhi, July 18, 1955.

82 Ibid.

visit, the Soviets had arranged for Bhabha to inspect their nuclear installations.[83] All nuclear powers were trying to impress the public about the openness of their nuclear technology and plans. This theme had been adopted particularly by the Soviets and Americans at the Geneva Atomic Conference. In reality, however, the entire field was shrouded in secrecy. Even cooperation projects were closely held information. For instance, the Indians were interested in obtaining British fuel elements for the Apsara "swimming-pool" reactor.[84] Bhabha had mentioned this to some Canadian officials but the discussions with the United Kingdom, which were proceeding at the same time as the negotiations for the N.R.X., were kept secret from the Canadians. Even in Canada, the negotiations with India were a carefully guarded secret to which only very few senior officials were privy. Thus it would appear that the Indians were rather mischievous in revealing that the Soviets were making overtures towards them. Perhaps India hoped that Canada would show greater eagerness for the project and offer more concessions.

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[83] The Soviets and other nuclear powers were extremely secretive about their nuclear technology and seldom allowed foreigners to view them.

[84] The Apsara was India's first nuclear research reactor. It was designed and constructed entirely by Indian engineers and went in operation in August 1956. Numbered letter 882 from the High Commission in New Delhi, August 6, 1957. RG 25, Vol. 414, 14003-J-2-1-40. External Affairs Records, National Archives of Canada.

Back in Ottawa, there was a lively debate as to whether and when Canada should inform the United States and the United Kingdom. It was decided that, on account of the nature of the project and the competition among the three countries, the negotiations should be kept "highly confidential".[85] The Canadian Ambassador to the United States, A.D.P. Heeney, was in complete agreement with the policy. The negotiations were still at the early "offer stage" and, he stressed, the Americans had not "always been in a hurry to tell us in advance of their intentions, domestic and international, in the atomic energy field".[86] Heeney recommended that the Americans only be informed "some days before a public announcement is made". Ottawa evidently agreed. The "some days" in Heeney's telegram is underlined and emphatically accompanied by the marginal remark, "not too long--a day or so would be enough".[87]

The advice from the Acting High Commissioner in London, Frederick Hudd, was quite different. He "strongly" recommended that the Canadian officials "avail [themselves] of the first possible opportunity to acquaint the United

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[85] Despatch E 1046 to the Embassy in Washington, July 18, 1955.

[86] Telegram WA 1242 from the Canadian Embassy in Wasnington, July 23, 1955.

[87] Ibid.

Kingdom authorities with the terms of the most recent cabinet decision".[88] Britain had always informed Canada of any on-going discussion with another country on atomic energy matters.[89] He added that Britain was making "a determined bid to capture the widest possible export market for atomic installations while it still enjoys a head start in the development of commercial atomic power".[90] Hudd ended with the recommendation that Canada let Britain take the lead in export markets. His advice appears rather curious, almost accepting as inevitable that Great Britain should be a larger exporter of nuclear technology. In retrospect, his assertion on the free flow of information from London can be refuted because the British authorities did not reveal to the Canadians the progress of their negotiations with India regarding the supply of fuel for the Apsara reactor. Ottawa never resolved the question of when to let its war-time nuclear allies know.[91] Canada, the United States and the

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88 Telegram 1248, from the High Commission in London, July 27, 1955.

89 Ibid..

90 Ibid.

91 Canada was committed to its nuclear allies not to divulge any nuclear secrets. With the Quebec Agreement of 1943 the three Anglo-Saxon allies undertook to share all nuclear information in order to ensure a speedy victory over the Axis powers and Japan. The Atomic Energy Act of 1946 (the McMahon Act) restricted the nuclear information that could pass among the three allies. It was not until 1953 that President Eisenhower reversed this rigid policy with the Atoms for Peace Plan. The American President amended the McMahon Act and allowed information on nuclear technology for industrial

United Kingdom had an agreement to consult before they "could agree to any proposal which would transfer ownership and control of the fuel elements and by-products" to another country.[92] Nevertheless, Canadian officials decided to maintain secrecy until Canada and India had reached a formal agreement.[93] In the end, however, a resolution of the issue was forced on the Canadians.

External Affairs Reviews the Issues

In a memorandum dated July 26 Stoner reviewed the situation for Ritchie and raised a number of major questions.[94] First, Canada should perhaps not be so adamant about training scientists from other Asian countries at the reactor site if indeed this posed a security problem for India. Second, Canada had to determine whether to send Canadian experts to India for several years or to train Indian scientists at Chalk River. Third, Canada had to take into consideration the possibility that India might allow non-

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application, except for "restricted data", to transfer without restriction among America's allies. Harold L. Nieburg, Nuclear Secrecy and Foreign Policy (Washington, 1964).

92 Telegram E10, to the Canadian Delegation to the Consultative Committee of the Colombo Plan Conference, Singapore, October 5, 1955. It is of interest that no reference is made to the trilateral agreement prior to this telegram.

93 Letter from W.J. Bennett to Jules Léger, July 28, 1955.

94 Memorandum from O.G. Stoner to A.E. Ritchie, July 26, 1955.

Colombo Plan scientists to train at the Indian centre. A fourth important matter was the funding of the operational cost of the reactor. Late in July, Bennett had expressed some concern that the operational costs might "stand in the way of India's acceptance of our offer".[95] In his unmistakably large penmanship, Ritchie affirmed, somewhat surprisingly, that the points raised by Stoner were "pretty well disposed of".

Stoner's memorandum provides a good indicator of Canadian concerns and preoccupations at this stage of the negotiations. Apparently, neither Stoner nor Ritchie were fully aware that their analysis was incomplete. They had left out the most important consideration: the control of fissile materials and the disposal of spent fuel rods. When Stoner was asked by this writer why the non-proliferation problem only surfaced later, after it had been raised by A.E.C.L., he simply answered that, "we trusted everybody in those days".[96] Ritchie and Stoner may have been incapable of asking the right questions; after all, they had only a peripheral knowledge about atomic energy. They had no reason to believe either that A.E.C.L. was not providing them with all the necessary

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[95] Letter from W.J. Bennett to J. Léger, July 28, 1955. It seems strange that Bennett should raise the operational cost problem so late. Furthermore, the N.R.X. was known to have a high initial capital cost but to be cheaper than others to run because it used natural rather than enriched uranium.

[96] O.G. Stoner interviewed on June 13, 1988.

technical information. Evidently, at this stage of the negotiations, External Affairs still did not fully realize the significance of the small amounts of plutonium produced in the N.R.X..

The same lack of knowledge cannot be attributed to the officials and scientists of A.E.C.L.. Somehow, and this is a key point, the meaning and significance of the spent-fuel question, which would be clear to a nuclear physicist, never was impressed on the officials of the Department of External Affairs. The Stoner memorandum reveals that the Economic Division gave higher priority to other, far less consequential, matters. It should also be remembered that Léger's original eight-page memorandum to Pearson had only briefly mentioned the fuel ownership problem. The issue was not followed up, probably because the implications did not seem important. Perhaps it was a simple oversight. Nevertheless the documents, which at this stage of the negotiations are silent on this question, stand in marked contrast with later correspondence that addresses the issue with great vehemence and urgency.

India Reacts

On August 4, External Affairs received official word, in the form of a letter from Nehru to St. Laurent, that India would indeed accept Canadian aid in India's atomic

energy venture, albeit with one major reservation: an N.R.X. type reactor might present technical problems. In the Bombay region, where the reactor would be located, it was only possible to use salt water to cool down the reactor. Nehru therefore suggested that the N.R.U.[97] (which was under construction at Chalk River) might be a more suitable model because it was cooled as well as moderated by heavy water.[98] The Indian Government would gladly meet any additional costs.[99] This new obstacle apparently did not unsettle the scientists at A.E.C.L.. They believed that once Canadian experts had a chance to discuss the matter with the Indians at the upcoming Atomic Conference in Geneva, they were likely to reconsider their preference for the N.R.U..[100]

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[97] The N.R.U. (National Research Universal) was more powerful and versatile and would naturally be much more expensive. The N.R.U. would also generate much more plutonium, which was one of the reasons it was built.

[98] Nehru said that the Indian location where the N.R.X. was to be built would not have the fresh water supply of Chalk River. It would be necessary, therefore, "either to cool the cooling water which flows through the reactor in cooling towers, or by passing it through a heat exchanger in which the secondary circuit will contain the salt water of the Bombay harbour. With this arrangement it would be better to use heavy water than ordinary water in the primary cooling circuit. If this is done, the reactor will approximate more ...[the Canadian] N.R.U. reactor than the N.R.X.". Message from Prime Minister Nehru to Prime Minister St. Laurent, July 31, 1955.

[99] Letter from L.B. Pearson to L. St. Laurent, August 4, 1955.

[100] Ibid.

During the Atomic Conference in Geneva, Bhabha was convinced by the Canadians that the N.R.X. would be an important addition to the Indian atomic energy programme. The Canadian scientists made a number of technical suggestions to address the environmental conditions of Trombay and to deal with the cooling problem. These were all accepted by Bhabha and the matter was resolved. The meeting also provided fresh proof of the intensity of the competition. According to Bhabha, India was about to obtain a swimming pool reactor from the United States and a somewhat more advanced facility (an E-443 reactor) from the British.[101] Thus the N.R.X. would supplement the Indian programme because it could be used for making loop experiments, something the others could not achieve.[102]

The problem of training foreign scientists at the Trombay facility also seemed about to be resolved. In a

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[101] Telegram 141 from the Permanent Mission in Geneva, August 12, 1955. In fact, these discussions never came to fruition. India obtained fuel elements from the United Kingdom for its Apsara reactor but did not purchase an E-443. Nor did the Indians obtain a "swimming-pool" type reactor from the United States.

[102] One of the features of the N.R.X. design is loops which can be isolated allowing different experiments to be carried out separately. It is possible, for example, to test simultaneously what happens to the fuel under extreme temperatures and whether the size of the fuel or metal change during the reaction. Richard Osborne, Executive Assistant to President of A.E.C.L.. Telephone conversation, March 29, 1989.

letter to St. Laurent, Pearson wrote that "the Indian authorities would be willing to allow accredited scientists, including those from other Asian countries in the Colombo Plan" (my italics) work with the N.R.X..[103] Pearson emphasized that this meant all Asian countries in the Colombo Plan, therefore, Pakistan was included. If Pearson had been careful to quote Nehru's words almost verbatim, it seems that he nevertheless went beyond what the Indian government was ready to consider. The training of foreign scientists would remain a point of disagreement.

The Plutonium Question

On the morning of August 24, 1955, discussions took place between Bennett and officers of the Economic Division of External Affairs. The main topic of their conversation was the conditions to be laid down for the disposal of the plutonium produced by the N.R.X.. Other related issues were also addressed, such as whether Canada should supply the fuel at its own expense. External Affairs wanted Bennett to speak to Sir Edwin Plowden, the Director of British Atomic Energy in order to find out, without revealing too much of Canada's own hand, the provisions under which they would be supplying the E-440. From this point on, the negotiations took on a more technical nature, although they were always to retain a

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[103] Letter from L.B. Pearson to L. St. Laurent, August 4, 1955.

strong political overtone. It had become evident, at a rather late juncture, that "one of the major problems to be considered...will be the question of the control and disposal of by-products".[104]

Conclusion

Canada had offered India a gift of considerable value: a large experimental reactor that would serve as India's first and major entry point into nuclear research. Yet it was insufficient to whet the appetite of the Indians. They never became the demandeurs, perhaps because Canada had, in the first instance, taken the initiative to offer the project. Right from the beginning, the Indians raised objections and sought to improve the financial and technical aspects of the Canadian offer. Pillai asked for an outright gift that would not reduce the yearly Colombo Plan allotment for India. He also hesitated before accepting that foreign scientists train at the Trombay centre. Raising these objections and obtaining additional concessions from the Canadians gave India the upper hand. This set the trend for the rest of the negotiations. The Indians had accurately observed that the Canadians were "hungry" for the deal and this emboldened them to seek greater concessions.[105]

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[104] Telegram 184 to the Permanent Mission in Geneva, August 25, 1955.

[105] Bruce Williams interviewed on August 8, 1988.

There was no "bazaar" approach on the Indian side. Pillai was an astute and shrewd negotiator who immediately saw the obvious flaw in the Canadian offer: Canada was offering India a regional project but wanted to negotiate it on a bilateral basis. It was illogical to ask that India alone bear the cost of the reactor while enabling its neighbours to enjoy privileged access to the facilities. The flaw had eluded the officials in Ottawa and when the Indian objection to the foreign scientists was brought to their attention, the reaction was to make the offer financially more attractive rather than to deal with the regional aspect of the project.

The British, American and Soviet bogies also seemed to throw the Canadians into a real state of apprehension. The project had been presented to the cabinet as an undertaking that would have numerous political, technical and economic benefits for Canada. Under the pressure of the international competition, the commercial considerations became paramount. Under no circumstances, the Canadians felt, must this deal be lost, not even to old nuclear colleagues. The C.I.R. was too important for business. It appears that the Canadians were unaware that, by doing this, they were really reducing the special relationship to a matter of trade, an "open door" to India's market for high technology.

The Canadians were not dissatisfied by the turn of events. They had challenged the superpowers in a field considered as their prerogative and it looked as if they would win, even if there was an additional cost of $8 million for the Canadian taxpayer.

CHAPTER III

The Second Phase of the Negotiation: Dealing with New Problems

Introduction

On September 2, 1955, five and a half months after Canada had first broached the issue, the Indian High Commissioner in Ottawa formally accepted the "kind offer of an N.R.X. reactor".[1] This response marked the beginning of the second phase of the negotiations. Until then, the negotiations had essentially been bilateral and concerned with the definition of the project and its acceptance by the Indians. Other considerations, more difficult and more international in character now had to be introduced. Nothing had been formally agreed upon about the apportionment of the costs, the use of the nuclear facilities at the Trombay site, particularly by foreign scientists, and "the provision of the fuel for the reactor and the disposal of by-products such as plutonium".[2] These were difficult issues, especially, the

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[1] Note Verbale from the High Commissioner of India, September 2, 1955. Nehru had already approved the offer on July 31. This second and more formal acceptance may reflect Indian anxiousness to move forward.

[2] This question was raised in a memorandum to the Minister with the hope that it might be discussed when Dr. Bhabha and a team of Indian scientists visited Chalk River to look at the N.R.X.. The memorandum states "this party should include

last. The negotiations with India were taking place virtually at the time of the creation of the International Atomic Energy Agency. Canada did not want to undermine any future international safeguards regime. In addition, the Indians did not wish to commit themselves bilaterally to a restrictive safeguards system that they might later on be obliged to apply to every other nuclear facility in India.

The Canadian government expected to conclude the negotiations without delay. They invited a team of Indian experts to come to Ottawa, to see the N.R.X. at Chalk River, and to resolve any outstanding issue. Two events dominated this period of the negotiations: Bhabha's trip to Ottawa in September and Pearson's visit to New Delhi in early November.

First Problems: the Foreign Scientists Issue, the Press Leak

On July 15, St. Laurent had written to Nehru that if he agreed to the Canadian proposal, he "would be prepared to permit scientists from other Asian countries in the Colombo Plan" to train at the Trombay facilities.[3] When Nehru accepted the offer on July 31, he made a slight alteration to the clause. India would allow access at the reactor site to

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someone who is qualified to discuss the provision of fuel and the disposal of by-products". Memorandum for the Minister, September 3, 1955.

[3] Telegram 455 to the High Commission in New Delhi, July 15, 1955.

"accredited foreign scientists including those from other Asian countries in the Colombo Plan".[4] As the High Commission in New Delhi saw it, the Indians did not want the bilateral agreement to limit their freedom if, at some point in the future, they decided to open the nuclear site to scientists from other countries, whether or not these were Asian members of the Colombo Plan.[5] Canada, however, wanted scientists only from member countries of the Colombo Plan to train at the Trombay site.

The discrepancy between the two positions was apparently not noted at first. When Pearson sent his reporting memorandum to St. Laurent, on August 4, he mistakenly used Nehru's formulation. The variance was discovered on September 10, when it appeared that the Ottawa press had heard of the project and was about to divulge the ongoing negotiations.

The Canadian government faced a dilemma. The negotiations were about to be leaked. There was pressure to reach agreement on the question of the foreign scientists before a joint announcement could be released. In a memorandum to Léger, Ritchie argued that it was too late to

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[4] Note from Nehru to L. St. Laurent, July 31, 1955.

[5] Telegram 636 from the High Commission in New Delhi, September 9, 1955.

go back on the offer. "It would appear to me," he warned, "politically impossible for us to reject this change without endangering the whole project and creating a good deal of unhappiness in relations between India and Canada".[6] The Canadian officials also reasoned that if adequate arrangements were made for the fuel rods[7] and the by-products, it was inconsequential whether the foreign scientists were Colombo Plan members or not. They therefore decided to accept the Indian interpretation. Ultimately, the concession was all in vain. According to both Stoner and Ritchie, no foreign scientist ever trained on the N.R.X..[8] Years later, Ritchie acknowledged that the Canadians had insisted on the inclusion

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[6] Memorandum from E.A. Ritchie to the Under-Secretary, September 13, 1955.

[7] The fuel rods are extremely important in any nuclear safeguard system because they contain plutonium. "It is these rods which give off the neutrons on which all of the processes within the reactor are based. In the course of yielding these neutrons, the rods are changed considerably over a period of time and quantities of plutonium (as well as certain other new chemical elements) are created inside them. By the processing of these used rods plutonium is extracted, which (if available in sufficient quantities and with the right degree of purity) can be used for making bombs as well as for peaceful purposes (such as various research experiments and the enrichment of fuel for use in power reactors). It should not e thought... that the main object of running a reactor is to use up the fuel rods and get plutonium from them...The principal purpose is to conduct various tests and experiments while the rods are being used (as well as to irradiate various materials such as cobalt, etc.)". Memorandum to the Minister, October 21, 1955.

[8] A.E. Ritchie interviewed on June 16, 1988 and O.G. Stoner interviewed on June 13, 1988.

of an impractical clause, whose implementation they could not enforce.[9]

In any case, the Canadian hand was forced. Frank Swanson, a reporter from the Ottawa Citizen, had a scoop on the supply of the reactor.[10] So worried was External that it even asked Mitchell Sharp and K.W. Taylor, the Deputy Minister of the Department of Finance, for advice on how to deal with the repercussions of a press leak.[11] Not only were the negotiations between the two parties about to be revealed, but there was also a risk that relations between Canada, the United States and the United Kingdom might be affected.

In the "hugger-mugger" that followed, a flurry of telegrams was sent to Canadian missions in Washington, London, and New Delhi giving instructions and later contradicting them.[12] At one point it was suggested that neither Ottawa nor New Delhi lend any credence to the story and refrain from issuing any communique until Pearson's trip to New Delhi,

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[9] A.E. Ritchie interviewed on June 16, 1988.

[10] Telegram 1436 to the High Commission in London, September 6, 1955.

[11] Letters to K. W. Taylor, Deputy Minister for the Department of Finance, and M. W. Sharp, Associate Deputy, Minister of Trade and Commerce, both dated September 8, 1955.

[12] Telegrams 1436 to the High Commission in London, 1541 to the Embassy in Washington, and 596 to the High Commission in New Delhi, September 6, 1955.

scheduled for later in the year. A few hours later, in light of the anticipated publicity, it was considered that "a public announcement should be made much earlier...in order to avoid a misunderstanding".[13] In the end, both London and Washington were informed. By then (September 7, 1955), however, Swanson's article had been published.[14] The following day, Reuters quoted Howe as saying that Canada had indeed offered India an N.A.X. (sic) reactor under the umbrella of the Colombo Plan.[15]

When the British were informed, they declared that tne C.I.R. was an "imaginative" project that would strengthen the Colombo Plan and would underline its "seriousness of purpose".[16] Their reaction was welcomed in Ottawa. The Americans, however, were critical. They genuinely feared that scientists from Iron Curtain countries would gain access to

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[13] Telegram 1554 to the Embassy in Washington, September 8, 1955. By then, many major newspapers, including the Times and the India Press, had relayed the story. The Reuters wire service also carried the item.

[14] See telegrams 1554 to the Embassy in Washington, September 8 and 1461 to the High Commission in London, September 9, 1955. Also see the Ottawa Citizen, September 7, 1955.

[15] Telegram 633 from the High Commission in New Delhi, September 9, 1955.

[16] Telegram 1278 from the High Commission in London, September 12, 1955.

the Indian reactor site and would be able to train there.[17] The Americans had reason to be cautious. In 1954, they had begun to supply military aid to Pakistan and significantly increased the risk of friction with New Delhi.

Finally, on September 16, even before the Indian scientists looked at the N.R.X., both governments announced that a Canadian offer of a nuclear reactor had been accepted by India. An Indian newspaper carried a short article on the story, together with a picture of the N.R.X. and the comment that the:

> Canadian Government will ask Parliament to appropriate additional funds for this purpose in order that the project can be carried out without reducing the regular economic development assistance to be made available by Canada to India and other Colombo Plan countries.[18]

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[17] Memorandum for the Under-Secretary from A. E. Ritchie, September 13, 1955.

[18] The Statesman, September 17, 1955. The Pakistani reaction was difficult to gauge. A letter from the High Commissioner in Pakistan stated that the American Chargé had told him that the Pakistanis were "furious". However, the Canadian staff did not get that reaction, and there was no criticism in the press about the Canadian "gift". During a visit to Pakistan in November that year, Pearson explained the purpose of the reactor. He underlined that other Colombo Plan countries would benefit. Numbered letter 643, from the High Commission in Karachi, November 14, 1955. A telegram was sent to Karachi, just after the official announcement to stress the fact that the project should be viewed as regional and "that the magnitude of this project makes it impossible to undertake supplying comparable reactors to other countries in the area at this time". The High Commissioner was admonished not to initiate discussions with Pakistan on this topic and to stick to the responsive press line. Telegram 241, to the High Commission in Karachi, September 19, 1955.

Nehru's interpretation of the foreign scientists clause had been accepted[19] in spite of anticipated American objections.[20] The Canadians were unwilling to point out to the Indians that Nehru had changed the terms of the original proposal. Canada decided to be accommodating, perhaps because it feared jeopardizing the project more than it worried about irritating its mighty southern neighbour. The hope of a special relationship with India seemed predominant and to foreclose any debate on the international implications of the Indian position.

The Visit of Dr. Homi Bhabha

The visit of Bhabha and other Indian technical advisers took place during the latter part of September and the two sides discussed the financial and technical aspects of the agreement, including the fuel ownership question.[21] The Indians pressed hard during the first part of the discussion, when the financial arrangements were reviewed, and created some annoyance on the part of the Canadians. It was something that the Canadians had not foreseen. As Plumptre said somewhat tongue in cheek, the Indians "were not only looking at the gift horse in the mouth but insisting that we

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19 Message from Nehru to St. Laurent, July 31, 1955.

20 Memorandum to the Minister, September 13, 1955.

21 Telegram 571 from the High Commission in New Delhi, August 31, 1955.

supply a complete set of gold-filled teeth for the beast as well - together with replacements as the teeth wore out".[22] A few days, on October 6, a meeting was held between Bhabha and Plumptre and the financing question discussed and resolved to mutual satisfaction. The cost to the Government of Canada would be $7 million and would cover the grant of the reactor. Transportation would be F.O.B. from a Canadian port, in accordance with the normal procedures of the Colombo Plan.[23] India would assume all shipping and insurance costs. It would also be responsible for all local costs, which were estimated at about Rs 3 Crores ($6 million). If the Canadian share were to exceed $7 million, the difference would be charged against the funds that India would be receiving under the Colombo Plan for that fiscal year. The Indians would cover any shortfall on their side by drawing on the counterpart funds arising from other Canadian-funded Colombo Plan projects.[24]

The Safeguards Issue

At the Geneva Conference on the Peaceful Uses of Atomic Energy, in August 1955, all participants, including

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[22] Letter from A.F.W. Plumptre to W.J. Bennett, October 3, 1955.

[23] F.O.B. stands for Free on Board, i.e. sent to the ship without any cost to the buyer or recipient.

[24] Letter from A.F.W. Plumptre to H.J. Bhabha, October 6, 1955. A fairly comprehensive breakdown of the costs and responsibilities of each party was appended to the letter.

the Soviet Union, had agreed that controls on nuclear facilities were necessary, and should be therefore introduced, preferably under the aegis of an international organization.[25] In view of this, External officials had asked India that "an officer with authority to undertake preliminary discussions of the content...including such matters as the supply and disposal of fuel elements" should accompany the team visiting Canada at the end of September.[26]

By the time of the visit of Bhabha and his team, however, Canada had formulated the broad outline of its nuclear safeguards policy but not asked India to state its views. On October 7, Bhabha was presented with a Canadian offer that the initial fuel load and the stock required for a period of three years be supplied by Canada. The irradiated

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[25] Bhabha chaired the Conference and was extremely effective in this capacity. In his closing address he alluded to the "far reaching political consequences" of the conference. The peaceful applications of nuclear technology were apparently Bhabha's sole concern during the conference. Radio report given by Homi Bhabha on August 24,1956, in which he quoted himself. RG 25 Vol. 414, file 14003 J2-1-40. External Affairs Records, National Archives of Canada. The International Atomic Energy Agency (I.A.E.A.) was created in 1957. This agency was to be "responsible for onsite [sic] inspections and safeguards measures that assist the member states of the Agency to demonstrate that no nuclear material is diverted to non-peaceful purposes from safeguarded nuclear facilities". Canada's Nuclear Non-proliferation Policy (Ottawa, 1985).

[26] Telegram 579 to the High Commission in New Delhi, August 31, 1955.

rods would be returned to Canada for reprocessing.[27] A telegram sent to New Delhi at the time by External's Economic Division reflects uneasiness lest the Indian Government resist anything short of "complete ownership and control of the fuel elements and by-products (particularly plutonium)".[28] The Canadians now calculated that the ownership of the by-products might not be questioned if they proposed that the:

> agreement could provide that this plutonium would be credited to India but that its disposition would be deferred until the agency had been established and had settled upon principles to be followed in disposition of such material.[29]

Therefore Canada was proposing to act as a bank that would hold India's plutonium in trust until the international agency was in a position to monitor India and to ensure that its research was exclusively devoted to peaceful purposes.

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[27] Reprocessing is the process by which the plutonium is separated from the uranium and other fission by-products. The technology is complex and dangerous: spent fuel is highly radio-active, plutonium is extremely toxic, and its critical mass is small. Reprocessing consists of a chemical dissolution stage (to break down the fuel rods) followed by a series of catalytic reactions (to isolate the plutonium). Ronald A. Knief, Nuclear Energy Technology, pp. 293-301.

[28] Telegram E-662 to the High Commission in New Delhi, October 7, 1955.

[29] Telegram 157 from the Permanent Mission in Geneva, August 26, 1955.

These were terms to which India could never agree. Ottawa and Reid were insensitive to India's political status. As the acknowledged power in South and East Asia and as a natural leader among the non-aligned, India, would find it impossible to sign away its sovereignty particularly in such a critical field. India's position on the safeguards question and on the responsibility of an international atomic agency was straightforward. It hinged on two fundamental principles: no nation or group of nations should have a privileged position and nations should not be expected to abdicate their sovereignty. During his meeting in Canada, Bhabha was adamant that India must have clear and absolute ownership of the fuel. Anything less would create "political problems" in India.[30]

Bhabha continued in the same vein when the topic was discussed at the General Assembly of the United Nations. He said that he accepted the necessity of international control over fissile material if the system applied to all nations, including the super powers. Until then, for political reasons, India wanted clear title to the fuel and would do its own reprocessing.[31] Confronted with such vehemence, Jules Léger could only hope that Bhabha's views

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[30] Telegram E10 to the Canadian Delegation to the Consultative Committee of the Colombo Plan Conference in Singapore, October 5, 1955.

[31] Telegram DL-721 to the High Commission in New Delhi, October 27, 1955.

were not "unalterable" and, more important, were not shared by the Prime Minister of India.[32]

Canadian Nuclear Allies

The public announcement of the project caused excitement in Canada's scientific community because India had an excellent team of physicists and would be able to carry out complex experiments with the reactor.[33] On the other hand, Canada's nuclear allies, particularly the United States, led in another direction. This raised a major hurdle. Canadian officials now had to grapple with the fact that Canada, the United States and the United Kingdom were bound by an agreement to consult before they "could agree to any proposal which would transfer ownership and control of the fuel elements and by-products to India".[34]

On October 12, Bennett was in Washington attempting to persuade the two allies, particularly the American administration, to adopt a more "liberal view"[35] on

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[32] Ibid.

[33] A.E. Ritchie interviewed on June 16, 1988.

[34] Telegram E10 to the Canadian Delegation to the Consultative Committee of the Colombo Plan Conference, Singapore, October 5, 1955. The agreement referred to in this telegram is probably the McMahon Act.

[35] Telegram 1726 from the Canadian Embassy in Washington, October 13, 1955.

the ownership question. At the meeting, the Canadians said that their discussions with Bhabha had taken place in a "very wholesome atmosphere" and that he had been extremely cooperative.[36] However, when the question of the ownership of the fuel had been raised with Bhabha, he had shrugged it off, offering his personal assurances that the fuel elements from Canada would be used only for "the peaceful development of atomic energy".[37]

The British representative at the meeting, Edwin Plowden, revealed that his government had advised Bhabha that India would only be able to acquire enriched fuel from it on a "lease basis".[38] Britain was also engaged in nuclear discussions with India. Its officials were sensitive to the agreement with the United States on "restricted data" and were, like Canada, anxious to get into the lucrative market. However, the British feared that, with reprocessing equipment, India would inevitably produce fissile material for atomic weapons. They urged Canada to stand firm and, if all else failed, to approach Nehru and to grant India the fuel on a loan basis, pending the creation of the international

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36 Ibid.

37 Telegram E-662 to the High Commission in New Delhi, October 7, 1955.

38 Ibid.

agency.[39] In late October, a British telegram acknowledged the difficulty faced by Canada. "Nevertheless", the telegram warned, "to make an outright sale of considerable quantities of nuclear material, without reservations on reprocessing of the irradiated fuel elements, would be at variance with our present line of thought on international control".[40] The telegram went on to suggest that, in his negotiations with the United Kingdom, Bhabha had formally agreed to something that he now appeared to find difficult to accept. Undoubtedly, he was "trying it on". The British Government, concerned at "the importance of the precedent involved", therefore proposed that the start-up load should be "considered as a loan pending the establishment of a satisfactory system of international control".[41]

Lewis Strauss of the American Atomic Energy Commission, was even more uneasy than the British.[42] He was reluctant to sanction the Canadian project because he thought, like the British did, that India might develop its own

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[39] Telegram 1396 from the Lord Privy Seal, London to the High Commissioner of the United Kingdom, Ottawa, October 13, 1955. This telegram was relayed to External Affairs officials.

[40] Ibid.

[41] Ibid.

[42] Telegram 1726 from the Canadian Embassy in Washington, October 13, 1955.

processing facilities. It was less a matter of quantity, recognized as small, of weapon-grade material that could become available to the Indians, more a matter of setting a dangerous example. Heeney, who was also present at the meeting, assured the Americans that Canada hoped to work out "some formula which would satisfy the Indians and at the same time avoid the creation of a precedent that would be embarrassing in dealings with other governments."[43] The Americans had trouble adopting a straightforward position on the project. They too were facing a dilemma. Two days later, the Secretary of State, John Foster Dulles, pointed out to the difficulties caused by the Indian attitude but also confided in Heeney that he was disturbed at "the slow progress made by the U.S. authorities in giving practical effect to the President's proposals for making atomic energy available for peaceful uses".[44] For their part, the Canadians believed that the American concern was genuine and not the result of a desire to obstruct the negotiations between Canada and India.[45]

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[43] Telegram 1744 from the Canadian Embassy in Washington, October 15, 1955.

[44] Ibid.

[45] Telegram DL-709 to the High Commission in New Delhi, October 24, 1955.

There is evidence that the Canadian side was sensitive to the negative reaction of the international community. A memorandum to the Minister stressed that the absence of adequate controls would create a climate of uneasiness and suspicion, particularly in neighbouring countries such as Pakistan. It was of utmost importance, therefore, that no country act independently until an international agency had been set up. It was up to countries that were already established in the atomic energy field to assume:

> the role of trustees until the agency can be established...This is not another example of carrying "the White Man's burden", it is simply a fact of international life that if these somewhat dangerous materials are spread around in an uncontrolled manner among a variety of countries, distrust is likely to develop.[46]

The Canadians placed great hopes on the establishment of the agency to resolve the fuel problem. Agency inspectors would visit nuclear plants and account for the nuclear material and there was a proposal that:

> irradiated fuel elements be processed either in a plant belonging to the agency itself or that of a donor country. Every effort [would] be made to discourage countries not already possessing processing plants from building them...It does not specifically preclude the transfer of title of fissile material to a receiving country, but it does

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[46] Memorandum to the Minister, October 21, 1955. The memorandum is the first document that explains basic nuclear technology concepts and processes.

give the agency authority to demand the return of any material it has supplied.[47]

The Canada-India negotiations were influenced by these considerations. Canadian officials "would not make any bilateral agreement establishing an important precedent which would seriously compromise the basic concept of agency control".[48] It seemed, however, that the difficulties were compounding. Canada also had to protect itself against the risk that India might develop its own processing facilities. The root of the problem lay in the difficulty of accounting for fissile material at every stage of the processing of irradiated fuel.[49] Once the irradiated fuel was in the reprocessing plant, its control would become far more difficult, because the extraction technology was not efficient and created "un-accounted-for losses" of fissile material.

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[47] Telegram DL-709 to the High Commission in New Delhi, October 25, 1955.

[48] Ibid.

[49] Telegram DL-721 to the High Commission in New Delhi, October 27, 1955. (The telegram was repeated to the Permanent Delegation in New York as DL-89 and to Washington as DL-1824). The safeguards problem was summarized as follows: "When it [the fuel] is in the reactor, it is in a kind of vault which makes it inaccessible. But when the irradiated fuel goes to the processing plant, the control problem becomes much more complex. First, it is at this point that the material ceases to be a discrete mass; second, the processing system is not completely efficient so that there are "losses" of fissile material which are difficult to account for; thirdly, it is here, for the first time, that material which could be used in weapons, is obtainable".

As long as Bhabha held firmly to the views he had expressed during his visit in Ottawa, the Canadians would attempt to mask the difference between the two positions, in the hope that later on, the member states of the Agency would succeed to establish an international safeguards system.[50] Heeney hoped that an undesirable precedent might be avoided if the agreement between Canada and India made clear "the interim character of the [fuel] arrangement pending agreement on a new international regime".[51]

Lester Pearson visits New Delhi

During October, Pearson was criss-crossing the globe, on a 25,000 mile trip. Before returning to Ottawa he would visit the Soviet Union, go to Singapore to attend the annual Colombo Plan meeting, and meet Nehru in New Delhi to discuss the supply of the N.R.X. and other issues before departing to Pakistan and Egypt.

In Canada, the negotiations had stalled. While in Singapore, Pearson suggested that to overcome the impasse, talks "must be [conducted] at a very high level...and must be

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[50] Telegram 1726 from the Embassy in Washington, October 13, 1955. Also telegram 771, from the High Commission in New Delhi, November 9, 1955.

[51] Telegram 1726 from the Embassy in Washington, October 13, 1955.

put in very general terms".[52] He proposed to raise the matter directly with Nehru. Pearson no doubt hoped that a one-on-one meeting between politicians would cut through the red tape. In other words, Bhabha would be side-stepped and technical details, such as the fuel rods issue, would be avoided. In the same telegram to Ottawa, Pearson expressed concern at the American rigidity and fearfulness about the "risk" that India could in the foreseeable future develop processing facilities. He blithely added that this worried the Americans more "than possible weapon development",[53] a remark which seems to indicate that Pearson had very little knowledge on how atomic weapons are manufactured. If India were to have its own reprocessing plant it would completely escape international safeguards. This was critical because, at that stage, it would have access to small quantities of weapons-grade plutonium.[54] It seems that Pearson was completely unaware of these implications although Ottawa made an immediate attempt to correct his mistaken impressions.[55]

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[52] Telegram 16 from the Delegation in Singapore, October 21, 1955.

[53] Ibid.

[54] Telegram DL-89 to the High Commission in New Delhi, October 27, 1955.

[55] Ibid.

Pearson may not have been on solid ground in hoping to persuade Nehru. There were astute individuals in Ottawa like the Comptroller-Secretary of the Department of Trade and Commerce, Finlay Sims, who cautioned that, "Unless an agreement is reached satisfactory to Dr. Bhabha, the whole scheme might collapse".[56] Sims understood the dynamics of the negotiations, and identified the individual whom the Canadians had to persuade to come to a satisfactory agreement on the fuel issue. It appears, however, that Canadian officials, in Ottawa and New Delhi, underestimated the degree to which Bhabha was in charge of the project. The High Commission in New Delhi may have let Ottawa down by underrating Bhabha's influence. Nehru normally had the last word in foreign affairs and, because of his scientific training, he may have been expected to control the negotiations. In fact, Nehru had full confidence in Bhabha whom he considered an intimate and he gave him free rein.[57] It would take Pearson's visit to India to bring this point home to the Canadians officials.

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[56] Letter to W.F. Bull, Deputy Minister of Trade and Commerce, from Finlay Sims, Comptroller-Secretary, October 7, 1955.

[57] Bhabha always addressed Nehru as bhai (brother). Only one other Indian official, outside Nehru's family, had this privilege. Escott Reid, Envoy to Nehru, p. 257. Nehru trusted Bhabha completely and "the relationship between... [these two men] was very close". Letter from Escott Reid, May 9, 1989.

Pearson's briefing book contained a memorandum from Ritchie who seemed to feel that the situation was in hand although Canada's position had not changed since September. Its main elements still were that the start-up fuel load and a three year fuel supply could be provided by Canada, and there would "be full consultation between the two governments concerning the deposits of plutonium or by-products which may be disposed of in Canada or abroad for the peaceful development of atomic energy".[58] Ritchie added optimistically that the Canada-India "agreement would serve as a pattern in the event that such a project was undertaken with any other country", and that this agreement once formalized would be subject to review by the International Atomic Energy Agency, once established.[59]

Ritchie prepared a second briefing note which was sent straight on to New Delhi on October 27. The note rephrased Ottawa's earlier proposals and emphasized that, "The main aspect on which discussions at a high level might be useful is the arrangements for providing and controlling the fuel elements for the reactor".[60] Ritchie advised Pearson to state why Canada wished to retain control over the fuel

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58 Brief to the Minister on his Visit to Moscow, 1955.

59 Ibid.

60 Memorandum for the Minister, October 21, 1955.

elements. India would get possession of as much of the by-products as were needed for experiments at very low cost and they would be covered by the Colombo Plan funds. Canada trusted India and India should, "now...show at least some trust in us". After all, these strict regulations would be applied to other countries as well. The reason India was "treated rather differently than the U.S., U.K. and Canada would treat one another", was simply that India had not been an original member of the nuclear club and that it was the first country to which "a reactor of this type" was offered.[61]

Ritchie's second brief also urged that the bilateral agreement between Canada and India should avoid compromising "the basic concept of agency control".[62] A bad precedent would be established if India's position were accepted and if it were given "clear and absolute title" to the N.R.X. fuel. To overcome the present difficulties, Ritchie proposed an interim agreement in which:

> Canada would lend to India the fuel charge for the reactor to India and in due course would extract the plutonium from the irradiated rods and lend this plutonium to India for its research programme. As soon as the International Agency was functioning effectively, the arrangement would be recast and

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61 Ibid.

62 Telegram DL-709 to the High Commission in New Delhi, October 24, 1955.

made firm in accordance with the principles established by the agency.[63]

External Affairs kept the pressure on Pearson and informed him that both allies considered the C.I.R. negotiations as serious and were generally concerned.[64] Three days later, Ottawa underlined that the "dangerous situation which would arise if there were no control system would be so serious that every effort must be made to develop such a system while the problem is still small enough to cope with".[65] Pearson was therefore fully briefed even on the substantive issues. He also received a last minute warning from Léger advising him of the American concern lest Canada grant "excessive concessions to India".[66] He informed Pearson that, during a recent meeting in Washington, the minister of National Health and Welfare, Paul Martin had assured the Americans that Pearson would be "urged to take a strong position" during his talks with the Indians.[67]

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[63] Ibid.

[64] Ibid.

[65] Telegram DL-721 to the High Commission in New Delhi, October 27, 1955.

[66] Telegram DL-734 to the Head of Post, New Delhi, October 31, 1955.

[67] Ibid. At the time, Martin was working on the draft of the Statute of the International Atomic Energy Agency. Paul Martin, A Very Public Life, pp. 168-71.

The discussions were not fruitful.[68] The charm of this intuitive Canadian politician was insufficient. Although he had met Nehru before, Pearson was not prepared to deal with this rather intractable and complex man, who was both at home in the intellectual environment of Cambridge and in the self-indulgent splendour of his Gangtok palace tucked in the Himalayan foothills. The Canadian found his host in an expansive and lofty mood. In his journal, Pearson recalls their November 4 meeting with exasperation: "I couldn't get down to any of the problems I wished to discuss as he preferred to philosophize about the present state of the world and hear my impression of the Russian visit."[69] When finally Pearson became insistent on discussing the subject of the C.I.R. project, the Indian Prime Minister called in Bhabha, who just happened to be waiting in the corridor.[70]

Pearson had undoubtedly been apprised of Bhabha's views before he met with Nehru. According to Escott Reid, when the "Minister brought up the difficulties concerning the reactor project...Nehru immediately requested Bhabha to join

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[68] In his memoirs, Escott Reid relates that he accompanied Pearson during the two meetings with Nehru. Each lasted approximately two hours but, as Reid laments, he could not recount what transpired because he was unable "to find [his] notes on the talks". Escott Reid, Envoy to Nehru, p. 90.

[69] Ibid., p. 90.

[70] Telegram 771 from the High Commission in New Delhi, November, 1955.

us and the Minister and Bhabha had a talk in which Nehru did not participate."[71] Nehru expressed complete trust in Bhabha, stating that whatever arrangement was made with him would be acceptable to India. Pearson had been out-manoeuvred. He had to talk to Bhabha and to get into the technical detail of the problem, something he had stated that he would avoid under all circumstances.[72]

Bhabha took a new tactical approach to the fuel problem. First he stated that uranium was widely available and that there was no practical means to regulate its production. He was convinced that an international agency would not be able to regulate the sale of uranium as long as Australia, Canada, and Czechoslovakia continued to supply the metal to the United States, the United Kingdom, or the Soviet Union. He added that the extreme complexity of the physical process of obtaining fissile materials was control enough against the risk of proliferation. He considered that nations would not be ready to surrender their existing stocks of fissile material: "In the opinion of the Government of India, it is impossible to devise a perfect security system" and the only realistic policy was to establish a system that would

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[71] Telegram 771 from the High Commission in New Delhi, November 9, 1955.

[72] Telegram 16 from the Delegation in Singapore, October, 21, 1955.

provide "reasonable security".[73] Bhabha also stated that the Great Powers had agreed to live in peace; and that the agency should stop any clandestine production of atomic weapons. Even if a few weapons were manufactured covertly, they would not have any global strategic significance. After all, stated Bhabha:

> the threat of the use of such a weapon would also immediately disclose its existence and should equally attract international action... Such a risk has to be accepted as a natural risk in the atomic age, but clearly presents no serious threat to the safety of the world as a whole, though it may cause severe local damage and suffering, as do volcanic eruptions, earthquakes and floods."[74]

Neither Pearson nor Reid had counted on India's unyielding position. Although technical, the question of safeguards had enormous political consequences. Even Bhabha had admitted as much. Nehru had allowed a scientist, albeit a trusted friend, to make a fundamental policy decision. It must be assumed that Nehru knew exactly what he was doing and that he gave his instructions to Bhabha. To protect his reputation as a man of peace, Nehru may have wanted, in this instance, to put distance between him and the decision and thus avoid appearing just as another Machiavellian politician. It appears that Pearson, like Reid, did not appreciate Nehru's

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[73] Telegram 772 from the Canadian High Commission in New Delhi, November 9, 1955. The telegram quotes an Aide Mémoire received from the Government of India.

[74] Ibid.

strategy. At the end of the meeting, Pearson still had "a good deal of sympathy" for India's position on the ownership of the fuel and the question of safeguards. He remained optimistic, writing that, "We will work this out all right, in spite of India's sensitiveness, and the reluctance of Washington to help."[75]

A second meeting was held between Pearson, Reid and Bhabha on November 5. The Minister gave Bhabha a paper describing the Canadian position. Canada was aware that India was rapidly becoming a major nuclear power. Neither Canada nor India could forget their responsibility to "establish effective safeguards". The two countries realized the importance of creating precedents and did not wish to prejudice the ongoing negotiations to establish an international atomic control agency. The Canadians, therefore, proposed that, "pending the establishment of the international agency" the two countries should,

> proceed on an interim arrangement whereby Canada would lend the fuel charge for the reactor to India and in due course would extract the plutonium from the irradiated rods and lend this plutonium to India for its research programme.[76]

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[75] "Diary on Pearson's Visit to the Soviet Union, South and South-East Asia and the Middle East, September 30 to November 15, 1955", MG 26, N 8, Vol. 1. L.B. Pearson papers, National Archives of Canada.

[76] Telegram DL-709 from External to the Head of Post in New Delhi, October 24, 1955.

The terms of the interim arrangement would eventually be superseded by those agreed to in the context of the international agency. Canada believed, in any case, that the agency would have come into being long before the project was completed, thus making this "interim arrangement" obsolete before it took effect.[77] Pearson also informed Bhabha of the difficult position in which Canada found itself. Canada was fully dependent on the American market for the sale of uranium and was committed to protect access of the Canadian industry to this market.

The Indians were not moved and, in the end, Pearson and Bhabha decided that the nuclear cooperation agreement between their countries would be "silent" on the provision of the fuel so as to avoid the creation of a precedent.[78] The decision provoked some reaction. In Washington, Heeney advised caution and pointed out that the Indians could well refuse to accept the later ruling of the international agency. He also considered unrealistic the Indian position that the Soviet Union and the United States should submit to the same controls as other countries, just "for the sake of principle".

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[77] Ibid.

[78] Telegram 771 from the High Commission in New Delhi, November 9, 1955.

Finally, he stressed once again the importance the negotiations would have for Canadian-American relations.[79]

Conclusion

The documentation leaves no doubt that Ottawa felt committed to the project. When the story leaked to the Canadian press, turning back became impossible. At first, the deal had seemed simple enough but, with every turn, it had become increasingly problematic. Canada was now in an unenviable position. India had formally accepted the proposal. A collapse of the deal would damage the relationship between the two countries. Although India was non-aligned, its sympathies were with the West and it was therefore the responsibility of the West to provide technical assistance. Another element in the equation was that the Soviet Union was actively helping China's economic development. It was politically expedient to pursue the deal, because, as Heeney reported, "the larger considerations tend to outweigh any risk involved".[80] Canadian officials were not prepared to take the blame for causing a rift with the developing countries and thus tried to obtain the best possible understanding with India. Business considerations

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[79] Telegram 1897 from the Canadian Embassy in Washington, November 15, 1955.

[80] Telegram 1726 from the Embassy in Washington, October 13, 1955.

had been one of the predominant factors when the project was first conceived. At this juncture, however, the economic and technological advantages of the project seemed to matter less. The documents contain no references to the losses that Canada would incur if the deal were to fail.

The Canadian government should also have realized that the foreign scientists clause smacked of neo-colonialism. India wanted to retain its freedom of choice and would not be dictated to by a foreign country. The Canadians should have pondered about India's desire to do as it pleased with the reactor, preferably in the absence of any cumbersome witness. In an interview, Ritchie stated that he pressed hard for the foreign scientists because he thought they would, in effect, monitor activities and keep the reactor under informal safeguards.[81] However, nowhere is this point ever made on paper. The documentation clearly shows that the "accredited scientists" clause was essentially meant to give the project a regional, Colombo Plan, character. No doubt, it may have been wishful thinking on Ritchie's part, or just hindsight.

The Canadians also appeared unwilling to test whether Bhabha was really bluffing on the matter of safeguards. Canadian pusillanimity worked to the advantage

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[81] A.E. Ritchie interviewed on June 16, 1988.

of the Indians who were able to pursue their objectives selfishly without seeming to care whether Canada was experiencing international difficulties. During his visit to Ottawa, Bhabha had been unyielding on the fuel ownership issue. His hosts became concerned lest the project have severe implications for the bilateral relationship, for the credibility of the future international agency and for the very viability of nuclear cooperation between developed and developing countries. The final hope was to use Pearson's disarming charm and, by appealing directly to Nehru, to convince India to soften its position. Unfortunately, Pearson found that it was impossible to drive a wedge between Bhabha and his political master. Nehru would not be drawn into a serious discussion and when his guest insisted, Bhabha was called in. Ultimately, the agreement remained silent on the question of the fuel, a disappointing result for the Canadians. It does not seem that the alternatives to signing an increasingly unsatisfactory agreement were ever seriously examined. The Canadians seemed like puppets whose strings Bhabha and Nehru, somehow, could pull and tug at will.

CHAPTER IV

A Matter of Safeguards

Introduction

Jules Léger, who seldom expressed his feelings about anything, had displayed excitement when the project was first brought to his attention. That had been in March when spring and optimism are in the air. Now it was late and dreary November and the negotiations seemed a mirror image of the dull and dispiriting weather outside. The Canadians had lost control of the direction and momentum of the C.I.R. project in April, as soon as they had presented their offer to the Indians. At first, two issues: the foreign scientists and the financing of the reactor had slowed down the pace of the negotiations. Later, the safeguards proved to be an extremely complex question and to threaten the viability of the project. The officers of External Affairs who were handling the file were now under pressure to resolve these difficulties and reach agreement.

On November 28, 1955, Léger wrote to Heeney a letter that displays frustration and a tinge of helplessness:

> There is a strong inclination in Ottawa to suggest that some arrangement be worked out which would have the effect of deferring the settlement of the fuel

> question until a later stage in the implementation of the project. There is also the feeling that the project must go ahead quickly and that there should be no delay in the timetable.[1]

Léger had reason to be worried. No matter what the final arrangements were, at least one party would be unsatisfied. Either Canada would fail to obtain the non-proliferation assurances which it considered minimal, or India would have to make concessions which it considered a major infringement on its sovereignty. In addition, if Canada and India came to an understanding based only on confidence and the good-will of India, it might be more difficult to establish an effective system of international controls. India could be expected to resist attempts to introduce new or more severe constraints.

The Americans were upset at the idea that the Indians might retain their fuel and be able to develop their own reprocessing facilities. They were particularly afraid that fissile material might be produced without adequate controls and be made freely available throughout the world. The men involved in the creation of the I.A.E.A. and the scientific community agreed that reprocessing plants must fall under the jurisdiction of that Agency if the international control system was to be viable. The Canadian Ambassador in Washington was apprehensive about the conduct of the

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[1] Letter from Jules Léger to A.D.P. Heeney, November 28, 1955.

negotiations and the problems faced by Ottawa officials. On November 15, Heeney wrote:

> The implications, to my mind, are most serious, both for the C.I.R. project and for the impending negotiations on the establishment of an international agency... Imagine the position we would be in if, after spending some $7 million and a great deal of effort in providing India with a reactor, we were to find the Indians unwilling to accept the fuel for it on the terms which we, as a member of the International Agency, were bound to stipulate.[2]

Differences of Perspectives

It is interesting to compare Heeney and Reid. Ambassador Heeney was on the periphery of the N.R.X. project. His responsibility was limited to reporting on the inter-allied consultations on the establishment of the international agency which were taking place in Washington. He informed Ottawa of the views and policies held by the United States and Great Britain in regard to the question of international controls on nuclear technology. His analysis of the Indian position was, nevertheless, closer to the mark than that of either Ottawa or Reid. The High Commissioner, on the other hand, was responsible for the promotion of Canadian interests in India. In early 1956, the N.R.X. was probably the most visible and sensitive part of the aid relation between Canada and India. Reid was aware that the special relationship had

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[2] Telegram 189 from the Embassy in Washington, November 15, 1955.

recently come under some stress as a result of the differences of views which had arisen between the two countries in the supervisory commissions in Indochina.[3] For that reason, the conclusion of a satisfactory bilateral nuclear agreement must have been of paramount importance to him. Reid, however, had the disadvantage of being distant from Washington. Had he been closer, he might have been more understanding of Ottawa's interests and concerns.

Neither did Reid appear to realize that Bhabha stood alone at the heart of the project. Bhabha was the negotiator, the scientist, the politician, and finally the creator and contractor of the Trombay centre. On November 9, after Pearson's unsuccessful visit, Reid suggested that, while in New York, "one of Bhabha's men", might go to Ottawa to discuss the safeguards issue. This naturally prompted Bhabha to retort that he was the only person competent to do this.[4]

There is no evidence in the documentation that Reid concerned himself in any way with the fuel problem. Apparently, he did not share Léger and Heeney's misgivings.

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[3] Escott Reid, Envoy to Nehru, p. 260. Since then Reid stated that the Canada India relations were at their zenith in 1953 and 1954. Letter from Escott Reid to I. Lonergan, May 9, 1989.

[4] Telegram 771 from the High Commission in New Delhi, November 9, 1955.

While Ottawa was evaluating the project and attempting to rationalize its position, Reid was curiously silent. If anything the High Commissioner was embarked on a one-man campaign to obtain an even better deal for India. At one point, he suggested that the Canadian engineering firm which was building the reactor be held entirely responsible for the work in Trombay.[5] Nik Cavell, who was familiar with aid projects, pushed the suggestion aside with the remark, "Escott does not yet fully comprehend the very real complexity of this job".[6] Indeed even Cavell did not realize that the building of the N.R.X. would almost take two years longer than first anticipated. Reid nevertheless continued to urge Ottawa until finally, on December 5, he capitulated and resignedly informed the Department that, "I do not plan to press you further on this matter [that Canadian firms be held responsible for all the work done at Trombay]". The relief at the other end was audible. Ritchie underlined Reid's sentence and penned in the margin in bold letters, "good".[7]

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[5] Telegram 793 from the High Commission in New Delhi, November 21, 1955.

[6] Letter from Nik Cavell to A.E. Ritchie, November 25, 1955.

[7] Telegram 822 from the High Commission in New Delhi, December 5, 1955.

Ottawa Re-evaluates the Project

The N.R.X. was beginning to face tight deadlines. First, a number of logistical imperatives had to be dealt with. In the region of Bombay the monsoon season would start in April. Further delays might mean that a full construction season would be missed.[8] Second, the question of the spent fuel had to be resolved. Failure to do so would carry serious repercussions for the bilateral relationship. In addition, the situation was complicated by the perceived threat that the Soviets might just walk in and "reap considerable political benefit and propaganda".[9]

The Canadians now had to weigh the risks of failing on the safeguards issue against the advantages of completing the project no matter what. This was done in a memorandum to the Minister dated November 21.[10] The positive elements of the project were emphasized. First, the Canadian press, which had been very disparaging of the government's handling of the pipe line debate, considered the project "an imaginative undertaking". Indeed it was regarded as a bold gesture of cooperation that helped to silence the criticism that Canada had not been playing its full part in promoting the

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8 Telegram 793 from the High Commission in New Delhi, November 21, 1955.

9 Ibid.

10 Memorandum to the Minister, November 21, 1955.

development of the southern hemisphere. Second, the project had not lost its commercial glow. From an economic point of view, the deal still looked solid and held the promise that Canadian nuclear technology and uranium would find external markets. Finally, there was hope that the Americans might adopt a more "liberal view". They were, after all, contemplating the establishment of an atomic centre in the Colombo Plan region.[11]

In the final analysis, the memorandum continued, the risk of proliferation did not appear overwhelming. India would, in any case, soon be capable of building its own reactor. It was undoubtedly better for India to acquire its nuclear expertise and facilities through cooperation with countries like Canada than as a result of assistance from the Soviet Union. Although Cold-War considerations did not seem to dominate Canadian decisions as much as they had during the late forties and early fifties, they still were factored into the general calculation.

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[11] The United States was considering the building of an atomic research training centre in a Colombo Plan country. Ceylon was petitioning Canada for its support. Telegram 304, from the High Commission in Colombo, November 18, 1955. At an earlier stage the United States had considered the Philippines because of its membership in SEATO (South-East Asian Treaty Organization). Created in 1954, SEATO was an alliance between Great Britain, France, Australia, New Zealand, the Philippines, Thailand, Pakistan, and the United States. As a result of international objections, the United States withdrew its proposal. Telegram 1419 from the High Commission in London, October 18, 1955.

Cabinet gives Official Sanction to Sign the Agreement

In early December, cabinet was informed, for the first time, that Canada and India could "not resolve the conditions on which the fuel elements for the reactor should be provided".[12] Ministers were told that India's decision to reject anything less than "complete and absolute ownership" of the fuel was based primarily on political considerations.[13] Nevertheless, after Pearson had summarized the recent developments, he urged his colleagues to sanction the project immediately to avoid the loss of a entire construction season. Pearson recommended that the agreement stipulate the following:

> a) the reactor and any products resulting from it will be used by India for peaceful purposes only;
>
> b) when the reactor is ready to operate, it is India's intention to turn to Canada for the supply of fuel and it is Canada's intention to provide the fuel;
>
> c) arrangements for the provision of any fuel to India from Canada will be agreed upon by the two Governments; if an international agency acceptable to both Governments has come into being or is in prospect at that time, the terms of such agreement will be in keeping with the principles of that agency.[14]

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[12] Memorandum to Cabinet, December 7, 1955, RG 2 B 2 Vol. 2656. Cabinet Conclusions, National Archives of Canada.

[13] Ibid.

[14] Memorandum to the Cabinet from L.B. Pearson, December 5, 1955. The terms in this memorandum are similar to those outlined in the previously mentioned Memorandum to the Minister dated November 21, 1955.

On December 7, cabinet gave official sanction to these terms and authorized the signature of a bilateral agreement with India. It must have been apparent to Canadian officials that the new provisions had loopholes. The first only provided for voluntary restraint on the part of India and did not include any type of verification by Canada or the international agency. The second clause hinged on India's willingness to supply itself from Canada. Finally, the third would not prevent India from finding unacceptable the safeguards "principles" of the international agency, once they came into force.

Cabinet was almost entirely preoccupied with the pipe line debate. Howe, who had been kept periodically informed about the progress of the nuclear negotiations, now seldom intervened. During these months, he was busy seeking to arrange the financing of the pipeline.[15] As the debate became more boisterous and bitter during the early months of the new year, the cabinet would be entirely absorbed by domestic issues.

Canada Presents the Draft Agreement

A draft of the Canada-India nuclear cooperation agreement was sent to New Delhi in early January 1956. The

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[15] R. Bothwell and W. Kilbourn, C.D. Howe: a Biography (Toronto, 1979), pp. 283-298.

proposals made by Canada, Heeney believed, were "the most satisfactory arrangements which can be hoped for" but he cautioned that if the Indians were to refuse the Canadian terms, the negotiations should be delayed "until there was at least some clear indication of whether the agency was to have controls of the kind you have sketched". Heeney recognized the difficulty of reaching a collective safeguards system and shared Ottawa's fear of being blamed for undermining the agency. On the other hand, "If no such controls were to be agreed", he wrote, "we would be free to accept the Indian terms."[16]

After some slight amendments, suggested by Escott Reid, the text was transmitted to the Indian Government with the request that they provide their "preliminary reaction".[17] The Indian authorities gave their formal answer on January 30. Once again the interlocutor was Bhabha. He proposed minor changes to Articles II and V of the draft and the substitution of the word "rotunda" for the expression "reactor hall". But he reserved his attention for Article X which dealt with the supply of the fuel.[18] The Indians proposed that the first

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[16] Telegram 35 from the Embassy in Washington, January 7, 1956.

[17] A copy of the draft is attached as Annex A.

[18] In the final version of the agreement, Article X became Article XI because of the insertion of an additional Article. See Appendix A.

sentence of the paragraph be amended to read: "it is the intention of both Governments that the fuel elements will be either manufactured in India or secured from Canada".[19] The reaction had been anticipated by Canada. It had been previously agreed that India could not be denied the right to provide its own fuel, even for the initial charge. But the point was made that, as India would not be able to manufacture fuel elements for the foreseeable future, it would have to rely on Canadian procurement and therefore to submit to Canadian controls.[20]

While the political negotiations went on, the Vice-President of Administration and Operations of A.E.C.L., Lorne J. Gray was settling with Bhabha the allocation of costs and responsibilities between the two countries. An agreement ad referendum was reached in January 1956. Gray and Bhabha decided that the agreement would take the form of an exchange of some twenty-five letters between the two nuclear agencies. This complicated procedure alarmed Reid, who understood that it would be unworkable in India. He therefore warned that enormous problems would inevitably arise in the absence of a

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[19] Telegram 76 from the High Commission in New Delhi, January 31, 1956.

[20] Telegram E-51 to the High Commission in New Delhi, January 20, 1956. Actually India found it more difficult than anticipated to mine natural uranium. Also see telegram 82, from the High Commission in New Delhi, February 1, 1956.

"single controlling document" that would set down clearly the obligations of each party. The High Commissioner recommended that the bilateral agreement be accompanied by a single annex "expressed in clear precise unambiguous language" to avoid any misunderstandings.[21] The wisdom and political merit of Reid's recommendation was recognized in Ottawa. It was agreed that such a document would "guard against the possibilities of irritation and resentment...between Indians and Canadians during the construction of the project".[22] Ultimately it was decided that the bilateral agreement would be accompanied by a purely technical annex which would settle such matters as the financial obligations of each party.[23] Reid, incidently, was warned that Gray was "purely a technical man "and that under no circumstances should he and Bhabha discuss the text of the main agreement which should be carried out in New Delhi and not in Bombay".[24]

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[21] Telegram 101 from the High Commission in New Delhi, February 8, 1956.

[22] Memorandum from Commonwealth and Middle East Division to Economic Division, February 14, 1956. The United States had already had a similar bad experience in Bhakra-Nangal. Two Indian provinces were at the point of armed confrontation for their rights, all as a result of a misunderstanding between the United States and India.

[23] Text of the annex as Appendix "B".

[24] Telegram E43 to the High Commission in New Delhi, January 17, 1956.

Negotiating the Draft Agreement

In Ottawa, the lawyers in External Affairs were inspecting the draft agreement. Simple words like "engineers" and "contractor" were scrutinized for fear they might be misunderstood or convey some unintended meaning. The Oxford Dictionary determined the selection of the word "personnel" whose meaning had been found to be more "comprehensive" than "employee".[25] In recognition of the difficulties that would inevitably arise from such a complex project, it was decided to give wide latitude to the project managers, especially the Canadian firms working on the spot. A number of amendments were therefore made to the annex to ensure expedient decision-making at the site and thus avoid delays.[26] By February 28, Bhabha had finally agreed to the main part of the text although the annex still needed revision.[27]

Another problem which called for immediate attention was whether the agreement should be registered with the United Nations. Neither Bhabha nor Pillai saw the need for

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[25] Memorandum from Legal Division to Economic Division, March 16, 1956.

[26] Telegram E-160 to the High Commission in New Delhi, February 23, 1956.

[27] Telegram E-169 to the Embassy in Washington, February 28, 1956.

registration.[28] Up to that point, Colombo Plan projects arrangements, being operational in nature, had not been sent to the New York registrar of treaties. Reid saw the political value of registration. A.E.C.L. for its part made the argument that since the United Kingdom had not registered its agreement with India for the sale of "enriched uranium", Canada "should follow a similar course".[29] A.E.C.L. wanted to avoid a precedent, "since registration of this agreement would oblige us to register any subsequent agreements for cooperation in the field of atomic energy".[30] A.E.C.L. was already thinking ahead that, "it may well be that we will have other bilaterals the full contents of which we will not wish to make public".[31] Reid held his own, reminding Ottawa that Canada, a signatory of the U.N. Charter, was obliged under Article 102 to register its international agreements unless it was in the national interest not to do so.[32]

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[28] Telegram 273 from the High Commission in New Delhi, April 21, 1956.

[29] Letter from W.J. Bennett to A.E. Ritchie, February 6, 1956.

[30] Telegram E-101 to the High Commission in New Delhi, February 6, 1956.

[31] Ibid.

[32] Telegram 103, from the High Commission in New Delhi. February 9, 1956. Article 102 of the U.N. Charter states:
1. "Every treaty and every international agreement entered into by any Member of the United Nations after the present Charter comes into force shall as soon as possible be registered with the Secretariat and published by it." and
2. "No party to any such treaty or international agreement which has not been registered in accordance with the

The Legal Adviser of the Department of External Affairs, M.H. Wershof, was asked for counsel. At first, Wershof advised that registration would "give ample publicity to this project, particularly with a view to giving both the Asian and Canadian public a clear idea of this important contribution to the Colombo Plan". It would also allay "any fears that other countries in the area, such as Pakistan, might have about the project".[33] However, a few days later, Wershof stated that the matter should be decided on political rather than legal grounds. The two Governments could simply ignore Article 102. There was no obligation to register and it had not previously been Canadian policy to follow this procedure for economic development projects. The Legal Adviser recommended that, if the text was to be made public, then registration should take place. While no other Colombo Plan project agreement had been registered, it did not follow that the same decision should be taken automatically for "an agreement of the formal and important character of the Canadian-Indian Reactor Agreement".[34] In the end, the problem

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provisions of paragraph 1 of this Article may invoke that treaty or international agreement before any organ of the United Nations". Charter of the United Nations and Statute of the International Court of Justice (New York, DPI/511).

[33] Memorandum from the Legal Adviser to Economic Division, February 10, 1956.

[34] Memorandum from M.H. Wershof to A.E. Ritchie, February 15, 1956. There is no evidence that the bilateral agreement was ever registered with the United Nations.

was cast aside, never to reappear and the C.I.R. agreement was not registered with the United Nations.

While Gray was in Bombay in January, it finally became clear to the Canadians in the High Commission that Bhabha was in complete control of this project. Of course, Nehru must have been aware of Bhabha's position and of the direction he was following. Bhabha's influence was underlined in early February, when he again raised objections about the fuel clause and proposed a number of revisions to the text of the agreement. While earlier on, Reid might have preferred to petition Pillai or even Nehru himself, this time, he offered to go to Bombay and discuss the problem with Bhabha if he was unable to come to new Delhi.[35] The trip was unnecessary because Bhabha did not press the issue at that time.

Meanwhile Ottawa was preparing a message from the Prime Minister of Canada to the Prime Minister of India for the occasion of the signing of the agreement. Again Reid raised objections. He considered that the draft message placed too much emphasis on the availability of the reactor to foreign scientists. This was "a string which we have attached to our gift" and a reference to it would be

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[35] Despatch 169 from the High Commission in New Delhi, February 9, 1956.

misunderstood by the Indians. He felt he might be "over apprehensive", nevertheless his advice was that "we shall get most value out of the exchange of messages between the Prime Ministers only if Mr. St. Laurent's message causes unqualified pleasure to Mr. Nehru".[36] On April 4, Ottawa decided that the reference to foreign scientists would be removed. However, the press release would state that foreign scientists approved by India would have an opportunity to study at the facilities.

The Canadian Government had made a serious effort to obtain India's consent to the training of "foreign" or "accredited" scientists. St. Laurent had raised it in his initial letter to Nehru and it was the subject of one of the clauses of the draft agreement. There were good domestic and international political reasons for doing so. Canadians would more readily support such an expensive project if it were beneficial to the entire region. India's neighbours might not feel as threatened. Hopefully, they would not petition Canada for their own N.R.X.. Nevertheless, it seems that the Canadians did not seriously address the consequences of this issue, particularly how the clause would be implemented. Nowhere in the files is there a document explaining how Canada would ensure that these scientists could actually study at Trombay. In the end, in spite of External Affairs insistence

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[36] Telegram 206 from the High Commission in New Delhi, March 19, 1956.

and care to use exactly the right wording, the practical details of the implementation of the clause were never discussed with the Indians. Not surprisingly, the clause remained without effect. No foreign scientist was ever trained in Trombay under the umbrella of the Colombo Plan or under the Canada-India nuclear cooperation agreement.[37]

The month of March 1956 was not a good one for the Canadian government. In the House, the Liberals looked as if they would suffer another disastrous defeat over the temporary emergency powers. John Diefenbaker, the ambitious and caustic M.P. from Prince Albert (Saskatchewan), vehemently warned that the last summer's debate "will appear a mere skirmish beside the battle we will wage when the bill regarding the Trans-Canada Pipe Lines comes before Parliament".[38] While the government was readying itself for a renewed Conservative onslaught, Pearson was himself preoccupied with other issues and policies. He had to accompany St. Laurent to the tripartite summit (Canada, the United States and Mexico) at White Sulphur Springs although there was nothing of importance on the agenda except that President Eisenhower "wanted to have

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[37] A.E Ritchie interviewed on June 16, 1988 and O.G. Stoner interviewed on June 13, 1988.

[38] Robert Bothwell and William Kilbourn, C.D.Howe: A Biography, p. 305.

neighbours in".[39] At any rate, now that cabinet had given its final approval to the N.R.X. project, the Canada-India nuclear negotiations had probably lost their appeal for Pearson. It was left to the desk officers in External Affairs to tidy things up. But that would not happen before yet another political decision had been made.

Early in December the question of who would sign the agreement on behalf of Canada had been discussed. Léger had proposed Paul Martin. Reid had suggested Howe, not only because he knew him personally but, more important, because of the minister's interests and association with the Canadian nuclear industry. In the end neither minister was available because of "the very heavy agenda in the forthcoming session".[40] It was then decided that Reid, as the highest official in New Delhi would preside over th eremonies and sign for Canada. And so it was that the man who had chosen India and worked tirelessly to improve Canadian-Indian relations would have the final responsibility for signing the nuclear agreement.[41]

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[39] Arnold Heeney, The Things that are Caesar's, (Toronto 1972) p. 139.

[40] Telegram 856 to the High Commission in New Delhi, December 19, 1955.

[41] Escott Reid, see the Title of Chapter one, "I Chose India", in his book Envoy to Nehru. The title reveals that Reid had great expectations and, as "Envoy", was willing to work very hard. Even before the signing ceremony, Reid had asked Ottawa whether A.E.C.L. could envisage selling a power

Now that the C.I.R. was coming to its final stage, there was room for relaxation. Cavell had sent some photos of the N.R.X. to the Economic Division, and Ritchie wrote back, "It was most interesting to Jerry Stoner and myself to get a direct impression of what the product of all our talking and scribbling will look like".[42] The comment underlines how little information had filtered out of Chalk River and that, ten years after the war, "the need to know" classification was still part of the psyche.[43] It also suggests that nuclear physicists might have had fewer qualms about sharing knowledge among one another than about divulging information to bureaucrats and politicians. Canadian officials had only a most peripheral knowledge about nuclear technology and the N.R.X.. They learned as the negotiations went on. No doubt it undermined their effectiveness. They were handling a project about which they had little technical knowledge. When the safeguards issue arose, at a later stage, they were ill-equipped to deal with its consequences and they were so

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reactor to India. See despatch 548, from the High Commission in New Delhi, April 3, 1956. When queried about this, Bennett wrote to Ritchie that the possibility could certainly be envisaged in the near future, probably in the early 1960s. Letter from W.J. Bennett to A.E. Ritchie, April 9, 1956.

[42] Letter from A.E. Ritchie to Nik Cavell, April 26, 1956.

[43] Up to the end of April 1956, most departmental documents dealing with the reactor project had been marked "secret" or "top secret". The Economic Division's Weekly Divisional Note dated May 1, 1956 which is the first note classified "confidential", ushered a new era.

committed that they could not back out gracefully. Whereas Bhabha, the expert, knew exactly and at all times what he was doing.

Final Hurdles and Signature of the Agreement

On April 12, Bhabha raised again the issue of the fuel with Reid. This time it was the initial fuel charge. At a "12 powers" meeting on the establishment of the I.A.E.A. that he had just attended in Washington, Bhabha had argued that Canada's agreement with India went "further than the corresponding clause in the agreement between India and the United Kingdom".[44] Bhabha now contended that the wording in the Indian-British agreement was more flexible because it stated that: "the parties may by mutual agreement take such steps as they think fit to notify the Agency of the existence and terms of this Agreement".[45] The Canadian-Indian agreement stated more precisely, that it would be "in keeping with principles of that agency". Bhabha did not propose a revision of this article but asked for an "interpretation". Reid refused, stating that "our people considered that they had

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[44] Telegram 273 from the High Commission in New Delhi, April 21, 1956. The agreement to which Bhabha refers covers the sale of enriched fuel for the Indian research reactor programme. The Canadian Government had recently been made privy to the terms of this agreement by both India and the United Kingdom. See also letter from W.J. Bennett to A.E. Ritchie, February 6, 1956.

[45] Ibid.

gone a very long way to meet Indian wishes when they had accepted the language in Article XI".[46] It was agreed that Reid would seek instructions from Ottawa and that Bhabha and Pillai would discuss the matter in private for a few days. Reid was evidently distressed. His telegram to Ottawa ended with the following: "I found the whole discussion deeply disturbing as another example of the deep suspicions which India has of either the good sense or the good intention of the West".[47] On April 23, however, Reid was informed by Bhabha and Pillai that they had decided to drop the question of an "interpretation" of Article XI of the main agreement.[48]

The signing ceremony was planned for Saturday April 28, 1956. Reid attached great importance to Nehru's personal participation because it was almost totally unprecedented. Nehru had previously signed only one other international agreement.[49] According to Reid, Nehru wanted to demonstrate the "special feeling" that he held for Canada. The Indian Prime Minister also accepted the invitation for the dinner at

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[46] Ibid.

[47] Ibid.

[48] Telegram 275 from the High Commission in New Delhi, April 23, 1956. Also letter from Escott Reid to I. Lonergan dated May 9. 1989.

[49] The agreement between the United States and India to establish a Technical Cooperation fund. C. Bowles had signed for the United States. Telegram 283, from the High Commission in New Delhi, April 24, 1956.

the High Commissioner's residence that evening. Reid was exhilarated and he reported to Ottawa that Nehru attended receptions only when protocol made it imperative. In a letter to Pearson, Reid unashamedly praised the individuals who had helped to bring the project to a successful conclusion:

> The real credit for the agreement goes to you and the others in Ottawa who originated the idea and carried it through in spite of the hesitations and objections of some of our friends in Washington. I am confident that time will prove that it was in the general Western interests to take the risks of not trying to tie the Indians down to the kind of stipulations the Americans wanted.[50]

Nehru's speech on the occasion of the signing was most complimentary. Not only did he mention the benefits that India would receive, he also emphasized that the gift had "been made possible by the friendship and good will existing between our two countries...which will now be further strengthened by the close association of Canadian and Indian scientists".[51] The ceremony received wide coverage in the two countries. In Canada, the Globe and Mail reported that the project would advance "the scientific capabilities of South-East Asia" and that it had, "enhanced Canada's prestige there enormously".[52] The Indian newspaper, The Statesman, reprinted

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[50] Letter from Escott Reid to L.B. Pearson, May 19, 1956. MG 26, N 9, Vol. 10. L.B. Pearson papers, National Archives of Canada.

[51] Ibid.

[52] The Globe and Mail, April 30, 1956.

the press release verbatim.[53] The Hindustan Standard highlighted the potential of nuclear power. "On the one hand", the paper said:

> there is the picture of the tremendous destructive power of atomic weapons which may lead to measureless disaster; on the other, there is the picture of great abundance and rapid increase in human welfare through wide application of the inexhaustible resources of nuclear energy.[54]

The article went on, however, to point to some ominous signs. The nuclear world was divided between the "haves" and the "have-nots" and it was up to the under-developed to prevent nuclear warfare from spreading to them.[55]

The two governments decided to publish the agreement but, because of Indian objections, withheld the Annex. The Indians invoked two rather spurious arguments. First, they stated that the Annex had been adequately summarized in the press release, although the official releases did not really treat in any substantive way the financial arrangements nor the division of responsibilities.[56] In addition, they objected on account of their "sensitivity concerning the financial arrangements" which, no doubt, would be modified

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53 The Statesman, April 29, 1956.

54 The Hindustan Standard, May 3, 1956.

55 Ibid.

56 Text of the Press Release as Appendix C.

later.[57] On May 9, 1956, therefore only the text of the signed agreement was tabled simultaneously in the House of Commons and in the Lok Shaba (or House of the People, the Indian Parliament).[58]

On May 1, 1956, in a weekly divisional note, Ritchie noted that the signature of the agreement concluded the negotiations for the C.I.R., which had been under way since March the year before.[59] From this point on, the Minister and the Under Secretary played a minor role, and perhaps their interest in the project decreased. The work of the High Commission in New Delhi, however, continued until July 10, 1960, when the reactor reached criticality and was officially declared functional.

The Construction of the N.R.X.

While the agreement was being negotiated in New Delhi, steady progress was taking place at the reactor site. By the middle of December 1955, the Indians had already received the blueprints for the foundations of the reactor building. Before the spring monsoon, the concrete base had been poured and work had started on the buildings. A.E.C.L.

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57 Telegram E 858 to the Canadian Embassy in Washington, May 7, 1956.

58 Internal Memorandum, May 4, 1956.

59 Weekly Divisional Note, May 1, 1956.

had selected two major contractors: Shawinigan Engineering Company of Montreal was responsible for overseeing the entire project and for design and construction of the nuclear island while the Foundation Company of Canada was the main construction firm. The Indian Government was responsible for hiring local companies to erect the reactor building, the safety casement, and the research, ancillary and administrative annexes.

With construction, minor problems appeared. During an exploratory trip to Bombay, one of Shawinigan's engineers was informed of the need to register the company in India and to pay taxes, both personal and corporate. The Canadian Trade Commissioner in New Delhi had to make representations on behalf of Shawinigan and provide them with assurances that, indeed, the project would remain profitable.[60] The matter was eventually resolved. During a trip to India in early 1956, Gray raised it with Bhabha and was able to work out an arrangement acceptable to both parties.

Some fifty Canadians and their families were expected to move temporarily to Bombay and Reid became concerned lest friction arise between Canadians and Indians.

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[60] Letter from the Canadian Trade Commissioner in Bombay to W. Jones, Commercial Secretary at the High Commission in New Delhi, December 23, 1955.

Americans who had worked on major projects in India had experienced a number of problems, in particular "drinking too much, or having trouble with women".[61] To protect the $7 million project, Reid suggested that a man should assume "the duties which in the army are those of the G3 and of the Chaplain".[62] But External Affairs was not disturbed by Reid's apprehensions and, as it turned out, Ottawa was right.

Actual construction of the reactor took longer than anticipated. The delay was caused primarily by the difficulty of building a cylindrical reactor within a dome. Neither construction firm had ever built an hemisphere strong enough to withstand the pressure that a sudden rupture of the reactor tubes or heat exchangers would cause. There were other problems as well, such as finding individuals with the appropriate technical skills in India, and the unavoidable personality clashes among staff members.[63] As a result, the project was completed about eighteen months behind schedule at an additional cost of some $2 million to Canada.[64]

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[61] Despatch from the High Commission in New Delhi, May 4, 1956.

[62] Ibid.

[63] Memorandum to the Acting Minister, May 4, 1960.

[64] The final Canadian share was approximately $ 9 million.

The Safeguard Problem Re-surfaces

As construction progressed, the question of the ownership and safeguards regime for the initial fuel charge came back to haunt the project. A memorandum to file dated June 1959 deplored "India's refusal to accept any safeguards on these elements...in spite of long negotiations, in implementing this Article" (Article XI of the bilateral agreement).[65] Apparently India had both attempted to manufacture its own fuel and to obtain it from another source, but without much success. India had petitioned Dr. Bertrand Goldschmidt, an official of France's Commissariat à L'Energie Atomique, to supply 10 tons of uranium. Goldschmidt had no idea that the request went against the C.I.R. agreement. France was ready to supply the uranium without formal safeguards. According to Goldschmidt, France wanted to demonstrate its independence and to retaliate against the United States for keeping France out of the nuclear club.[66]

By September 1959, Gray had come to the conclusion that, on purely technical grounds, it was imperative for India to use Canadian fuel.[67] He therefore took advantage of a

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[65] Memorandum from Economic Division I to File, June 2, 1959.

[66] Letter from Lorne Gray to the Canadian Embassy in Vienna, September 20, 1959. The letter comes from A.E.C.L.'s file on the Canada-India Agreement.

[67] Ibid.

meeting with Bhabha in Vienna to propose that Canada should sell fuel rods to India "at a price which would undercut any European supplier and...in some way soften and camouflage the safeguards difficulty".[68] On September 5, Gray was able to reach an understanding with Bhabha. The I.A.E.A. would keep an account of the Canadian fuel elements and "institute a system of effective self-inspection" (my italics) in which it was India's responsibility to carry out, once a year, a physical audit "of the Cdn elements in storage prior to irradiation... the Cdn elements in the reactor...the Cdn elements in storage after irradiation, and the number sent for reprocessing". Canada had the right at any time "to ask for a joint audit".[69] Again both parties restated that "the fuel elements provided by Canada and any plutonium produced therefrom shall be used for peaceful purposes".[70] Canadian officials nevertheless recognized that they had obtained less than stipulated in Article XI of the bilateral agreement.

> [The] safeguards are much disguised in this draft which was best draft Gray could get. We may have difficulty later on justifying ourselves to the USA

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[68] Memorandum from Economic Divisions I and II to the Under-Secretary, June 5, 1959.

[69] Telegram 147 from the Canadian Embassy in Vienna, September 28, 1959.

[70] Ibid.

and UK in view of informal understanding that they should insist on safeguards in bilaterals.[71]

The agreement had two major shortcomings. India was allowed to monitor its own installation and safeguards would only apply to Canadian fuel elements. India was under no obligation to account for the fuel it manufactured or for the uses it made of the plutonium extracted therefrom.

Another difficulty arose out of Bhabha's insistence that the safeguards arrangement be kept confidential. The Legal Division expressed puzzlement at the Indian request since the arrangement was to complement Article XI of the bilateral agreement, which was a public document. The Division also pointed out that if the arrangement was kept confidential, as the Indians wished, its "actual implementation would be based only on the willingness of the parties to fulfil their obligations, since logically it could not, in practice, be invoked before nor enforced by national or international tribunals".[72]

Notwithstanding the legitimate arguments made by the Legal Division, Gray recommended that the draft understanding

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[71] Telegram 146 from the Canadian Embassy in Vienna, September 28, 1959.

[72] Memorandum from Legal Division to Economic Division I, December 3, 1959.

reached with Bhabha be accepted. Canadian officials decided to go ahead. Bhabha had been under criticism lately in the Indian press and would be unwilling to admit to the Indian public that the reactor could not be safely started up without Canadian fuel. This might further delay the project. The Canadians would meet Bhabha:

> half way by leaving the details of the agreement to be set out in a confidential exchange of letters with Gray...and confining the intergovernmental exchange of notes (also confidential) to a simple record of the fact that the arrangements called for under Article XI of the original C.I.R. agreement have been negotiated between officials of the two agencies concerned.[73]

The Canadians also recognized that "we should face the fact that without Indian co-operation we would not in any case enforce our requirements".[74] On January 29, 1960 the Canadian High Commissioner proceeded with the confidential exchange of letters with India.

The Final Period: the N.R.X. Reaches Criticality

By 1957 the fortunes of the Liberal government had come to an end. The Conservatives led by John Diefenbaker were swept to power. A year later, the Department of External Affairs informed its new Minister, Sydney Smith, of the

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[73] Memorandum from Economic Division I to A.E. Ritchie, December 5, 1959.

[74] Ibid.

CONCLUSION

When it launched its nuclear cooperation with India, Canada was an assertive and optimistic nation. It had stood among the world leaders and helped to shape the post-war era. A progressive voice, Canada was calling for new and more equitable international relations and for cooperation with the emerging nations of the developing world. The C.I.R. project was bor.. out of a desire to affirm Canada's industrial and political strength. The sale of a large research reactor constituted a bold step forward for the Canadian nuclear industry. For the government, it was an important foreign policy initiative. The project offered concrete proof of Canada's autonomy in the nuclear field and therefore of its emancipation from Great Britain and the United States, its closest allies and former partners in the Manhattan project. Its success would underline the high value of Canadian-Indian cooperation and demonstrate the originality and strength of Canadian foreign policy in action.

At the outset, the C.I.R. proposal was imbued with the spirit of participatory internationalism. Canadian officials were animated by realism and idealism. The point of origin of their actions was a conjunction of beliefs and perceptions: a curiosity and an interest in the world; the

On February 16, Churchill praised the project in a speech to the House of Commons. Paul Martin, who had been active in the international discussions on the establishment of the I.A.E.A. and was later to become Secretary of State for External Affairs, added that this "knowledge that was primarily discovered by scientists of the West is a contribution of which we will have every reason to be proud later".[79]

Conclusion

The last period of the bilateral negotiations, from November 1955 to April 1956, was probably the most difficult for Ottawa. Canadian officials must have felt they were being swept by the current. By the new year, construction of the reactor building had started and the project had developed its own dynamic. Yet the Indians, particularly Bhabha, were as obstinate as always on the fuel question.

Canada believed that its special relationship with India would be strengthened by cooperation in advanced fields such as nuclear technology. Canada also hoped that the C.I.R. would not damage its close ties with the United States and the United Kingdom nor undermine the viability of the international agency. However, by the time the agreement was signed, Canadians had decided not to press India on the matter

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[79] House of Commons Debates (Canada), February 16, 1961.

of safeguards in spite of the reservations they might have had. It appears that, for Canadian officials, the C.I.R. venture would be considered a success if it generated confidence and friendship between Canada and India. The risk of alienating India was apparently regarded as more important than either the risk of incurring the displeasure of two close allies or of undermining the agency.

Throughout the negotiations, Canadian officials were severely handicapped by the lack of international experience with safeguards and non-proliferation treaties and by the inadequate technical expertise of External Affairs officers. Canada's bilateral agreement with India was among the very first to provide for the exchange of atomic energy materials, technology and information between a member of the Western bloc and a developing country. Although Bennett had first mentioned in August 1955 that the safeguards issue might create a problem and that Canada would have to deal with it, the Canadians were never able to define the safeguards policy that would protect their fundamental interests. They were not guided by a set of coherent non-proliferation principles, but had to find their own way between the ill-defined and changing positions of their allies and the lack of consensus on an international safeguards regime. They received little or no support from the politicians who were preoccupied by pressing domestic matters such as the acrimonious pipe line debate.

It was therefore impossible for them to counter Bhabha's insistence that India should have full and complete ownership of the fuel, in the name of equal sovereignty of all nations. In the end, to reach agreement with the Indians, they had little choice but to accept that the text be silent on the question of safeguards and that the matter be passed on to the agency, once it became operational. There was, however, no guarantee that India would be more cooperative with the agency than it had been with Canada.

When the fuel question re-surfaced in 1959, Gray saved the Canadian face. He applied a safeguards band-aid to the project and thus enabled Canada to supply the initial fuel charge. Reid had been told early in 1956 that Gray was only there to work out the technical problems, but, by 1959, he was allowed to take over the final stage of the negotiations. According to Stoner, Gray was the best man for this job because he was a very personable individual and Bhabha liked him.[80] Bothwell states that Gray had somewhat the reputation of being a "pirate" and that he "was not much trusted, even though he was much liked".[81] Gray only obtained diluted and disguised safeguards assurances. Since the actual agreement

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[80] O.G. Stoner interviewed on June 13, 1988.

[81] Robert Bothwell, Nucleus, p. 381.

had already been signed three years prior, it was considered that he probably obtained the best deal possible.

Looking over the final months of the negotiations, it becomes obvious that the pattern that had already been established in April continued on, until the end. Every time a difficulty would appear, the Canadians would find it impossible to resist India's objections or demands. The best they could achieve was to push the problem aside. The five issues of the financing of the project under a special appropriation, the foreign scientists, the safeguards clause in the final agreement, the registration of the agreement and the confidentiality of the exchange of letters on safeguards for the initial fuel charge were all dealt with in this fashion. The result was that the Indians obtained not only the "gift horse" but also the gold-filled teeth and their replacements.[82]

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[82] Letter from A.F.W. Plumptre to W. Bennett, October 3, 1955.

CONCLUSION

When it launched its nuclear cooperation with India, Canada was an assertive and optimistic nation. It had stood among the world leaders and helped to shape the post-war era. A progressive voice, Canada was calling for new and more equitable international relations and for cooperation with the emerging nations of the developing world. The C.I.R. project was bor.. out of a desire to affirm Canada's industrial and political strength. The sale of a large research reactor constituted a bold step forward for the Canadian nuclear industry. For the government, it was an important foreign policy initiative. The project offered concrete proof of Canada's autonomy in the nuclear field and therefore of its emancipation from Great Britain and the United States, its closest allies and former partners in the Manhattan project. Its success would underline the high value of Canadian-Indian cooperation and demonstrate the originality and strength of Canadian foreign policy in action.

At the outset, the C.I.R. proposal was imbued with the spirit of participatory internationalism. Canadian officials were animated by realism and idealism. The point of origin of their actions was a conjunction of beliefs and perceptions: a curiosity and an interest in the world; the

belief that international activism was both necessary and workable; and a willingness to take chances. The C.I.R. would foster interdependence and promote peaceful co-existence. Canada and all other nations would do better in a peaceful environment rather than in a world continually wreaked by open conflicts or the build-up of armaments. Asia's development could be achieved with Western technology outside of communist control. The project would be one of the trusses in the bridge from north to south.

As the most important country in South and South-East Asia, India was a natural partner. Its scientists enjoyed a justifiably high international reputation and were in the process of establishing their own nuclear centre. In the eyes of Canadian diplomats, Nehru stood as a man of vision and peace. India, a new country and an ancient civilization, represented hope and wisdom and the Canadians were looking forward to exchanges which would be "mutually enriching each other's lives".[1] Officials in Ottawa were pragmatic and willing to understand the attitudes and to accommodate, as much as possible, the real interests of India.

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[1] Lester B. Pearson, "Stafford Little Lecture", April 12-14, 1955. See pages 17 and 18 of Chapter I for complete quote.

The Canadian urge for action perhaps reflected their awareness that Canada had strength but that, with post-war reconstruction, its position in the world community was declining and it had to show its competence in fields such as nuclear energy. Participatory internationalism expressed dynamism, ambition, idealism and confidence. It was not the principle of a policy of timidity or impotence. Canada could establish solid international credentials and at the same time promote its economic and industrial interests in areas of sophisticated technology by using multilateral institutions such as the Commonwealth and by funnelling innovative projects as the C.I.R. through the technical assistance mechanism of the Colombo Plan. Thus the transfer of technology within the Commonwealth advanced Canadian interests. Canadian ministers were willing to pay the bill partly out of a genuine desire to help India's development. More important, however, they were making an investment to confirm Canada as one of the major suppliers of nuclear technology. The project enabled Canada to appear supportive and disinterested, an enlightened modern state, but it was also meant to serve Canadian business interests.

Canada wanted to stay with the nuclear forerunners. Cooperation with India would stimulate the domestic atomic energy industry and allow Canadian scientists, engineers and technicians to gain experience. Chalk River had overcome

initial design and operational problems. The N.R.X. was demonstrably one of the safest and most efficient research reactors in the world, a tough challenger to its British and American counterparts. Getting in early in a highly competitive field, Canadians might be able to achieve a strong commercial position. Many of the early documents, particularly the two memoranda to cabinet (March 21 and July 10, 1955) stress this point. Parliament authorized the additional $8 million to give Canada an edge in the world nuclear market. Undoubtedly, the project would also serve the ambitions of Canadian officials for whom success would mean personal rewards. They would try to avoid being part of a negotiation that had failed and that might lead to a review of cherished ideals and to an evaluation of their responsibility.

The Indians were rather less intoxicated by the "special relationship" and were more focused on their own self-interest. Neither the "special relationship" which the Canadians envisioned with India nor the spirit of the Colombo Plan animated the negotiations for very long. When they first presented the project to the Indians, the Canadians did not suspect that the negotiations would unfold in such a tortuous manner. As a result of Indian intransigence, the Canadians became aware of one difficulty after another and the complexity of the subject became overwhelming.

The fundamental weakness of the nuclear relationship between Canada and India was that it failed to provide strong non-proliferation safeguards. The nuclear cooperation agreement was silent on the spent fuel question and India came under no treaty obligation to Canada or general commitment to the global community to use the fuel solely for peaceful purposes. The documents show that, in the end, the Canadians accepted the oral assurances received from Nehru and Bhabha and simply decided to place their trust in India and their hopes on the establishment of an international agency. Canada was out-maneuvered. Under pressure from Bhabha, it buckled and yielded to all of India's demands: the reactor was financed as an outright grant above the Colombo Plan yearly appropriation for India; the foreign scientists clause was inoperative; and the agreement was silent on the question of the ownership and disposal of the spent fuel; the reactor was not placed under international or bilateral safeguards. The Canadians agreed to a "self-inspection" fuel safeguards system, although they recognized it was a watered-down version of what they had sought to achieve. Later there would be regrets. After the peaceful explosion of 1974, as Bothwell states in Nucleus, one official admitted Canadians "knew that reactor was naked".[2]

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[2] Robert Bothwell, Nucleus, p. 363.

Throughout the negotiations, the Indians were intransigent, primarily motivated, it seems, by a desire to maintain their freedom of action. International safeguards and inspections were considered offensive because they were perceived as a loss of sovereignty and a stain on India's national dignity. At least in part, Nehru must bear responsibility for refusing to make an unequivocal commitment to non-proliferation. De facto, he had given Bhabha complete autonomy during the negotiations. The two men may also be blamed on another account. They were so intent on protecting their country from outside interference that they could not see the value of protecting India from itself.

The Canadian government carries a share of the responsibility. It allowed Nehru, Bhabha and their successors access to nuclear technology without safeguards. The Canadians might have taken more seriously Reid's dictum that "Diplomats must have cool brains and assess dangers and opportunities in foreign policy".[3] Ottawa had drawn great plans for a peaceful post-war period. It was quite aware and rather exuberant about the technical, commercial and political opportunities offered by the C.I.R. project. Ironically Canada became entangled as much in its dreams as in its desire for profit and could not keep a cool head and threaten not to

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[3] Escott Reid, "The Conscience of the Diplomat: A Personal Testament," Queen's Quarterly, 591.

sign the agreement after it had ascertained what the dangers really were.

To be fair, in the early days of the development of the peaceful uses of atomic energy, eyes were riveted on the benefit side of the ledger. Nuclear energy offered clean and abundant power and promised development. It would improve standards of living in the industrialized countries and in the less developed world. Horizontal non-proliferation, safeguards over nuclear facilities, the ownership of by-products and assurances such as the deeming provision[4] over fissile material were questions that were just starting to be understood by politicians, officials and the scientific community.

Nevertheless, the question of safeguards was mishandled. It was first considered in Léger's initial memorandum to the minister, dated March 21, 1955. The reference was brief. The issue was never fully analyzed and was shelved until August 24 when Bennett raised it with the Department of External Affairs. The international implications of the ownership of the spent fuel only became

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[4] Contemporary nuclear cooperation agreements include a deeming provision according to which nuclear material remains subject to the safeguards conditions of the original supplier, through its successive transformations. The provision also applies to domestic nuclear material processed in a foreign-supplied reactor.

clear when Bhabha proved intractable on the question during his September visit to Ottawa. Léger and Heeney seem to have been the two officials most aware of the dangers of signing an agreement without appropriate nuclear safeguards. Their memoranda and telegrams written in the early fall of 1955 reveal that they were becoming apprehensive and felt that Canada was taking on more than it could handle. By then, the project was being carried forth on the strength of its own dynamism.

Perhaps more than anyone else, Reid promoted the significance of the project as a device to enhance ties between Canada and India, to foster international peace and bind Asia to the West. His enthusiasm for India may have obscured his judgment and made him attentive only to the positive side. Not once, it seems, did he reflect on the problems that Canada might encounter with its western allies or consider the risk of undermining the international atomic agency about to be created.

The non-proliferation dangers were dealt with too late. St. Laurent formally made the offer on July 4, 1955 and the Indians accepted it in early September. It was only later that month, when Bhabha was visiting Ottawa and Chalk River to go over the technical and financial aspects of the deal, that Canada, for the first time, brought up the safeguards

issue. To their chagrin, Bhabha refused to go along with the Canadian proposals. The issue was then raised at the political level when Pearson visited New Delhi in November. He capitulated, making the key compromise on the fuel clause rather than follow Ritchie's recommendation and redress the situation by insisting on stronger safeguards. Pearson had the final word on the Canadian side and he held the power to say no. Apparently it had become inconceivable to break off the negotiations on the safeguards or any other question. It seemed that a rupture at this late stage would have created embarrassment on both sides and damage Canada's reputation as a nuclear supplier and its interests in India.

The high level of competition and the secrecy among World War II allies and the manner in which decisions were reached in Ottawa also worked in favour of India. The competition from the Soviet Union had been identified in the first memorandum to the minister. The commercial rivalry among Canada, the United States and Great Britain represented a significant element in Canadian decision-making. The nuclear powers wanted to get a head start in the commercialization of peaceful nuclear technology and were actively promoting their own equipment. The Canadians sought to conclude the Indian deal quickly and without any Great Power meddling.

The course taken by the negotiations and their ultimate result lead to certain conclusions on the decision-making of the Ottawa bureaucrats. The initiative for the project came from two elitist bureaucracies: External and A.E.C.L.. Few civil servants were privy to the project and had an opportunity to offer advice or comments. Consultations with other departments, such as Trade and Commerce and Finance, dealt with specific sub-topics: the economic viability of the project or the financing of the reactor. A.E.C.L. gave out technical information rather selectively and appeared to place more trust in Indian fellow scientists than in Canadian diplomats. The lack of technical knowledge in External Affairs about nuclear technology and safeguards severely hampered the Canadian position and was one of the determining factors for the mishandling of the spent fuel ownership and disposal question. Inside External Affairs, Pearson played the crucial role: he made the final and most important concession. The department's decision-making process was essentially vertical. Cabinet was offered a single course of action and rubber-stamped External's recommendations. Those with qualms, Léger and Heeney, never really made an attempt to have the project re-examined, perhaps because they too suffered from limited technical knowledge, or, more important, because they may not have wished to fight an uphill battle.

The Canadians also seemed to have overestimated the strength and cordiality of their links with India. They had assumed that because India and Nehru had reciprocated Canada's eagerness for a special relationship, their proposal would immediately be accepted. On the face of it, Canada had substantial reasons for making this assumption. During Reid's term as High Commissioner in India, and indeed before, relations between Canada and India had flourished. Reid was one of the few Western diplomats to have a personal relationship with Nehru. Neither is there any reason to believe that Nehru was being diplomatic or off-hand when he stated that St. Laurent and Pearson were good men. It was only natural, therefore, that the Canadians were extremely surprised and disappointed that India raised problems rather than gave thanks and that the entire spring and early summer of 1955 were taken up with tortured negotiations. It was only in early August, after Canada had made its offer more appealing, that Nehru sent word that India was accepting the reactor, albeit with some reservations.

It was Canada's misfortune that Bhabha was sitting across the table. He was an experienced scientist and an unyielding practitioner of realpolitik. He made every effort to obtain the best possible deal and, in the end, had his way in everything. Bhabha was a tough negotiator but also lucky. The principle of participatory internationalism meant that

Canadians would pursue their economic self-interest and the establishment of a more ccoperative and equitable world. Pearson had thought that Canada would be able to maintain harmony between its world view and its own interests. In his memoirs, he asserted that Canadian statesmen never did "confuse short-term opportunities with long-term realities".[5] The C.I.R. project makes this affirmation sound hollow. Under Indian pressure Canada chose two goals: its immediate commercial interest and its "special relationship" with India. From a business perspective, the N.R.X. project no doubt helped Canada to establish its position as a supplier of nuclear technology. India, Pakistan, Taiwan and Argentina all purchased natural uranium and heavy water research or power reactors from Canada. In the long run, however, the C.I.R. spelled disaster. It created a bad precedent for the international atomic agency and for future nuclear cooperation with the developing world. It hampered Canada's nuclear exports because India was able to take advantage of the weak safeguards clause in the bilateral agreement, clandestinely to isolate plutonium from the N.R.X. and to manufacture its first explosive device. Nuclear cooperation with India was immediately suspended. The exportation of Canadian nuclear technology to Pakistan and Argentina was also deeply affected.

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[5] John A. Munro and Alex. I. Inglis, Mike, Vol. II, p. 32.

Canadian officials realized that an aborted project would have damaged the special relationship with India and they felt obligated to conclude it. In addition, South and South-East Asia were important and sensitive areas for the West. Nor did Canadian officials wish to be blamed for having caused a setback in the development of harmonious relations with that whole region.[6]

The safeguards problem arose and could not be resolved satisfactorily because, in the context of the C.I.R. project, the two sets of objectives inherent in participatory internationalism developed a strong dynamic which worked against Canada's best interest. When the project was formulated, the two objectives, the pursuit of self-interest and the promotion of international peace and prosperity were uppermost on the minds of Canadians. The combined weight of these two goals made nuclear cooperation with India very appealing. When they began to encounter difficulties, the Canadians chose not to question their relationship with India. It may be that, having perceived the special relationship was tenuous, the Canadians were unwilling to put it to the test, for instance by asking the Indians to wait until an international safeguards regime had been established. In the end the Canadians became prisoners of their own short-term

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[6] Bruce Williams interviewed on August 8, 1988.

vision. Had they not signed the agreement, they would have lost on both accounts. They would have stood to lose the economic and technological benefits of the project. They would have impaired Canada's reputation as a cooperative and enlightened state.

Canadian diplomats did not recognize that to be successful a foreign policy aimed at creating a special relationship with India required almost perfect reciprocity. This condition was never met. India's representatives were more narrowly-focused: a special relationship with Canada had less meaning and significance. After all, Canada was only a middle power. India considered itself as a big player in the game of world politics. Its interests were global and centred on the United States, the Soviet Union and China. It also had military pretensions and regional ambitions. Canada may have been special to India primarily in the sense that it opened the possibility of working in tandem to resolve difficult international issues such as Indochina and thus increase India's stature in the world.

Perhaps the special relationship had never existed, or existed only so far as it espoused national self-interest. In the context of the C.I.R. project, this relationship was exploited by both parties as a means to achieve basic foreign policy objectives. India came out a winner. It obtained its

first nuclear research reactor under extremely favourable conditions. Canada obtained no more than a foothold in the international nuclear market and the prestige, difficult to quantify at any time, of being a generous and cooperative country. In the final analysis, the two countries cooperated on a basis of business rather than on mutual trust and friendship. The nuclear project suggests two ships which signalled one other for a short period, and then pressed on, each on its separate course.

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APPENDIX "A"

AGREEMENT ON THE CANADA-INDIA COLOMBO PLAN ATOMIC REACTOR PROJECT

The Government of Canada and the Government of India, desiring to conclude an agreement concerning the Canadian Government's contribution under the Colombo Plan, have agreed as follows :

Article I

As part of its contribution under the Colombo Plan, the Government of Canada will provide an NRX atomic research and experimental reactor to the Government of India.

Article II

The Government of India will make the facilities of the reactor available to scientists approved by the Government of India from other countries including Colombo Plan countries in South and Southeast Asia.

Article III

The Government of India will ensure that the reactor and any products resulting from its use will be employed for peaceful purposes only.

Article IV

The contribution of the Government of Canada will comprise the external costs of designing the reactor, the rotunda, all auxiliary services within the rotunda and the specific auxiliary equipment set out in the annex. It will also include the external costs of manufacturing or procuring the reactor and the auxiliary equipment set out in the annex, together with the external costs of the supervision of their installation and erection.

Article V

The Government of India will provide the site for the reactor. It will also be responsible for the foundation work, for constructing the buildings and for supplying the specific auxiliary equipment set out in the annex. The Government of India will provide all mechanical, electrical, administrative and other services and facilities required at the site. In accordance with normal Colombo Plan practice the Government of India will be responsible for providing local labour and materials as required. The Government of India, following past practices in relation to Colombo Plan shipments from Canada, will arrange for shipment and bear freight charges and will arrange for and assume the cost of insurance on any equipment and materials destined for the project or will bear the cost of replacement in the event of loss.

Article VI

The distribution of the various costs between Canada and India will be in accord: :e with the understanding reached between representatives of the two Governments, which is :corded in the annex.

Article VII

The annex to this agreement may be amended from time to time in ways not inconsistent with the agreement by letters exchanged between the High Commissioner for Canada in India and the Department of Atomic Energy of India.

Article VIII

The Government of Canada will provide such training as is practicable for the staff of the reactor.

Article IX

The Government of Canada will provide at the site during the construction period and for the initial period of operation such technical experts as may be required from Canada.

Article X

In order to ensure that all phases of the project are effectively coordinated, the Canadian engineering and supervisory authorities responsible for designing and installing the reactor will also supervise all other aspects of the work and will be responsible for the inspection and acceptance of all work undertaken at the site including the erection of the reactor and the construction of the rotunda. All related auxiliary equipment and its installation will also be subject to inspection and acceptance by these authorities.

Article XI

It is the intention of both Governments that the fuel elements for the initial fuel charge and for the continuing requirements of the reactor will be supplied from Canada save to the extent that India provides them from sources within India. Arrangements for the provision of the fuel elements to India from Canada will be agreed upon by the two Governments before the reactor is ready to operate; if an international agency acceptable to both Governments has come into being or is in prospect at that time, the terms of such agreement will be in keeping with the principles of that agency.

Article XII

This agreement takes the place of all previous agreements and understandings on this matter between the two Governments or between officials of the two Governments.

Article XIII

The present agreement shall enter into force on the date of signature.

IN WITNESS WHEREOF the undersigned being duly authorised by t ir respective Governments have signed the present agreement and have affixed thereto their se .

Done in duplicate at New Delhi this twenty-eighth day of April, 1956, i the English language.

On behalf of the Government of Canada

SD. ESCOTT REID
High Commissioner

On behalf of the Government of India

SD. JAWAHARLAL NEHRU
Prime Minister

APPENDIX "B"

ANNEX

TO INTERGOVERNMENTAL AGREEMENT

ON THE

CANADA-INDIA COLOMBO PLAN ATOMIC REACTOR PROJECT

1. In the present annex

(a) the term "contractor" means the coordinating and contracting agency selected by Atomic Energy of Canada Limited,

(b) the term "engineer" means the person or persons authorized from time to time by Atomic Energy of Canada Limited to act as such.

PART I—ALLOTMENT OF COSTS

2. The total estimated cost of approximately $14 million will be shared as set forth in appendix "A" hereto on the principle that the Government of Canada will pay the external costs and the Government of India will pay the internal costs.

3. The Government of Canada will provide for the external costs of the reactor (estimated in appendix "A" hereto as approximately $7.5 million) out of a special addition to the Colombo Plan vote on a basis which will not significantly reduce normal allocations to India from Canada under the Colombo Plan.

4. The Government of India's contribution in excess of 3 crores of rupees will be charged to counterpart funds established as a result of other Canadian programmes in India under the Colombo Plan.

PART II—RESPONSIBILITIES OF THE GOVERNMENT OF INDIA

5. The Government of India will

(1) Facilitate the prompt clearance and expeditious trans-shipment through the Indian customs without cost to the Government of Canada for import, customs and other duties and taxes of all necessary materials and equipment supplied by the Government of Canada including engineering instruments and equipment. This provision will cover bonafide personal and household effects (including motor car) of all non-Indian personnel whose salaries and travelling expenses to and from India are paid out of the Canadian contribution, provided

(a) that these effects are brought in on first arrival as accompanied or unaccompanied baggage, and

(b) that these effects other than those entitled to free entry under the ordinary baggage rules are liable to payment of duties, etc., if they are sold or otherwise disposed of in India.

(2) Pay the expenses in India of all non-Indian personnel whose salaries and travelling expenses to and from India are paid out of the Canadian contribution. This contribution by the Government of India will include office accommodation for the said employees, living accommodation for them and, where necessary, for their families, and transportation within the Bombay area including at least one motor vehicle for the exclusive use of the senior Canadian representative; office and living accommodation will be of a standard in keeping with the status of the men concerned. Reasonable living allowances will be paid to cover normal living requirements (including accommodation) but will not exceed an average of Rs. 2,500/- per month per employee. Payments made for these allowances, expenses or services will be analogous to daily allowance and the amounts above shall be exclusive of income or other taxes which, if payable, shall be paid by the Government of India.

(3) Keep the contractor informed, through its representative in India, of local laws and regulations that may affect its work and hold non-Indian personnel hagmless from the consequences of any act connected with the work which is not inherently immoral, criminal r fraudulent on their part.

(4) Provide, as promptly as possible

(a) all permits, licences, etc., necessary to enable the contractor to carry o his contract in India and to build any and all structures required for the execution of .e project;

(b) export and exit permits, where necessary, for the return of any of the .aterials, equipment, effects or personnel provided by Canada.

(5) Pay Indian income tax and other taxes on payments made to non-Indian firms and personnel out of the Canadian contribution, if any such taxes be payable.

(6) Arrange for delivery free of charge to the contractor at the site, of construction power as required for the work.

(7) Make available for employment by the contractor all local labour and personnel required for the project, on the understanding that the contractor reserves the privilege of selecting the personnel to be employed, after consultation with the engineer.

(8) Deal with the settling, without cost to any non-Indian firm or personnel paid out of the Canadian contribution, of any claims which may be made against any such firm or personnel with respect to liability for

(a) injury or death to any person during the performance of his duties,

(b) injury or death of any person arising from the work, and

(c) property damage;

but this provision will not relieve any person from liability for any act inherently immoral, criminal or fraudulent.

PART III—DESIGN, PROCUREMENT AND ERECTION

6. The engineer will be responsible for all design, as set forth in the appendix hereto, including the whole project with the exception of the rod storage facilities and such laboratories, change rooms, etc. that may be added to the project. The engineer will be responsible for the inspection during fabrication and erection of all work designed and specified by the engineer including foundations and basement and sea water lines and equipment.

7. The engineer, as purchasing agent for Atomic Energy of Canada Limited, will procure all equipment and material to be supplied by the Government of Canada. This material or equipment will be consigned to the contractor, FAS Canadian port. The shipping agents appointed by the Government of India, which will pay freight and insurance charges, will also be responsible for the loading and unloading of the shipments. If equipment is purchased with shipping and erection costs included, the Government of India will reimburse the Government of Canada for that portion of the costs attributable to freight and insurance.

8. The contractor will co-ordinate all work designed by the engineer, except (unless otherwise agreed with the Department of Atomic Energy of India) the foundation and basement area and sea water lines and intake structures.

9. The contracting for the foundations and basement area and sea water lines and intake structures will be the responsibility of the Department of Atomic Energy of India. The engineer will control the inspection and the acceptance of this work in accordance with the designs and specifications of the engineer.

10. Contracts entered into by the contractor will be approved in writing by an authorized representative of the Department of Atomic Energy of India.

11. Representatives of the Department of Atomic Energy of India, as are available and acceptable to the engineer and the contractor, may be seconded to their technical staffs.

APPENDIX "A"

PRELIMINARY COST ESTIMATE OF CANADA-INDIA REACTOR

Particulars	Canada's Account $			India's Account $			Remarks
	Design, Inspection and Supervision	Materials Supply	Erection	Design	Materials Supply	Erection	
1. REACTOR BUILDING :							
(*a*) Foundations, Basement and Reactor Concrete Structure .	355,000	..	..	..	'A'	886,000	
(*b*) Steel Shell	110,000	438,000	..	..	'A'	200,000	India's share to include architectural treatment of outside of shell and shell insulation.
(*c*) Building Services . . .	34,000	136,000	..	..	..	161,000	
2. REACTOR PROPER	920,000	3,685,000	..	..	..	1,410,000	
3. WATER COOLING :							
(*a*) *Primary Cooling Circuit* :							
(*i*) Heat Exchangers . .	40,000	160,000	..	..	..	16,000	
(*ii*) Pumps	20,000	80,000	..	..	..	8,000	
(*iii*) Delay Tanks . . .	10,000	60,000	..	..	'A'	50,000	Stainless steel by Canada, concrete work by India.
(*iv*) Internal Piping including Connections to Dump and Storage Tanks . .	50,000	250,000	..	..	..	20,000	
(*v*) Demineralisers and Filters.	7,000	60,000	..	..	..	6,000	
(*b*) *Thermal Shield Cooling Circuit* .	5,000	20,000	..	..	..	2,000	
(*c*) *Sea Water Pumps* . . .	30,000	190,000	..	..	..	15,000	
(*d*) *Sea Water Lines and Valves* .	74,000	100,000	..	..	'A'	500,000	
(*e*) *Water Storage and Dump Tank, including* lines *to* Storage and *from* Dump Tank . . .	25,000	..	..	..	'A'	500,000	
	1,680,000	5,179,000	..	..	..	3,774,000	

NOTE.—Items marked 'A' have material and equipment costs included in the Indian erection costs.

PRELIMINARY COST ESTIMATE OF CANADA-INDIA REACTOR—(*contd.*

Particulars	Canada's Account $			India's Account $			Remarks
	Design, Inspection and Supervision	Materials Supply	Erection	Design	Materials Supply	Erection	
B/F from page 7 . .	1,680,000	5,179,000	..	..	..	3,774,000	
4. HEAVY WATER COOLING :							
(*a*) Ion Exchange . . .	3,000	12,000	..	..	..		
(*b*) Secondary Cooling Circuit .	5,000	20,000	..	..	..	51,000	
(*c*) Demineralising Unit on Sec. Circuit	3,000	12,000	..	..	..		
5. AIR COOLING :							
(*a*) Air Conditioning Plant . .	10,000	200,000	..	..	..	20,000	
(*b*) Filter House Plant . . .	5,000	50,000	..	..	..	5,000	
(*c*) Ducting for Air Conditioning and Ventilation	10,000	..	..	..	'A'	40,000	
(*d*) Exhaust Stack . . .	3,000	..	..	..	'A'	60,000	
6. ROD HANDLING :							
(*a*) Water Treatment for Storage Bay	2,000	24,000	..	..	..	3,000	
(*b*) Rod Storage Bay as far as gate outside Annulus Building—including gate	6,000	50,000	..	..	..	10,000	Including Rod Handling Trolley and Rails up to gate only.
(*c*) Rod Storage beyond Annulus Building	..	..	..	..	..	..	By India. Details not decided.
7. OUTSIDE INSTRUMENT AND CONTROL LINES (including instruments for item 3)	10,000	55,000	..	—	..	6,000	Insts. on storage, dump and delay tanks and sea water pumps and lines.
8. DIESEL STANDBY GEN. SETS . .	5,000	100,000	..	..	..	10,000	No standby for experiments including Reactor standby *only*.
9. SPARE PARTS	..	100,000	..	..	..	..	
10. HEAVY WATER 42,000 lbs. @ $ 28 per lb. + 10 % for packing . .	..	..	..	..	1,293,000	..	
11. URANIUM	..	..	..	..	600,000	..	
12. TRANSPORTATION AND INSURANCE .	..	..	..	..	730,000	..	
TOTAL . .	1,742,000	5,802,000	..	..	2,623,000	3,979,000	

NOTE— Items marked 'A' have material and equipment costs included in the Indian erection costs.

APPENDIX "C"

PRESS INFORMATION BUREAU
GOVERNMENT OF INDIA

NOT TO BE PUBLISHED OR BROADCAST BEFORE 3 P.M. ON APRIL 28, 1956.

CANADA-INDIA COLOMBO PLAN ATOMIC REACTOR

New Delhi, April 28, 1956.

An intergovernmental agreement on the Canada-India Colombo Plan Atomic Reactor project was signed in New Delhi today. The Prime Minister signed on behalf of India. Mr.Escott Reid, the Canadian High Commissioner, signed for Canada.

The Indo-Canadian agreement was forecast on September 16, 1955, in the joint announcement by the Governments of India and Canada that in April 1955 Canada had offered to India under the Colombo Plan a high powered atomic research and experimental reactor similar to the well-known NRX reactor at the Canadian Government's atomic energy establishment at Chalk River, Canada, and that India had accepted this offer shortly thereafter. Since the time of this announcement preliminary work has been going ahead at the site at the same time as further consultation between the two governments.

The Canada-India Atomic Reactor will be erected at the atomic energy establishment of the Government of India at Trombay near Bombay. The building to house it will be a rotunda in the shape of a hermetically sealed steel shell about 135 feet high and 120 feet in diameter. This rotunda will be surrounded by buildings for auxiliary equipment and attached laboratories. Representatives of the publicly owned Canadan company, Atomic Energy of Canada Limited, who have visited the site, have been most favourably impressed by the location and the general facilities available in the area to carry out the work.

JOINT ENTERPRISE

The reactor project is a joint Indo-Canadian enterprise. The costs and the responsibilities are shared between the two countries. When it is completed full title and complete control will pass to the Government of India. The total cost of the project will be about Rs 7 crores or a little over 14 million dollars. The value of the Canadian contribution is about seven and a half million dollars, the value of the Indian contribution over six and a half million dollars. The general principle is that Canada pays for the external costs, India for the internal costs.

Thus Canada is providing the reactor itself and the steel for the rotunda which will surround it. Canada is also designing the reactor, the steel rotunda, and the foundations of the reactor.

Indian contractors and Indian labour will carry out the major part of the construction work at the site, while Canada, represented by Atomic Energy of Canada Limited, will be responsible for the supervision of the engineering and erection.

The Department of Atomic Energy of the Government of India will be responsible for building the foundations and basement of the reactor. Work on the basement has already started. The Department of Atomic Energy expects to have the work on the foundations and basement of the reactor completed before the end of June. Erection of the steel rotunda to house the reactor will start soon after the monsoon this year and is expected to near completion by the end of 1956. It is hoped that the reactor will be completed early in 1958 and that it will be in full operation by the middle of that year.

Arrangements have been made to send an adequate number of selected Indian technical personnel to Canada to obtain first hand experience and training in the operation of the NRX reactor at Chalk River. Chalk River is the Canadian Government's atomic energy

establishment on the Ottawa River about 130 miles above Ottawa. Indian technical personnel will also be seconded to the engineering staff in Canada which is designing the reactor, the steel rotunda and the reactor foundations.

Thus, Canada, through the Agency of Atomic Energy of Canada Limited, will provide India with every opportunity for Indian scientists and engineers to become fully familiar with all aspects of the work. The visits of Indian scientists and engineers to Canada will be paid for by Canada under its normal technical assistance programme.

The Canada-India Atomic Reactor will add an advanced and versatile research facility to India's atomic energy programme. It is specifically designed to provide excellent facilities for fundamental research in physical, chemical, biological, and metallurgical problems relating to atomic energy. It is an efficient producer of radioactive isotopes for use in medical therapy, agriculture, and industry, and for tracer element studies in chemical, biological, and medical research.

Above all, the reactor is specially suited for making engineering studies and research on reactor materials which can be tested under the conditions of high neutron intensity met inside reactors. The research and development facilities of the reactor will enable advanced engineering experiments to be performed in connection with the design of future power reactors.

India has offered to make the experimental facilities of the reactor available to scientists approved by the Government of India from other countries including Colombo Plan countries in South and South-East Asia. Thus the installation of the reactor in India will advance the development of atomic energy not only in India but in the entire region.

THE ABOVE IS NOT TO BE PUBLISHED OR BROADCAST BEFORE 3 P.M. ON APRIL 28, 1956.

ARV R.M

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