CANADIAN THESES ON MICROFICHE

I.S.B.N.

THESES CANADIENNES SUR MICROFICHE

National Library of Canada
Collections Development Branch

Canadian Theses on
Microfiche Service

Ottawa, Canada
K1A 0N4

Bibliothèque nationale du Canada
Direction du développement des collections

Service des thèses canadiennes
sur microfiche

NOTICE

The quality of this microfiche is heavily dependent upon the quality of the original thesis submitted for microfilming. Every effort has been made to ensure the highest quality of reproduction possible.

If pages are missing, contact the university which granted the degree.

Some pages may have indistinct print especially if the original pages were typed with a poor typewriter ribbon or if the university sent us a poor photocopy.

Previously copyrighted materials (journal articles, published tests, etc.) are not filmed.

Reproduction in full or in part of this film is governed by the Canadian Copyright Act, R.S.C. 1970, c. C-30. Please read the authorization forms which accompany this thesis.

AVIS

La qualité de cette microfiche dépend grandement de la qualité de la thèse soumise au microfilmage. Nous avons tout fait pour assurer une qualité supérieure de reproduction.

S'il manque des pages, veuillez communiquer avec l'université qui a conféré le grade.

La qualité d'impression de certaines pages peut laisser à désirer, surtout si les pages originales ont été dactylographiées à l'aide d'un ruban usé ou si l'université nous a fait parvenir une photocopie de mauvaise qualité.

Les documents qui font déjà l'objet d'un droit d'auteur (articles de revue, examens publiés, etc.) ne sont pas microfilmés.

La reproduction, même partielle, de ce microfilm est soumise à la Loi canadienne sur le droit d'auteur, SRC 1970, c. C-30. Veuillez prendre connaissance des formules d'autorisation qui accompagnent cette thèse.

THIS DISSERTATION
HAS BEEN MICROFILMED
EXACTLY AS RECEIVED

LA THÈSE A ÉTÉ
MICROFILMÉE TELLE QUE
NOUS L'AVONS REÇUE

NL-339 (r. 82/08)

Canada

National Library of Canada
Bibliothèque nationale du Canada

Canadian Theses Division
Division des thèses canadiennes

Ottawa, Canada
K1A 0N4

0-315-09054-5

172

56971

PERMISSION TO MICROFILM — AUTORISATION DE MICROFILMER

• Please print or type — Écrire en lettres moulées ou dactylographier

Full Name of Author — Nom complet de l'auteur

IAN MONTGOMERIE

Date of Birth — Date de naissance	Country of Birth — Lieu de naissance
20/10/51	CANADA

Permanent Address — Résidence fixe

11647 - 77 AVENUE
EDMONTON, ALTA.
T6G 0M4

Title of Thesis — Titre de la thèse

THE BEST OF INTENTIONS:
CANADIAN URANIUM EXPORT
POLICY IN THE SEVENTIES

University — Université

UNIVERSITY of ALBERTA

Degree for which thesis was presented — Grade pour lequel cette thèse fut présentée

M.A.

Year this degree conferred — Année d'obtention de ce grade	Name of Supervisor — Nom du directeur de thèse
1982	DR. DAVID B. DEWITT

Permission is hereby granted to the NATIONAL LIBRARY OF CANADA to microfilm this thesis and to lend or sell copies of the film

The author reserves other publication rights, and neither the thesis nor extensive extracts from it may be printed or otherwise reproduced without the author's written permission.

L'autorisation est, par la présente, accordée à la BIBLIOTHÈQUE NATIONALE DU CANADA de microfilmer cette thèse et de prêter ou de vendre des exemplaires du film.

L'auteur se réserve les autres droits de publication; ni la thèse ni de longs extraits de celle-ci ne doivent être imprimés ou autrement reproduits sans l'autorisation écrite de l'auteur.

Date	Signature
Apr 26/82	I Mon Gomerie

THE UNIVERSITY OF ALBERTA

THE BEST OF INTENTIONS
CANADIAN URANIUM EXPORT POLICY IN THE SEVENTIES

by

IAN A. MONTGOMERIE

A THESIS

SUBMITTED TO THE FACULTY OF GRADUATE STUDIES AND RESEARCH

IN PARTIAL FULFILMENT OF THE REQUIREMENTS FOR THE DEGREE

OF MASTER OF ARTS

POLITICAL SCIENCE

EDMONTON, ALBERTA

SPRING 1982

THE UNIVERSITY OF ALBERTA

RELEASE FORM

NAME OF AUTHOR IAN A. MONTGOMERIE

TITLE OF THESIS THE BEST OF INTENTIONS:
CANADIAN URANIUM EXPORT POLICY IN THE SEVENTIES

DEGREE FOR WHICH THESIS WAS PRESENTED MASTER OF ARTS

YEAR THIS DEGREE GRANTED SPRING 1982

Permission is hereby granted to THE UNIVERSITY OF ALBERTA LIBRARY to reproduce single copies of this thesis and to lend or sell such copies for private, scholarly or scientific research purposes only.

The author reserves other publication rights, and neither the thesis nor extensive extracts from it may be printed or otherwise reproduced without the author's written permission.

(SIGNED) I. A. Montgomerie

PERMANENT ADDRESS

11647 - 77 Avenue

Edmonton, Alberta T6G 0M4

DATED April 26 1982

THE UNIVERSITY OF ALBERTA

FACULTY OF GRADUATE STUDIES AND RESEARCH

The undersigned certify that they have read, and recommend to the Faculty of Graduate Studies and Research, for acceptance, a thesis entitled THE BEST OF INTENTIONS: CANADIAN URANIUM EXPORT POLICY IN THE SEVENTIES submitted by IAN A. MONTGOMERIE in partial fulfilment of the requirements for the degree of MASTER OF ARTS.

Supervisor

Date 6 April 1982

for Barbara

ABSTRACT

The export of Canadian uranium historically has been motivated by two policy objectives. Canada has sought to establish an effective supplier based international regime to control the proliferation of nuclear weapons or weapons technology, and thereby enhance the security of the international community. Secondly, Canada has endeavoured to realise the full economic benefit of being a nation on the leading edge of nuclear technology and a major supplier of uranium to the world's markets. This study uses Stephen Krasner's 'statist approach' to foreign policy to identify a triangle of forces which act in the formulation of foreign policy, arising from domestic interests, international determinants and the goals which the state has set for itself. Ultimately, the Government of Canada, through the Prime Minister and Cabinet, was able to use its absolute control over the domestic nuclear industry, including uranium production and export, to press for the establishment of an effective regime of nuclear safeguards while also creating a stable economic environment for international nuclear trade.

Much of the strategy designed to achieve these goals centred upon the integral relationship of Canada's participation in the international uranium cartel and the Nuclear Supplier's Group. There is a fundamental relationship between the price of uranium and the safeguards which are placed upon its transfer. This study suggests that a continuation of the operations of the international uranium cartel to 1978 or four years after its reputed demise, offered Canada the opportunity to control these two factors simultaneously and thereby realise its goal of establishing an effective non-proliferation regime while still maintaining its strong market position. The collapse of these organizations during a major confrontation with the nations of the European Community signalled an end to Canada's position of strength and its unilateral push toward a secure international nuclear market.

This study examines the role of the state in setting foreign policy goals and how the relationship of the state and its society affects the formulation and implementation of policies designed to achieve those goals.

ACKNOWLEDGMENTS

The preparation and writing of a thesis is seldom an individual exercise but more often a joint effort. In this case, the acceptance, by my supervisor, Dr. David Dewitt, of nothing less than excellence from himself, his collegues and his students enabled me to recognise that before one can expect to find answers, one must first ask the correct questions. I am also most grateful to P. 'Roff' Johannson for providing a valuable factual and analytical basis for my work by making available his unpublished manuscripts and papers. And my wife Barbara, to whom this is dedicated, is to be congratulated on her patience, support and above all, her ability to spell.

It is however, to the faculty and students of the University which I owe my greatest debt, for their constant tutelage in the hallways, lounges and frequently even the classrooms of the University of Alberta.

Table of Contents

List of Tables

List of Figures

I. Introduction

Canada is a world leader in the development manufacture and supply of one of the world's most dangerous technologies. That technology is however one which also provides one of the world's few operational alternatives to our diminishing stocks of petroleum as a readily-available energy source. Acting as the purveyor of a technology of such consequence carries with it some weighty responsibilities. These obligations often are not articulated in the normal business of government by any specific group, nor are they clearly enunciated in law or economics. However, as with commitments to development assistance, human rights, or long standing alliances, they exist in the minds of policy-makers and represent a salient force in the determination of their decisions.

The Government of Canada has recognised these obligations in the exporting of uranium. Furthermore, as a responsible member of the international community, Canada has pursued consistently a policy of ensuring that nuclear technology is used only in the interests of peace. This position requires some sacrifice on the part of Canadian industry in the form of lost sales and bureaucratic impediments to the free flow of commerce. As a result there is a distinct conflict of interest between the government's position and that of industry. It is one representative of the persistent, and pervasive dilemma in the formulation of foreign policy of how best to reconcile the competing demands of the various segments of society and still emerge with a policy which ultimately serves the general interests of the society as a whole.

A responsible nuclear export policy must reconcile two major objectives.[1] Initially, an exporting state must ensure that by its act, it will not endanger its own security or that of the international community. Specifically, this means that implicit in the export policy must be adequate safeguards to ensure that the export of nuclear materials does not contribute to the proliferation of nuclear weapons, through the diversion of those materials from peaceful facilities for military purposes by either governmental or non-governmental actors, or by the irresponsible or inadequate supervision of operations which allows the possiblity of a nuclear accident. Secondly, the export policy must facilitate the full realisation of the economic benefit which may accrue to the

---

[1] Bruce G. Doern and Robert W. Morrison, eds., *Canadian Nuclear Policies*, (Montreal: The Institute for Research on Public Policy, 1980).

exporting state through the sale of nuclear materials abroad.

Hence the central policy making body is faced with a fundamental contradiction. On the one hand, it is recognised by even the staunchest opponents of the existing non-proliferation regime, that is, the prevailing system of international control, that the proliferation of nuclear weapons is generally undesirable and a threat to the interests of not just a particular section of the international community, but to the world as a whole.[2]

> Considering the devastation that would be visited upon all mankind by a nuclear war and the consequent need to make every effort to avert the danger of such a war and to take measures to safeguard the security of peoples, [there is a belief] that the proliferation of nuclear weapons would seriously enhance the danger of nuclear war.[3]

Thus Canada's adherence to the principle of non-proliferation of nuclear weapons in its nuclear export policy is a response by Canadian foreign policy makers to the needs of the international community and consistent with Canada's historical internationalist perspective.

On the other hand, however, it is the declared objective of Canadian foreign policy to be the "extension abroad of national policies" and to reduce the "overemphasis on role and influence obscuring actual interests".[4] The Canadian nuclear industry, with annual sales of about $1 billion, employed 31,500 people in 1977 directly[5] with an additional 54,000 jobs dependent upon it.[6] Canada has estimated reserves of 838,000 tonnes of uranium with an approximate value of $55 billion (at an average price of $65/kg ($30/lb)) of which 90% is available for export. Five thousand people are directly employed by the uranium mining industry, mainly in isolated communities with no other local industry or alternate exploitable mineral deposits.[7] However, the significance of the Canadian nuclear industry lies not only with its current profitability, but with its very existence. The Canadian nuclear industry is representative of the high technology, innovative

---

[2] Hedley Bull, "Re-thinking Non-Proliferation," *International Affairs* (London), 51(Spring, 1975) 77-79. An interesting contrasting argument in support of universal proliferation can be found in T.C. Schelling, "Who Will Have the Bomb", *International Security*, 1.1(Summer, 1976).
[3] *Treaty on the Non-Proliferation of Nuclear Weapons*, 1 July, 1968. Preamble.
[4] *Foreign Policy for Canadians* (Ottawa: Information Canada, 1970).
[5] Leonard and Partners Ltd., *Economic Impact of the Nuclear Energy Industry in Canada*, (Ottawa: Leonard and Partners Ltd., 1978).
[6] Sanjay Banarjee, "The Economics of Canadian Policy" in Doern and Morrison, p. 68.
[7] Banarjee, p. 68.

manufacturing sectors upon which Canada must depend if it is to reverse its declining international revenues from older, more labour intensive, low technology and foreign controlled manufacturing industries.[9] The Canadian content of a nuclear power facility is approximately 90%,[9] the technology is virtually all of Canadian origin and after the original purchase of a Canadian installation is made, the customer is locked into peripheral facilities of Canadian design. Therefore it is of the utmost importance to a large segment of the Canadian economy that the interests of the nuclear industry be supported in Canada's foreign policy and the vast sums of public financial assistance invested in the development of the industry[10] be recouped through international transactions.

There is a direct relationship between the level of restriction which is placed on exports of nuclear materials in order to ensure their use for only peaceful purposes and the economic returns which accrue to the exporting state from the sale of those materials.[11] Therefore, there is a balance to be struck between the pursuance of a worthy international goal, but with non-specific beneficiaries, and the real costs to the community which will be incurred in the process. It is the mechanism of the resolution of this conflict to which this study is directed.

The Study of Canadian Foreign Policy

Canadian foreign policy can be characterised by its observance of polite traditions in both its execution and analysis. Throughout Canada's history as an independent actor in the international community, particularly in the post war period up to the decade of the sixties, foreign policy was subject to rules and assumptions which permeated the thinking of practitioners and critics alike. Strangely, however, writings on foreign policy have been largely without theoretical structure and have focused upon independent elements of foreign policy in a descriptive manner while failing to question the veracity of these more or less accepted traditional assumptions.

---

[9] R.W. Morrison and E.F. Wonder, "Canada's Nuclear Export Policy", in Doern and Morrison, pp. 103-109, see also "Report of the Senate Committee on Science and Technology (The Lamontagne Committee), *A Science Policy for Canada*, 3 Vols. (Ottawa: Information Canada, 1970-73), for a discussion of the need for innovation in Canadian industry.

[9] Banarjee, p. 72

[10] Almost $6 billion between 1965 and 1977, see G. Bruce Doern, *Government Intervention in the Canadian Nuclear Industry*, (Montreal: Institute for Research on Public Policy, 1980) p. 25

[11] See Infra. Ch. IV

This somewhat imprecise analytical approach was engendered and encouraged by the liberal-internationalist perspective[12] which has dominated the formulation and interpretation of Canadian foreign policy. "[The] liberal-internationalist perspective continues to exist far less as a systematic theory with logical propositions and specific predictions than as a fluid collection of assumptions and beliefs flowing from a small set of central themes."[13] The longevity of this perspective is no doubt attributable to the universality of its acceptance. This approach is epitomised by the practise of foreign policy exercised by L.B Pearson and in the interpretations of practitioners-turned-analysts such as John Holmes.[14] The great similarity of conceptual foundations thus facilitated a concurrence between the official and the analytical views of events[15] and hence leaves little room for debate. This perspective still prevails in the analytical literature[16] but has been substantially eroded in the contemporary practise of foreign affairs.

The liberal-internationalist perspective places Canadian foreign policy solely within the sphere of international relations, quite exclusive of Canadian domestic policy. Foreign policy from this point of view is formulated as a response to international determinants and subject to little influence from Canadian domestic pressures. Decision makers then set policy for Canada as an international actor in reference to its assumed capacity as a 'middle power',[17] with 'functionalism' as the determinant of participation in the international arena, and a 'search for world order' through the establishment of multilateral organisations as its long term strategy. Policy formulation however, is the preserve of a foreign policy elite, as it

---

[12] The typology of Canadian Foreign Policy perspectives used here is that proposed by D.B. Dewitt and J.J. Kirton in *Canada as a Principal Power: International Politics and Foreign Policy in a Changing Global Environment* (Toronto: John Wiley and Sons, Canada, forthcoming 1982). Citations are taken from the manuscript of Chapter I.

[13] Dewitt and Kirton, Ch. I, p. 27

[14] see John Holmes, *The Better Part of Valour: Essays on Canadian Diplomacy*, (Toronto: McClelland and Stewart, 1970) and *Canada: A Middle Aged Power*, (Toronto: McClelland and Stewart, 1976).

[15] see James Eayrs, *In Defense of Canada*, Vols. 1,2,3,4 (Toronto: University of Toronto Press, 1964, 1965, 1972, 1980).

[16] Peyton Lyon and Brian Tomlin, *Canada as an International Actor*, (Toronto: Macmillian, 1979), Peter C. Dobell, *Canada's Search for New Roles: Foreign Policy in the Trudeau Era*, (Toronto: Oxford University Press, 1972), and Michael Tucker, *Canadian Foreign Policy: Contemporary Issues and Themes, (Toronto: McGraw-Hill Ryerson, 1980)*

[17] J. King Gordon, ed., *Canada's Role as a Middle Power*, (Toronto: Canadian Institute for International Affairs, 1966).

> ... is too sophisticated and professional to be generally accepted or understandable to a public which does not comprehend the complexities, which impatiently wants tangible success, and which is unduly influenced by idealist standards of moral absolutism.[18]

Opposing the liberal-internationalist view is that of the peripheral-dependence perspective which gained some prominence in the sixties and became an established analytical framework in the seventies. The peripheral-dependence perspective has its roots in the political economy of Canadian economic development from a neo-Marxist perspective which depicts Canada as a nation penetrated by American capital, thus a victim of the neo-colonial and hegemonic ambitions of the United States, and characterised by a lack of national and cultural sovereignty. The peripheral-dependence perspective encompasses a wider field of literature with a less hard-line Marxist interpretation[19] evolving from a nationalist stance concerned with regaining domestic control over economic and social decision making. Thus, writers using this perspective have focused primarily on the failure of Canadian decision making processes to effect changes in the domestic structures which they purport to govern.[20]

The peripheral-dependence perspective places great emphasis on the leverage applied by external actors to decision making on both domestic and international issues. This results in a foreign policy which is routine and acquiescent to the interests of foreign, i.e. American, capital. Policy is less responsive to domestic interests and thus the role of the governmental decision-makers is relatively passive and always compliant.[21] There is no question that in a variety of specific issue areas, the empirical base for this perspective is quite sound[22] and has caused a considerable change in the priorities of foreign policy. The review of foreign policy instituted after the election of Pierre

---

[18] Dewitt and Kirton, Ch. I, p. 45

[19] the exception being Leo Panitch, *The Canadian State: Political Economy and Political Power*, (Toronto: University of Toronto Press, 1977)

[20] In economic policy, Kari Levitt, *Silent Surrender: The Multinational Corporation in Canada*, (Toronto: Macmillian of Canada, 1970), social and cultural policy, Garth Stevenson, "Continental Integration and Canadian Unity", in Andrew Axline, et al, eds., *Continental Community?: Independence and Integration in North America*, (Toronto: McClelland and Stewart, 1974) and in military policy, John Warnock, *Partner to Behemoth: The Military Policy of a Satellite Canada*, (Toronto: New Press, 1970)

[21] Dewitt and Kirton, Ch. I, pp. 53-60.

[22] See *The Report of the Royal Commission on Corporate Concentration* (Ottawa: Minister of Supply and Services, 1978) and Robert J. Bertrand, Director of Investigation and Research, Restrictive Trade Practises Commission, Department of Consumer and Corporate Affairs, *The State of Competition in the Canadian Petroleum Industry*, (Ottawa: Minister of Supply and Services, 1981). See also Annette Baker Fox, Alfred O. Hero, Jr. and Joseph S. Nye, eds., *Canada and the U.S.: Transnational and Transgovernmental Relations*, (New York: Columbia University Press, 1974)

Trudeau in 1968 was undertaken during a period of building nationalist fervor and its recommendations reflect the need to counter external influences in setting foreign policy goals.[23]

The major thrust of Trudeau's foreign policy initiative was to reduce "the overemphasis on role and influence obscuring actual interests"[24] and to establish a foreign policy which is "the extension abroad of national policies".[25] its goals to be "spelled out" by the government of the day according to "its progressive definition of ... national aims and interests."[26] This move to implement foreign policy on the basis of functional, realistic and attainable goals, which attempts to find solutions in the international arena for domestic Canadian problems, rather than acting under perceived roles or expectations, brings to the fore a perspective which has permeated foreign policy decisions throughout Canada's history

The realist perspective[27] has not had a distinctive articulation in Canadian foreign policy literature until recently because of its lack of theoretical structure and the dominance of other, more ideologically based, perspectives.

> Although the realist tradition has formed the underlying premise of a considerable amount of the historical writing and prescriptive analysis in the field, it has yet to emerge as a school of thought with a systematic set of themes, concepts and research questions, a dynamic body of research inquiry, and an attendant group of adherents forwarding its conclusions in policy debate.[28]

While several issues in Canadian foreign policy have been solved on the basis of

---

[23] *A Foreign Policy For Canadians*, (Ottawa: Minister for Supply and Services, 1972) and the implementation of the priniciples of diversification from American influences in Mitchell Sharp, "Canada-US Relations: Options for the Future", *International Perspectives*, (Autumn, 1972)

[24] *Foreign Policy*, p. 8

[25] Ibid

[26] Ibid.

[27] It is necessary at this point to depart from the typology currently in use. Dewitt and Kirton propose a concept of foreign policy analysis which derives from, but is considerably more refined than the more general realist perspective. Drawing from the works of Peter Katzenstein "Introduction: Domestic and International Forces and Strategies of Foreign Economic Policy" and "Conclusion: Domestic Structures and Strategies of Foreign Economic Policy", *International Organisation*, 31:4 (Autumn, 1977), Peter Gourevitch, "The Second Image Reversed: The International Sources of Domestic Politics", *International Organisation*, 32:4 (Autumn, 1978) pp. 881-911, Robert Keohane and Joseph Nye, *Power and Interdependence: World Politics in Transition* (Boston: Little Brown, 1977), and Stephen Krasner, *Defending the National Interest: Raw Material Interests and U.S. Foreign Policy*, (Princeton: Princeton University Press, 1978) the precise focus of the complex neo-realist perspective is inappropriate for this broad survey of the literature

[28] Dewitt and Kirton, Ch. I, p. 13

concrete and pragmatic realities, and have often been well documented usually as case studies or diplomatic history, it was not until the foreign policy review that this approach was enunciated as the overarching principle of Canadian foreign policy.

The realist perspective has its roots in the great power theorists who stress such factors as national interest, power and capability as being the prime determinants of outcomes in the international system.[29] Thus grounded in the larger concept of international politics, this perspective of Canadian foreign policy is concerned primarily with Canada's ability to "define, advance and secure distinctive national interests, through competitive actions directed at potential adversaries abroad, and through the promotion of a world order directly supporting this purpose".[30] Although compatible with the observed behaviour of participants in the international system, this general orientation is not particularly useful in the study of foreign policy as it assumes states to be unified actors with clearly enunciated policies and a single perception of the national interest.

However, when domestic policy formulation processes and outcomes are defined in terms of, or are compatible with the concepts used by international theorists, the realist perspective provides the opportunity to integrate the study of foreign policy into the wider study of international relations. By identifying the national interest, potential adversaries and their relative capabilities, and the world order which will forward those interests in terms of domestic policy considerations, the theoretical structure of the realist perspective is strengthened considerably. It further enables a range of orphaned research areas to be subsumed under a single conceptual heading. For example, few studies on Canadian foreign policy recognise that there have been severe disagreements within the government over a particular issue,[31] that the government may have acted illegally or in a clandestine fashion to serve its own interests at the expense of others, or that there may be economic imperatives to ostensibly moralistic decisions. Foreign policy is formulated as a result of the processes identified by the public policy analysts wherein the conflicting interests affected by policy decisions are aggregated to form the single

---

[29] Hans Morgenthau, *Politics Among Nations*, 3rd ed., (New York: Alfred A. Knopf, 1963), and more recently, Hedley Bull, *The Anarchical Society: A Study of Order in World Politics*, (New York: Columbia University Press, 1977)
[30] Dewitt and Kirton, Ch. I, p. 77
[31] P.R. Johannson, *Nuclear Exports and Canadian Foreign Policy*, Unpublished Manuscript, 1981, Ch. I, p. 17

voice of a nation so necessary to the conduct of international affairs. Foreign policy thus becomes the nexus between domestic and international processes, wherein the flow of complex transactions between state, substate and private actors are regulated in order that these diverse and often independent relationships follow a course consistent with the national interest.

The following study is designed to explore the relationship between the precepts of the international power theorists, specifically national interest and capability, and the Canadian foreign policy formulation process in the case of uranium export policy. The analytical framework used to guide this investigation is Stephen Krasner's 'Statist Approach' to foreign policy.[32] Krasner attempts to integrate the analysis of foreign policy into the wider field of international relations by applying a state centric concept to the foreign policy formulation process. Under this conceptualisation, the 'state' becomes an entity with a will and a purpose of its own, creating a triangle of contending policy forces, international determinants, domestic interests and the goals of the state. Krasner defines the national interest as the consistent policy preferences of the central decision making body[33] rather than an objective definition set out in terms of 'what is good for the nation'. In pursuing these interests, the state will encounter resistance from both domestic and international actors[34] and thus the ability to implement policies in support of those defined interests depends on the state's capacity to influence the actions of both state and non-state actors within and external to its own society.[35]

Under this 'statist image' of foreign policy, the realist perspective acquires a considerable degree of theoretical consistency through the conceptual and operational definition of terms which often have been used in a nebulous or arbitrary fashion. The analysis of Canadian foreign policy has most often been 'a thing unto itself' with little to

---

[32] Stephen Krasner, *Defending the National Interest: Raw Material Interests and U.S. Foreign Policy*, (Princeton: Princeton University Press, 1978)
[33] Krasner, p. 13
[34] Ibid, p. 10-11
[35] Ibid. For a similar perspective on the relationship of the state to domestic and international determinants see *International Organisation*, 31:4 (Autumn, 1977) with special attention to the introductory and concluding articles by Peter Katzenstein "Introduction: Domestic and International Forces and Strategies of Foreign Economic Policy" and "Conclusion: Domestic Structures and Strategies of Foreign Economic Policy", and Peter Gourevitch, "The Second Image Reversed: The International Sources of Domestic Politics", *International Organisation*, 32:4 (Autumn, 1978) pp. 881-911

bind it to other analytical approaches to foreign policy analysis[36] or to the wider study of international relations. The typical analytical approach to Canadian foreign policy, and most probably the major cause of this conceptual isolation, has been the prominent use of case studies without theoretical structure, particularly in those investigations which might fall under the realist perspective. The use of the statist approach to organise and structure the considerable amount of data uncovered in case studies, and a flexibility which allows its application across the range of cases subsumed by the realist perspective, is a valuable step toward developing a systematic approach to the study of Canadian foreign policy.

The Case Study and the Study of Foreign Policy

In the study of foreign policy, the use of the case study approach has fallen into disrepute. "One remarkable quality of ... [case studies] ... has been their failure to provide cumulative knowledge about the class of events they investigate."[37] The major criticism of the case study is that its detailed empirical analysis of a particular situation is unable to offer much in the way of higher level abstractions.

> Generalisations fade when we look at the particular cases. We add intervening variable after intervening variable. Since the cases are few in number, we end with an explanation tailored to each case. The result begins to sound quite idiographic or configurative.[38]

This is largely true in many case studies where historical accuracy, rather than explanation is the chief concern and little effort is made to provide propositions which may be applied to other situations.[39] In attempting to draw wider conclusions, a number of incompatibilities arise from the differing initial assumptions made in each case. Disparities arise in the adequacy of explanation sought, whether it is to investigate the internal consistency of events or a relationship to propositions external to the situation; the representativeness of the case, that is, if the case can be considered to be an occurrence of a more general phenomena or a case truly unique in its own right; the level of analysis from which the case is approached; and the boundaries of the case or the

---

[36] A clear exception to this is Thordarson's use of Brecher's model, proposed in Michael Brecher, Blema Steinberg, and Janice Stein, "A Framework for Research on Foreign Policy Behaviour", *The Journal of Conflict Resolution*, 13:1 (March, 1969), see Thordarson, note p. 6.

[37] C.F. Hermann, *Crises in Foreign Policy*, (Indianapolis: Bobs-Merill, 1969) p. 21.

[38] Sydney Verba, "Some Dilemmas in Comparative Research" *World Politics*, 20:1 (October, 1967), p. 113.

[39] Hermann, p. 40.

selection of events deemed to be significant in the analysis.[40] If the purpose is to generate scientifically verifiable hypotheses, these disparities are often reduced to "... a general rule you cannot generalise from a single case. The corollary of the rule is that a case study cannot be used for a scientific test of a hypothesis unless stated in universal terms (i.e. in every case)."[41]

The study of foreign policy is not, however, blessed with consistent, homogeneous criteria by which to measure and evaluate behaviour. Nor is the study of politics at a stage where its theoretical structures provide hard and fast rules of political performance. At best it can provide only probabalistic solutions. Thus, "a single case can constitute neither the basis for a valid generalisation *nor the ground for disproving an established generalisation.*"[42] Therefore, the individual case study makes its greatest contribution when used to refine and improve theoretical questions through a systematic comparison of similar case studies.

The attraction of the case study as an analytical technique is its intensive exploration of the considerable amount of data usually inherent in individual cases. Just getting the facts straight by chronicling the characteristics of the subject (ideographic) or identifying the structures in a systemic analysis (configurative) is of enormous importance in any examination.[43] However, to explain the behaviour, function, or existence of characteristics of the subject under investigation requires reference to some generalised principles even if only to verify its uniqueness.[44] To this intensive exploration of the data, then, a general law or theory is applied in order to interpret, organise and explain the data. "By showing that [their] existence could have been inferred – either deductively or with a high probability – by applying certain laws of universal or of statistical form to specified antecedent circumstances..."[45] the

---

[40] G.D. Paige, *The Korean Decision*, (New York: The Free Press, 1968) p. 10-11
[41] Hermann, p. 40
[42] Arend Lijphart, "Comparative Politics and the Comparative Method", *American Political Science Review*, 65 (1965) p. 691 (emphasis added)
[43] The typology used here is that put forward by Harry Eckstein, "Case Study and Theory in Politcal Science", F.I. Greenstein and N.W. Polsby, eds. *Handbook of Political Science*, Vol. 7, (Don Mills: Addison-Wesley, 1975)
[44] Verba, p. 114
[45] C.G. Hempel, *Aspects of Scientific Explanation and Other Essays in the Philosophy of Science*, (New York: The Free Press, 1965) p. 299

"disciplined-configurative case study"[46] serves first to explain the event under scrutiny and second, to further validate the applied theory.

This structured analytical approach affords a comparability among cases which allows a more systematic examination of cases and their analytical structures. Case studies are so ordered that a large number of important characteristics are sufficiently similar that they may be treated as constants, leaving those variables of concern more clearly identified for analysis. Further, new characteristics become apparent which are neither constant nor initially under examination, thus opening new avenues of exploration. The intensity of analysis undertaken in a case study reveals a great deal of data. When organised under a single theoretical construct, numerous comparative case studies offer the iterative possibilities necessary for an effective and directed theory building process, with each additional study both validating or revising past work, and developing preliminary hypotheses to facilitate exploration past previous theoretical boundaries.[47]

This case study of Canadian nuclear export policy includes facets of each of these levels of analytical approach. Initially, the study describes the international uranium cartel with regard to its role in the setting of Canadian uranium export policy. Secondly, the behaviour of the Government of Canada in the formulation of that policy, will be interpreted within the terms of a theoretical framework in order to contribute to a more systematic examination of Canadian foreign policy.

The Study of Canadian Uranium Export Policy

The seventies were tremendously exciting years in the evolution of Canadian nuclear export policy, beginning in 1972 with the secret formation of an international uranium cartel. India exploded a nuclear device in 1974 which led to renewed attempts by both Canada and the international community to establish an effective international non-proliferation regime and thus the establishment, again in secret, of the Nuclear Suppliers Group in London, an organisation of major exporting countries with the objective of implementing a system of supplier imposed restrictions on the end use of nuclear technology. The Indian blast also spurred Canada to establish strict conditions on the export of nuclear technology, more rigorous than any other supplier nation, thus

---

[46] Verba, p. 114

[47] Alexander George and Richard Smoke, *Deterrence in American Foreign Policy: Theory and Practise* (New York: Columbia University Press, 1974)

placing a considerable handicap on the competitive position of the Canadian nuclear industry

Uranium has been selected as the focus of the study because of its capacity to act as a responsive indicator of the economic impact of foreign policy decisions in this area. Uranium is the basis of all nuclear programs and Canada possesses approximately 20% of the world's known reserves. The uranium market, as with the nuclear market in general, is extremely competitive. While the demand for uranium is price inelastic, as fuel prices form only a minute fraction of the capital costs of nuclear facilities, the supply of uranium is extremely sensitive to price fluctuations. Furthermore, the supplier based export restrictions add considerably to the real costs incurred by consumers in their purchases of uranium. Therefore the number and size of sales, and the prices paid for uranium act as extremely responsive long term indicators of the reaction of the international market to various policy initiatives taken by supplier states.

Uranium has also been selected in order to investigate the virtually unexplored role of the international uranium cartel as an instrument of Canadian nuclear export policy. The uranium cartel, composed of the governments of Australia, Canada, France, South Africa and the massive multinational mining company, Rio Tinto Zinc, based in the United Kingdom, is known to have operated from 1972 through 1974 but may have continued in existence until 1978. During that period it commanded absolute control over the international uranium market through a rigged bidding system. The cartel was exposed in 1976 through the theft of confidential documents from Mary Kathleen Uranium, an Australian subsidiary of Rio Tinto, which came into the possession of the Australian offices of the Friends of the Earth, an international environmental organisation. The documents were ultimately forwarded to the American House of Representatives Subcommittee on Oversights and Investigations of the House Standing Committee on Interstate and Foreign Commerce, which held hearings in 1977. Despite its public disclosure, however, both political and economic analysts have continued to ignore or down play the existence of the cartel in investigations of nuclear policy.

Comprehensive analytic writing on the subject of Canadian uranium export until most recently has been very sparse. However, Canadian domestic issues pertaining to nuclear export policy and the international conditions which prevail upon those issues

have been discussed in a spate of recent publications dealing with Canadian nuclear policy. Bruce Doern has examined the domestic political and economic questions in *Government Intervention in the Canadian Nuclear Industry* and, in partnership with Robert Morrison, these questions are approached as they relate to the broader economic and political environment, including their international antecedents and ramifications, in *Canadian Nuclear Policies*. Roff Johannson, in a forthcoming book, has undertaken an extensive investigation of the decision making structure of the Canadian nuclear export policy utilising a bureaucratic bargaining model[48] examining the positions of various concerned government departments, agencies and crown corporations to establish the major actors and influences which have stimulated policy directions and past policy changes.[49] Finally, Constance Hunt[50] and to a lesser degree James Keeley,[51] have taken a strictly legalistic approach to Canadian nuclear export policy in identifying the legal relationship of the industry to the government and the institutional structure of the policy formulation process in order to examine the dilemma between the economic motivations to export and the demand for constraints on the use of atomic power for destructive purposes.

Earlier writers can be excused from including references to the existence in reality of market cartelisation while toying with it as an imaginative possibility.[52] Writers publishing as late as 1980[53] are equally unacquainted with the activities of the cartel while

---

[48] The bureaucratic bargaining model was first proposed by G.T. Allison and Morton H. Halperin, "Bureaucratic Politics: A Paradigm and Some Implications", in Raymond Tanter and Richard Ullman, *Theory and Policy in International Relations* (Princeton: Princton University Press, 1972).

[49] See also P.R. Johannson and J.C. Thomas, "A Dilemma of Nuclear Regulation in Canada: Political Control and Public Confidence", *Canadian Public Policy*, VII:3 (Summer, 1981), pp. 433-443, and P.R. Johannson and J.C. Thomas, "Canada's Nulcear Dilemma: Promotion vs. Regulation", Unpublished Manuscript, 1979.

[50] Constance D. Hunt, "Canadian Policy and the Export of Nuclear Energy", *University of Toronto Law Journal*, 27:1 (Winter, 1977).

[51] James F. Keeley, "Canadian Nuclear Export Policy and the Problems of Proliferation", *Canadian Public Policy*, 6:4 (Autumn, 1980) p. 621.

[52] See Michael Mandelbaum, "A Nuclear Exporters Cartel", *Bulletin of the Atomic Scientist*, 33:1 (January, 1977) pp. 42-50. G. Willrich and B. Marston, "Prospects for a Uranium Cartel", *Orbis*, 29:1 (Spring, 1975) pp. 167-84 and Steven Baker, "Monopoly or Cartel?", *Foreign Policy*, 23 (Spring, 1976), pp. 202-220. While the latter two contemplated the ramifications of the Nuclear Suppliers Group, established secretly in 1975, but reported sporadically in the press, neither acknowleges the existence of the cartel, the meetings of which were equally well reported as attempts to "secure orderly marketing" of uranium, see *Wall Street Journal*, Feb. 8, 1972.

[53] The only noteworthy exceptions being Johannson and Thomas, and Larry R. Stewart, "Canada's Role in the International Uranium Cartel", *International Organisation* 35:4 (Autumn, 1981) pp. 657-689.

discussing in some depth the implications of the NSG.[54] However, it seems inexcusable that economic analysis of the international uranium market from a classical supply and demand stance,[55] should somehow have missed the existence of an artificial market structure which so distorted normal market forces that ultimately producers would become the customers and the consumers, the vendors, with the upper limit on prices becoming the cost of production.[56] Even with the availability of the documents of the House of Representives Subcomittee and the volume by Taylor and Yokell[57] which recounts this evidence with a comprehensive and authoritative economic background, the impact of the cartel for Canadian nuclear policy has still been substantially overlooked. Johannson's detailed examination of Canadian nuclear policy includes an extensive analysis of the cartel as a policy objective of the Canadian Government while discussing Canada's primary goal of establishing an effective supplier based non-proliferation regime. However, he dismisses any connection between these two informal supplier based control systems with a single phrase "... the cartel appears to have been unrelated to the NSG."[58] On the contrary, it appears unlikely that Canada's concurrent membership in these organisations, one controlling price and the other controlling export criteria, the two determining forces in the uranium market, could be 'unrelated'. Thus with the full extent of documentary evidence now publicly available, it may be possible to shed some light on the role which the cartel played in the implementation of Canadian nuclear export policy.

The analytic framework selected to guide this investigation is derived from Krasner's fifteen detailed case studies of American raw material procurement policies.[59] He has gone on to apply this statist approach to American oil policy in the Middle East in which he demonstrates that the statist argument can offer a powerful descriptive and analytic framework.[60] Krasner's analysis has been restricted to the American experience,

---

[54] see Keeley, pp. 622-24
[55] see Sanjay Banerjee, op. cit. and D.J. Lecraw, "Uranium Supply and Demand: Implications for Policy", in Doern and Morrison, 121-36
[56] See Infra, Ch. IV
[57] June H. Taylor and Michael D. Yokell, *Yellowcake: The International Uranium Cartel*, (New York, Pergamon Press, 1979)
[58] Johannson, Ch. IV, p. 16
[59] Krasner, *National Interest*
[60] Stephen Krasner, "A Statist Interpretation of American Oil Policy Toward the Middle East", *Political Science Quarterly*, 94.1 (Spring, 1979) pp. 77-96

and though stating that "... [if] the efficacy of a statist paradigm can be demonstrated in explaining the raw materials policy of the U.S. , it should apply with even greater force to most other political systems (at least those of the developed countries) and to other policy issues",[61] he has as yet made no attempt to verify this somewhat general claim.

Therefore, this case study will serve a dual function. In applying the 'statist approach' in the Canadian context and in the marketing rather than procurement of raw materials, this study will begin to explore the application of Krasner's work outside of its previous concentration on U.S. foreign policy. The primary goal however, is to explain the mechanism of Canadian foreign policy by drawing generalisations which might contribute to the theory building process and to the cumulative and systematic study of foreign policy from a statist point of view. A considerable amount of work has been done in the study of Canadian foreign policy analysis. With laudable effort, the field has been opened and cleared of much of the rhetorical and parochially based pronouncements beneath which we have laboured for far too long. Sufficient individual study has been successfully accomplished now to begin gathering the products of these independent works into a more comprehensive, integrated and dynamic body of knowledge under more generalised principles. In doing so, the data will begin to speak for itself, thus opening a fresh and exciting era in Canadian foreign policy analysis.

An Overview

It is now possible to outline the course which this examination of Canadian uranium export policy will take. The chapter subsequent to this offers an overview of Krasner's statist approach to foreign policy designating specifically the operational definitions necessary to implement the conceptual framework, for example the operationalisation of 'the state' as the central decision-making body, the determination of the 'national interest' and the relationship of the state to its society. These will be examined in relation to the contending analytic approaches of liberal pluralism and structural Marxism as identified by Krasner. Chapters III and IV offer an overview of the economics of the international uranium market and a history of the derivation of Canadian uranium export policy respectively in order to establish the relationship between the economic and political considerations in the marketing of Canadian uranium. Chapter V

[61] Krasner, *Defending the National Interest*, p. 7

provides a detailed examination of the international uranium cartel as an international institution, the role which the Canadian Cabinet played in its establishment and operation, and the function of the cartel in the implementation of foreign policy objectives. Chapter VI discusses the implementation of Canadian uranium export policy with special attention given to the interaction of the various policy goals and objectives pursued throughout the prior evolution of Canadian export policy. Finally, Chapter VII integrates the data raised during the previous discussion with the statist approach in an effort to explain the mechanism of Canadian foreign policy formulation, to derive some conclusions about the nature of Canadian foreign policy and to compare the application of Krasner's statist concept to decision making in the United States with findings based on the Canadian experience emerging from this study.

II. A 'Statist' View of Canadian Uranium Export Policy

The 'State-Centric Approach', while commonly accepted in the study of international relations, has not been similarly accepted in the study of foreign policy formulation because of its assumption of the state as a unified actor. This disjuncture between the approaches used to analyse domestic and international politics can be overlooked so long as the international issues of concern are those which threaten territorial or political integrity since all groups within a society could be expected to support these fundamental goals.[62] However, the examination of economic issues which treat one group in society differentialy to another, strains the acceptability of a unified actor concept in foreign policy. Yet in international affairs, states do put forward unified positions and speak with a single voice. A number of explanations have evolved as to how these competing opinions are integrated to form the unified action of the state.

In contrast to the outward looking factors of internationalism and dependency respectively raised by the liberal and neo-Marxist writers on Canadian foreign policy, Krasner takes a more inward looking approach. Krasner has identified the liberal and Marxist perspectives to be the most important rivals to the statist perspective[63] and focuses upon those facets which pertain directly to the foreign policy formulation process. The issues of importance are the role which is played by the state in setting foreign policy goals, the relationship between the state and society and how that relationship affects the implementation of policies designed to reach those goals. In contrasting the international and foreign policy aspects of these contending approaches, Krasner takes the initial step toward developing an integrated analytic framework which comprises both domestic and international policy determinants.

The Liberal Pluralist Approach

The simplest and most pervasive explanation of the resolution of conflicts between contending interests in the formulation of foreign policy in Canada is that of liberal pluralism. For liberal analysts there is an integral relationship between the society

---

[62] Stephen Krasner, "A Statist Interpretation of American Oil Policy Toward the Mid East", *Political Science Quarterly*, 94:1 (Spring, 1979) pp.77

[63] Stephen Krasner, *Defending the National Interest: Raw Material Interests and U.S. Foreign Policy*, (Princeton: Princeton University Press, 1978) p. 6. A more comprehensive and detailed examination of this debate from a unique perspective is found in Alfred Stephan, *The State and Society: Peru in Comparative Perspective* (Princeton: Princeton University Press, 1978) pp. 3-45

and the state. Society is composed of a number of groups which represent various interests involved in each policy decision. Politics is viewed as the competition among these various organised interests and the policy outcome is the "resultant of effective access by various interests...."[64] Government is then the object of these contending pressures and the policy outcome is the summation of all these countervailing forces. Although the state or government is dependent upon the society, it retains a character of neutrality, an institutional arbiter of the inter-group conflicts, but guided directly by the relative power of the groups involved in each issue.[65]

Until recently, the Canadian public has displayed little concern over the issue of nuclear exports.[66] Although the subject has become increasingly politicised, the proliferation of nuclear weapons is not an issue which has drawn a great deal of active public involvement. Hence the proponents of non-proliferation have not formed a vocal bloc through which to pressure government to take a strong stand in exports of nuclear materials. The secrecy surrounding the nuclear industry and the psychological atmosphere of the 'Cold War', contributed considerably to this lack of public involvement, but even during the early seventies, when the cloak was being removed from high technology and detente was at its height, little concern was voiced over Canadian international nuclear activities. For example, Canadian involvement in the Indian nuclear explosion was revealed in the midst of the 1974 federal election, but was never considered an issue.[67] Thus in this broadest application of the pluralist analysis, the Canadian public would not appear to be a factor of any considerable weight. Rather, the representatives of the nuclear industry, including the reactor manufacturers, uranium mining and processing industries,

---

[64] David B. Truman, *The Government Process: Political Interests and Public Opinion*,(New york: Knopf, 1971) p. 507, as cited by Krasner, p. 26

[65] Rianne Mahon, "Canadian Public Policy: The Unequal Structure of Representation", in Leo Panitch, ed., *The Canadian State: Political Economy and Political Power* (Toronto: University of Toronto Press, 1977), p. 193.

[66] With the possible exception of the Bomarc missle debate which eventually forced Prime Minister Diefenbaker from office in February 1963, see Peyton V. Lyon, *Canada In World Affairs 1961-63 (Toronto: Oxford University Press, 1968) pp. 146-58.*

[67] The "1974 National Election Study" conducted by John Meisel, made no mention of anything 'nuclear' in over 150 identified election issues. A similar lack of public involvement was evident during the 1965 debate over sales of unsafeguarded uranium to France, even with the unsuccessful efforts by the opposition to stir up public opinion previously sensitised to the issues by the 1963 Bomarc missle debates. See P.R. Johannson, *Nuclear Exports and Canadian Foreign Policy*, Unpublished Manuscript, 1981, Ch. VI, p. 21, see also Peyton Lyon, *Canada in World Affairs* 1961-63, (Toronto: Oxford University Press, 1968) pp. 146-163.

the communities whose existence is dependent upon the mining of uranium and the considerable lobby for Canada to take a leading role in the development of high technology would distinctly have more impact on the determination of nuclear export policy. Certainly, in terms of access, responsiveness and sheer weight of lobby pressure, it is the economic sector which would have greater sway with policy makers vis-a-vis the proponents of non-proliferation.

A more functional refinement of this pluralist analysis in this context is the bureaucratic politics approach[68] used by Johannson in his comprehensive examination of Canadian uranium export policy. His analysis shows that throughout the evolution of Canadian policy, decisions have been "a product of bargaining among a variety of government and bureaucratic actors who usually have different goal structures and different perceptions of the national interest, as well as varied influence on the bargaining process."[69] Hence policy decisions are not made with a single rational choice, but by bureaucratic "pulling and hauling."[70] In general, the interests of the uranium mining and processing industry have been directly represented by the Department of Energy, Mines and Resources and the crown corporation Eldorado Nuclear Limited. The reactor manufacture and export industry is provided access through the Departments of Industry, Trade and Commerce, and Finance, the Export Development Corporation, Atomic Energy Control Board and the crown corporation Atomic Energy of Canada Limited. Employment in the industry, because of its remote and localised character, is most effectively represented by Members of Parliament[71] and less directly, through social service departments. On the other hand, the internationalist position has generally been advanced by the Departments of External Affairs and National Defense, less frequently by the Office of the Privy Council (PCO), and lately by the Office of the Prime Minister (PMO), none of which has domestic constituencies.

---

[68] G.T. Allison and Morton H. Halperin, "Bureaucratic Politics: A Paradigm and Some Implications", in Raymond Tanter and Richard Ullman, *Theory and Policy in International Relations* (Princeton: Princton University Press, 1972)

[69] P.R. Johannson, "Change and Canadian Nuclear Policies", *Nuclear Exports and Canadian Foreign Policy*. Unpublished Manuscript, Ch. II, p. 12

[70] Allison, as cited by Johannson, Ch. II, p. 13

[71] It is interesting to note, however, that during the 1965 debate over sales of unsafeguarded uranium to France, Prime Minister Pearson, while taking a position against the sale, represented the people of Elliot Lake, a town almost entirely dependent on uranium mining. See P.R. Johannson, "Change and Canadian Nuclear Policies", p. 20.

Johannson has found a considerable degree of fluctuation in the amount of influence each of these actors exerts in the making of Canadian nuclear export policy and an equivalent increase in the complexity of the process by which that policy is made."[72] Yet he observes "... that there has been more constancy than change in the central elements of Canadian nuclear policy."[73] From the pluralist point of view, the "identifiable shift in the influences which have shaped Canadian policies"[74] should result in variation in policy rather than consistency. Secondly, with the Canadian public taking only a nominal role in directly governing the actions of decision-makers, the remaining lobbyists occupy positions which distinctly favour the economic interests of the industry and Canada in general. However, in reality, there has been a consistent elevation of the goal of non-proliferation above that of the promotion of economic well-being throughout the evolution of Canadian nuclear export policy. Hence it would appear that there is another factor which has not been taken into the calculation of the pluralist or more specifically, the bureaucratic bargaining analysis, a motivating force which cannot be found in the calculus of the aggregation of contending political forces, but one which responds to the collective interests of the nation as a whole.

The Structural Marxist Approach

On first appraisal, it would appear that the relationship between the actions of the Government of Canada and the economic interests of a specific segment of Canadian society would be most compatible with a Marxist interpretation. The structural Marxist analysis argues that the state acts in a semi-autonomous role to maintain the cohesion of the capitalist system. The function of the state is to mitigate contradictions which are inherent in that system while remaining within the limits of the general preferences of the dominant elements of the capitalist class.[75] The state provides the climate within which that class can most profitably accumulate capital and legitimises this economic structure by maintaining social harmony. However, within the dominant class, competition dictates that there will be diverging interests among various groups or factions, and therefore, the state must have a 'relative autonomy' from the dominant class in order to act as a

---

[72] Johannson, Ch. VI, p. 57-58
[73] Ibid., Ch. VI, p. 57
[74] Ibid.
[75] Stephen Krasner, *Defending the National Interest: Raw Materials and U.S. Foreign Policy*, (Princeton: Princeton University Press, 1978) p. 22

neutral arbiter between these competing factions.

The Canadian government has always played an important role in facilitating capital accumulation for a number of reasons and through a variety of means.[76] Historically there has been a symbiotic relationship between government and the business community with recruitment coming from a defined socio-economic strata of the Canadian community. Although the specialised nature of government has reduced the salience of that symbiosis, there is clearly a communality of interests between the interests of the business community, the bureaucracy and the policy making elite.[77] But within the Canadian context of Canadian nuclear export policy this unequal representation of the dominant economic class within the policy formulation process would not predict the choice by the Canadian government of a non-proliferation policy at the expense of economic interests.

However, if our terms of reference were expanded to include Canada's relationship with the global business community, this structural Marxist analysis can provide two plausible if not totally convincing explanations for the Canadian action. The first stems from the state's responsibility to ensure a stable environment in which the capitalist system can prosper. Clearly the proliferation of nuclear weapons works against that goal, at least while military strategists work under the principle of 'Mutually Assured Destruction', and tactical nuclear war is, arguably, not yet 'economically viable'.[78] Canada therefore chose to yield its nuclear interests to the greater good of world stability for the remainder of its capitalist activities.

The second possibility is that Canadian economic decision-making is penetrated by foreign economic interests. There is certainly a distinct foreign presence in the Canadian nuclear industry, with names such as Westinghouse and General Electric dominating the reactor industry and Gulf, Uranerz (West German parent company) and Amok (French parent) in uranium mining. There is also a high degree of interrelation between Canadian and American nuclear policies as evidenced by the specific mention of

---

[76] Leo Panitch, "The Role and Nature of the Canadian State", in Panitch, *The Canadian State*, p. 11.
[77] Ibid. p 13.
[78] Robin Ranger, "NATO's New Great Debate: Theatre Nuclear Force Modernisation and Arms Control", *International Journal* 36.3 (Summer, 1981) p. 557, citing the creator of the neutron concept, Samual T. Cohen, *Strategic Reveiw*, 6 (Winter, 1978) pp. 9-17

Canadian uranium supplies in President Carter's Energy Program of 1977, as the source of stable uranium supplies needed to successfully convince consumer states to subscribe to the American plan and forego advancement to plutonium and fast breeder reactor technologies."[9]

The structure of the Canadian uranium industry and its relationship to the Government would not lend itself easily to an analysis which suggested that a foreign economic elite dominated the policy formulation process. There is no clear evidence that decision-making concerning the industry is highly penetrated by foreign capital nor is there evidence that the Canadian government *in this case* holds allegiance to any foreign economic group. Although production of uranium currently is evenly divided between Canadian, American and British firms, the Canadian government continues to exert considerable influence within the industry. Participation in actual production through Eldorado Nuclear, its role in marketing and operation of the buffer stock through Uranium Canada, and its regulatory capacity through the issuance of exploration, production and export licenses,[10] provide the Government of Canada with a great deal of control over the industry at prime nodal points in the commercial process. Further, Canada's beheviour in the uranium cartel was such that it worked exclusively in support of Canadian economic interests and directly against those of a very powerful section of American capital with a tremendous retaliatory capacity, that is, the American utilities.[11] It is reasonable therefore that if there has been a coordination of policy between the American economic interests and the Canadian government, it has resulted from a concordance of interests between the two rather than a unilateral surrender of Canadian interests to those of the Americans. For the most part it would appear that in the formulation of uranium export policy the Canadian government has given the unique interests of the Americans only a cursory consideration.

The inadequacy of the structural Marxist approach, as with the liberal pluralist, centers around the degree to which the state and society are dependent. Pluralists

---

[9] Martin Indyk, "Australian Uranium and the Non-Proliferation Regime", *The Australian Quarterly*, 49:4 (December, 1977) p. 24

[10] Constance D. Hunt, "Canadian Policy and the Export of Nuclear Energy", *University of Toronto Law Journal*, 27:1 (Winter, 1977) p. 71

[11] June H. Taylor and Michael D. Yokell, *Yellowcake: The International Uranium Cartel*, (New york: Pergamon Press, 1979)

concede no independence to the state as it is subject exclusively to the contending forces of competing interests within society. The Marxist approach confers to the state only a 'relative autonomy'[12] which allows the state such freedom as is required to mediate in clashes between factions of the dominant class while remaining within the bounds of the general interests of that class as a whole. However, neither of these approaches adequately explains the conflict between the public and private interests within the Canadian uranium export policy, nor the choice of the Canadian government to support the interests of the world community over the economic interests of the domestic community.

The Statist Approach

Krasner offers a perspective which is unavailable through these more commonly applied approaches. The major contribution of the statist approach is its recognition of the state as distinct and operating independently of its societal context according to a set of unique objectives. Secondly, it sets out a policy formulation process in which the state selects a policy based upon the demands of the domestic and international pressures but then must implement that policy against resistance from both communities.

Krasner's 'statist' image of foreign policy recognizes that the state, or in this case, the Government of Canada, is an institution with a will and a purpose of its own. He takes as his fundamental assumptions that "there is a distinction between the state and society", that "the objectives sought by the state cannot be reduced to some summation of private desires". Hence the central decision-makers have an independence from particular pressures within society which allows them to formulate policies that cannot be effectively articulated by any individual or assembly of non-state actors. These "objectives can be called appropriately the national interest".[13]

In this 'statist image' of foreign policy, the state is conceived to be "a set of roles and institutions having particular drives, compulsions and aims of their own that are separate and distinct from the interests of any particular societal group."[14] In the formulation of foreign policy, the institutions and roles which restrain the actions of individuals are distinguished from other policy making bodies by "their high degree of

---

[12] Mahon, in Panitch, p. 169
[13] Krasner, p. 5-6.
[14] Ibid., p. 10.

insulation from specific societal pressures and a set of formal and informal obligations that charge them with furthering the nation's general interests"[15] This does not suggest that the state is a unified whole which, undivided, pursues a universally recognised 'national interest'. Rather, this approach incorporates the necessity for the state to deal with both governmental and non-governmental actors in its own society and internationally. Therefore in pursuing its objectives:

> ... the state may confront internal as well as external resistance. Central decision-makers may be frustrated not only by other states but also by their inability to overcome resistance from within their own society. [The process, is one of] ... the state autonomously formulating goals that it then attempts to implement against resistance from international and domestic actors. The ability of the state to overcome domestic resistance depends upon the instruments of control that it can exercise over groups within its own society[16]

It is unfortunate that Krasner has chosen the term national interest to describe the objectives of the state, for it reawakens an old unresolved debate among the 'grand theorists' of the 1950's and 60's who conceived of "interest defined in terms of power",[17] and conjures up images of a nebulous entity called the 'state' which seeks to pursue universally recognised interests which can ultimately be reduced to the defence of political or territorial integrity. Krasner makes no attempt "to identify the national interest with some divinely ordained goal for the state, nor has [he] viewed it as an analytic assumption that can be used to derive propositions about the international system".[18] As such Krasner's approach to the 'national interest' is substantially removed from that of the more traditional proponents of the term and in many ways more useful.

Rather than attempt to explain policy decisions in terms of lofty objectives, Krasner uses the 'term inductively to describe the consistent preferences of policy makers over time. There are three criteria by which to judge the 'national interest':

1. a set of objectives must be related to general societal goals;
2. these goals must have a consistency over time;
3. there must be a hierarchical ordering of goals arranged according to the

---

[15] Ibid. p. 11.
[16] Ibid. p. 10-11
[17] Hans J. Morgenthau, *Politics Among Nations*, 3rd ed., (New York: Alfred A. Knopf, 1963)
[18] Krasner, p. 334.

importance to the state."

Given these criteria it is possible to establish, with regard to each foreign policy issue, a transitively ordered set of national objectives which will indicate, when faced with a conflict, which course the decision-maker might choose

This approach allows the flexibility necessary in policy making to form judgements on the well being of the community which are not necessarily based upon the improved well being of each individual. Krasner relies upon Pareto's distinction between "utility *for* the community" or a summation of the preferences of the individual members of society, and "utility *of* the community" which involves making a judgment about the well being of the society as a whole." The national interest, according to Krasner, is then the goals sought by the states conceived in terms of the utility *of* the community.

There is a profound difference between Krasner's concept of the national interest and the objectively identifiable goals of the traditional power theorists, a difference so great that it is conceivable that they may not in some cases refer to the same thing at all. Both accept that the consistent preference of policy makers is essential to the identification of the national interest. Power theorists conclude that this consistency is a natural response to externally imposed conditions which determine policy choices. Therefore it is possible to derive propositions about the behaviour of states from these identified external determinants. To Krasner, the national interest is the consistent choice of decision makers, solely because of this persistent selection. Unfortunately, he makes no statement as to why one policy selection should be made over another in such a consistent fashion. The deductive view of the traditionalists and Krasner's inductive approach might well culminate in identical conclusions. However, given the frailty of human nature, the result could be entirely different.

Thus, the greatest defence for the statist approach lies in the ability of the state to make mistakes or to act non-rationally in the definition or pursuit of the national interest." All too often, the world is witness to misperceptions of external situations by policy makers, the lack of accurate means-ends calculations in the pursuit of foreign

---

" Ibid., p. 13

" Vilfredo Pareto, *A Treatise on General Sociology* pp. 1456-74, as cited by Krasner, p. 12.

" Krasner, p. 16

policy objectives or the inaccurate assessment of the national will or public opinion in making policy choices. The ability of policy makers to free themselves from societal or external constraints which allows them to take action in a non-rational manner, offers strong evidence in support of the statist approach.[92] However, this also emphasises the very real difference in the national interest, defined by Krasner to be the consistent preferences of policy makers, and an objective assessment of the true interests of the nation.[93]

Krasner identifies the central state actors in his examination of American policy to be the President, Secretary of State, White House Staff and State Department. His selection is based on the degree to which these institutions are insulated from "specific societal pressures" and the pivotal position they hold in the determination of American foreign policy.[94] Thus it is the consistent choice of these decision-makers which determines the national interest. In the context of Canadian uranium export policy, the central decision making unit is the Prime Minister and the federal Cabinet. Certainly there are a number of other key actors which contribute to the formulation of export policy, such as the various concerned departments and agencies within the bureaucracy, Parliament and particularly the Atomic Energy Advisory Panel, a semi-official but informal assembly of senior bureaucrats and management personnel which has guided nuclear policy over the last three decades.[95] However it is the Prime Minister and Cabinet which ultimately have had to make the policy decisions and more significantly, have taken policy initiatives in the area of uranium export which have worked directly against the longer term policies of other actors in the policy formulation process. Furthermore, the legislative framework within which the export of uranium operates is such that most of the key areas of regulation are under the direct control of Cabinet. Thus, the policies of the Government of Canada concerning the export of uranium are a direct result of the decisions taken by this central decision-making unit, and it is the consistent selection made by this body which will determine Canada's national interests.

---

[92] Ibid. p. 45.
[93] Ibid. p. 54.
[94] Ibid. p. 11.
[95] Johannson, p. 9-11.

The two major objectives of Canadian uranium export policy, the maximisation of economic benefit and world stability through non-proliferation, would appear to satisfy easily the criteria set by Krasner. These two goals are well integrated with the general goals of Canadian foreign policy.[16] Secondly, there has been a consistency in these objectives since the beginning of Canadian involvement in the nuclear age, and further, a consistent hierarchy in the importance of these issues to the government.

Canadian uranium export policy therefore appears to be highly compatible with Krasner's statist analysis, at least in fulfilling his initial criteria. There is a well defined conflict between the interests of the state as an international actor, and the economic interests of Canada. Further, this conflict since its inception has been typified by two competing goals or objectives which the government through its decisions when confronted with this conflict, has consistently ordered hierarchically. In this case, it is possible to recognise that this hierarchy of objectives is also one which is consistent with the more traditional conception of the national interest in terms of our ultimate survival.

It is possible that the compatibility of Krasner's approach to the study of nuclear export might not be a fair test of this approach. Certainly there are obvious reasons why the state would subordinate normal economic goals in the case of nuclear energy. There is a distinct association between the cessation of the proliferation of nuclear weapons and the 'core values' of self preservation so prevalent in early discussions of national interest.[17] However, Canada has never considered the sale of nuclear weapons, nor the technology, materials or equipment necessary to fabricate a nuclear device, to anyone, particularly to a client considered at the time to be irresponsible or in a volatile circumstance. Therefore, Canada's international nuclear activities have never created a direct threat to its own national security. Canada's motivations, as it will be demonstrated,[18] have been more subtle: to pursue a leadership role in the establishment of an effective, international non-proliferation regime, and in seeking this goal has demonstrated a willingness to sacrifice its own economic well-being. It is not a simple question of national security, nor even one of the security of the international community,

---

[16] *Foreign Policy for Canadians*, (Ottawa, 1970)
[17] Hans Morgenthau, *Dilemmas of Politics*, (Chicago: University of Chicago Press, 1958)
[18] See Infra. Ch. IV.

but rather a desire to harness the constructive uses of a valuable technology while controlling its use for destructive purposes. Although the statist approach might be a simplistic approach to the former question, it offers a powerful explanatory device for the interpretation of Canada's behaviour with regard to the more nebulous objective.

In the terms of Krasner's analytical framework, the Canadian government, acting on its perception of the general interests of Canadian society, designated the non-proliferation of nuclear weapons to be in the national interest and to be of greater importance to the nation than that of the maximisation of economic benefits. The government then formulated a policy for the export of uranium from Canada which specified that within its many conditions, the export of uranium was to take place only when the danger of nuclear proliferation was effectively controlled, regardless of the economic cost which that policy imposed upon Canada in general and particularly specific segments of the Canadian economy which were primarily concerned with uranium export.

In order to implement its policy, the government had to somehow circumvent or ameliorate the inevitable resistance which these sectors of the Canadian economy would raise. Although it had a significant degree of control over the industry within the domestic context, this was insufficient to counter the considerable economic influence of foreign consumers. As it was through the manipulation of market forces which Canada's export policy was placed in jeopardy, Canada took the hopefully unprecedented step of entering into two complementary supplier organisations. Together, these bodies artificially structured the international market in such a way that both the interests of domestic producers were met and the national interest of Canadians was also satisfied. Krasner's analytic framework therefore, offers an uncomplicated explanation of the apparent contradictions in the actions of the Canadian government in this complex area.

III. Nuclear Energy and the Economics of the International Uranium Market

Nuclear Energy and the Proliferation of Nuclear Weapons

The technology which is required for the production of nuclear power represents the leading edge of man's knowledge. As with recombinant genetics, bio-medical engineering and space exploration, physical laws held to be true for centuries have been revised repeatedly in the inquiry into the nature of matter itself. However, stemming from this burdensome knowledge, the industry which surrounds nuclear energy is one riddled with intricate myths, deliberate obfuscations of the nature of the industry and its activities through conscious attempts to confuse the learned and public alike, and constantly cursed with the spectre of nuclear holocaust suspended above its every action. This rapid advancement and industrial implementation of such complex and potentially lethal technology has required that the use of nuclear energy be brought into the political sphere so that laymen might be involved in decisions concerning its disposition. Before lay opinions can be realistically formed, however, some effort must be made to cut away the enormously complex shroud of theoretical and technical detail, to reveal the relatively simple principles of primary concern.

Uranium is the basis of nuclear energy. It is the source of the materials necessary to fuel nuclear reactors or to create nuclear explosives.** Natural uranium, or yellowcake in its refined form U_3O_8, is not itself useable as an explosive material, nor is it particularly dangerous. It is composed of two isotopes of elemental uranium. U-235, which normally accounts for 0.7% of natural uranium, is the fissionable variety suitable for use as a nuclear fuel. U-238 accounts for the remainder and is relatively stable and thus inactive in the nuclear chain reaction. It acquires importance, and some notoriety, when, as a result of the reactor process, it absorbs neutrons and becomes plutonium-239 (Pu-239), one of the most dangerous substances known to man, in itself as a toxin, and as the major constituent of a nuclear explosive device.

Some reactors (most notably the Canadian CANDU reactor, for Canadian Deuterium Uranium which uses heavy water (Deuterium) as a moderator and coolant), can use natural uranium directly as a fuel. Most other reactors, using light or normal water as

---

** Thorium, another naturally occurring radioactive material may soon become a practical fuel source, found largely in Canada and useable in the CANDU reactor.

a moderator, require the enrichment of uranium fuel to raise the level of U-235 to 3-5% and, in some, to upwards of 15%. If natural uranium is enriched past 20%, it becomes useable in a nuclear explosive device, the higher the enrichment, the less material needed and the simpler the design.[100] The fast breeder reactor is radically different in design and uses both uranium and plutonium as fuel sources. Its major advantage is its vastly superior efficiency in the use of fuel, up to 50 times that of more conventional nuclear technology.[101] However, the major drawback is that it produces more plutonium than it consumes thus creating a serious proliferation threat and a dangerous environmental hazard.

Less than 1% of the energy available in reactor fuels is extracted using the current 'once-through' fueling techniques with conventional reactor systems.[102] For the most part the 'depleted' fuel rods are stored on site, with no known method of permanent disposal. The alternative to storage is reprocessing, where nuclear wastes are mechanically and chemically broken down into their constituents with those that are reusable being refabricated into nuclear fuel, thereby reducing the volume of waste materials and increasing the efficiency of fuel consumption. However, due to the high radioactivity and long life spans of the undesireable wastes, the amount of waste material may be reduced but size of the disposal problem is not. Secondly, the separation process identifies and makes available the materials which are necessary for the production of nuclear weapons. The nature of nuclear chemistry makes it very difficult to safeguard these processes against the diversion of weapons grade material to the construction of nuclear devices. Thus, although the reprocessing of fuels would appear to be a most important factor in making nuclear power production more efficient, it is in fact, the single most dangerous point in the nuclear fuel cycle. The free availability of reprocessing technology and facilities constitutes the greatest threat to the effective control over the proliferation of nuclear weapons.

---

[100] U.S. Congress, Congressional Research Service, *Nuclear Proliferation Factbook*, (Washington: U.S. Government Printing Office, 1977) p. 129.
[101] Ibid.
[102] Mooradian, Ara J., "New Technologies and Fuel Cycles" in Bruce G. Doern and Robert W. Morrison, eds., *Canadian Nuclear Policies*, (Montreal: The Institute for Research on Public Policy, 1980) p. 195

The design principles of both atomic and thermonuclear weapons are extremely basic and simple to incorporate into a workable, if crude, explosive device.[103] Plans for both types of device have been published publicly and the blueprints for the original series of American atomic weapons are non-classified.[104] Although the construction is relatively simple, access to the necessary nuclear materials is not. 4.5 kilograms of plutonium is sufficient to cause a low yield but extremely 'dirty' explosion (i.e. scattering a large amount of highly radioactive material). However, an effective, controlled nuclear blast suitable as a military weapon requires a range of exotic nuclear substances which are only available in sufficient quantities from the sophisticated separation procedures used in the reprocessing of nuclear wastes. Thus the object of any effort to control the proliferation of nuclear weapons must be to ensure that these materials are kept in the hands of responsible users and that nuclear facilities committed to the production of these materials are restricted to peaceful purposes.

The vast majority of nuclear facilities are operated without question of the operator's intentions or responsibility. In March of 1979, there were 186 thermal power reactors operating in twenty countries with 346 more under construction or planned in an additional sixteen countries.[105] The honorable behaviour of the majority does not, however, reduce the significant threat imposed by those states which have the technological means to produce a nuclear weapon,[106] have no legal restriction placed upon their nuclear activities because of their failure to ratify existing international agreements on the acquisition of nuclear weapons, such as the *Treaty on the Non-Proliferation of Nuclear Weapons*, (NPT) and the *Treaty on the Denuclearisation of Latin America* (Tlatlelolco Treaty),[107] have a strategic incentive to acquire nuclear devices,

---

[103] An 'atomic' weapon is a fission device of the type used in World War II with a yield in the range of 5-50 kilotons of TNT equivalent, whereas a 'thermonuclear' weapon, is a fusion device currently in use in strategic nuclear weapons with yields well in excess of 10 megatons.

[104] A New York feminist newspaper published plans for a atomic bomb using plastique and a coffee tin, and a popular mechanical magazine applied a similar design but, more appropriately, using a paint can. See "Nuclear Bluff", *The Australian*, 14-15 June, 1980.

[105] Stockholm International Peace Research Institute, *Nuclear Energy and Nuclear Weapon Proliferation*, (London: Taylor and Francis Ltd., 1979) pp. 378-79.

[106] Adlai Stevenson, "Nuclear Reactors: America Must Act", *Foreign Affairs*, 53 (Fall, 1974) p. 64.

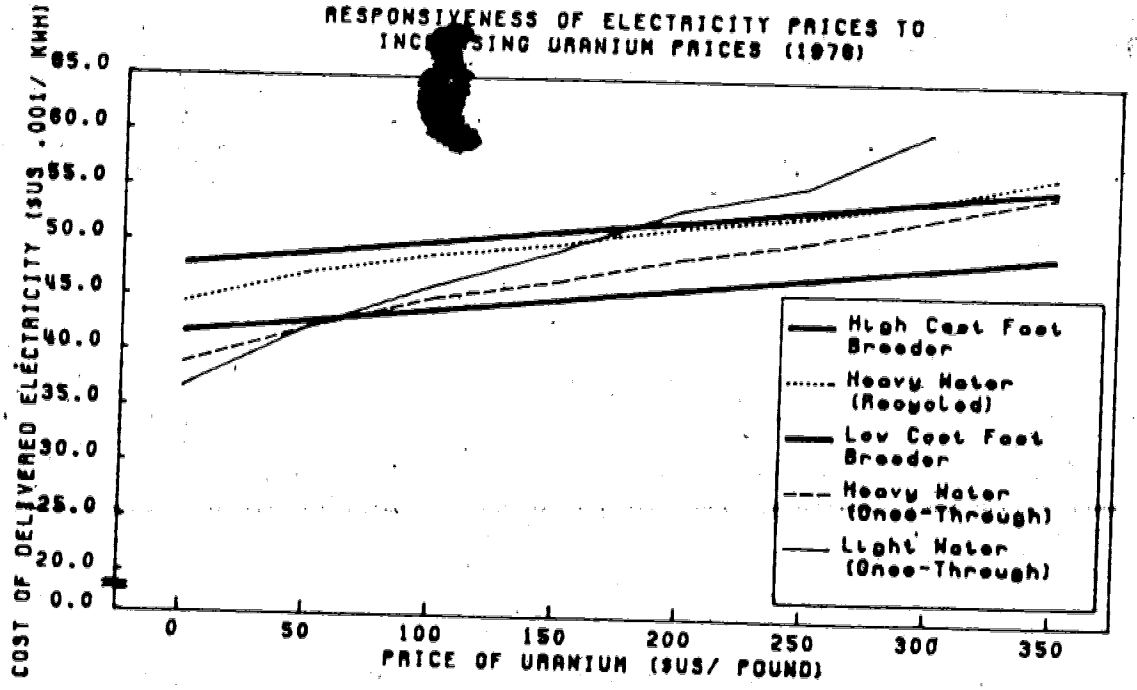
[107] Stockholm International Peace Research Institute, *World Armaments and Disarmament: SIPRI Yearbook, 1975*, (Stockholm: Almqvist and Wiksell, 1975) pp. 551-92

and have declared their intention not to reject a nuclear option if necessary. The states which fulfil all of these qualifications are Argentina, Brazil, Israel, Pakistan and South Africa. The threat to world security inherent in the acquisition of nuclear weapons by any of these nations indeed warrants grave concern. However, the major preoccupation of the remaining users of nuclear energy is the cost competitiveness of nuclear power vis-a-vis other alternate sources of energy.

The Economics of the International Uranium Market

The cost of uranium itself does not contribute greatly to the final price of electricity produced from nuclear power reactors. Table 3-1 illustrates that the cost of both the initial charge and on-going refuelling of uranium in all types of reactors amounts to no more than 5% of the final electricity costs and, with reprocessing, can be reduced to 1%. By far the major constituent of nuclear produced electricity is the capital cost of the highly sophisticated gadgetry which goes into nuclear technology. Therefore, the demand for uranium is very price inelastic with consumers changing their planned purchases of uranium fuel very little in response to price alone.

FIGURE 3-1



Source: SIPRI, *Nuclear Energy*, p. 25

Table 3-1

Cost Components of Electricity Produced by Nuclear Energy ($.001)

	Light Water Reactor		Heavy Water Reactor	
	Once-Through	Fuel Recycled	Once-Through	Fuel Recycled
Capital	14.88	14.88	15.48	15.48
%	37	34	38	34
Fuel[1]	2.02	1.65	1.23	.49
%	5.0	3.9	3.0	1.0
Processing[2]	3.21	5.95	4.06	7.19
%	8.0	13.9	10.0	15.8
TOTAL[3]	40.03	42.77	40.63	45.51

[1]At Average price of $US 30 per pound
[2]Includes processing, conversion, enrichment, reprocessing, fabrication, and storage.
[3]Includes operating, transmission and distribution costs

SOURCE: SIPRI, *Nuclear Energy*, p. 26

That is not to say, however, that nuclear technology is totally unresponsive to uranium prices. On the contrary, the relatively low price of uranium as a fuel has not made it necessary to consider conservation practices in uranium use. At the current price level of between $US 25 and $35 per pound, it is cost efficient to use uranium on a 'once-through' basis with on-site waste storage, and therefore avoid the cost of expensive reprocessing equipment. Current enrichment processes presently allow 0.25% U-235 in tailings, that is, allow one-third of the useable nuclear fuel to escape as waste. At a price of $US 60 per pound, it becomes economic to reduce this loss to 0.1% by the use of more efficient, but also more expensive enrichment techniques.[101] Finally, as uranium costs increase, the competitiveness of fast breeder reactors increase for, as fast breeder fuel cycles effectively produce their own fuel, the relative cost of uranium becomes negligible. These responses arise only in reaction to long term increasing price trends. In the short to mid term, currently installed or planned nuclear facilities have little

---

[101] SIPRI, *Nuclear Energy*, see note p. 25.

flexibility in their consumption of uranium fuel regardless of its price.

The use of nuclear energy for purposes of power production is largely restricted to the developed Western economies. Table 3-2[109] lists the major users and the most recent forecasts for planned nuclear development. It is not a simple task to assess demand trends for nuclear power production and subsequently the demand for uranium as a nuclear fuel. Certainly, current consumption by existing facilities is fixed and in the short term, demand is highly inelastic. However, a number of factors have arisen during the past decade which place any predictions of future demand trends in a questionable light.

The demand for uranium is a function of electricity demand and the cost of nuclear power production relative to alternatives. The exponential increase in energy prices since 1973, leading to a search for alternate less energy intensive technologies, and a sluggish growth in the world economy, have greatly reduced the expected increase in demand for electricity and hence nuclear power.[110] Problems of nuclear waste disposal, increasing costs of producing nuclear energy, long regulatory lags, the costs and feasibility of decommissioning production facilities[111] and uncertainty concerning the long term safety of facilities have also produced a world wide trend away from the establishment of nuclear power programs.

The lack of a sound future for nuclear power has produced the real possibility of a collapse in the nuclear reactor industry.[112] Electric utilities are entirely dependent on long term stability. Long construction time, a very long expected economic life of facilities and the necessity of a stable and reliable fuel supply and service industry throughout this period make speculation on an uncertain energy technology impossible. The problem becomes circular as uranium suppliers necessarily need long term contracts in order to confidently develop their reserves but cannot obtain solid commitments from utility authorities.

---

[109] O.E.C.D. Nuclear Energy Agency and International Atomic Energy Agency *Uranium: Resource, Production and Demand*, (Paris: O.E.C.D., December, 1979) p. 29, Table 6
[110] Doern and Morrison, p. 129.
[111] Ibid., p. 130.
[112] D.J. Rose and R.K. Lester, "Nuclear Power, Nuclear Weapons and International Stability", *Scientific American* 238:4 April, 1978) p. 51

Table 3-2

INFCE Estimates of Nuclear Power Growth (GW(e))
(Installed plant capacity)

	1979 ACTUAL	1985 LOW	1985 HIGH	1990 LOW	1990 HIGH
U.S.	58	100.3	122.3	157.3	192.3
JAPAN	15	26	33	45	60
FRANCE	12	39	39	59	67
GERMANY	9.6	20.2	23.8	35.9	40.7
CANADA	5.5	12	12	20	22
O.E.C.D.	120	238.1	280.4	387.8	483.4
REST	6	19	23	45	50
WORLD TOTAL	126	257.1	303.4	432.8	533.4

SOURCE: OECD and IAEA, p. 29, Table 6

There is also a crucial conflict of interest in the uranium supply industry in which the major petroleum companies own 40% of ore processing capacity and 50% of low cost reserves in the U.S. alone.[113] The problem is further complicated by the critical overcapacity of the nuclear reactor manufacturing industry. Estimated to require contracts for twenty to thirty new plants per year to remain solvent, American reactor manufacturers are expected to receive orders for no more than twelve on average to the year 2000. The Canadian industry requires only one order per year and has just concluded a sales agreement with Romania for a second CANDU power installation.[114] This is the first sale in over four years for AECL, but operating at a deficit is hardly a new state of affairs for the federal crown corporation. However, each of the major American manufacturers has over 75% of its business in diversified interests other than nuclear power and in the present business environment of rising costs, large scale cancellation of orders and excess capacity, it appears that these companies are ready to withdraw from the market, each able to withstand the subsequent collapse.[115] This of course does not contribute to the long term confidence of the utilities as nuclear power reactors require a considerable degree of on-going support which most often can only be

[113] Ibid.
[114] *The Financial Post*, 1 August, 1981, p. 14.
[115] Rose and Lester, p. 51

offered effectively by the company which supplied the reactor. The end result of this self-sustaining uncertainty is a retraction to the more traditional, if not more palatable alternatives of fossil fuel fired plants.

The supply of uranium to the world market is restricted to only a few countries. Table 3-3 illustrates that of the non-communist world's total 'assured' (i.e. already identified) and 'estimated' (i.e. there is a 50% chance of exploitation at stated costs) uranium reserves, 85-90% is located in only six countries.

Table 3-3

WORLD URANIUM RESOURCES[1]
(1,000 tonnes, at 1 January, 1979)

	Reasonably Assured Resources			Estimated Additional Resources		
	<$80/kg	$80-130/kg	Total	<$80/kg	$80-130/kg	Total
U.S.	531	177	708	773	385	1158
Australia	290	9	299	47	6	53
South Africa	247	144	391	54	85	139
Namibia	117	16	133	30	23	53
Canada	215	20	235	370	358	728
Niger	160	0	160	53	0	53
WORLD TOTAL	1850	740[2]	2590	1480	970	2450
Above as % of World	84	48	74	90	88	89

[1] Communist states excluded
[2] 300,000 tonnes in Sweden not available for mining due to veto by local authorities for environmental reasons.

SOURCE: OECD and IAEA, p. 18-19, Tables 1 and 2

Canada possesses 19% of the non-communist world's uranium supplies,[116] producing 18% of current world requirements[117] of which well over 80% goes for export. This production will more than double in the next five years and can be maintained at that rate into the next century, well past the point when the resources of other supplier countries

[116] OECD and IAEA, pp. 18-19, Tables 1 and 2.
[117] Ibid. p. 22, Table 3.

are exhausted.[118] While most Western states have nuclear programs, only a few have uranium. France and the U.S. are the largest consumers, however each has access to considerable proven reserves. The United States has the world's largest deposits of uranium but its large nuclear power program will make it a net importer shortly if it is not already.[119] France has some indigenous sources but is largely dependent on the large reserves found in previous colonial holdings in Africa such as Niger and Gabon.[120] As a result Canada, Australia and South Africa are presently the only uranium suppliers of world consequence.

The supply of uranium is again a long term proposition more dependent upon the general state of the industry at any one time and the ability of producers to respond to changes in the demand of the market than to fluctuations in the price of uranium. Over the past two decades, stockpiling programs in both producer and consumer countries, primarily by the American Atomic Energy Commission, have effectively insulated producers from short term changes in uranium pricing. However, repeated downward revisions of projected commercial demand because of reduced real consumption, compounded by perennial forecasts of future supply shortfalls, have created an artificial and consequently unstable market.[121]

This is by no means a new story in uranium economics. On the contrary, there have been only two periods in the post-war years when demand has exceeded supply (1953-59 and 1972-75).[122] Consistently producers have responded to demand forecasts which have never materialised. This 'slippage' in demand estimates, often out by more than twice real needs,[123] has left the market in a state of chronic over-supply. While regularly reducing short term forecasts, there is usually a complementary increase in the long term. Therefore, producers have consistently responded to a demand which turns out to be illusory for the present but is no doubt 'just around the corner'.

Uranium producers continue to respond to forecasts of rapidly increasing demand by developing considerable excess capacity. Currently, the 'maximum attainable

---

[118] Ibid. p. 24 Table 5
[119] D.J. Lecraw, "Economic Rationale for Canada's Future Uranium Policy", *Resources Policy*, 5.3 (September, 1976) p. 209
[120] OECD and IAEA, p. 18
[121] Doern and Morrison, p. 123
[122] Lecraw, p. 209
[123] Ibid. pp. 211-212, see also U.S. Congress, *Factbook*, p. 230

Table 3-4

COMPARISON OF WORLD[1] NUCLEAR POWER FORECASTS (GW(e))

Reporter and Year	1975	1980	1985	1990	2000
OECD (1973)	94	264	567	1068	-
IAEA (1974)	86	232	596	1127	2884
AEC[2] (1974)	81	217	553	1049	2540
OECD (low 1975)	70	179	479	875	2005
IEA[3] (low 1976)	68	181	470	887	2055
ERDA[4] (mid 1976)	68	167	374	675	1540

[1] excludes USSR and Eastern Europe
[2] U.S. Atomic Energy Commision
[3] International Energy Agency
[4] U.S. Energy Research and Development Administration

Source: *Factbook*, p. 230

production levels for uranium are expected to fall behind consumption before the year 2000,[124] a prediction which is consistent with others in the energy sector. Therefore, producers in Canada (Saskatchewan), Australia (Western Australia and the Northern Territory) and South Africa (claimed territories in Namibia) have been very active in bringing new deposits on stream in anticipation of the increased demand. Consuming utilities have encouraged this activity by negotiating long term fuel supply contracts and have become increasingly involved in uranium exploration and development directly.

These factors contribute to a highly competitive international market for uranium which, for the individual supplier, creates a situation with a desperate character. The international uranium market is in a chronic state of over-supply, a situation which has and will prevail for some time. This over-supply has created a growing insecurity and instability in the industry. However, the consumption of uranium is increasing quickly and consumers are eager to obtain long term contracts with reliable and stable producers. With current fueling techniques, present consumption trends will exhaust identified uranium deposits before the turn of the century creating a psychological atmosphere of some desperation on the part of the consuming utilities, and the appearance of a 'seller's market'. However, the inevitable progress toward technologies which are more fuel

[124] OECD and IAEA, p. 37, Table 5

efficient will ultimately relieve this atmosphere of desperation as will extended estimates of world reserves, thus making it necessary for producers to capitalise on their uranium holdings as quickly as possible before this atmosphere dissipates. Producers, therefore, have opted to exploit the existing market to the full as soon as possible and are entering the competition in strength in hopes that each can secure a viable portion of the existing demand. Competition is fierce but the rewards can be great.

This behaviour on the part of individual producers is inconsistent with the macro-economic analysis of the supply and demand functions of the international market. Given the historical oversupply of the market, the recurrent reduction in demand by consumers, and the chronic instability of the market created by the divergence of opinion over nuclear safeguards, the expansion of production among all supplier states appears irrational. However, as this is a consistent response, it would indicate not a case of mass hysteria, but rather a fundamental distortion in the market.

Because of the long term contracts between utilities and producers, and the heavy intervention on the part of governments to control wide price fluctuations, the price of uranium has been held to a narrow range of variation. In the short term, demand, again because of long term contracts and the long lead time for nuclear facilities, is highly inelastic. Therefore, for producers to be increasing supply with a price that is for all intents fixed, would require some mechanism by which the excess product can be absorbed.

The Canadian government, through the crown corporation Uranium Canada, has operated a continual stockpiling program, funded under three consecutive titles, from July 1963 through to 1974.[123] These stockpiles now remain as a buffer against price fluctuation and as a reserve against the legislated 30 year supply of fuel for Canadian nuclear power facilities. However, it also offers a vehicle through which the government can 'cover' for large scale production programs by industry in times of short term market downturn. Hence, as the industry has always had this 'safety net' in being able to rely on government for stockpiling assistance, the normal risk attached to expansion has been transferred to government. In return, the government acquires a mechanism by which the

---

[123] Uranium Canada Ltd., *Annual Report, 1978*, (Hull: Minister of Supply and Services, 1979) p. 15

Canadian domestic uranium market can be effectively controlled.

Given the sensitivities of consumer states to foreign intervention into domestic energy programs, the chronic oversupply of the uranium market is of fundamental importance to the ultimate success of Canada's export policy. During previous times of excess supply, the price of uranium has been reduced often to below cost by playing one producer off against another.[116] Since price has been overshadowed by the new emphasis on supplier conditions, it is clear that these conditions have now become the prime target for negotiations.[117]

This tough competition between supplying and consuming states and among producing companies takes place in a market which is not famed for its fair play and sportsmanship. There is a very real possibility at present that inordinate and expensive safeguarding requirements will create a movement toward obtaining unsafeguarded supplies from less responsible suppliers at least on the spot market until suppliers reconsider their position, or possibly more permanently from substantial producers such as South Africa or the ex-French colonies in Central Africa. Similarly, by pushing consumers toward plutonium technologies (fast breeder reactor and reprocessing technologies), sales of the not especially fuel efficient nor technologically advanced CANDU reactor[118] are also influenced. In any event, the reduced growth rate in nuclear power production works in the favour of consumers in that as decisions to construct new plants are postponed, the technology of nuclear power production is advancing rapidly. The longer a decision is delayed, the greater the opportunity of acquiring a safe, more fuel efficient plant.

The fact that Canada has held so tenaciously to its requirement for stringent export safeguard conditions is not only a testament to its convictions but also to its substantial market power. However, the government's long standing predisposition to subordinate economic interests to a more valued goal of non-proliferation would quite

---

[116] Lecraw, p. 209.

[117] In recent uranium export negotiations between Australia and the U.K., West Germany and Japan, Australia retracted its insistence on approval of reprocessing and re-transfer. Prices had been previously established by the participating companies, and were out of the terms of reference of the inter-governmental negotiations. See Desmond Ball, "Australia and Nuclear Non-Proliferation" *Current Affairs Bulletin* 55:11 (April, 1978) pp. 25-27.

[118] *Factbook*, p. 220.

clearly not sit well with many important interests in the Canadian political community. The government would therefore have some severe difficulties in convincing those interests of the merit of its position. The best solution to these diverging concerns was to establish an environment in which there could be an active trade in nuclear materials but within the confines of a regime of tight safeguards. As the effective price of uranium (nominal price plus safeguard requirements) was being manipulated by market pressures, the only alternative was to control the market. Attempts had been made to establish an accord between consumers and suppliers but failed because of the distinct divergence of interests between the two, and as a result Canada along with others in a similar position opted to form a supplier's cartel.

In 1972, the governments of Canada, Australia, France, and South Africa in co-operation with a number of multinational mining firms, made arrangements for the "orderly marketing" of uranium in the international market.[129] The existence of this cartel was not made public until late in 1976 through the leak of corporate documents which unleashed a series of litigations that continue to the present.[130] However, in the meantime, a more public partnership had evolved. The London Supplier's Club, comprising the major exporters of nuclear materials, equipment and facilities including Canada, met first in 1974 to set standards for the export of sensitive materials and technology.[131] Each participating state ultimately entered into a bilateral agreement with the IAEA to supply nuclear materials and equipment only to those non-nuclear weapon states which subject all their nuclear facilities to IAEA safeguards[132] and who agree not to re-transfer materials or technology to others unless they too come under similar safeguards.[133] Canada's simultaneous membership in these two associations, one highly secret controlling the economics of the market through the coordination of bidding practises, market allocation and floor prices, another strictly above board, standardising the export conditions and therefore neutralising them as a market force, is far too significant to be

---

[129] P.R. Johannson and J.C. Thomas, "Canada's Nuclear Dilemma: Promotion vs. Regulation" Unpublished Paper, October, 1979, p. 8.
[130] See *The Financial Post*, 4 June 13, 1981, for a comprehensive recap of the progress made so far in each of the 29 separate anti-trust actions, see also Johannson and Thomas, p. 10.
[131] William Epstein, *The Last Chance* (New York: The Free Press, 1976) p. 155.
[132] Ibid.
[133] Michael Mandelbaum, "A Nuclear Exporter's Cartel" *Bulletin of the Atomic Scientist* 33:1 (January, 1977) pp. 42

coincidental.

The success of both of these organisations is in some question. It might be speculated that this results from an attempt by each to control a different sector of the market without explicit coordination. Similarly, the inherent instability of cartels no doubt has a serious effect on their success as neither has ultimately secured the compliance of all significant market participants. And finally it is not unreasonable that, the considerable influence of these organisations notwithstanding, in the ultimate battle between the market forces of suppliers vs consumers, it is the consumers which have triumphed through their superior bargaining strength and ability to resist the demands of suppliers.

IV. A History of Canadian Nuclear Policy

On May 18, 1974 an atomic blast rocked the Rajasthan Desert of Northern India announcing to the world that the "nuclear genie" was truly "out of the bottle"[134] and no amount of international regulation could ensure that it would ever be contained again. That day, the ambassadors of the United States, the United Kingdom, and the Soviet Union, and the charge d'affairs for Canada were summoned to meet in New Delhi where they were informed of India's advancement to that elite company of states which commanded a nuclear arsenal. They had a right to be first informed for each, through their respective governments, had been direct participants in India's nuclear endeavours. Nuclear material for the device had been derived from indigenous uranium, fabricated into fuel rods with Soviet technical assistance, irradiated in a Canadian reactor using American heavy water and the plutonium extracted from the spent fuel in a British reprocessing plant.[135] The event not only made it obvious that nuclear proliferation was an international reality and possible through the application of peaceful technology, but that the NPT/IAEA regime was powerless to prevent it, and further, that there were clear advantages to remaining outside its grasp. It also created a policy debate within Canada which resulted in a vow that Canada would do everything in its power to ensure that it never happened again.[136]

Canada's participation in the Indian blast was the sad result of an anomaly of Canadian nuclear export policy which remains from its very earliest efforts in nuclear co-operation. At that time basic principles for the export of nuclear technology were established and have remained unchanged to the present. Although these convictions have been consistently recognised in principle, measures taken to ensure compliance in reality have often been reduced substantially through commercial competition. While this has resulted in inadequate protection in the short run, it has consistently increased Canadian resolve that in future, it will not be confronted with a similar need to compromise these ideals. Unfortunately, as with all questions of deep complexity, the problems of exporting nuclear technology while ensuring it is used for peaceful purposes are not solved with a

---

[134] President J.F. Kennedy in announcing the Nuclear Test Ban Treaty, 1964
[135] Constance D. Hunt, "Canadian Policy and the Export of Nuclear Energy", *University of Toronto Law Journal*, 27:1 (Winter, 1977) p. 83
[136] Reference to a secret Cabinet memorandum of 1974 which specified that "Canada would play a commanding role in the establishment of an effective safeguards regime", see P.R. Johannson, "Change and Canadian Nuclear Policies", *Nuclear Exports and Canadian Foreign Policy*, Unpublished Manuscript, 1981, Ch. VI, pp. 30-31

single universal answer, but each issue must be dealt with individually before another can be confronted. The initial conflicts are resolved with ease and little resistance. However, in proceeding, the conflicts become more severe, the solutions less simple and with resistance increasing, the measures necessary become more extreme. This pattern has been the mechanism through which Canadian nuclear export policy has evolved over the years. Canadian nuclear relations with India are a vestige of those simpler times.

Principles of Canadian Nuclear Export

The uranium industry in Canada started in the early thirties with the development of the Port Radium mine at Great Bear Lake in the North West Territories by Eldorado Gold Mining Company.[137] The mine was closed in 1940 but reopened in 1942 at the government's request. Uranium was necessary for the development of the atomic bomb, through the war-time collaboration of the U.S., U.K. and Canada. The framework of the co-operation was laid out in 1943 in the *Quebec Agreement* between the allies which in part specified that security was of the utmost importance and hence all facets of nuclear research should come under strict government control.[138] As a result, an Order-in-Council was issued placing all new discoveries of uranium under the control of the crown, barring private individuals from staking or mining uranium claims and banning the publication of information regarding uranium. Control of the industry was completed with the purchase of Eldorado by the federal government in 1944 and creating Eldorado Mining and Refining Limited.[139]

This is the first basic principle of Canadian nuclear policy, that the federal government shall have direct control over all facets of the industry and that the ultimate decision making power would reside with the federal cabinet. Exclusive federal jurisdiction over the industry was seized by the *Atomic Energy Control Act* of June 1946, Section 17 which states:

> All works and undertakings whether heretofore constructed or hereafter to be constructed,
> a) for the production, use and application of atomic energy,
> b) for research and investigation with respect to atomic energy, and
> c) for the production, refinement or treatment of prescribed substances,
> are and each of them *declared to be works or a work for the general*

---

[137] Uranium Canada, *1978 Annual Report*. (Ottawa: Minister of Supply and Services, 1979) p. 15
[138] Hunt, p. 76
[139] Johannson, Ch. III, p. 12

advantage of Canada.[140]

The Act further designates all nuclear materials and equipment to be 'prescribed substances' or 'prescribed equipment' and places them under the control of the *Export and Import Control Act.*[141] Permits for the export of these materials come under the review of the Atomic Energy Control Board (AECB) and representatives of the Department of External Affairs, Industry, Trade and Commerce and Energy, Mines and Resources. As could be expected, there have frequently been conflicting veiwpoints raised by each based on their respective interests and hence nuclear policy has often been required to be resolved at the cabinet level.[142]

Largely arising from the secrecy of the war time collaboration, the responsibilty for policy making was delegated to the AECB independent of any outside review, most notably the Parliament of Canada.[143] The Board is given wide ranging powers to make regulations with respect to research; mining and exploration; production and refining; export and import; the control of information dissemination and international co-operation[144] with the approval of the Governor-in-Council alone. Therefore, by altering the regulations under the Act by Order-in-Council,[145] or by instructing the Board to modify its regulations,[146] the immediate control over nuclear policy rests exclusively within the Cabinet subject only to consultation with interested departments and agencies. In the security conscious atmosphere of the post-war years, the blanket authority of the Board was not opposed. However, recently there has been a great deal of concern expressed over the intimate relationship of the Board to the Cabinet, and subsequently of the failure of either to deal with issues of nuclear policy 'at arms length'.[147]

Having established a legal regime which adequately imposed federal control over the activities of the industry, it became possible to retract from direct governmental participation in selected areas of the industry. Therefore, in 1947, all prohibitions on

---

[140] *Atomic Energy Control Act*, R.S.C. 1970, C. A-19, S. 17, authority being derived from the declaratory power of the *British North America Act*, Sec. 92(10)(c) (emphasis added)
[141] *Export and Import Control Act*, R.S.C. 1970, C. E-17
[142] Hunt, p. 71, see also Johannson, Ch. VI, passim.
[143] Johannson, Ch. III, p. 18
[144] *Atomic Energy Control Act*, Sec. 9
[145] Ibid., Sec. 10
[146] Ibid., Sec. 9
[147] See Johannson and Thomas, passim, see also P.R. Johannson and J.C. Thomas, "A Dilemma of Nuclear Regulation in Canada: Political Control and Public Confidence", *Canadian Public Policy*, VII:3 (Summer, 1981), pp. 433-443

private prospecting and development were lifted, with Eldorado Nuclear retaining its position as sole purchaser.[148] However, by 1958, this too was lifted allowing private producers to strike their own commercial agreements subject only to the requirements of the *Atomic Energy Control Act* and the *Export and Import Permits Act*.[149]

This concern for absolute control of the nuclear industry arose from what would become the second principle of Canadian nuclear export policy, that control over the proliferation of nuclear weapons could best be achieved through international regulation. This intent is made clear in the Preamble to the *Atomic Energy Control Act*:

> Whereas it is essential in the national interest to make provision for the control and supervision of the development, application and use of atomic energy, and to enable Canada *to participate effectively in measures of international control of atomic energy which may hereafter be agreed upon*;...[150]

The wartime trio of Canada, U.K. and U.S. issued a *Tripartite Declaration* in November of 1945 which initially stated their interest in using their existing dominance in the field of nuclear technology as a lever with which to pressure others into accepting an international regime which would prohibit the destructive uses of atomic energy.[151] In the euphoria of the times over the fledgling United Nations, such a desire fit well with general Canadian foreign policy and Canadians pressed hard for its success.

> If we are agreed on the ultimate necessity of some measure of world government to maintain world security, we should, by every means in our power, support and strengthen every agency of international co-operation and understanding which can help to make the world community a reality .... We must work with all our might for a world under the rule of law. This seems to be our only hope.[152]

As a result of this dedication to the establishment of an international regime and its advanced technological capability, Canada was invariably included with the permanent members of the Security Council in all subsequent attempts to implement a workable international regime. Unfortunately, it was to be some time before such a regime commanded the respect of the world community, but would never secure universal

---

[148] Johannson, Ch. III, p. 23
[149] Ibid., Ch. IV, p. 27
[150] *Atomic Energy Control Act*, S. 1 (emphasis added)
[151] Johannson, Ch. III, p. 15
[152] Prime Minister MacKenzie King to the House of Commons on the *Tripartite Agreement*, 17 Dec., 1945, as cited by Johannson, Ch. III, p. 15

compliance.[153]

Inherent in this commitment to pursue an effective international regime to control the destructive uses of atomic energy, must be an equal desire to encourage its peaceful use. This is the third basic principle of Canadian nuclear export policy, that Canada recognised the positive and constructive uses of nuclear energy and would actively promote its commercial trade within the limits of safety imposed by the international regulation. The two are highly integrated. Lester Pearson, while Deputy Undersecretary for External Affairs, in the first statement of the philosophy by which Canada would live to the present, suggested that the then nuclear 'have' nations

> should exploit the temporary advantage they now possess ... by trading the knowledge of invention and manufacture they alone possess at present, for renunciation by all nations of the right of production or use ... [of nuclear weapons]. This in its turn means international supervision and control of the development and use of atomic energy.[154]

Although the consummation of this trade appears to be a simple task, it in fact has become the single most contentious facet of nuclear export policy as it places acceptance of a most basic but nonetheless complex philosophy directly in the sphere of commercial competition. Canada has from the outset put its safeguard requirements 'on the table' to be bargained on an equal footing with other commercial considerations in an attempt to secure 'a good deal'. We have not always done so.

Canada as a Commercial Entity

Canada's first entry into the field of nuclear energy on a commercial basis with anyone but the wartime trio came as early as 1947 with the provision of one ton of uranium oxide (U_3O_8) to India for experimental purposes. Indian nuclear expertise advanced sufficiently that in 1956 Canada's first sale of a CANDU reactor was made through a Colombo Plan funded project to construct the Canada-India Research reactor (CIR) to be operational in 1960.[155]

---

[153] The ill-fated *United Nations Atomic Energy Commission*, created by the first resolution of the General Assembly, Resolution 1(1), 24 Jan. 1945 was ultimately merged after a lack lustre performance, with the *Commission for Conventional Armaments* in 1952 to form the *Disarmament Commission*. The role was not again taken up until the establishment of the *International Atomic Energy Agency* on 29 July, 1957. see *United Nations and Disarmament 1945-70*, (New York: United Nations Publications, 1970) p. 2-3

[154] Pearson in a memo to Prime Minister King, 8 Nov., 1945 as cited by Johannson, Ch. III, p. 14

[155] Johannson, Ch. III, p. 30

There were no safeguards attached to the CIR agreement. "We felt," said John McManus of the AECB later," that it wouldn't look right; that we had to take the word of the Indian government."[156] Thus the only reference to the 'trade' between technological transfer and renunciation of destructive uses was a single short clause in an equally short agreement that the CIR would not be used for anything but 'peaceful' purposes.[157] The agreement left the matter of safeguards for later discussions in the hopes that an action of good faith by one of the nuclear 'have' nations would convince the Indians to see the provisions of the Statute of the International Atomic Energy Agency, upon which discussions were rapidly coming to a conclusion, in a more positive light. On the other hand, it was also Canada's first sale of a unique reactor technology which because of its use of natural uranium was an ideal solution to the energy starved nations of the world. The Indian agreement "not only marked us as a generous and responsive people, it provided a showcase for our technology, a sample room for our wares."[158] India was ideally qualified, as a central figure in the Commonwealth, an impoverished state with an impressive development program, and a nation which had demonstrated its dedication to peace. What better place to situate a demonstration model of a new export industry.

India was not Canada's only commercial problem in 1956. France offered to purchase Canadian uranium on an unrestricted basis. The U.S. intervened under a somewhat loose application of the terms of a 1955 agreement between the U.S. and Canada on atomic energy,[159] and the French responded by accepting the safeguards but at a significant reduction in price. The U.S. again intervened, this time contending that a Canada–U.S. purchase option agreement prevented Canada from selling uranium at terms more favourable than those offered to the U.S.. The sale was never completed.[160]

The outcome of these two initial transactions was to make officials aware of the complexity of the relationship between the commercial and political aspects of nuclear export, and of the need for more precision and consistency in nuclear agreements. The

---

[156] As quoted by Walter Stewart, "How We Learned to Stop Worrying and Sell the Bomb", *Maclean's*, 87:11 (Nov. 1974) p. 30

[157] *Agreement between Canada and India on the Peaceful Uses of Atomic Energy*, BSP Col. 162, p. 845, 28 Apr. 1956

[158] Stewart, p. 30

[159] *Agreement between the United States and Canada on Co-operation in Atomic Energy*, 15 June, 1955, Can. T.S. No. 15, p. 235; see Hunt, p. 77 for a summation of provisions.

[160] see Laurence Sheinman, "Security and the Transnational System: The Case of Nuclear Energy", *International Organisation*, 25:3 (Summer, 1971) p. 637-38

result was a defined procedure for the export of nuclear materials and a framework for treaties which specified a general outline of commitments and issues which must be addressed. This procedure and model treaty provide the structure for Canada's nuclear relationships through to the present with only the forcefulness of each provision varying. The procedure for exporting nuclear materials would be:

1. that an international treaty would be signed between contracting states which specified each parties rights and obligations with regard to safeguards;
2. that within the terms of the overarching treaty, individual firms would negotiate sales contracts. It was expected that this phase would not take place before the conclusion of treaty negotiations, but in reality contract negotiations are carried out concurrently and sometimes in advance of diplomatic discussions;
3. that the terms of the contract would be reviewed to ensure that it fulfills the requirements of the AECB, *Export and Import Permits Act*, and the special economic, political or strategic interests of the Departments of External Affairs; Industry, Trade and Commerce; Energy, Mines and Resources; or National Defense as they arise.[161]

Within this procedure the federal government is well placed to ensure that the terms of each nuclear transaction are to its satisfaction.

Between 1956 and 1958, treaties were signed with the Federal Republic of Germany, Switzerland, Australia, Pakistan and Japan. The form of these treaties provided the model for all future agreements. Four distinct points were addressed in these and subsequent treaties:[162]

1. a statement that the material supplied under the agreement will be used only for peaceful purposes. The definition of a 'peaceful' purpose was not clearly addressed in these early treaties usually prohibiting only uses which "further" or "may be diverted to military purposes."[163]
2. the conditions under which exchange may be made. Generally,
   a. the supplier would have to provide written authorisation before any supplied material could be reprocessed;

---

[161] Johannson, Ch. IV, p. 26
[162] Ibid., Ch. IV, p. 53-4
[163] Hunt, p. 78

b. that surplus plutonium could be repurchased by the supplier;

c. that any material, equipment or information supplied under the agreement could be retransferred unless specifically prohibited by the supplier.[164]

3 the safeguards which must be in place prior to the exchange. At this point bilateral safeguards were necessary but a number of the treaties make specific mention of transferring safeguard provisions to the new IAEA. Regardless, bilateral agreements have since been retained in the event that the IAEA is unable to execute its duties. Designed to ensure that supplied material was not diverted to military purposes, these early safeguard agreements specified that the supplier had the right to inspect the design and operations of nuclear facilities and to receive reports and records on the disposition of supplied materials.[165]

4. the term of the agreement. For the most part the treaties were to run for a period of ten years after which abrogation would require six months notice. The importance of specification of the duration of the treaty in this way lies in the fact that along with the demise of the treaty, so too die the safeguard agreements and pledges for peaceful use.[166]

There can be no question that the commitments elicited by these treaties are rudimentary at best, but they do show a marked improvement over the previous agreement with India. Further it establishes a systematic procedure within which questions of existing policy are raised to a competent level of authority and their solutions integrated into current practise on a consistent basis. India, however, continued to be treated differentially form all other nuclear partners.

In the early 1960's, negotiations began between Canada and India for the sale of India's first power reactors to be called RAPP I and RAPP II (for Rajasthan Atomic Power Project). The financial and technical commitments required for these projects were considerable on both sides and it was felt that these negotiations presented an excellent opportunity to place tighter controls on the previous CIR project. The Indians would have no part of these renegotiations continuing the line they had held concerning the IAEA and in the new negotiations on the Non-Proliferation Treaty. Once again commercial

---

[164] Hunt, p. 79
[165] Ibid., p. 80
[166] Ibid., p. 81

considerations took precidence among Canadian officials eager to display the Indian installations before other interested buyers such as Pakistan and Spain. As John McManus of the AECB would again later explain,

> One side kept saying look, we can use RAPP as a lever; we can say we won't go ahead unless the Indians agree to safeguard CIR. We knew CIR was naked [without safegurads], here was a chance to do something about it. But the commercial people kept saying that if we don't give the Indians what they want, they'll buy it elsewhere, they'll get it from the French or the Americans. That was the telling argument. Eventually, it went to Cabinet, and you know who won.[167]

The Rajasthan agreement, signed on 16 December, 1963,[168] subsequently did not include a definition of peaceful uses, restricted mutual inspection of facilities only to purposes of exchanging technical information, required only advance notification of the disposition of spent fuel and made no reference to safeguards at all.[169] Fortunately this agreement was superceded by a trilateral agreement among Canada, India and the IAEA for the application of safeguards to only the RAPP facilities.[170]

The experience was not lost on Canadian officials who, in response to the Indian position, attempted to improve the precision of the 'standard treaty' in agreements with Sweden, Spain and Euratom.[171] These agreements vary from their predecessors in that they specify that the agreement excludes " the employment for military purposes of information, equipment, facilities of materials obtained pursuant to this Agreement"[172] Further, supplier's consent is necessary prior to the transfer of any reactor or identified material.[173] These provisions were then incorporated as part of the 'standard treaty' as evidenced by Canada's agreement with Pakistan on the Karachi Power Reactor, 24 December, 1965.[174] Nonetheless, the anomalous relationship with India had been

---

[167] Stewart, p. 31
[168] *Agreement between Canada and India on the Rajasthan Atomic Power Station and the Douglas Point Station*, 16 Dec., 1963, Can. T.S. No.10
[169] Johannson, Ch. IV, p. 53
[170] 1971 Can. T.S. No. 36
[171] *Agreement between Canada and Sweden on Co-operation in the Peaceful Uses of Atomic Energy*, 6 Dec., 1962, 529 UNTS 9, *Agreement between Canada and Spain on Co-operation in the Peaceful Uses of Atomic Energy*, 8 Sept. 1964, Can. T.S. No. 7, *Agreement between the Government of Canada and the European Atomic Energy Community (EURATOM) for Co-operation in the Peaceful Uses of Atomic Energy*, 6 Oct., 1959, Can. T.S. No. 22.
[172] Hunt, p. 79
[173] Ibid., p. 80. The treaty with EURATOM did not include this latter provision nor did it include the restriction on the the use of information for military purposes.
[174] *Agreement between Canada and Pakistan on the Karachi Station*, 24 Dec., 1965, Can. T.S. No. 26

confirmed and with two agreements bargained and struck in the same vein, was not to be changed.

The 1965 Uranium Debate

Canada's commercial problems were, however, far from over. With Canada's irregular relationship with India firmly established, France once again approached Canada in search of a large long term uranium supply contract. The 1965 Uranium Debate became one of international significance and one which would crystalise the position the Cabinet would take in a number of issues about which it was previously ambivalent. The facts of the case are relatively simple and almost a replay of 1956. Bertrand Goldshmidt of the CEA recapped the events of the day:

> We want to contract for 1000 tons a year, to be renewed annually. The talks went very well. In fact, within a day it was all but agreed. Canada had two prices then, the lower being $10.40. The Canadian negotiator said they are so happy with the way it had gone they would offer us the lower price. Then came the question of safeguards and inspection.
>
> I told them that we would never accept international agency inspection because that would mean Russian and other Communist inspectors seeing our program, and Ottawa agreed that this was not good. They asked, "Would you accept Canadian inspectors?" and I said "Yes."
>
> We met the next day to complete the arrangements. I said there was just one more point. As we were not getting the same product as the British and Americans - I must insist on a 25% discount. That was the end of those negotiations.[175]

It is, however, the context of these events which are of primary importance. The Canadian uranium industry was desperate for the sale. In August, 1964, the United States Atomic Energy Commission enacted the *Private Ownership of Special Nuclear Materials Act* which denied access to American markets of all foreign, and thus Canadian uranium. The Canadian government had announced its second stockpiling program designed to provide the minimum demand required to maintain operations in the industry. A proposed one hundred million pound contract to span twenty five years at premium

---

[175] *Finacial Post*, 18 Dec. 1965, as cited by Ulrich Strempel, "The Forgotten Link - Canada - EURATOM, and Canada - European Nuclear Relations, 1959 - 79", unpublished paper presented to the Canadian Political Science Association, Banff, Alberta, 12-14 Dec., 1980. M. Goldshmidt somewhat overstated the French position as it is more commonly recognised that the initial offer was in the range of $7.00/ lb., see *Toronto Globe and Mail*, 4 June 1965, and the final offer was well below the stockpiling price of $4.90/ lb., see Johannson, "Politics, Parliament and Foreign Policy - the 1965 Uranium Debate", p. 11

prices could have done much to turn the slump around.[176]

Internationally, France had gained a reputation as the arch-proliferator. Having become a nuclear power in 1960 through military domination of its civilian nuclear program, it continued an active nuclear test program and defied the American position of nuclear defender of the Western alliance with de Gaulle's pursuance of the independent nuclear strike force, *the force de frappe*.[177] Negotiations on the Non-Proliferation Treaty were showing results. For Canada to agree to a sale of nuclear materials without safeguards and a virtual assurance that some would end up as bomb material would show a tacit approval of France's military plans and make a mockery of Canada's negotiating stance of nuclear trade for renunciation of the military use of nuclear energy.[178] Finally, the United States placed considerable pressure upon Canada to reject the sale of unsafeguarded uranium.[179] In the end, the sale did not go through. With the aid of hindsight, we can see that it was not a good deal for Canada. The French would have gained ownership of the Denison Mine, at that time containing over twenty five per cent of Canada's known reserves,[180] at an ultimate price which would prove to be less than production cost. This has led many analysts to conclude that the safeguards issue was only "used as a means of getting out of a poor commercial situation."[181]

Yet the benefit of hindsight is ours alone. To relegate the issue of safeguards to the position of a 'red herring' in the 1965 debate, is to attribute to the decision makers of the time the gift of prophecy. At that time, the size and duration of the contract was confidential information as was the fact that the Denison mine would end up in the hands of the French.[182] Moreover, if safeguards were not an issue, then the Canadian government would have accepted the initial offer of the French government which was at that time and would remain today, as an acceptable commercial arrangement. In the complex debate over the French sale which was often confused with rumour and innuendo, it is clear that the primary initial concern on the part of the Cabinet was that

---

[176] Johannson,"65", p. 10
[177] Johannson, "65", p11
[178] Ibid
[179] see Strempel, p.22-26
[180] Johannson, Ch. IV, p.32
[181] Ibid., Ch. IV, p.33
[182] Ibid., Ch. V, p.16

Canadian uranium was not to be directly used for French military purposes.[183] Having satisfied itself that that was not to be the case, the terms of the agreement were then assessed on their commercial merits. These were eventually found to be unsatisfactory. Therefore safeguards, rather than being used as an excuse to avoid a bad commercial deal, were in fact a primary consideration.

There were two immediate ramifications from the 1965 uranium debate. First, the government had confirmed its policy of insisting that Canadian nuclear materials be used for only peaceful purposes and had demonstrated a willingness to forego significant sales if that condition was not fulfilled despite the wishes or needs of Canadian industry. Secondly, the rejection of the French sale made apparent the inconsistency in Canadian policy of not insisting on peaceful use for Canadian exports to Britain or the United States. As a result, a new policy was adopted which resolved this inconsistency. The Prime Minister announced that after consultation with the United Kingdom and the United States

> We would be applying similar rules to France as to all other countries with whom we hope to make bilateral agreement for the peaceful use of atomic energy in the future, and we will apply these rules to the United States and the United Kingdom in respect of future contracts we may have with them.[184]

The decision to forego the French sale might have been billed as a victory for those who opposed the proliferation of nuclear technology, but it also spelled disaster for the ailing uranium industry. The loss of the French sale forced the government to institute a second stockpiling program in July of 1965 which would continue through July 1970 at an eventual total cost of over $100 million.[185] The abysmal state of Canada's nuclear export industry also meant that without exports, there was also no need for alterations in policy. However, in June 1969, the anticipated increase in demand for nuclear energy caused the government to make slight alterations in preparation for the expected run on Canadian uranium resources.[186] The major change was to expand the federal government's ability to control the terms of future uranium sales by announcing

---

[183] Note that concern was for 'direct use' and little consideration was given to the use of Canadian uranium for civilian purposes freeing indigenous sources for military use.
[184] Prime Minister Pearson to the House of Commons, 4 June, 1965 as cited by Johannson, Ch. IV, p. 34
[185] Uranium Canada Limited, *1978 Annual Report*, (Ottawa: Minister of Supply and Services, 1979) p. 15
[186] Minister Without Portfolio, Otto Lang, House of Commons, 19 June 1969 as cited by Johannson, Ch. IV, p. 34

that the Atomic Energy Control Board would have to approve contracts prior to export permits being issued. The criteria specified for approval were ostensibly the contained safeguards with accession to the NPT being mentioned as a possible precondition to approval.[187] However, it was obvious to the industry that the real thrust of the policy change was in reponse to the high degree of multinational participation in the energy field which was usurping the control that the federal authorities had previously held over the nuclear industry. Transfer pricing and 'high grading' of the extensive Canadian reserves, exploiting the high quality deposits while leaving the lower grade ores behind,[188] by both private firms and state controlled mining firms were effective means of circumventing Canadian export control. Therefore, it was made clear that both price and the terms of the contract would be placed under the scrutiny of the AECB in order to ensure that Canada was receiving a fair return for its resources. However, while the priorities of Canadian nuclear export policy were turning increasingly inward, the pressures toward the very real proliferation of nuclear weapons were building.

Canadian Involvement in India's Nuclear Explosion

As early as 1964, Pakistan, in a stiffly worded diplomatic note alerting Canadian officials as to India's intent, had complained that India was working toward the construction of a nuclear device.[189] In 1966, an official complaint was lodged with the Secretary General of the United Nations citing similar apprehensions.[190] It would appear that India itself was making no pretenses as it announced to the General Assembly in 1966, 1967 and 1968 its clear intention to detonate a Peaceful Nuclear Explosion (PNE) and secured considerable support for its plans from other nations of the third world.[191] PNE's were, at the time, recognized to be a legitimate constructive application of nuclear technology. The *Treaty for the Prohibition of Nuclear Weapons in Latin America* (Treaty of Tlatelolco,) of 14 February, 1967 encourages parties to engage in PNE research in Article XVIII specifying that states "...may carry out explosions of nuclear devices for peaceful purposes -- including explosions which involve devices similar to those used in

---

[187] Johannson, Ch. IV, p.35
[188] Johannson, Ch. IV, p.36
[189] Stewart, p.31
[190] Ibid.
[191] Hunt, p.82

nuclear weapons..."[192] Similarly, in the *Treaty on the Non-Proliferation of Nuclear Weapons* (NPT), Article V, "...undertakes to ensure that ... potential benefits from any peaceful application of nuclear explosions will be made available to non-nuclear-weapon states..."[193] It has been the contention of many developing countries, primarily India, Brazil and Argentina, that PNE's are essential for national development. They have been proposed for use in the exploitation of oil and gas deposits, opening of ore fields and the clearing of overburden, construction of water reservoirs, both above and below ground, earth moving in canal and harbour construction and river diversion.[194] However, dangers from contamination of ground waters or above ground venting, safety in handling the device and derivatives and geological anomalies prohibit its use in all but a few select areas.

Canada, however, has never been convinced of the distinction between the development of nuclear devices for peaceful purposes and those for military purposes. After a tour of India in 1971, Prime Minister Trudeau expressed his concern over India's intentions, which were becoming well known in official circles, in a letter to Prime Minister Indira Ghandi.

> The use of Canadian supplied material, equipment or facilities in India, that is, at CIRUS, RAPP I, or RAPP II, or fissile material from these reactors, for the development of a nuclear explosive device would inevitably call on our part for a reassessment of our nuclear co-operation arrangements with India, a position we would take with any other non-nuclear weapon state.[195]

He went on to add that if India was intent on setting off such a blast, it should be done within the terms of the NPT (of which India is not a signatory) with the aid of a nuclear power.[196]

Mrs. Ghandi would not be a party to a retroactive redefinition of 'peaceful uses'

> ... obligations undertaken by our two governments are mutual and they cannot be unilaterally varied. In these circumstances, it should not be necessary now, in our view, to interpret these agreements in a particular way based on the development of a hypothetical contingency.[197]

Canada's immediate response to this frank rebuff was to cut back sharply its nuclear aid

---

[192] *Treaty for the Prohibition of Nuclear Weapons in Latin America*, 14 Feb., 1967.
[193] *Treaty on the Non-Proliferation of Nuclear Weapons*, 1 July, 1968.
[194] Alva Myrdal, "Peaceful Nuclear Explosions", *Bulletin of the Atomic Scientist*, 31: p. 30
[195] Letter from P.M. Trudeau to P.M. Ghandi, Oct. 1, 1971, as cited by Johannson, Ch. IV, p. 54
[196] Stewart, p. 32
[197] Letter from P.M. Ghandi to P.M. Trudeau, 12 Oct. 1971, as cited by Johannson, Ch. IV, p. 55, see also Stewart, p. 32

to India and to curtail completely the training of Indian nuclear scientists.[198] The ante in the game of nuclear export bargaining had been substantially raised.

Concurrent with these discussions were negotiations with Iran for co-operation in atomic energy.[199] The provisions of this agreement reflect the impact of India's position on Canadian officials. Article I(2) specifically states that "the development ... of a nuclear explosive device shall not be regarded as a peaceful use".[200] Both IAEA and bilateral safeguards were applied and the treaty would run for a period of five years with six months notification of abrogation required thereafter. However, the application of safeguards and pledge for peaceful use

> shall remain in force for as long as any material, nuclear material, equipment and facilities supplied pursuant to this agreement and any special nuclear material produced therefrom or thereby [i.e. plutonium] shall remain in existence and shall not have been returned by the receiving or producing Contracting Party to the supplying Contracting Party.[201]

The ramifications of the anomalous relationship with India were therefore providing a strong stimulus for added scope and precision in Canadian agreements with its nuclear partners. Nevertheless, the lessons that Canadian officials had learned in the rest of their nuclear transactions were of little use in bringing relations with India into line.

Canada's immediate response to the blast was swift and angry. Mitchel Sharp, Minister of External Affairs, noted that Canada saw no distinction between a peaceful and a non-peaceful explosion. Speaking with righteous indignation, seasoned with a good deal of national embarrasment, Sharp informed the House that Canada would no longer "assist and subsidise, directly or indirectly a nuclear program which, in a key respect, undermines the position which Canada has for a long time been firmly convinced is best for world peace and security."[202] As a result all nuclear shipments and technical consultations were curtailed as was all financing for debts incurred through nuclear

---

[198] Hunt, p. 82
[199] *Agreement between Canada and Iran on Co-operation in the Peaceful Uses of Atomic Energy*, 7 Jan. 1972 [1973], Can. T.S. No. 2
[200] Ibid.
[201] Ibid., Art. VII
[202] Mitchell Sharp, Minister of External Affairs, House of Commons Debates, 18 May 1974, as cited in *International Perspectives*, July/August 1974, p. 24

transactions, and the AECL's representative was recalled from Bombay.[203] For humanitarian reasons, food and agricultural aid continued unimpeded.[204]

The immediate response was one of urgency. The blast came during a federal election and international outrage was considerable. However, the longer term response was deliberate and considered. The keystone to the response was a decision made by the Trudeau Cabinet upon which Canadian nuclear export policy is now based.

> Although the specific wording of the 1974 decision (as set out in the Cabinet memorandum) is not publicly available, many of those who were involved in the decision have used common adjectives in describing it. Cabinet decided that Canada should adopt a leadership position in seeking a tough international system for the management of nuclear energy. Rather than accepting the lead of others, Canada would play a commanding role in the establishment of an effective safeguards regime. This sweeping mandate explains many of the actions taken by Canadian officials after 1974.[205]

This single decision would appear to give carte blanche authority to the architects of Canada's nuclear export policy to pursue an effective regime for the prevention of nuclear proliferation regardless of the implication which those decisions might have for other policy areas.

The realisation of this reassertion of Canada's commitment to non-proliferation came in sweeping changes to Canada's nuclear export policy which resulted from an extensive review of past policies announced to the House, 20 December 1974.[206] The new policy specified that:

1. all consumers would be required to supply binding assurances that no Canadian nuclear material, equipment or technology would be used to produce an explosive device for whatever purpose;
2. a 'trigger list' of certain nuclear equipment such as reactors, fuel fabrication, reprocessing and heavy water plants, their major components and related technology, will require the application of safeguards;
3. safeguards would operate on the 'contagion principle', i.e. all supplied nuclear materials, equipment or facilities and *all subsequent generations of nuclear material used, produced or processed from, by, in or with Canadian materials or*

---

[203] Johannson, Ch. VI, p. 20
[204] Hunt, p. 83
[205] Johannson, Ch. VI, p. 30-31
[206] D. Macdonald, Minister of Energy, Mines and Resources, House of Commons Debates, 20 Dec. 1974, pp. 2428-30

facilities are to be covered by IAEA safeguards.

> Not only will these binding safeguards apply to all future sales, but the government has decided to negotiate additional safeguards in respect of uranium supply contracts already approved. Existing contracts and contracts pending will be allowed to proceed during the course of the next calendar year while new safeguards are being negotiated.[207]

The government's efforts in this area have only been partially successful. Since the 1974 policy review, only two countries have accepted Canadian modifications to existing agreements, two have signed new safeguard agreements and three interim agreements have been concluded.[208]

Two new agreements were also signed with South Korea, a party to the NPT,[209] and with Argentina, which is not.[210] Much reliance is placed in these treaties upon the NPT/IAEA safeguards regime, which of course leaves the Argentine agreement in a somewhat more vulnerable position. Both treaties specify in Article I that the agreement relates only to peaceful purposes and that an explosive device is not considered to be a peaceful use. Argentina, as a non-party to the NPT or Tlatelolco Treaty is under no general, legal obligation not to acquire a nuclear device, nor does the Canadian agreement prevent it from doing so.[211] Both treaties require that IAEA standards used for physical security and that the pledge of peaceful use be applied to all subsequent generations (the contagion principle). An interesting innovation in the Korean agreement is the inclusion under this principle of "equipment and facilities which are located within the jurisdiction of ...[Korea]... which ...[Canada] considers are making use of principles contained in information supplied or obtained ... pursuant to this Agreement."[212] Strangely this clause is not included in the Argentine agreement which, with few other facilities under IAEA control, should require a greater degree of bilateral supervision.[213] This laxity can be very quickly explained by Canada's eagerness to make the Argentine sale (contrary to policy,

---

[207] Ibid.
[208] Johannson, Ch. V, p. 47
[209] *Agreement between Canada and South Korea for Co-operation in the Development and Application of Atomic Energy for Peaceful Purposes*, 26 January 1976, unpublished
[210] *Agreement between Canada and Argentina for Co-operation in the Development and Application of Atomic Energy for Peaceful Purposes*, 30 January 1976, unpublished
[211] Hunt, p. 84
[212] Ibid., Art. V(1)(iii), as cited by Hunt, p.84
[213] Ibid.

prior to a safeguards treaty being in place)[214] worth $480 million[215] against heavy competition from West Germany.

Considerable public outcry followed the Argentine and South Korean agreements concerning the provisions of the arrangements, not the least of which was the $20 million paid to foreign middlemen to act as sales agents.[216] This outcry was not, however, exclusively aimed at only these agreements but was precipitated by a number of emotion laden events to be discussed in a subsequent chapter, which raised the issue of nuclear exports to a high level of public consciousness. 1976 ended with a final policy change which would take the assertion of Canada's dominant role in international nuclear affairs over the brink. On 22 December, 1976, Donald Macdonald announced to the House the following changes to the 1974 safeguards requirements:

1. future contracts with non-nuclear-weapon states would be limited to those which ratified the NPT or otherwise accepted IAEA safeguards over their entire nuclear program (full-scope safeguards);
2. to terminate nuclear shipments immediately to any non-nuclear-weapon state which detonates a nuclear device.[217]

Canada had been the first supplier country to require full scope safeguards. The European countries, primarily France, and Japan had still not come to an agreement which satisfied the 1974 requirements and were not any more enamoured with the new additions. However, the government was aware of the implications of its actions and the Minister terminated his remarks by noting:

> ... the Government of Canada has unilaterally decided to strengthen further Canada's safeguard requirements. As in the past we are prepared to accept the commercial consequences of being clearly ahead of other suppliers.[218]

Indeed, 'commercial consequences' were in store for the new policy as an ultimatum had been put to the Europeans on accepting the new safeguard package. Nine days hence the government would "have to decide whether progress [on an agreement] was sufficient to

---

[214] Johannson,Ch. V, p.47
[215] Stewart, p.29, the Korean deal was worth $600 million
[216] Auditor General of Canada, *Report of the Auditor General*, 1977 (Ottawa: Information Canada, 1977) as cited in P. Roff Johannson and J.C. Thomas, "Nuclear Regulation in Canada", *Canadian Public Policy*, 7:3 (Summer, 1981) p. 439
[217] Donald Macdonald, Hous Commons, 22 December, 1976, *House of Commons Debates*, p. 2255
[218] Ibid.

allow us to continue shipments on an interim basis or if we would simply disrupt shipments as of December 31."[219] The subsequent embargo on all shipments of uranium to Europe and Japan would become the proving ground for Canada's apparent unilateral effort to establish a tough safeguards regime. How successful this attempt was, and whether it was in fact unilateral, or rather a marshalling of international forces will be explored in Chapter VI.

Through three decades of participation in international nuclear transactions, Canada had established agreements with thirteen countries and two international organisations for the peaceful use of atomic energy. Two conclusions can be drawn from this examination of the evolution of Canadian nuclear export policy through the negotiation of each of these agreements. First, Canada has pursued a defined set of goals in each transaction and second, there is a price which must be paid if the pursuance of those goals is to be successful. These goals have remained unchanged from the beginning of Canada's nuclear experience and have also retained a consistent hierarchy. However, the critical error in pursuing these goals has been to link directly and consciously, the issue of safeguards against the proliferation of nuclear weapons to other commercial considerations.

This link is not exclusively in the minds of only Canadian officials. A direct relationship between the price of nuclear technology and the safeguards which have been placed upon its transfer has been demonstrated. Consumers have consistently shown a propensity to consider the terms of an export agreement in terms of the total costs of the transaction encompassing economic, political and strategic considerations or the 'effective price' of the transfer.

As a result, the Canadian government consistently has entered into nuclear negotiations with 'the best of intentions'. The foremost consideration in these negotiations has been that the transfer should take place within such limits of safety which are thought adequate at the time. However, during the course of the bargaining, and by placing the details of safeguard requirements on an equal footing with other commercial considerations, the substance of these safety precautions has been bartered away. Lester Pearson proposed in 1945 that Canada should trade its nuclear expertise

---

[219] Ibid. p. 2260

for renunciation of the war-like uses of atomic energy. For the most part, Canada has done so, though the terms of this trade have not always been entirely satisfactory.

There are basic requirements for the application of a statist analysis to a specific policy area. Primarily, there must be a persistent and sustained set of objectives which have a consistent heirarchy over time. The principles which have guided Canada's conduct of its nuclear transactions demonstrate the existence of such objections while the outcome of these transactions similarly demonstrates their consistent ranking in the value structure of decision-makers. Canadian policy makers clearly recognised the relationship between nuclear safeguards and economic return very early in their commercial dealings and made clear their intentions although detail was lacking in treaties negotiated at the time. However, this relationship was never made so apparant as in Canada's dealings with France in 1956 and 1965 where the price of safeguard commitments was firmly established. Invariably the outcome of each transaction was a greater commitment on the part of Canadian policy-makers to ensure nuclear trade took place only within a safe environment. These and other events in the derivation of Canada's nuclear export policy indicate that this area is compatible with the statist analysis in so far as it can be shown that these objectives can be met by a central decision making body acting autonomously in both a domestic and international context.

V. The International Uranium Cartel

On February 1-4, 1974, the representatives of the governments of Australia, Canada, France, South Africa and virtually all the world's major uranium producing companies; met in the offices of the Commissariat a l'Energie Atomique (CEA) in Paris[220] "The objective of these meetings in Paris was to determine whether or not the uranium producing countries, and the companies who have stockpiles and uncommitted production capacity could agree on a formula whereby they could satisfy the free world demand (outside the United States) for the period through to the end of 1977, in an orderly fashion."[221] Within the next eight months this group would command 100% of the world's uranium market[222] and in five years would increase the price of uranium by over 700%.[223]

'The Club' as it came to be known, was formally composed of the four major uranium producing countries, and a fifth member, the only corporate body with equivalent stature to the member nations, the massive British metals corporation, Rio Tinto Zinc (RTZ). These five members directly represented the interests of thirty-four uranium producing companies[224] and an amorphous group of 'associated' firms which were aware of the operations of the cartel and participated in its activities but were not directly involved. The state groupings were a natural selection due to the considerable amount of national control each had within its domestic uranium industry. Both France and South Africa have central marketing authorities (the French CEA, subsequently to become COGEMA in 1975, and Nuclear Fuels Corporation NUFCOR, in South Africa) which, although private corporations, have close links with their respective national

---

[220] The majority of the evidence cited in support of the existence of the uranium cartel is taken from the testimony presented in the *Hearing Record of the House Subcommittee on Oversights and Investigation of the Committee on Foreign and Interstate Commerce, "International Uranium Cartel", Vols. I and II*, which held hearings beginning Nov. 4, 1976, May 2, June 1, and Dec. 8, 1977. Documents noted as 'MKU Doc.'(for Mary Kathleen Uranium) are numbered according to the system of the California Energy Commission which first made them public in the United States. 'Gulf Documents' are as set out in the record of the Subcommittee Hearings of May and June, 1977.

[221] Minutes of the Canadian Uranium Producers Meeting, Feb. 15, 1972, House of Representatives Sub-Committee, p. 455

[222] An internal RTZ memo of Sept. 1972 notes that a German utility requiring a contract for 800 tons of yellowcake was "... looking all around the world to get it at prices below those of the Club. So far they have not been successful." see June H. Taylor and Michael D. Yokell, *Yellowcake: The International Uranium Cartel*, (New York: Pergamon Press, 1979), p. 94, MKU Document 13, p. 1

[223] see Figure 5-1

[224] Taylor, p. 71-72

governments.[225] Canada and Australia are not so endowed. However, in each case, the government took a firm leadership role in organising domestic participation in the cartel. RTZ, on the other hand, is the largest uranium producing corporation in the world, with major operations in all of the uranium exporting countries and has, through joint ownership and interlocking directorships, influence with the majority of producing firms.[226] Its intimate relationship of over one hundred years with the Government of Great Britain and particularly the Conservative Party,[227] also afforded it a degree of influence which may well have surpassed the governmental members. The pervasiveness of RTZ's influence and operations was indispensible in establishing the cartel and in maintaining discipline in the cartel's daily dealings.[228]

The organisation crystalised quickly and after plenary discussions of data provided by the participants on reserves, mining and production capacities, stockpiles, estimates of international utility requirements and existing delivery contracts, met in June 1972, in Johannesburg, South Africa, to formalise the cartel and agree upon its rules of operation. At the time it was estimated that a demand of 26,000 tons of U_3O_8 remained uncommitted through to the end of 1977 of which half would be spoken for by the middle of 1972 if the cartel did not act. Producers on the other hand were operating at a level four times this demand rising to a possible 150,000 tonnes of stockpiled and uncommitted production capacity available to supply a potential market estimated optimistically at 75,000 tonnes. The solution was to allocate the uncommitted market to each participant with regard to its individual production capacity at the present and potential in the future. After much acrimonious debate, the market share quotas shown in Table 5-1 were decided upon.

It was decided that to avoid combines legislation, the domestic markets of the participating states and that of the United States would be excluded from any marketing arrangements. The two stage quota allocations recognised the important position of new entrants to a cartelised uranium market, particularly in Australia and later in Canada, and illustrates the long-term thinking with which the architects of the cartel approached its

---

[225] Taylor, p. 70
[226] Ibid., p. 73-75
[227] Lord Carrington, Secretary of State for Foreign Affairs, sits on the executive of RTZ with responsibilites for governmental affairs.
[228] Taylor, p. 73

TABLE 5.1

NATIONAL SHARE MARKET QUOTAS

Member	1972-77	1978-80
Canada	33.50 %	23.22 %
NUFCOR (S. Africa)	23.75 %	19.26 %
Uranex (France)	21.75 %	19.26 %
Australia	17.00 %	24.44 %
RTZ	4.00 %	13.82 %

Source: MKU Doc. 8, p.5

conception. Although the alleged object of the cartel was to rationalise the uranium market until supply and demand could re-establish a stable equilibrium, arrangements were eventually made for the period through 1983, after which it would be difficult to justify the cartel on anything but grounds of mutual self-interest.[229]

In contrast to the convoluted web of accounting and tranferances commonly encountered in other secret combinations, the means used by the uranium cartel to assure the proper allocation of contracts was simplicity in itself.

> The most easy way to describe it ... is to imagine five glasses on the table and the idea is to fill those five glasses at an approximately equal rate so that no one's glass gets full of wine before anyone else's.[230]

A central secretariat was established, the Uranium Market Research Organisation (UMRO or SERU in its more common French acronym) and secreted within the CEA in order to operate a rigged bidding system for uranium contracts. After the quotas were set, each producer receiving a 'bid request' forwarded it to the secretary who decided whose turn it was to 'have his glass filled'. They became the 'lead-bidder' and would bid at the cartel approved floor price. To maintain the illusion of competition, a 'runner-up bidder' was also designated which would offer' no less than $.08 above the floor price If other members chose to bid, they were restricted to floor price plus $.15. Should a 'lead-bidder' fail to win the contract because of consumer preference or long standing associations (no 'sweetener's' were of course allowed) accommodations were made and taken into consideration in the next round of bids. East Asian countries, specifically Japan, Taiwan and Korea, would be required to pay $.20 above floor price ostensibly because of their heavy commitments to massive nuclear energy programs, lack of ready

---

[229] Taylor, p. 81
[230] Ibid., p. 88

alternatives and subsequently greater 'willingness to pay'. In a similar vein, 'middlemen' were considered to be a primary cause of the depressed state of the uranium industry and a major threat to the free operation of the cartel. Hence all bid requests were required to specify the ultimate end user and it was recognised that the supplier was entitled to quote directly to that user.[231] Quotations to 'middlemen', such as Westinghouse, General Electric, etc., would be at $ 35 above the floor price.

To simplify the future operation of 'Club' activities, no deliveries of yellowcake after 1978 were to name a specific price, but were to be delivered at the 'world market price'. This ensured that after negotiating initial contracts at cartel-set prices, all subsequent agreements would automatically take effect at prices designated by the cartel, as long as the Club maintained its control over the market and the continuing strict discipline of members. This feature of the Club's pricing policy acquires important significance in its later activities.

The inherent instability of a cartelised market arises from the increasing incentive for a single member to 'cut and run' as the market becomes more distorted. Without the natural levelling device of the free market, a cartel must somehow impose discipline on each member. The uranium cartel did so in two ways. First, it required complete disclosure of all facets of its related activities to the secretariat. All contracts, letters of intent, inquiries, quotations and delivery invoices were to delivered to the secretary and if not, the offender would be called upon to account before the 'Operating Committee', an executive of two representatives from each participating state and RTZ. If found to be working against the interests of the cartel, its quota would be reduced.[232] RTZ's position of being in contact with virtually every facet of the industry world-wide insured that no individual producer or member country would be tempted to act independently. Unfortunately, no one was similarly able to monitor the activities of RTZ.[233]

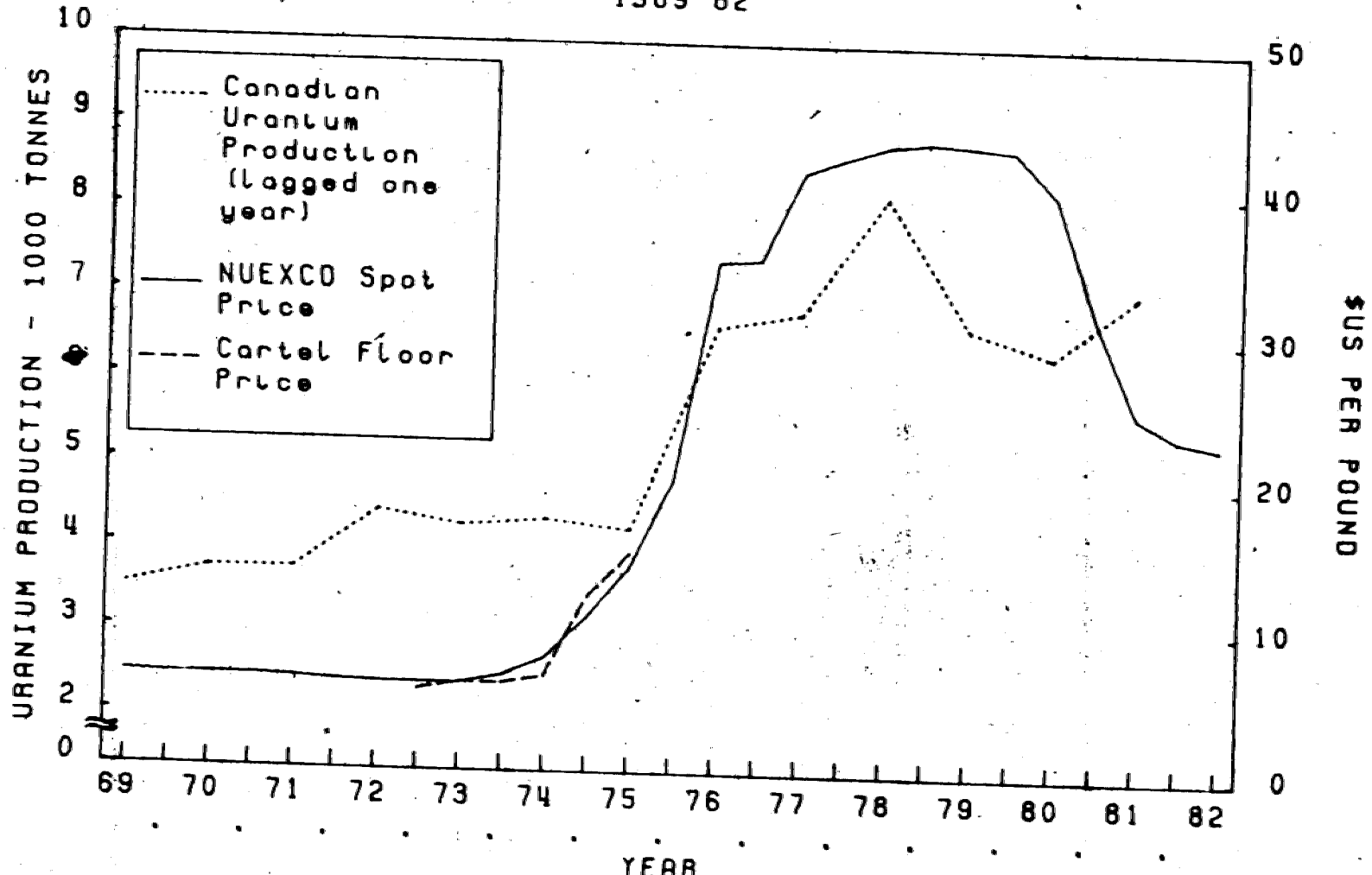
The second means of control was the power vested in the member countries. Each was required to insure that companies operating within their boundaries kept within the rules of the Club, provided the necessary documentary information and did not exceed its quota. France and South Africa presented no difficulty as they each had

---

[231] MKU Doc. 8, p. 15
[232] House of Representatives, p. 594
[233] Ibid. p. 290

FIGURE 5-1

CANADIAN MARKET FOR URANIUM
1969-82



SOURCE: DEPARTMENT OF ENERGY, MINES AND RESOURCES.
AND THE "NORTHERN MINER"

central marketing corporations in the effective control of the government. Canada and Australia placed the shipment of uranium under export control and made the contract price a criteria for the issuance of an export licence. In this way, contracts had to be presented to the governments, hence to the cartel secretariat, and strict tabs could be kept on all domestic producers.

There can be no doubt that the cartel was absolutely successful in satisfying its avowed purpose of establishing a system for the 'orderly marketing' of uranium internationally. Documentary evidence called in Hearings before the *Subcommittee on Oversights and Investigations of the Committee on Interstate and Foreign Commerce, U.S. House of Representatives*, in 1976, reveal that between February of 1972 and May 1974, the control which the Club exercised over the international marketing of uranium was unassailable. The marketing procedures and requirements were relatively common knowledge within the industry,[234] and the meetings of the cartel members reported freely in the press,[235] although neither were aware of the full extent or impact of the organisation.

What is not at all clear is the effect the cartel had on the dramatic sevenfold increase in the price of uranium between December 1972 and September 1976, from less than $6 US per pound to over $42 US. The coincidence of this astronomical increase with the existence of a cartel with uncontested market power provides a tempting but somewhat over simplified explanation for the price rise. Placed in the context of the world-wide market for uranium, the importance of the cartel is reduced, but not eliminated.

The world uranium market in the early seventies was in dire difficulties, as serious as any previous period in its history. After the halcyon days of the nuclear weapons race, consistent cutbacks by both military and non-military consumers placed increasing pressure on consumers. This bad streak for producers culminated in 1964 with an embargo placed by the United States on the enrichment of foreign mined uranium for use in American reactors. This single action effectively closed off 70% of the world's

---

[234] A letter to John Proud, head of the Australian Uranium Producer's Forum, July 1972, from a new potential exporter requested "... information on the limitations under which uranium producers will be exporting... [and] ...a copy of the Producer's Agreement regarding market sharing, minimum, export prices, etc ...", MKU Doc. 9, p. 1

[235] see *Wall Street Journal*, Feb. 8, 1972; Aug. 1972, as cited by Taylor, p. 63

demand for uranium to non-U.S. suppliers.[236] By August 1971, Nuexco reported that "several hundred thousand pounds [of U_3O_8] have been offered for immediate delivery as low as $3.55 per pound"[237] which was well below production costs. The major price slasher was identified as Nufcor, the South African firm, which because its uranium is produced as a by-product of its gold mining operations, had significantly lower costs of production, and was in desperate need of a cash flow.[238] Stockpiling programs in Australia, Canada and France had reached the upper limit of practicality. Without some stability and long term security in the market, there would be no uranium industry.

Once having established order in the market, the cartel proceeded to raise the price of uranium to a level where producers could retrieve their fixed costs. Figure 5-1 demonstrates however that for the first 18 months, the cartel's floor price lagged behind the spot market price. In fact, it was not until the third revision of the floor price schedules in March of 1974, that the cartel price actually lead the spot price.

Clearly there were other factors at work in the uranium market which resulted in the price rise. The most significant of these factors were:

1. the Arab oil embargo of 1973 and massive price increase in oil bringing a sympathetic increase in alternative energy forms,
2. the election of a Labour government in Australia and subsequent moratorium on uranium exports from that country,
3. the delay of enrichment and reprocessing technology[239]

It will be noted that the major impact of these factors, as with most of the others cited by analysts, is psychological rather than material. During that period of the price rise there was neither a reduction of supply nor an increase in real consumption which seperately or in combination, was sufficient to warrant a 700% increase in the price of uranium. There was, however, a general feeling within the industry that a price rise was ultimately inevitable, a number of circumstances existing in the market which could explain a massive price increase, and an organisation with sufficient market strength to

---

[236] O.J.C. Runnals, "A Brief Submitted to the Cluff Lake Board of Inquiry", April, 1977, pp. 8-9
[237] Nuexco, *Monthly Report* August 19, 1971, as cited by Taylor, p. 67
[238] MKU Doc. 2, Attachment II, p. 6
[239] Nuexco, "Significant Events in the Uranium Market, 1969-76", October 15, 1976, as cited by Taylor, p. 105.
see also "International Supply and Demand", House of Representatives, p. 364

Table 5.2

CARTEL FLOOR PRICES

Year of Delivery	Price Schedule ($US / Pound)		
	June 1972	October 1973	March 1974
1972	$US 5.40	***	***
1973	$US 5.75	$US 6.70	***
1974	$US 6.10	$US 7.20	$US 8.50
1975	$US 6.45	$US 7.70	$US 9.35
1976	$US 6.80	$US 8.20	$US 10.30
1977	$US 7.15	$US 8.95	$US 11.35
1978	$US 7.50	$US 9.70	$US 12.50

Sources:
June 1972 - MKU Doc. 8, p. 1
Oct. 1973 - Gulf Doc. 73-91
Mar. 1974 - Gulf Doc. 7-4-24 "Clean Draft" Appendix I

exploit that psychological atmosphere.[240]

The documentary evidence on cartel floor prices ceases in January 1975 at which point the cartel had been leading spot prices for one year. By that time the cartel had become a smoothly efficient operation and one which operated according to a consolidated set of standardised procedures.[241] Existing evidence shows that marketing arrangements had been formulated to the end of 1977 and forward plans had been made to 1980 and possibly to 1983, to be approved on the basis of the market equilibrium in evidence at that time. As the cartel was not publicly exposed until late 1976, there is no reason to believe that it would have ceased to operate prior to that time. The revelation of the cartel apparently placed a damper on the spiralling price of uranium. However, the pause was for a period of only six months after which it continued to climb at a similar rate to a price of $40 to $42 predicted with amazing accuracy and consistency by senior

---

[240] The New York State Assembly, after finding that the cartel had influenced the prices of electricity paid by New York consumers, charged uranium producers with

> "... not only abandoning competition, but escalating their uniform prices in tandem with raising oil prices, aiming for a one-price energy policy pegged not to production costs but, in fact, to a partially self induced crisis."

Statement by Oliver Koppel, New York State Assemblyman, in the introductory summation of past evidence before the final sitting of the House of Representatives Subcommittee (Dec. 8, 1977), Vol. II, p. 4

[241] Gulf Doc. No. 7-4-24, "Clean Draft", Appendix I, see also testimony of Lawrence Gregg, Gulf Minerals of Canada Limited, House of Representatives, p. 256-61

industry officials with documented ties to the cartel.[242] At the end of 1977, precisely the date established in the cartel marketing schedule, the price of uranium ceased to climb and continued at the 'world market price' of approximately $43 for exactly three years, despite a plummeting demand for uranium and a consequent plunge in production. Ultimately, the market became so over supplied that consumers began selling from stockpiles purchased in cheaper times and not required for plants which had yet to be licensed. Producers found it easier and less costly to fill long term contractual commitments by purchasing on the spot market. Hence the market was turned 'upside down' where the producers became the purchasers and the consumers, the sellers, with the upper limit on prices, the cost of production. Unfortunately, the uranium mining industry has changed little in the last 35 years, nor has it learned much.

> I do not see the industry coming out of its present mode in the short term. It appears we are destined to live with over abundance and consumption uncertainty for some time.[243]

With, at present, no evidence to the contrary, it is possible to speculate the following chain of events. The international uranium cartel operated unimpeded in a formal arrangement until its exposure and subsequent investigation by the House of Representatives until at least October of 1976. During that time it operated according to a marketing schedule which included the systematic raising of the floor price of uranium. Upon its revelation, the formal cartel ceased to function and for six months there was a short period of readjustment at which time it was decided that the organisation would continue according to schedule until the first marketing period was completed enabling producers with forward commitments based on the 'orderly market' to complete them or make alternate arrangments. During this time, information was exchanged as usual and contracts allotted according to the simple rules of operation. At the end of 1978, the organisation merely maintained its position as best it could through the 'world market price' clause of previous contracts until the demand situation made market control by a supplier cartel absolutely untenable and the cartel collapsed with a crash in January of 1980. Further evidence for the viracity of this scenario will be offered in the discussion

---

[242] John Kostiuk, Chairman of Denison Mines, *Northern Miner*, 3 June, 1976
[243] J.P. Walcott, President of Nuexco, "Uranium Market Seeing Fundemental Change", *Northern Miner*, July 17, 1980. The blind optimism of the industry remains unswayed. On the same page as this article of doom and desperation with its inocuous title, was a small filler entitled "Demand for Nuclear Power to Increase 17 Times by Year 2000"

of the participation of the Government of Canada in the cartel.[244]

Canadian Government Participation

The uranium cartel had the unfailing support of the Government of Canada through the Cabinet from the outset. It is apparent that if the Government of Canada did not originally introduce the idea of the cartel, it was certainly its chief proponent. When confronted with the desperate state of the Canadian nuclear industry in 1970-71, the Government set out on a major trade promotion with high level missions attempting to whip up the market for Canadian uranium among previous clients. A major objective of this promotion was to attempt to arrive at some accommodation with consumers in achieving a modicum of stability in the international market. Their efforts were to no avail as consumers had everything to lose and little to gain in rationalising a heavily competitive market. The alternative was to work among producers. "As national proprietors of a non-renewable resource we have an obligation to create an orderly marketplace in which our industrial groups can expand operations and make adequate profits."[245] Apparently in response to Canada's lead, other supplier nations began to voice the need for "common marketing policies or a world supplier price minimum".[246] The result was the plenary meeting of producers and interested governments in Paris, February 1-4, 1972.

The representatives of the Government of Canada who attended the initial meetings were clearly enthusiastic over the cartel.[247] It offered a panacea for many of the industry's ills by improving employment, the profitability of both joint and private ventures and Canada's trade outlook. It also came with the added bonus of enabling the Government to retrieve the $100 million it had invested in stockpiles, possibly at a good profit. As a result, the Government, through the Department of Energy, Mines and

---

[244] See Infra, p. 82

[245] Minister of Energy, Mines and Resources, Hon D. MacDonald, Feb. 1972, as cited by L. Gregg, Gulf Minerals of Canada Limited (GMCL), House of Representatives, p. 65

[246] Taylor, p. 66. The original idea for the cartel could well have come originally from RTZ which had accumulated huge uranium stockpiles world-wide during the 1960's and could obviously benefit from an improved market. It has been suggested that through its Canadian subsidiary, Rio Algom, it persuaded the Canadian Government to take the lead in calling on other governments to support the idea. See Taylor, p. 73

[247] Either Jack Austin, Deputy Minister for Energy, Mines and Resources and President of Uranium Canada, or Gordon McNabb, Assistant Deputy Minister for Energy, Mines and Resources, and Vice-President of Uranium Canada, or both, attended all 17 meetings of the cartel, Taylor, p. 70

Resources, took an active role in organising Canadian producer participation.[248]

The cartel had the full support of Cabinet. Repeatedly, the minutes of meetings of the Canadian producers cite statements and assurances by Departmental spokesmen, predominantly J. Austin, that Canadian participation had the full sanction of Cabinet.[249] In voicing concern over the legality of the arrangement in the early stages, M.H. Ediger, President of Gulf Minerals of Canada Limited (GMCL) stated,"Mr. Austin assured me that these exploratory meetings were held with the full knowledge and approval of the Canadian Government"[250] and later on April 4, 1972, "D.S. MacDonald, Minister of Energy, Mines and Resources (EMR), wired Mr. Ediger that he had been authorised by Cabinet to enter into the cartel and he wanted all Canadian companies to participate."[251] Cabinet formally approved the terms of the cartel, agreed upon at the June, 1972 meeting in Johannesburg, on the 29 June, 1972 and thereby confirmed Canada's involvement at the highest level of authority.[252]

The major difficulty encountered by the government was in soliciting the compliance of all Canadian producers to the agreement. Only Australia and Canada possessed industries with numerous independent producers and it was left to each state after the initial Paris meeting to "... get their house in order to present a unified position, otherwise further meetings in Paris would serve no useful purpose."[253] Gulf Minerals Canada Limited, a joint venture with Uranerz Canada Limited (UGL) of West Germany in the Rabbit Lake development in northern Saskatchewan (at the time not in production), was most reluctant to participate in the arrangement because of anti-trust actions which could be brought against its American parent Gulf Oil Corporation. GMCL's position was further complicated by the mood of hostility which prevailed among the Canadian based mining companies engendered by GMCL's hesitancy to declare its exclusive Canadian

---

[248] Taylor, p. 78.
[249] see House of Representatives, p. 455 (Minutes of Canadian Producers Metting, Feb. 15, 1972), p. 484 (Producers Meeting, Apr. 19, 1972)
[250] House of Representatives, p. 456
[251] Ibid., p. 653
[252] Letter from MacDonald to D.G. Hearst, President of the AECB, 17 August, 1972, as cited by Johannson, p. 39
[253] J. Austin, as quoted by R.K. Allen, Legal Council for GMCL, House of Representatives, p. 468

citizenship in the highly nationalistic atmospere of the times.[254] GMCL's ultimate accession to the agreement was however based on the legal principle of 'comity' professing to be a Canadian corporation operating in Canada and accordingly subject to the laws of Canada. "The fountainhead of our antitrust defense is the effective Canadian Government direction that Gulf participate in the cartel, buttressed by the projected minimal impact on the trade or commerce of the United States."[255] There is some question however as to whether the Canadian Government did in fact order GMCL to participate, or if the government merely complied with requests from GMCL for protection from the extraterritorial application of American law.

It was absolutely essential that all Canadian producers comply with the cartel arrangements in order to avoid contravention of the *Combines Investigation Act*, Canada's weak-kneed answer to anti-trust legislation. Part 5 of the Act states that "everyone who conspires, combines, agrees or arranges with another person ... to prevent, or lessen unduly, competition in the production, manufacture, purchase, barter, sale ... or supply of an article ... is guilty of an offense." Although the Act is aimed at domestic transactions, it further specifies that action can be brought if the conspiracy "has restrained or injured or is likely to injure the export business of any domestic competitor who is not a party."[256] With all producers being 'parties' to the arrangement, conflict with this portion of the act could be avoided.

It is the contention of GMCL, that the Government of Canada not only required its participation but used coercive measures to obtain it. GMCL had not attended the inaugural meeting of the Club in February, 1972, but was requested in what has been referred to as an 'executive directive' from the Department of Energy, Mines and Resources to attend a meeting of the Canadian Producers.[257] In a memo from G.M. McNabb, Assistant Deputy Minister of Energy, Mines and Resources, to L. Gregg of GMCL, he insisted that it was "very essential for Gulf Minerals to attend the Meeting on

---

[254] House of Representatives, p. 485-86
[255] R.D. Jackson, Legal Council for Gulf Oil, House of Representatives, p. 541-42
[256] The Combines Investigation Act, R.S.C. 1970, C. C-23, S. 1
[257] House of Representatives, p. 132

Wednesday, from Canada's point of view and in Gulf's long term interest".[258] Gulf's 'long term interests' were truly in some jeopardy. The Government wanted GMCL to 'comment' in a draft of the *Uranium Mining Control Act* in which foreign ownership of Canadian uranium deposits was to be reduced substantially, something the Government had long wished to accomplish.[259] No doubt this preview look at the legislation would assist GMCL in its deliberations on the Government's request as would GMCL's response determine the receptivity of the Government to Gulf's 'comments'. Secondly, the Government's plans to place uranium under export control were well known within the industry and it was made clear that without the participation of foreign based firms in the arrangement, "it was unlikely that approval for their export permits would be forthcoming".[260] Although the eleven outstanding lawsuits against Gulf Oil in U.S courts are adequate testimony to the authenticity of GMCL's fears and the pressures which were brought by the Canadian Government indeed persuasive, Gulf's defense of its activities as "some kind of corporate Patty Hearst"[261] appears to be somewhat contrived.

Clearly, GMCL, along with the other participants, gained a great deal from the marketing arrangement in more than mere economic terms.

> ... from a business standpoint, it is potentially advantageous for Gulf to know first hand what is going on and to have an opportunity to shape the functioning of the cartel board ...
> It is at least as important for Gulf to become a sophisticated and substantial participant in worldwide uranium matters as it was for us to undertake similar efforts with respect to oil and gas 30 or 40 years ago.[262]

As for Gulf's private opinion as to the posture which the Government was taking, they were under no illusions as to where their interests lay. "The more intricately involved the Canadian Government and any of its agencies or departments becomes and remains in

---

[258] Gulf Memo, Feb. 16, 1972, House of Representatives, p. 261
[259] The act was first proposed to prevent the takeover of Denison Mines Limited in March of 1970 but was never enacted. It was proposed that aggregate foreign ownership not exceed 33% with any one foreign company limited to 10%. Ultimately it was decided that companies would be permitted to retain existing holdings as of March, 1970. GMCL staked Rabbit Lake in 1968. See "Gulf Denies Responsibility for High Uranium Price", *Northern Miner*, June 16, 1977
[260] Johannson Ch IV, p. 40
[261] Congressman Albert Gore, House of Representatives, p. 241
[262] Jackson Memo, House of Representatives, p. 541-42

this matter, the better the degree of protection for Gulf ... "[263]

The Government's desire was for the cartel to go ahead, but although "all Canadian producers had been requested to make every effort to adhere to the terms of such arrangements,"[264] the Government of Canada had "as its policy stance from the beginning that it would not force Canadian producers into the arrangement".[265] It was, further, the policy of the government that regulations enabling the cartel to function under Section 9(d) of the *Atomic Energy Control Act* would be invoked only at the request of producers.[266] It appears that many of the events which have been identified by Gulf as instances of coersion by the Canadian government, were rather efforts on the part of the government to ease the difficulties which GMCL faced in its participation in order to win its accession and often at the request of GMCL. For example, when the Minister of Energy, Mines and Resources wrote GMCL that "it was in the public interest" for L.T. Gregg of GMCL to become a member of the Operating Committee with O.J.C. Runnals of the Dept. of Energy, Mines and Resources, testimony revealed that the text of the memo was actually drafted by GMCL in order to sustain their posture of being 'required' to participate.[267]

For the present, the question of the strength with which the Government of Canada enforced its request for all Canadian producers to participate in the cartel must remain open. The question has been transformed, however, from one which asks if the government required GMCL to participate to one of the degree to which the somewhat 'cozy' relationship between GMCL and the Government affected the willingness of the Government to support Gulf's request for protection from the extraterritorial application of U.S. law. For the purposes of the present argument however, the salient fact is that the Government took active steps to form and operate the cartel.

Once the agreement of all producers was secured, it was possible to divide the Canadian portion of the world uranium market among the Canadian participants. Quotas

---

[263] Jackson's final advice to replacement council for Gulf Oil, Oct. 11, 1972, House of Representatives, p. 600-02

[264] J. Austin, Canadian Producer's Meeting, Apr. 19, 1972, House of Representatives, p. 484

[265] J. Austin, Canadian Producer's Meeting, June 15, 1972, Johannesburg, House of Representatives, p. 552.

[266] Ibid.

[267] Testimony of L.T. Gregg, GMCL, House of Representatives, p. 279

were apportioned as shown in Table 5-3. The consistency with the proportions between those specified by the cartel and the actual production figures offers interesting evidence concerning the longevity of the activities of the cartel. Previous evidence was cited to suggest that the cartel operated 'informally' to the end of 1978, at which time it merely tried to maintain its position as best it could. It would appear that these figures would support this contention in that the market apportionment was consistent with the operations of the cartel.

To fulfill its role within the cartel as a control over the activities of producers, to insure that no company exceeded its quota, Canada, along with Australia, required that export licences be withheld until the Government had seen and approved of the terms of uranium supply contracts. Both countries accomplished this without Parliamentary approval, leaving it instead to the Cabinet to act through Orders-in-Council.[268] An amendment was made to the *Atomic Energy Control Act Regulations* stating:

> Section 201 of the Atomic Energy Control Regulations is amended by adding thereto the following subsection.
> (a) A permit to export prescribed substances shall not be granted unless the board is satisfied that the price stipulated for and the quantities meet such criterion, if any, *respecting price levels and quantities as may be specified in the public interest in a direction given to the Board by the Minister*[269]

This provided the powers necessary to police the activities of producers and a vehicle through which the prices determined by the cartel could be assured in export contracts. It had the additional benefit of providing a global exemption from the provisions of the *Combines Investigation Act*:

> ... since the [Atomic Energy Control] Board was effectively regulating the volume of exports pursuant to an act of Parliament. The jurisprudence under that Act holds that, insofar as the activities of an industry are effectively regulated, they cannot be in violation of the Combines Investigation Act.[270]

The amendment was carefully designed. "An opinion had been obtained from the Director of Combines Investigation Branch that the arrangement is legal ... ."[271] and similarly, a legal

---

[268] Taylor, p. 90
[269] SOR/72-301 August 2, 1972, as cited by Johannson and Thomas, p. 9 (emphasis added)
[270] A. Gillespie, Minster of Energy, Mines and Resources, *Globe and Mail*, 15 Oct. 1977, as cited by Johannson and Thomas, p. 10
[271] J. Austin, Canadian Producers Meeting, Apr. 10, 1972, House of Representatives, p. 474

Table 5-3

CANADIAN PRODUCER QUOTAS
(Percentage of Total Canadian Production)

	Market Share[1]		Actual Production[2]
	1972-77	1978-80	1978
Denison-UCAN (stockpiles)	51.67%	****	****
Denison	9.67	25.5%	26.5
Gulf-Uranerz	21.81	32.0	33.0
Rio Algom	9.93	25.5	27.0
Eldorado	6.66	****	****
	100.00	83.0[3]	87.3[3]

Sources:
[1] Letter from D. Macdonald to G. Hurst, Pres. of AECB, 17 Aug. 1972, as cited by Johannson, Ch. IV, P. 38
[2] R.M. Williams, *Uranium*, (Ottawa: Dept. of Energy, Mines and Resources, 1978) P. 2
[3] The remainder of production is taken up by smaller producers. It is unknown if they too were direct participants in the cartel.

opinion was sought from the Minister of Justice.[272] On August 23, 1972, a public statement from the Minister of Energy, Mines and Resources, Donald MacDonald, put the Canadian branch of the international uranium cartel into operation "in order to stabilise the current uranium marketing situation ..." Few facts were revealed at the time, however, as "... it would not be in public interest to disclose further contract details at this time."[273]

This power over minimun price levels was used regularly through to June of 1978, to control the price of Canadian uranium exports, and offers additional evidence to support the existence of the cartel to the end of 1978. Madawaska Mines, operating in Bancroft, Ontario, signed an agreement with AGIP, the purchasing agency for the Government of Italy to supply 6 million pounds of urnanium oxide, of which 450,000 pounds would come from 1977 production.[274] The agreed price was $34.50 per pound. However, the AECB intervened in March of 1978, requiring that this be raised to $42 before an export permit would be approved. An independent arbitrator was appointed to

[272] Ibid, p. 475.
[273] D. MacDonald, quoted in House of Representatives, p. 149
[274] *Northern Miner*, 30 March, 1978

determine the "world market value" for uranium delivered in 1978, and subsequently set the price at $30.50. A second arbitrator, brought in at the request of the AECB, established the price to be $32.50. Nevertheless, the AECB continued to insist upon, and ultimately obtained agreement on the price of $42, which applied not only to 1977 production, but also to the 1.5 million pounds to be produced in 1978 and 1979.[275] The AECB then, had retained the ability to insist on the "world market price" provisions of the cartel agreement contrary to independent appraisals of the market value of uranium which were significantly lower, and a full two years past the assumed demise of the 'official' uranium cartel.

It is apparent that in 1974, when the price of uranium began its skyward push, that the Government became concerned over the effects which the price rise might have on the Canadian members of the cartel with regard to the *Combines Investigation Act*. Domestic consumers had been previously excluded from the marketing policies of the cartel but could not be insulated from the induced price increase. Subsequently, as part of the 1974 nuclear export policy review, the Minister of Energy, Mines and Resources, announced that the government would require that nuclear based utilities sign forward contracts for uranium supplies to fuel all existing and planned nuclear facilities at 80% capacity for the next thirty years, or for thirty years from their expected date of on-line production.[276] The AECB was also empowered to ascertain, before any export permit was issued, if the contracting firm had sufficient reserves to adequately provide for these forward commitments. Further, domestic contracts would also require the approval of the Board and "Such approval will not normally be given if the pricing conditions for foreign customers are more favourable than those offered to domestic purchasers."[277]

The new policy not unexpectedly resulted in the largest uranium transaction in Canada's history. Ontario Hydro, Canada's largest nuclear utility, concluded two agreements, one with Denison Mines for 126 million pounds for shipment between 1981 and 2011, and 72 million pounds from Rio Algom Mines for delivery between 1984 and

---

[275] *Northern Miner*, 29 June, 1978, p. 3
[276] D. Macdonald, 4 Sept. 1974, as cited by Johannson, Ch. V, P. 24
[277] Ibid.

2020, at an estimated price of $6.5 billion.[278] With all domestic consumers having signed contracts so far in the future, the Canadian government and producers were free to agree to any pricing policy which the cartel might put forward with impunity from the *Combines Investigation Act*. The only legal flaw in these forward agreements was the pricing conditions of the Ontario Hydro contract. Rather than a fixed or 'cost plus' arrangement, the price to be paid was to be a mid-point between the cost of production and the prevailing world price. Under those conditions, if the cartel was shown to have had an influence on international prices, the members could subsequently be charged under Canadian law with restricting competition in the Canadian domestic market.

The atmosphere of secrecy which surrounded the Cabinet's participation in the cartel is amply illustrated by the Draconian measures taken in response to the exposure of the cartel and the subsequent attempts by American courts to obtain evidence in Canada. The *Uranium -Information Security Regulations*, again issued by Order-in-Council, under the powers of Section 9 of the *Atomic Energy Control Act*, stated:

> No person who has in his possession or under his control any note, document or other written material in any way related to conversations discussions or meetings that took place between January 1, 1972 and December 31, 1975 involving that person or any other person or any government crown corporation, agency or other organisation in respect of the production, import, export, transportation, refining, possession, ownership, use or sale of uranium or its derivatives or compounds, shall
> (a) release any such note, document or material, or disclose or communicate the contents thereof to any person, government, crown corporation, agency or other organisation unless
> (i) he is required to do so by or under a law of Canada, or
> (ii) he does so with the consent of the Minister of Energy, Mines and Resources; or
> (b) fail to guard against or take reasonable care to prevent the unauthorised release of any such note, document or material or the disclosure or communication of the contents thereof.[279]

However, the government not only took action in Canada to prevent the disclosure of evidence relating to the cartel but also in other countries. Actions to compel RTZ to provide evidence and testify before American courts were contested through the British courts right up to the Law Lords, but not before the British government was forced to

---

[278] Johannson, Ch. V, p. 45

[279] *Uranium Information Security Regulations*, SOR/76-644, 23 Sept. 1976, as cited by Johannson and Thomas, p. 11. The invokation of this regulation resulted in the seizure of 40,000 pages of material held in the vaults of the Toronto-Dominion Bank, Toronto which remain today under bond. See *Financial Post*, July 18, 1981

intervene as certain "friendly foreign governments would feel embarrassed if this evidence were given".[280] In fact heavy diplomatic pressure was being applied by the governments of Australia, Canada, France and South Africa, all of which had similar 'gagging' legislation, to prevent RTZ from testifying. One can be assured that RTZ was not inactive in this matter either. In addition, Canada submitted numerous requests to the Department of State of the United States in support of the confidentiality of the Gulf Minerals documents which won the approval of the State Department but was not acceded to by the House of Representatives investigating subcommittee nor the courts which initially issued the subpoenas.[281]

It is difficult to draw hard and fast conclusions from the somewhat circumstantial evidence concerning the Cabinet's participation in the activities of the cartel. We can however, be assured of two salient facts: first, that the international uranium cartel existed and that Canadian participation in the cartel had the full sanction of the federal cabinet.[282] Secondly, it is clear that the Cabinet acted repeatedly to protect the interests and activities of the cartel.

It is the degree to which the central decision-making unit can act independently of societal pressures which distinguishes the statist perspective from other analytical approaches which have been applied more commonly. In this case, it is apparant that the Prime Minister and Cabinet historically and through the period of the cartel, held absolute authority over the determination of Canadian uranium export policy. In exercising this authority the degree of secrecy and control which surrounded the formulation and execution of this policy insured that the central decision-making unit was effectively isolated from societal pressures. That is not to say, however, that it was unresponsive to domestic interests.

---

[280] Solicitor General for the United Kingdom, *London Times*, 28 June 1977, as cited by Johannson and Thomas, p. 13

[281] House of Representatives p. 39- 46

[282] A briefing paper on the relationship of Gulf Oil to the cartel prepared by Legal Council F.R. O'Hara states:

"(15)Canadian Government Officials concerned with the Organisation are
Mr. MacDonald - Minister of Department of Energy, Mines and Resources
Mr. Austin - Deputy Minister of Energy, Mines and Resources
Mr. G.M. McNabb - Director, Bureau of Energy of EMR
Bud Estey says MacDonald is key man; unfortunately much of his authority is delegated to Austin who seems to be less reliable."
See OLOA Doc. 58A, "Uranium Marketing Research Organisation", House of Representatives, Vol. II, p. 78

The process of formulating Canadian Uranium export policy is one consistent with that laid out by Krasner's statist approach. The Government of Canada was confronted with a situation in its domestic uranium industry which could best be described as abysmal and the onus was placed on Cabinet to find a solution. Canada, however, was not alone in this situation which it shared with all other major uranium producing countries. After efforts to rectify the situation through negotiations with consumer nations failed, the Prime Minister and Cabinet opted to join with other producers to cartelize the market and with unquestioned success.

In selecting this course of action, the task became one of implementing it domestically. The degree of absolute control which the central decision-making unit exercised over the entire nuclear industry dictated that resistance would be overcome with little effort. Cabinet successfully secured the compliance of all Canadian producers, even those with considerable resources and an equal incentive to refrain from participating, effectively sustained the existence of the cartel by forestalling its disclosure through 'gagging' legislation at home and 'stone-walling' techniques abroad; and actively engaged in price fixing in order to maximise economic returns. Clearly, the central decision-making unit had the capacity to act independently of its societal context according to a set of goals which it had set for itself. However, the strength which the Prime Minister and Cabinet enjoyed domestically would have to be translated into the international arena before these goals could be fully realised. Canadian participation in the international uranium cartel provided the opportunity to exercise a great deal of influence in the international community in support of the more fundamental goal of securing a workable international safeguards regime.

Knowledge of the existence and operation of the uranium cartel has only recently come to light and large areas are still shrouded in secrecy and confusion. Previous to this discovery, analysts of Canadian nuclear export policy attempted to explain the great number of inconsistencies in Canadian actions without the benefit of this knowledge and an essential piece of the puzzle. Therefore, with this knowledge now available, it is possible to review some of the conclusions which have been drawn previously in order to encompass the fundamental significance of the cartel.

The greatest inconsistency in Canadian nuclear export policy arose when Canada embargoed uranium shipments to Europe and Japan, requiring by far the most stringent safeguard conditions of any producer country, while simultaneously attempting to arrive at a 'Contractual Link', the fabled manifestation of the 'Third Option'. Knowledge that the operation of the uranium cartel would ensure that the volume of Canadian sales would not be reduced would certainly buttress their diplomatic position.

Secondly, a direct relationship has been demonstrated between the price of uranium and the associated safeguards. Further, it has been demonstrated that there is a consistent heirarchy in Canadian nuclear policy goals which places the desire for non-proliferation above that of commercial considerations. It is therefore not unreasonable that, with the knowledge that the market for uranium was under stable control, an equally stable international safeguards regime could also be established. The London Suppliers Group was such a regime, composed initially of the same national membership as the cartel and established during the peak of the cartel's power. A secret Cabinet memorandum of 1974 contains a sweeping mandate for Canada to take a leadership role in establishing an effective international safeguards regime and it is this same cabinet which supported and actively lobbied other nations to participate in the cartel. It will be the contention of the following chapter that the Cabinet was attempting to form supplier nations into a cohesive international unit in order to create an effective and workable non-proliferation regime.

Finally, following from the same logic, because of the inherent relationship between commercial considerations and safeguard requirements, the demise of the cartel will also result in the subsequent collapse of the newest attempts at establishing a safeguards regime. The cartel created an artificial supply stimulus causing a glut on the uranium market and placing producers in the chronic over-supply situation. Consumers have been further alienated by even greater assaults on their sovereignty, and are once again able to set the terms of sale. However, now there is a more widespread motivation to establish a parallel supplier regime, primarily but not exclusively, among the nations of the Third World, because of the unilateral, high-handed approach of the supplier nations. Subsequently the best fall-back position may be to revert to the NPT/IAEA regime which has never proven itself to be fully reliable.

VI. The Implementation of Canadian Nuclear Export Policy

The 1974 Cabinet decision resulting from the Indian blast, to take a leadership role in establishing an effective international regulatory regime, was indeed a watershed in Canadian nuclear policy. Subsequent events would demonstrate an unprecedented single-minded pursuit of an effective non-proliferation regime as a primary foreign policy goal to the exclusion of others with equal or greater historical priority. This 'damn the torpedoes, full speed ahead' approach would take the Canadian policy from multilateral efforts within the existing NPT/IAEA regime, through covert attempts to establish a parallel supplier based regime, and ultimately to a solitary unilateral standoff against the world's greatest economic powers. The priorities in this campaign were:[283]

1. that Canada's export conditions would be sufficient to prevent a recurrence of the Indian example using Canadian technology
2. that an international regime would be created with equally rigorous requirements in order that the Indian experience could never be repeated unconditionally.

Canada's vigorous pursuance of the second priority would be such that it would ultimately jeopardise the fulfillment of either.

By the mid seventies the trade in nuclear materials internationally was becoming extremely sophisticated both commercially and politically. The *Treaty on the Non-Proliferation of Nuclear Weapons*, signed 1 July, 1968 and called into effect in 5 March, 1[redacted], formed the focus of the debate. Five years later at the NPT Review Conference of May, 1975, 96 states had ratified the treaty leaving over half that number outside of its provisions.[284] Positions taken at the Review Conference demonstrated that there was a clear departure between the nuclear 'have' nations and the non-nuclear states, both parties and non-parties to the NPT.[285]

The NPT divides the nations of the world into the 'nuclear weapon states' or those which have detonated an atomic device prior to January, 1967[286] and the non-nuclear weapon states. The treaty intended to prevent the spread of nuclear weapons through a commitment on the part of non-weapon states not to manufacture or otherwise acquire

---

[283] P.R. Johannson, "Change and Canadian Nuclear Policies", *Nuclear Exports and Canadian Foreign Policy*, Unpublished Manuscript, 1981, Ch VI, p. 25.
[284] William Epstein, *The Last Chance*, (New York: The Free Press, 1976) p. 245.
[285] Ibid., Ch. 18, passim.
[286] *Treaty on the Non-Proliferation of Nuclear Weapons*, Art. IX(3).

nuclear weapons, and on the part of the nuclear-weapon states not to transfer or assist in the development of weapons in other states. To make this commitment binding, all states must accept the application of safeguards over their civilian nuclear activities in order to verify that materials, equipment and facilities are not diverted to military purposes. In this, the treaty is openly discriminatory and deeply resented by the non-nuclear states particularly in the Third World, especially when obligations toward the cessation of the vertical proliferation of weapons technology have been ignored.[287] The system of supervision, inspection and safeguards is one which unabashedly supports the paternalism of the developed Western powers over the less developed nations of the world and hence has provided a constant irritation to those nations in the free development of domestic energy programs. It has further become clear that a signatory gains nothing in terms of greater access to nuclear technology in subjecting itself to the provisions of the treaty, the promise of Article IV, and in many instances is in fact imposing significant additional costs upon its nuclear program. Subsequently, the NPT has encountered significant opposition and the debate is bitter.

Unfortunately, the NPT/IAEA regime may not be our best alternative, but our only choice. Until a more equitable alternative is identified, the degree of concentration of suppliers at key points in the nuclear fuel cycle and the ability of those suppliers to co-ordinate policies, provides the necessary conditions for a relatively efficient system for controlling the dissemination of nuclear materials and technology.[288] However, the rapid increase in the number of nuclear exporters with access to sensitive portions of the fuel cycle makes the conditions for this mode of control a short lived phenomena. Canada, therefore, first applied its efforts to strengthen the international safeguards against proliferation toward establishing control of the nuclear industry within the existing restricted number of suppliers.

The key to ensuring compliance to the provisions of the NPT, is the safeguard requirements of the IAEA. The object of these safeguards is to provide

> timely detection of diversion of significant quantities of nuclear materials from peaceful nuclear activities to the manufacture of nuclear weapons or of

---

[287] James F. Keeley, "Non-Proliferation in the 1980's: A House Built on Sand", unpublished paper presented to the Canadian Political Science Association, Montreal, June 1980 p. 8.

[288] James F. Keeley, "Canadian Nuclear Export Policy and the Problems of Proliferation", *Canadian Public Policy*, 6:4 (Autumn, 1980) p. 621.

other nuclear explosive devices for purposes unknown and deterrence of such diversion by the risk of early detection.[289]

This 'timely detection' has been the subject of some dissatisfaction as an overriding principle, considering the current state of nuclear technology. NPT/IAEA safeguards are based upon a material accounting system, established and operated by each state and verified by IAEA inspections. However, the enormous amount of discepancy allowed in tallies (Material Unaccounted For (MUF) should be no greater than 0.5% but may rise as high as 1%), a grossly overworked inspection and analysis staff (the IAEA in 1975 was applying safeguards in 53 countries under 59 agreements with 69 employees), the voluntary nature of inspections and reporting, and the selective application of safeguards to only specified facilities, ensures that should a state at any time want to divert material, it would not be difficult to circumvent safeguards without even going to the extent of falsifying records.[290] The free availability of nuclear weapon information and technology now enables a non-weapon state to assemble and detonate a nuclear device far faster than detection schemes could warn, much less prevent.[291] Further, the relative simplicity of nuclear weapons in terms of other nuclear technologies, makes it unnecessary to test a nuclear device and in that way advertise one's intent. Nonetheless, before any diversion could be detected, safeguards must first be applied to nuclear facilities and it was this universal application of safeguards which Canada sought as its primary objective.

Prior to 1974, not only were facilities to be covered by IAEA safeguards at the discretion of the consuming state, but also materials supplied in future which were to be covered by safeguards were enumerated in each individual agreement. Because of the variety of nuclear partners a state might have in a diverse range of projects, this left a sizable 'hole' in the safeguards regime. To rectify this omission, the Zangger Committee of the IAEA, comprised of Australia, Canada, Denmark, West Germany, Finland, the Netherlands, Norway, the U.K., the U.S.A., the U.S.S.R. and South Africa (observer status only)[292] defined a 'trigger list' of items, the export of which would require the application of safeguards, as specified by Article III(2) of the NPT, which prohibits the supply of certain materials to non-nuclear weapons states except where those materials are

---

[289] IAEA, *A Short History of Non-Proliferation*, (Vienna: IAEA, 1976), p. 37
[290] Epstein, *Last Chance*, p. 151-154
[291] see *The Progressive*, 43:11(November, 1978) pp. 14-23
[292] Keeley, *Policy*, p. 622

covered by safeguards. The list included nuclear fuel, equipment for the fabrication of fuel, reactors and their components, plutonium and reprocessing facilities. Individual agreements were concluded between the committee members, excluding South Africa, and the IAEA[293] and in the following eighteen months eight other nations concluded similar agreements.[294]

Though a major advancement in increasing the effectiveness of the NPT/IAEA regime, the acceptance of the 'trigger list' remained grossly inadequate as it applied to only those states which were parties to the NPT. Non-signatories were not bound to accept safeguards nor was France, a major nuclear power and exporter, obliged to impose them on its customers, leaving these nations with a considerable competitive advantage in nuclear transactions. In November of 1974, France, Canada, Japan, the U.K., the U.S. and West Germany, representing 90% of exports of nuclear equipment worldwide,[295] were invited by Secretary of State Kissinger to meet secretly to discuss the standardisation of safeguard requirements and the co-ordination of export policies among the major supplier nations.[296] The first meeting of the Nuclear Suppliers Group (NSG) was held in London in the spring of 1975. By the fall of the same year the group had agreed upon basic principles which would govern their nuclear transactions. All transfers of nuclear technology would require the application of IAEA safeguards and any materials or duplicates of equipment could not be transferred to third parties without a similar application of safeguards. Facilities would further require adequate physical protection from theft or sabotage. Peaceful nuclear explosions would be forbidden.[297] A more definitive set of export conditions, accompanied by an expanded 'trigger list' was released in 1978.

1. IAEA safeguards would be applied to all items on the 'trigger list' and assurances would be required that no item would be used in the development of a PNE.

---

[293] IAEA, "Communications Received from Members Regarding the Export of Nuclear Material of Certain Catagories of Equipment and Other Material", INFCIRC/209, *International Legal Materials*, 3 Sept. 1974, 14: 543-552
[294] These were Poland, East Germany, Hungary, Czechoslovakia, Ireland, Sweden, Luxembourg and Austria. Ibid.
[295] United States, Congress, Committee on International Relations (House of Representatives) and Committee on Governmental Affairs (Senate), *Nuclear Proliferation Factbook* (Washington: U.S. Government Printing Office, 1977) p. 321
[296] Keeley, *Policy*, p. 622
[297] Ibid., p. 623

2. Safeguards would apply to all transferred equipment, material, facilities and technology, and to all duplicates or derived technology for a period of at least twenty years.
3. Suppliers would "exercise restraint" in the transfer of sensitive items such as reprocessing and enrichment facilities or weapons grade material, rather, encouraging the use of internationally supervised fuel cycle centers
4. Reprocessing, storage, use and retransfer of weapons grade material should require mutual consent agreements and enrichment facilities should be designed so as to not enrich uranium beyond 20% without supplier consent.
5. Retransfer of all 'trigger list' items, duplicates or derived technology should require the consent of the original supplier.
6. Suppliers should consult among themselves in sensitive cases or in the event of a violation and to co-operate in ensuring the effectiveness of responses taken by fellow suppliers.[298]

Although precautions were taken to prevent the NSG from appearing as a cartel, the intentions of the membership to act as one, at least for the purposes of policy co-ordination, were eminently clear. Their objective was to secure absolute supplier control over the international nuclear market. Initially, though no formal criteria for membership was stipulated, the London Group was extremely select. Members were all major nuclear suppliers and each demonstrated a nuclear capability.[299] However, nuclear powers from the developing world with export viable nuclear industries such as India, Argentina or Brazil, were excluded from the Group, restricting the ultimate benefits to the major economic powers. The guidelines set by the NSG pay lip service to the international supervision of the nuclear fuel cycle but in reality, control over the end use of supplied materials remains under the authority of the original supplier. International fuel cycle centres have considerable environmental, political, economic and logistical hurdles to overcome before they become feasible. Even then, the practicality of such institutions

---

[298] "Communications Received from Certain Member States Regarding Guidelines for the Export of Nuclear Materials, Equipment or Technology", IAEA, Jan. 1978, *International Legal Materials*, 1978, 17:220-234, see also Keeley, *Policy*, p. 623
[299] Johannson, Ch. IV, p. 15

is not totally without question.[300] Thus for the immediate or even long term future, the fall-back position of suppliers is to stand as guardians over the non-proliferation regime until a supervisory system can be organised. The suppliers further agreed to consult over violations of the safeguards agreements and then determine their mutual response. This indicates an attempt by the suppliers to wrest authority over the safeguards regime away from the Board of Governors of the IAEA which previously had statutory authority to decide a course of action on such occasions. Although each member concluded an independent agreement with the IAEA binding itself to these provisions, it would appear that this was an attempt to legitimise their efforts to structure the nuclear market. The fact that all eight meetings of the NSG prior to 1978 were held in strict secrecy further supports the conclusion that the suppliers' intents were not entirely honorable.

Ultimately, fifteen states sent similar letters to the Director General of the IAEA citing the "need to remove safeguards and non-proliferation assurances from the field of commercial competition".[301] Given the lack of alternatives to the principle of supplier control as the operating basis of the non-proliferation regime, the NSG was a remarkable accomplishment. The fifteen member nations control the vast bulk of all nuclear exports and hold similar views toward the effectiveness of an international safeguards regime. The inclusion of France was a singular success as France has staunchly opposed signing the NPT, although it has agreed to carry out its nuclear activities as if it had. This is a debatable position given its continued nuclear testing and aggressive sales promotion of reprocessing facilities, however its compliance with NSG standards offers a considerable lever by which to encourage more responsible behaviour in future. The notable failure of the NSG has been to exclude such nations as South Africa, India and Argentina, technologically advanced nations in strong opposition to the existing international regime, which will surely form the core of an alternative nuclear supply system. If the NSG is to succeed, it must secure the compliance of these states before they and others become alienated and are persuaded into a less responsible alternative regime through political or

---

[300] Keeley, *Policy*, p. 624

[301] Letters from Czechoslovakia, France, East Germany, Japan, Poland, Switzerland, the U.S.S.R., and the U.S.A. contained the basic commitments. Canada and Sweden included provisions for "other principles considered pertinent..." and Belgium, West Germany, the Netherlands, the U.K. and Italy assumed those obligations permissible under the Economic Community and Euratom Treaties. See IAEA, "Communications".

economic inducements.

Canada was not satisfied with the final position of the NSG. Through the deliberations of the Suppliers, Canada had pressed for 'full scope' safeguards to be applied to all nuclear transactions. This would mean that all peaceful nuclear facilities under the control of a contracting nation would come under the supervision of IAEA safeguards, rather than only those specified by each individual agreement. Canada found support in the U.S., Britain, the Eastern Bloc members (Czecholslovakia, Poland and the U.S.S.R.) and the IAEA, but the proposal encountered strong opposition from France and West Germany.[302]

The most visible reason for the Franco- German opposition was the invasion of national sovereignty which these states would suffer by allowing supplier control over reprocessing decisions. However, this position represents only the tip of the convoluted politics of European energy. There is a great deal of suspicion on the part of the Europeans of any attempt to impose restrictions on reprocessing technology, especially from North America. Canada, Australia and the United States have been attempting since 1975 to co-ordinate policies to halt progress toward the 'plutonium economy', i.e. the reprocessing of nuclear fuels and fast breeder reactor technology, by withholding the export of sensitive technology necessary to implement such programs, in exchange for a guaranteed source of uranium to ensure that clients need not resort to such technologies for lack of a stable supply of fuel.[303] The Europeans were and remain unconvinced as to the unselfishness of North American motivations. The American reactor industry is most competitive in construction of light water reactors which use only slightly enriched uranium and have a virtual monopoly on commercial uranium enrichment. The Europeans, on the other hand, are well advanced in reprocessing nuclear fuel and have reactor industries which concentrate heavily on high enrichment and fast breeder technology, both of which can use reprocessed fuel. France and West Germany have lucrative export industries built on these technologies and have a justifiable suspicion that the origin of the emphasis on abandonment of reprocessing or fast breeder programs is the

---

[302] Keeley, *Policy*, p. 623

[303] Martin Indyk, "Australian Uranium and the Non-Proliferation Regime", *The Australian Quarterly*, 49:4(December, 1977) p. 24. See also, Desmond Ball, "Australia and Nuclear Non-Proliferation",*Current Affairs Bulletin*, 55:11 (April, 1978) p. 24

preservation of the faltering American nuclear industry

The imposition of full scope safeguards more significantly, assailed the fundamental principle of the European Economic Community, embodied in this case by the formation of the European Atomic Energy Community (Euratom),[304] that of the non-discriminatory access to nuclear fuels and materials between member states. Euratom was created as the prototypical supra-national organisation envisioned for future European integration and hence was empowered to decide upon and conduct foreign relations independently of the policies of individual member nations.[305] As a result all nuclear relationships would be conducted with the integrated body rather than each member state. This would pose no problem were it not for the inclusion in that group of France, the ubiquitous nuclear antagonist. The application of full scope safeguards to the totality of nuclear activities under the supervision of Euratom, would require the application of safeguards to French facilities, which of course was totally unacceptable to the French.

Hence the Canadian effort to have full scope safeguards made a condition of the Nuclear Suppliers Group's export policy failed, and with it, so too did Canadian reliance upon multilateral channels to the establishment of an effective international non-proliferation regime. Canada's single-minded pursuit of that goal, however, did not cease. Rather, Canada abandoned the multilateral approach which had characterised previous efforts since 1945, assuming instead a unilateral position on nuclear supplies which far exceeded the export conditions of any other supplier country, insisting that the application of full scope safeguards be a necessary precondition to the export of Canadian nuclear material to any country. The universality of this requirement brought Canada into direct confrontation with some of the world's greatest economic powers and most significantly, those with which its future lay as the objects of the 'Third Option'.

The 1977 Uranium Embargo

On January 1, 1977, Canada ceased all shipments of uranium to the countries within the European Community, Switzerland and Japan pending the renegotiation of nuclear co-operation treaties with Canada outstanding since the 1974 nuclear export

---

[304] *Treaty Establishing the European Atomic Energy Community*, Rome, 25 March 1957
[305] Euratom Treaty, Art. 2(h)

policy review."[306] To Canada, it was the final act of rationalisation intended to remove elements of inconsistency in its export policy which threatened to erode its concept of an effective non-proliferation regime. To the European nations, it represented a compromise of their national sovereignty by allowing foreign control over domestic energy programs. To the Japanese, it jeopardised the close relationship it had in nuclear co-operation with the United States by submitting that program to two differential safeguard packages. Canadian, as the original supplier and American, as the provider of the enrichment processing (referred to as 'double labeling') and therefore placing an additional burden on Japan's nuclear program. Regardless, until an agreement was reached, uranium bound for European or Japanese customers would be mined and processed, but would remain in Canadian stockpiles.[307]

Canada's relationship with Euratom was formalised on 6 October, 1959 with the exchange of notes invoking the *Agreement Between the Government of Canada and the European Atomic Energy Community (Euratom) for Co-operation in the Peaceful Uses of Atomic Energy*.[308] The treaty with Euratom was signed in the formative years of Canadian nuclear practise and therefore included only vague references to safeguards. Article 9 specified that supplied material and equipment "shall be employed solely for the promotion and development of the peaceful uses of atomic energy and not for any military purpose." It also prohibited the transfer of those materials "beyond its (Euratom's) control except with the prior consent in writing of ... the Government of Canada ..." and contingent upon "a mutually satisfactory system of safeguards."

> It is our expectation that the control system of the International Atomic Energy Agency and the European Nuclear Energy Agency, when established, will prove to be satisfactory in this respect.[309]

These undertakings appeared to be sufficient to remove them from question during the 1965 debate over uranium sales to France. Early in the debate, there was a recognition that under the non-discriminatory access terms of the Euratom Treaty, once

---

[306] Johannson, Ch. IV, p. 44
[307] Johannson, Ch. VI, p. 44
[308] *Agreement Between the Government of Canada and the European Atomic Energy Community (Euratom) for Co-operation in the Peaceful Uses of Atomic Energy*, 6 Oct 1959, Can. T.S. No. 22.
[309] Canadian Ambassador to the E.E.C., to Euratom Commission President Hirsch, as quoted by Ulrich Strempel, "The Forgotten Link - Canada - EURATOM, and Canada - European Nuclear Relations, 1959 - 79", unpublished paper presented to the Canadian Political Science Association, Banff, Alberta, 12-14 Dec., 1980, p. 13

in the hands of Euratom, France could not be prevented from obtaining a portion or all of any Canadian uranium. However, with the assistance of an internal squabble over Euratom's role as a market participant, the debate quickly boiled down to a bilateral problem between France and Canada.[310] It became clear that Canada had no dispute with Euratom, but in fact had become embroiled in an internal disagreement within Euratom which had called into question the intentions of the French by its fellow Euratom members and had displayed their open distrust. Ultimately, Euratom arrived at the same solution as the IAEA, that France would designate certain facilities to be of peaceful use only and would allow international inspection of these, but would reserve the remaining installations as having a military significance and hence out of the eye of international scrutiny. Contracted supplies would then necessarily be earmarked for one facility or another, with military facilities being largely fueled from indigenous (or Central African) sources.

Although this arrangement was satisfactory to Euratom, the IAEA, and the Canadians of 1965; by 1974 it provided a leak in the non-proliferation regime too large to continue to ignore. The major Canadian nuclear export policy review of 20 December 1974 specified that "all Canadian nuclear materials, and all subsequent generations of nuclear material used, produced or processed from, by, in or with Canadian materials or facilities would be covered by IAEA safeguards."[311] Canada's insistence on the 'contagion principle' would therefore be inconsistent with differential treatment applied to French nuclear activities by Euratom, the corporate entity in terms of the Canadian Treaty. Canada could neither contravene its policy of universal application of export conditions of 1965, as Japan was eager to seize upon any special dispensation which Euratom received in order to apply similar arguments to elude the application of IAEA safeguards in preference for bilateral safeguards imposed by the United States.

In view of the distrust which the Europeans felt about France's activities the Canadian safeguards would appear to be reasonable given the already strict Euratom standards. However, in the wake of the 1973 oil embargo, the European states had opted for heavy nuclear power programs as a method of reducing their dependence on foreign

---

[310] Strempel, p. 20
[311] see Infra, Ch IV

energy sources, a dependence which created not only an economic, but an intolerable political vulnerability. To accept foreign control over the end use of nuclear material would negate any positive aspects of nuclear energy as a counter to the foreign domination of other energy sources. Further, a long term energy policy requires planning based on the reasonably predictable behaviour of all parties. If suppliers, much less international organisations are allowed to influence the course of events through unilateral or arbitrary decisions without specified criteria, neither industry nor government can make the long term commitments necessary to make nuclear power a viable alternative to fossil fuels.[111] Thus, for the European nations to accept Canadian control over the disposition of nuclear materials, particularly given its attitude toward reprocessing and fast breeder technology, would be merely to trade one unpredictable external influence for another.

The negotiations of the Canadian-Euratom nuclear trade continued for two years with numerous deadlines and extensions. Within Euratom, the 'contagion principle' would ultimately equate to full scope safeguards with the dispersion of Canadian materials throughout the European Community which introduced considerable confusion into the debate. Ultimately, the 22 December 1976 policy statement specifying that full scope safeguards be a pre-condition to Canadian exports clarified Canada's position. The lines were then clearly drawn. Canada would insist on the application of full scope safeguards including full end use control by the exporting country of fuels, enrichment and technology throughout the Euratom nations and the Europeans would insist that they retain ultimate control over their national energy programs. Matters of principle are seldom open to compromise or constructive negotiation, even in international affairs.

To fully understand the power which Canada commanded in its assault on these powerful adversaries, the embargo must be placed within the constellation of concurrent events. The Canadian uranium embargo was primarily a demonstration of raw market power. On January 1, 1977, Canada had the international uranium market 'all locked up'. During the two years of negotiation prior to the embargo, the uranium cartel had acquired control over virtually all of the market and had become a smoothly functioning

---

[111] Thomas Roser, "Nuclear Energy and International Relations: The Case for the Federal Republic of Germany", *Proceedings of the 73rd Annual Meeting of the American Society of International Law*, Washington, D.C., Apr 26-28, 1979, p. 169-70

organisation. Canada had been allocated approximately one-third of the market and provisions had been made to reallocate sales foregone through consumer preference.[313] The cartel had also declared a policy of open discrimination against the Japanese. The instrumental position of the Canadian cabinet in the formation and operation of the cartel would dictate that this preeminent market position could hardly escape their notice. At the time of the embargo, the cartel was in some disarray due to its exposure in October of 1976. This would seem to be a temporary state of affairs, as the only impact of the exposure was a short respite in the sky-rocketing price with the cartel resuming operations on a less formal basis in the spring of 1977. The revelation of the cartel would have minimal impact on the embargo as the only available information was that derived from press reports of the pilfered Mary Kathleen Documents, held by an American Congressional Committee, which would not come under public scrutiny until late in 1977. The complicity of the cartel in the embargo is evidenced in the fact that no cartel member stepped in to fill the void left by the Canadian absence. Rather, it was resumed shipments from the U.S., as an act of reassurance that it would not attempt to force safeguards upon trusted allies, which played the most important role in breaking the embargo.[314]

Canada's market position was to a great extent supported by the rising demand in the international uranium market, a demand which was for the most part lead by European decisions to adopt nuclear power as a domestic energy alternative. Most certainly, the bouyancy of the market diffused much of the domestic opposition to the embargo from the industry. Growth in Canadian production slowed only temporarily during the embargo[315] but resumed its unprecedented increase after it was lifted. Producers had little to complain about as payments from consumers did not cease during the stockpiling period and it is conceivable that the slowdown in production might have been an unwarranted response of the industry in anticipation of a long dispute concurrent to a breakdown in the cartel. Canadian producers did in fact raise surprisingly little opposition to the embargo. However, given the very tight control the Government exercised over the industry, it is doubtful that a public outpouring of indignation would have served the

---

[313] Infra Ch. V
[314] Keeley, *Policy*, p. 622
[315] see Figure 5-1

interests of the industry in any significant way.

The European embargo would also appear to be a well timed political maneuver designed to seal international support for the Canadian concept of an effective non-proliferation regime. On January 1, 1977 Canada was enmeshed in secret meetings with the world's major nuclear suppliers and had had great success so far in winning the support for its proposals. Canada had only to secure the agreement of the Nuclear Suppliers Group for the acceptance of full scope safeguards as a necessary precondition for exports of nuclear materials. The majority of the NSG had declared support for the concept with the opposition residing mainly with France and West Germany. If these European powers could be made to accept full scope safeguards on their own nuclear activities, then support of all suppliers would surely be forthcoming.

Pressing the Europeans in this fashion was by no means new to the Canadians. Rather, access to Canada's natural resources had been the focus of Canada-European relations since the early seventies with the adoption of the 'Third Option'[316] and the subsequent negotiations on the 'Contractual Link' between Europe and Canada as a counter to American dependence. The *Framework Agreement for Commercial and Economic Co-operation Between the European Communities and Canada* was signed in October of 1976, less than three months before the imposition of the embargo and the linking of energy issues to the agreement formed a major part of the discussions. The Framework Agreement was only a framework and the embargo was an early opportunity to ensure that the conduct of business under that agreement would be favourable to Canadian interests. The atmosphere that was engendered throughout the negotiations, though at times acrimonious, was one of otherwise friendly allies working mutual problems out in a constructive environment. This attitude continued through the embargo and facilitated its ultimate resolution.

In the light of previous public demonstrations of nuclear policy, Canada's position was above reproach, whereas the European image was somewhat tarnished. In the aftermath of the Indian explosion, Canada's actions in pressing for an inviolable safeguard regime to the extent of jeopardising its commercial activities was an atonement for past

---

[316] Mitchell Sharp, "Canada-U.S. Relations: Options for the Future", *International Perspectives*, (Autumn, 1972)

errors. On the other hand, the Governments of West Germany and France had come under attack, both domestically and internationally, for their policies with regard to the export of sensitive nuclear technologies, i.e. reprocessing facilities. West Germany had concluded an agreement with Brazil in June 1975, the so-called 'Sale of the Century'[317] for initially five facilities including two nuclear reactors with options for six more, a uranium enrichment plant and a plutonium reprocessing plant, elements which compose a full fuel cycle.[318] West Germany was also competing with Canada for a similar deal with Argentina[319] and thus exacerbating an already dangerous regional rivalry.[320] France, too, had incurred the wrath of the international community by agreeing to supply Pakistan with a reprocessing plant. Considerable pressure was required before France agreed to abandon the sale earning in the process a reputation as an unscrupulous nuclear supplier.[321] The French have also encountered strong resistance to their proposed activities in South Korea, the Phillipines and Iraq.[322] Therefore, Canada's image was that of righteous crusader for a more stringent safeguards policy against the Europeans, who appeared as self-seeking proliferators.

The embargo continued throughout 1977 and acquired considerable international interest. The route to resolution was opened during the May 1977 London Summit Conference which was largely concerned with energy issues and the problems created by embargoes on energy supplies.[323] The Summit called for the establishment of an International Nuclear Cycle Evaluation (INFCE) which had a mandate to investigate those issues of nuclear policy in which Canada had the greatest concern. Pending the results of the INFCE, an interim agreement between Canada and Euratom was signed on 16 January 1978 allowing Canadian shipments of uranium to be delivered in sufficient amounts to

---

[317] Johannson, Ch. V, p. 42
[318] Norman Gall, "Atom for Brazil - Dangers for All", *Foreign Policy*, 23 (Summer, 1976) 155-60
[319] Johannson, Ch. V, p. 42
[320] Adlai Stevenson, "Nuclear Reactors America Must Act", *Foreign Affairs*, 53 (Fall, 1974): 64
[321] "Nuclear Bluff", *The Weekend Australian*, June 14-15, 1980, p. 2. There is considerable evidence to suggest that France is continuing to supply the reprocessing facility through an Italian licensee with Swiss and Libyan assistance. See "Four Corners", *Australian Broadcasting Commission*, 17 Aug. 1980.
[322] "The Atomic Hit-Squad", *The Australian*, 26 July 1980. French nuclear relations with Iraq have been typified more by their conflict with the Mossad than with political denouciations.
[323] Johannson, Ch. V, p. 37

meet the current needs of the Euratom members.[324] The provisions of the interim agreement were:

1. that Canada be consulted prior to the enriching, reprocessing or storing of any material transferred after 20 December 1974;
2. that Euratom safeguards be applied to all equipment, facilities and materials transferred including subsequent generations and duplicates;
3. that individual bilateral treaties with Community members be concluded with Canada prior to the transfer of sensitive technology;
4. that no Canadian material would be used in French reactors until Euratom safeguards, verified by the IAEA, were applied;
5. that any plutonium derived from Canadian source material would only be used in the French civil nuclear programs.[325]

On announcing the agreement, Minister of External Affairs, Don Jamieson assured the House that:

> ... the agreement will meet all the requirements of the 1974 policy ... All Canadian material going into the Community will be under fully IAEA and Euratom safeguards as they relate to all reactors within the Community, wherever located.[326]

A final agreement has been announced and is to be signed in the fall of 1981. The text of the agreement is as yet unavailable, but it is expected to call for "mutual consent" rather than "prior consent" on reprocessing and enrichment. Instead of a case-by-case appraisal of nuclear programs, Canadian officials will be provided with a detailed long-range information on the reprocessing and enrichment programs of each member state.[327]

Resolution of Canada's differences with Japan, because they rested on more technical and less political problems, was achieved with considerably more ease. Canadian uranium bound for Japan was enriched in the U.S. and hence was subject to both American and Canadian safeguards. This problem of 'double labelling' was further

---

[324] Strempel, p. 40
[325] Strempel, p. 40-41
[326] *House of Commons Debates*, 19 Dec. 1977, p. 1996, as cited by Johannson, Ch. V, p. 39
[327] "Safeguard Pact may Spur New Uranium Orders", *Toronto Globe and Mail*, 7 July 1981, p. B9

aggravated by the application of the contagion principle by the Canadians.[328] However, the issue was resolved through a Canadian-American agreement under the Nuclear Co-Operation Treaty of 1955, to co-ordinate the safeguard policies of the two countries in cases of trans-shipment.[329]

Was Canada successful in its unilateral attempt to establish a uniform safeguard policy which could be held as an example to other suppliers as a model for the international non-proliferation regime? Clearly it was not. Canada, as the supplier nation, lost the right of control over the end use of nuclear materials, agreeing instead to be consulted or in the nebulous terms of the final agreement, to "mutual consent". Not only did Canada also retreat on its insistence on full scope safeguards, particularly in reference to France, but also agreed to a limitation on the 'contagion principle' by restricting the peaceful uses of future generations, duplicates or derived technology, to only plutonium.

The significance of this retreat is not found in its impact on European or Japanese nuclear activities, but rather in the precedent which has been set in allowing special dispensation to Euratom and particularly France, from the application of Canada's strict safeguard policy. Throughout the evolution of Canada's nuclear export policy, there has been a consistent trend toward the universal application of safeguard requirements without exception. The commitment shown toward this goal has been demonstrated on repeated occasions by Canada's willingness to forego economic returns to achieve this goal. The major criticism of a supplier based control over the non-proliferation regime has been its discriminatory policies particularly toward the nuclear weapons states. Canada's favouritism was not toward a state whose exemplary behaviour warranted special consideration on the basis of rewarding good conduct. On the contrary, Canada had excused a country which had derived its nuclear capacity through the perversion of a civilian nuclear power program, had doggedly pursued an independent national nuclear force with an declared will to use it, and had engaged in questionable commercial practises including the export of sensitive technology and equipment to unstable or

---

[328] Keeley, *Policy*, p. 622

[329] *Exchange of Notes betweeen the Government of Canada and the Government of the United States of America Relating to the Agreement for Co-Operation concerning the Civil Uses of Atomic Energy*, 15 November, 1977, Can. T.S. No. 35

irascible regimes through covert means and thereby aggravating regional hostilities. The opponents of the NPT/IAEA regime and many adherents which, for other reasons, feel impeded by the application of stringent safeguards, can hardly be blamed for expecting that they are entitled to equal consideration. Given Canada's desire to establish good economic relations with the European Community, such a retrograde step could only be seen as a subjugation of a moralistic ideal to the economic realities.

Clearly the embargo had in fact jeopardised relations between Canada and Europe, possibly more than had been expected:

> ... bearing in mind what I have said about our wish to maintain good relations with Europe, an obstinate and unreasoning resistance on our part to the resumption of shipments would clearly be taken as an unfavourable act; indeed it has already been so interpreted in some quarters.[330]

However, to conclude that Canada's withdrawal was only because of the threat to future economic relations with the EC is simplistic and possibly quite wrong. The major component in the Canadian-European confrontation was the almost paranoiac drive by the Europeans to obtain energy self-sufficiency. Coming so soon after the 1973 oil embargo, the Canadian uranium embargo, considered to be arbitrary and high-handed, merely confirmed to the Europeans that control of strategic resources, particularly energy, could not even be left in the hands of trusted allies. Complete national control thus became an incontrovertible principle in future European energy negotiations. The relative ease with which Canada had dealt with the naiscent Euratom during the 1965 Uranium Debate, led Canadian officials to underestimate the bargaining power which this principle provided and certainly the strength of its motivation.

However, Canada's position was severely undermined by the decay of supplier control in the nuclear market. Clearly Canada's market position was substantially eroded by the unexpected resumption of uranium exports to Europe by the U.S. and signalled the first threat in six years to the preeminent position which the cartel had held over the uranium market. During the negotiations over the embargo in 1977, negotiations among the cartel members were no doubt taking place in an attempt to wrap up its activities. The cartel would cease to function toward the end of 1978. Members soon would have to engage in open competition among themselves and this would be no time to antagonise

---

[330] Minister of External Affairs, Don Jamieson, *House of Commons Debates*, 19 December 1977, as quoted by Johannson, Ch. V, p. 39

potential clients by continuing to support the Canadian embargo. The Fraser Government in Australia announced in August of 1977,[331] after an extensive study by the Fox Royal Commission,[332] that it would lift restrictions on uranium export which would allow Australia to take the lead as a world uranium supplier. The U.S. House of Representatives Subcommittee was further closing in on cartel participants requiring that they keep a low profile and with U.S. resumption of exports acting directly against the interests in the cartel, the Canadian government could no lohger rely on its support.

Canada was also losing the support of th NSG for its proposals. The resolve of the non-European members was beginning to wane, and it was becoming clear that support for the application of full scope safeguards was not as strong as first thought. As the final position of the NSG was announced in February of 1978, it must have been clear to the Canadians late in 1977 that they could similarly not rely upon the support of the NSG members in their confrontation with the Europeans. Canada had therefore entered into the embargo in January of 1977 under the justifiable impression that its chances of succeeding in pursuading the Europeans to accede to its demands were very good. However, Canada had pressed the supplier based regime past its limits and had created a gap between the interests of consumers and the demands of suppliers greater than the regime could span.

Clearly the seeds of decay were already laid in the cartel and when pressed the structure necessarily began to collapse. In the scramble to retain as much as possible from the crumbling organisation members hastily attempted to secure their future positions. This scramble is exemplified by Australia's efforts to secure framework agreements with the major consuming nations during and immediately subsequent to the fall of the cartel. Australia also initially insisted on prior consent before supplied items could be transferred beyond the jurisdiction of the recipient, enriched to more than 20% or reprocessed.[333] However, in treaty negotiations early in 1978 with the U.K., Euratom and Japan, Australia abandoned this insistence entirely agreeing instead to be informed of

---

[331] Prime Minister Malcolm Fraser, *Commonwealth Parliamentary Debates (House of Representatives)*, 25 August 1977, p. 646

[332] Justice F. Fox, *Ranger Uranium Environmental Inquiry: First Report* (1976) and *Second Report* (1977), (Canberra: Australian Government Publications Services)

[333] Bell, p. 26

the disposition of supplied materials.[334] The Fraser Government also stated a willingness to negotiate safeguard provisions with 'responsible nations' in terms of other economic considerations.[335] Thus the cracks in the supplier based non-proliferation regime were quickly widened by the wedge of commercial competition.

The results of Canada's unilateral attempt to establish an effective international non-proliferation regime were dramatically contrary to those which were intended. Rather than secure the compliance of all nations participating in nuclear activities through the establishment of a supplier based control regime with co-ordinated export policies, Canada, by curtailing supply of a strategic resource, actually stiffened opposition to such a regime and created an incentive, toward the development of more self-sufficient nuclear technologies embodied in the plutonium economy. This action further encouraged additional movement toward the formation of an alternate supply regime, one which is attractive because of its reduced costs, limited imposition on national sovereignty and compatibility with the concept of self-sufficiency in the developing world.[336] Further, rather than placing itself in the leading role envisioned by the Cabinet memorandum of 1974, Canada actually has damaged its international reputation as a stable nuclear supplier by appearing to act in an arbitrary manner and to have succumbed to economic pressures in the pursuance of its principles. It became clear that as a product of the embargo, the loss of future sales opportunities would restrict Canada's on-going ability to influence the nuclear policies of consuming nations.[337] Finally, rather than improve the market situation for Canadian domestic uranium producers by creating artificial forces in the international market, the Canadian Government has in reality placed those producers in a desperate situation. The cartel created artifically high prices based on an artifical demand inducing the industry to produce well above real consumption. The result has been a glut on the market far worse than the normal chronic state of oversupply. It has taken some time but this disastrous situation is finally taking its toll with the closure of less efficient Canadian mines.[338]

---

[334] Ibid.
[335] *The Weekend Australian*, 20-21 May 1978
[336] India has concluded nuclear co-operation agreements with Argentina and Brazil.
[337] Johannson, Ch. V, p. 39
[338] Eldorado Nuclear will be closing its Uranium City mine on June 30, 1982, putting 800 people out of work and virtually guaranteeing the demise of Uranium City itself with a population of 25,000. See *The Globe and Mail*, December 4, 1981.

Canada's flirtation with unilateralism in its drive to establish an effective non-proliferation regime was not a successful one. It does however, represent the culmination of its push to implement a policy considered by Cabinet to be one which held precedence over other foreign policy goals. Of particular significance was the almost total disregard for Canada's economic position vis-a-vis its desire to implement its nuclear export policy in its confrontation with Japan and Europe. This disregard included not only the economic interests of the Canadian uranium industry, but also threatened Canadian relations with the world's major economic powers under the terms of the 'Third Option'.

Thus the Canadian uranium embargo forms the apex of Canadian attempts to implement a paramount foreign policy goal. Its failure to do so represents a critical point in the pursuance of that goal. Canadian policy makers previously had been plagued with the conflict between economic interests and the desire to establish an effective non-proliferation regime. Repeatedly, this conflict had resulted in the negotiation of the terms of one goal at the expense of the other. However, subsequent to the 1974 Cabinet memorandum, this conflict was resolved. No longer would the pursuance of economic goals detract from the implementation of Canadian export policy. On the contrary, the resources which had been previously invested in achieving the former would now be put toward a single purpose. It was the object of the Government of Canada to use all the resources at its disposal to form the supplier nations into a cohesive international unit in order to create an effective and workable international regime.

Once set, the implementation of a specific foreign policy, under a statist analysis, is subject to resistance from domestic and international sources. In the case of Canadian uranium export policy, domestic resistance was slight due to the considerable control which the Prime Minister and Cabinet exercised over the nuclear industry as a whole. Thus it was possible for the central decision-making unit to use the economic well-being of the Canadian industry to buttress its international position on the more valued goal of establishing an effective non-proliferation regime. By acting unilaterally vis-a-vis both

---

[33](cont'd)Kerr-Addison's Agnew Lakes mine in Ontario is also nearing closure, see *Financial Post*, 1 Aug. 1981

external and internal interests, the Government of Canada was further demonstrating its ability to act autonomously in seeking goals which it had set for itself.

Having identified a set of objectives does not, however, guarantee that they can be realised. Canada's failure to implement its most favoured foreign policy goals must be explained in terms of the nature and competing forces of the international community and the applicable theories of international relations. The statist approach, at this point, is of no further benefit as an analytical tool. However, the process by which Canada can come to the threshold of its international interactions as an apparently unified actor can be explained by a statist view of the foreign policy decision-making process. In doing so it may be possible to integrate these two approaches to the study of international affairs and to bridge the gap between foreign policy as a manifestation of the domestic needs of society and as a response to the dictates of the conflicting powers of the international community.

VII. A Statist View of Canadian Nuclear Export Policy

The evolution of Canadian uranium export policy has been characterised by a continual refinement and clarification of the precise focus and relative salience of two basic policy goals. Canada has sought consistently to ensure that the export of Canadian uranium would not endanger the security of the international community by contributing to the proliferation of nuclear weapons. When there has been satisfactory evidence that this condition has been met, then Canada has attempted to secure markets for its exports of uranium in a highly competitive international market place. It has been a laborious process and sometimes one which was not totally satisfactory when the obligations obtained from consumers were assessed against the commitments necessary to successfully halt nuclear proliferation. But the process was one of refinement and the outcome of each negotiation provided information on the scope of these necessary commitments and their costs in terms of future sales. This information was incorporated into future negotiations, the refinement process continuing until there could be no more mutual exchange of safeguards for sales. In this final confrontation, the Government chose to place many of its political resources, including those committed to fostering a better economic relationship with the major economic powers in order to relieve itself from an unhealthy dependency on the United States, behind the pursuance of an effective non-proliferation regime. From a statist point of view, this decision is consistent with the historical course which the Canadian government has plotted in uranium policy and supports the concept of the state acting independently within the constraints set by its domestic and international context.

Krasner's statist approach to foreign policy appears most appropriate as an analytic framework in the case of Canadian uranium export policy. There is a distinct pattern in the evolution of this policy which clearly establishes a set of preferences, hierarchically ordered and persistent over time, which has guided the formulation of Canadian uranium policy for the last four decades. This policy is one selected to accommodate the demands of domestic and international interests while also meeting the goals which the state has set for itself. In the conduct of Canadian foreign policy, the legitimate range of policy alternatives is limited by the demands of various domestic interests, and by the international context within which those policy choices are

implemented. Within those international and domestic constraints, the state operates with relative independence according to the goals it has set for itself.

In the formulation of Canadian nuclear export policy, the Prime Minister and Cabinet have acted "with a will and a purpose" of their own. As a central decision making unit "sufficiently insulated from specific societal pressures", the Prime Minister and Cabinet have had the latitude necessary to take independent action to fulfil the primary objectives of Canadian nuclear policy. Through the legislative and institutional structure of the production and marketing of Canadian uranium, the central decision making unit has had direct and exclusive control over nuclear export policy. It has further demonstrated on repeated occasions a propensity to use this control, through active intervention in the industry at home and abroad, to secure policy goals in the areas of both domestic economic policy and foreign policy. In doing so, the Prime Minister and Cabinet have taken steps to remove uranium issues from public debate, to the point of legislating against such debate, and have frequently carried out policy deliberations and implemented policy in secret.

The control by the Prime Minister and Cabinet over domestic political and economic policy with regard to uranium exploitation and export has been absolute. Given the lack of public concern over the issues associated with uranium export, it would appear that the policy choices made by the central decision making unit were well within domestic constraints. The failure of the Government of Canada to implement its policy goals arose from an attempt to pursue a policy which was unacceptable in the international context and therefore encountered substantial resistance.

Krasner, in his studies of American foreign economic policy, concentrates upon the degree to which domestic resistance acts to foil the implementation of foreign policy. His examination shows the United States to be a 'weak state' in that in the relationship between the state and its society, policy makers do not have the power to overcome resistance from the private sector or other sub-state actors.[33] This weakness arises from the fragmentation and decentralisation of political power and the ease of pluralist access and private penetration of the governmental system of the United

---

[33] Stephen Krasner, "A Statist Interpretation of American Oil Policy Toward the Middle East", *Political Science Quarterly*, 94:1 (Spring, 1979) pp. 80

States.[340]

The problem in the Canadian context is, of course, quite different. In the case of Canadian uranium export policy, the Government of Canada is by no means weak. According to Krasner's criteria, a strong state is one which can resist private pressure, effectively persuade private interests to follow policies which further the goals of the state, and to slowly change the economic environment of those private actors.[341] Using these criteria, Canada can be characterised as having a strong state structure. To parallel the American example in the Canadian case, there is limited opportunity for public access to the nuclear policy formulation process with the decision making structure highly centralised and subject to the direct control of the central decision making unit. The general conclusion to be drawn from Canada's failure in its final confrontation with these major economic powers, is that the Government of Canada has greater ability to implement its policies in the context of its own society than as a nation in the international community. The United States, on the other hand, has relatively weak state structure domestically but once policy is agreed upon by domestic actors, is relatively much stronger in the international arena.

The value of this observation is in the comparative opportunity which Krasner's statist perspective offers in the examination of the foreign policies of a variety of nations. This study does not provide a direct comparison of the responses of Canada and the United States to a similar international event. However, there is sufficient evidence upon which to speculate on how a foreign policy response is formulated and implemented in the 'strong' and 'weak' state structures. In either structure, the state is a coalition of forces, under the direction of a central decision making unit, with a selection of instruments through which policy choices may be implemented.[342] The cohesiveness of the coalition and the extent and persuasive or coercive power of those social instruments vary widely across the nations of the world. While the United States may have a relatively decentralised governmental system or a limited ability to influence specific sectors of society or the economy, Canada, in this case, has a formidable array

---

[340] Stephen Krasner, *Defending the National Interest: Raw Material Interests and U.S. Foreign Policy*, (Princeton: Princeton University Press, 1978) pp. 61-70
[341] Krasner, *National Interest*, p. 57
[342] Peter Katzenstein "Introduction: Domestic and International Forces and Strategies of Foreign Economic Policy", *International Organisation*, 31:4 (Autumn, 1977) p. 599

of institutions which can exert considerable influence generally and in specific sectors. The primary difference in responding to a common international issue is the focus of attention of the state, or the degree to which the central decision making unit must comply with the wishes of various sectors in order to avoid significant resistance to its policy choices. Therefore, the substantial control which the Government of Canada held over the domestic interests in the formulation of Canadian foreign policy enabled the state to favour a more internationalist policy, at the expense of domestic economic interests. Decision makers in the United States, on the other hand, must concern themselves with avoiding domestic resistance, particularly from the private sector, and hence draft policies aimed at favouring domestic demands while confident that once set, international resistance will likely be insufficient to impede their implementation. Thus the probable course of national policy makers in confronting a common international issue will depend upon differences in the state structures.

These observations make it possible to comment upon the impact of the statist analysis on the study of Canadian foreign policy in general. Canada, to its credit, often has taken an independent stance on international issues. There also has been a long tradition in Canadian foreign policy of an aloofness on the part of foreign policy decision makers from public debate over international issues which, in turn, has enabled them to direct their attentions away from domestic demands raised as a result of this debate, and to act in accordance with the competing forces of the international arena. The liberal-internationalist perspective attributes this to a public which is ill-informed of the complex issues of international relations and hence unworthy of participation in policy deliberations, thus allowing foreign policy decision makers to act in an autonomous capacity. It would appear from a statist perspective, however, that this rift between policy makers and the public would be by design of the state.

In accordance with the theoretical grounding of the realist perspective in the 'great power' theorists, the ability of the Government of Canada to successfully implement its policies is based upon the strength and diversity of those social instruments which it can utilise to secure compliance with its policies. In this case the Government of Canada exerts considerable control over the domestic determinants of the foreign policy formulation process which make it possible to subordinate domestic

interests to the more valued objectives of the international community. To do so, however, the Government is acting not only autonomously, but as a separate entity and according to its own perceptions and objectives. However, the conclusions which may be drawn from the analysis of uranium export policy might not be valid for other areas of Canadian foreign policy in which the Government does not wield such absolute control. A statist analysis would predict that in such cases, the implementation process would favour domestic interests in order to minimise resistance from that quarter.

Canada's international activities primarily arise from its heavy involvement as a trading nation. It is therefore, in most cases, relatively easy to separate domestic interests from the demands of the international community. As a result, a statist analytic framework can provide a useful structure for the analysis of the Canadian foreign policy formulation process. It is a dangerous presumption to suggest that past behaviour may predict future performance in any sphere of politics. However, if the issue is one which has been confronted on several prior occasions and the conflict between contending objectives has become clearly defined, then a consistent response may indicate which direction policy makers may choose in future. Thus when the selection of contending positions falls between the satisfaction of domestic interests and a valued but more general international goal, the relationship between the state and its society becomes an important factor in deciding the outcome. As this is a relatively common conflict in Canadian foreign policy, the statist perspective becomes a valuable analytic tool.

The Statist Perspective and the National Interest

It is Krasner's contention that a set of preferences, hierarchically ordered, persistent over time and generally related to the goals of society defines the national interest. This is broadly compatible with traditional theorists from the realist perspective of international relations who argue that decision makers respond consistently to a set of objectively recognisable external determinants which govern the course which policy must take. However, is it reasonable to assume that because a state consistently chooses a course of action which follows a path of least resistance, that it is necessarily satisfying the national interest?

The crucial distinction between Krasner's and the traditional approach is that the statist approach is an inductive model as opposed to the more determinist deductive

model of the traditionalists. This is a legitimate distinction to make, but one to which Krasner has not strictly adhered. By demonstrating that the structure of a nation and the relationship between the state and its society are principal elements of the choices of decision makers, Krasner has merely identified another determinant to be placed beside other geo-political or economic determinants of the national interest. This in no way demeans Krasner's contribution in identifying such a crucial factor, nor the methodological contribution in the indentification of decision makers' perceptions of the national interest. However, in the same way that strategic, economic or geographic considerations do not in isolation absolutely determine the national interest, neither does the relationship of the state to its society.

On the other hand, by focusing on the perceptions of the national interest which decisions makers hold, through the statist perspective Krasner offers a mechanism with which to compare the objective assessments of the theoreticians with the subjective assessments of the practitioners. Because of the opposing logical processes of the traditional deductive approach and Krasner's inductive method, it is entirely conceivable that conclusions derived from each could yield totally different results. Krasner then makes the justifiable claim that the greatest defence of the statist approach is the ability of the state to make mistakes. Conversely, the statist perspective has an equal ability to falsify the pronouncements of theoreticians.

Krasner's concept of the national interest is very different from that which has come into common usage in the study of international affairs. There are indeed similarities and possibly a great deal of congruency between those issues of national interest identified by Krasner and those identified by the traditional analysts. Ultimately, however, Krasner's concept is but a reflection of the national interest, an indication of what it might or is perceived to be, but it cannot be called legitimately 'the national interest'. Only within the terms of the statist analysis may this distinction be disregarded. If the conclusions derived from such an analysis are to be integrated into further analyses in which there is a more conventional understanding as to the definitions and meaning of these terms and concepts, some attempt must be made to ensure that Krasner's 'national interest' is synonymous with the more universally accepted concept. To merely require that the policy choices of decision makers be consistent with the general goals of

society is just not sufficient.

Because of these two problems, the failure of the statist approach to adequately accommodate other determinants of the national interest and the lack of integration between statist and traditional concepts of the national interest, Krasner's statist approach is unable to provide adequate explanations for the content of policy choices. Throughout this study, questions have been raised concerning the propriety and effectiveness of the methods used in implementing the primary goals of Canadian uranium export policy. Although a statist analysis can identify decision makers in error or in conflict with contextual circumstances, it has no facility through which to explain the implementation of policies which have been selected to serve the national interest, but in fact are ultimately not in the interests of the nation at all. For example, as consistently as Canadian decision makers chose effective safeguards over economic considerations, Canadian negotiators were bargaining those commitments away. In all fairness, safeguard provisions were continually tightened and improved, but it was a long learning experience and not without its casualties. Possibly in this and other instances where it is the process by which policy is implemented rather than the policy itself which is the focal point, a bureaucratic bargaining approach may have greater utility. However, this is not a serious conflict for, like its predecessors, the statist approach is a 'grand theory', dealing with issues and concepts on a large scale and leaving the details to others.

However, a more serious question has been raised concerning Canada's participation in the uranium producer's cartel. Regardless of the acceptability of Canada's initial motivations, the cartel was an artificial market structure. In any artificial manipulation of the market, there is a price which ultimately will have to be paid if it is to be returned at some point to the mechanisms of free competition. The cartel created conditions which stimulated production in an industry which has and will be chronically over supplied. It indirectly also created an artificial demand for uranium with doomsday accounts of uranium supply shortfalls during a time of general insecurity about energy supplies. As a result of this fit of activity, there is now no demand for uranium as consumers have been left with huge stockpiles of fuel for reactors which remain subject to long political and regulatory battles. Thus the uranium industry is now in an abysmal state and looking forward to conditions possibly worse than it has ever experienced

before, not just as a result of the cartel, but because of the expectation established within the industry that it need not respond to natural economic forces and that somehow, someone will bail them out.

At the outset, the cartel was formed as an organisation which would bring order to an unstable international market. This was accomplished in a matter of months and is an action consistent with the pursuit of one of the primary goals of Canadian nuclear export policy. Yet, this organisation proceeded to raise prices and allocate market shares, ultimately creating a situation in the industry far worse than that which had brought it about. It appears exceedingly unlikely, given the fundamental role of the participant governments in the operations of the cartel, and its relatively simple structures and procedures, that the Government of Canada was unwittingly duped into price fixing activities. In this instance, an instrumental Marxist analysis might more appropriately explain the relationship between the interests of the industry and those of the Canadian government in the development of the cartel, particularly in reference to the intimate relationship which the Government of Canada had with Gulf Minerals of Canada during the initial stages of the U.S. Senate Subcommittee inquiry into the uranium cartel.[343] Again, this becomes a procedural analysis rather than an examination of the greater question. However, if a Marxist perspective is adopted at this detailed level, it is a natural extension to use a similar perspective on the more general question. The pursuit of non-proliferation at the expense of economic returns might be considered altruistic, a concept which is not easy to explain in any context, but especially in international affairs. However, if the non-proliferation of nuclear weapons is considered to be crucial to the maintenance of an international system which favours the interests and activities of capital, then the actions of the Government of Canada would be consistent with a structural Marxist perspective.

As with other applications of the statist perspective,[344] the structural Marxist approach offers a parallel explanation which is difficult to counter. It is in this case, however, also difficult to apply in detail, and must yield to the conceptual simplicity of

---

[343] see Infra, Chapter V

[344] Stephen Krasner, *Defending the National Interest: Raw Material Interests and U.S. Foreign Policy*, (Princeton: Princeton University Press, 1978) pp. 332-333 and, "A Statist Interpretation of American Oil Policy Toward the Middle East", *Political Science Quarterly*, 94:1 (Spring, 1979) pp. 95

the statist approach. The Government of Canada, because of its high degree of control over the uranium industry, acted autonomously in setting uranium export policy according to its own set of goals. The motivations behind Canada's participation in the cartel were less lofty than those ascribed to it by a Marxist analysis. The initial purpose of the cartel was to stabilise the international uranium market. In achieving this end, it was a dismal failure; an error in judgement by the central decision makers and a demonstration of the full autonomy which is bestowed upon the state by Krasner's statist perspective.

Nonetheless, Canada's efforts in establishing an effective non-proliferation regime have been carried out with the 'best of intentions'. The Government of Canada, since its founding involvement in the development of nuclear energy, has demonstrated a commitment to the non-proliferation of nuclear weapons by placing its economic considerations on the bargaining table equally beside its concern for the imposition of adequate safeguards. The terms of that trade have not always been satisfactory, conceivably because of the act of trade itself. Nuclear commerce need not necessarily be in conflict with international security. Conditions for the export of uranium can be designed to recognise the legitimate interests and concerns of all parties, to remain non-invasive of domestic sovreignty but still to provide adequate assurance of the peaceful use of such materials. However, once established, these conditions should then be non-negotiable. To negotiate safeguards in terms of economic considerations imparts a great deal of suspicion to the nuclear marketplace and thereby undermines the effectiveness of any international regulatory regime.

The NPT/IAEA is currently the prevailing non-proliferation regime. The mechanism of its control is by no means perfect, having created or sustained conflicts and inequalities throughout the international community and thus gaining less than universal acceptance. It has however, created a threshold past which nations intent on acquiring a nuclear device are forced to make an unambiguous decision to do so. The economic and political costs of such a decision have been made very high, and to even weigh those costs is an indication to the international community of those intentions. It is difficult to expect that any non-proliferation regime could effectively stop any nation intent on acquiring a nuclear device from doing so eventually. Although the NPT/IAEA regime may not be wholly successful, it has so far maintained a level of nuclear security sufficient to

discourage all but the most determined. That, of course, is not to say that there is not considerable scope for improvement.

The benefits of Canada's efforts toward establishing an effective non-proliferation regime are not restricted to the control of nuclear technology alone. There is an increasing number of technologies which have the capacity to destroy or critically damage our human existence, or to transform our society faster than we can adapt. Nuclear energy was only the first. International participation is essential for the optimal and safe utilisation of the complex and potentially hazardous technologies which surround genetic engineering, artificial intelligence, pathogenic pesticides and herbicides, industrial use of space, disposal of toxic chemical wastes, undersea resource exploitation and of course, pollution of the environment. Canada's efforts in the field of nuclear non-proliferation have not successfully produced a fully effective international regulatory regime. However, there now exists a blueprint, an institutional prototype for the control over the growing array of technologies which have the capacity to bring both prosperity and catastrophe.

Canada might have endured some economic sacrifices in the pursuit of its goals. These sacrifices however, are inherent in the responsibilities of a nation which has led the world in the development of such a major technological advancement. To evade this responsibility is to lose the opportunity to set the course of its progress. But through the formulation and implementation of effective and responsible policies, Canada might assist the world in taking early action regarding this and other potentially hazardous technologies, thus avoiding the repetition of some appallingly painful apprenticeships.

BIBLIOGRAPHY

BOOKS

Axline, Andrew; Hyndman, James A.; Lyon, Peyton; and Molot, Maureen A. eds. *Continental Community? : Independence and Integration in North America.* Toronto: McClelland and Stewart, 1974.

Bull, Hedley. *The Anarchical Society: A Study of Order in World Politics.* New York: Columbia University Press, 1977.

Dewitt, D.B. and Kirton, J.J. *Canada as a Principal Power: International Politics and Foreign Policy in a Changing Global Environment* Toronto: John Wiley and Sons, Canada, forthcoming 1982.

Dobell, Peter C. *Canada's Search for New Roles: Foreign Policy in the Trudeau Era.* Toronto: Oxford University Press, 1972. for Research on Public Policy, 1980.

Doern, Bruce G. and Morrison, Robert W., eds. *Canadian Nuclear Policies.* Montreal: The Institute for Research on Public Policy, 1980.

Doern, G. Bruce. *Government Intervention in the Canadian Nuclear Industry.* Montreal: Institute for Research on Public Policy, 1980.

Eayrs, James. *In Defense of Canada.* Vols. 1,2,3,4. Toronto: University of Toronto Press, 1964, 1965, 1972, 1980.

Epstein, William. *The Last Chance.* New York: The Free Press, 1976.

Epstein, William. *Disarmament: Twenty Five Years of Effort.* Toronto: Canadian Institute of International Affairs, 1972.

Fox, Annette Baker, Hero, Alfred O., Jr. and Nye, Joseph S., eds. *Canada and the U.S.: Transnational and Transgovernmental Relations.* New York: Columbia University Press, 1974.

Gordon, J. King, ed. *Canada's Role as a Middle Power.* Toronto: Canadian Institute for International Affairs, 1966.

Hempel, C.G. *Aspects of Scientific Explanation and Other Essays in the Philosophy of Science.* New York: The Free Press, 1965.

Hermann, Charles F. *Crises in Foreign Policy.* Indianapolis: Bobs-Merill, 1969.

Holmes, John. *The Better Part of Valour: Essays on Canadian Diplomacy.* Toronto: McClelland and Stewart, 1970.

Holmes, John. *Canada: A Middle Aged Power.* Toronto: McClelland and Stewart, 1976.

International Atomic Energy Agency. *A Short History of Non-Proliferation.* Vienna: International Atomic Energy Agency, 1976.

Johannson, P.R. *Nuclear Exports and Canadian Foreign Policy.* Unpublished Manuscript, 1981.

Keohane, Robert and Nye, Joseph. *Power and Interdependence: World Politics in Transition.* Boston: Little Brown, 1977.

Krasner, Stephen. *Defending the National Interest: Raw Material Interests and U.S. Foreign Policy.* Princeton: Princeton University Press, 1978.

Levitt, Kari. *Silent Surrender: The Multinational Corporation in Canada.* Toronto: Macmillian of Canada, 1970.

Lyon, Peyton and Tomlin, Brian. *Canada as an International Actor*. Toronto: Macmillian, 1979.

Lyon, Peyton V.. *Canada In World Affairs: 1961-63*. Toronto: Oxford University Press, 1968.

Morgenthau, Hans. *Dilemmas of Politics*. Chicago: University of Chicago Press, 1958.

Morgenthau, Hans. *Politics Among Nations*. 3rd ed. New York: Alfred A. Knopf, 1963.

Organization for Economic Cooperation and Development Nuclear Energy Agency and International Atomic Energy Agency. *Uranium: Resource, Production and Demand*. Paris: Organization for Economic Cooperation and Development, December, 1979.

Paige, Glenn D.. *The Korean Decision*. New York: The Free Press, 1968.

Panitch, Leo, ed. *The Canadian State: Political Economy and Political Power*. Toronto: University of Toronto Press, 1977.

Stepan, Alfred. *The State and Society: Peru in Comparative Perspective*. Princeton: Princeton University Press, 1978.

Stockholm International Peace Research Institute. *Nuclear Energy and Nuclear Weapon Proliferation*. London: Taylor and Francis Ltd., 1979.

Stockholm International Peace Research Institute. *Nuclear Proliferation Problems*. Stockholm: Almqvist and Wiksell, 1974.

Stockholm International Peace Research Institute. *World Armaments and Disarmament: SIPRI Yearbook, 1975*. Stockholm: Almqvist and Wiksell, 1975.

Taylor, June H. and Yokell, Michael D. *Yellowcake: The International Uranium Cartel*. New York: Pergamon Press, 1979.

Truman, David B. *The Government Process: Political Interests and Public Opinion*. New York: Knopf, 1971.

Tucker, Michael. *Canadian Foreign Policy: Contemporary Issues and Themes*. Toronto: McGraw-Hill Ryerson, 1980

United Nations and Disarmament 1945-70. New York: United Nations Publications, 1970

Warnock, John. *Partner to Behemoth: The Military Policy of a Satellite Canada*. Toronto: New Press, 1970.

York, Herbert F., ed. *Arms Control: Readings from Scientific American*. San Francisco: W.H. Freeman and Co., 1973.

ARTICLES, PAPERS AND MONOGRAPHS

Allison, G.T. and Halperin, M.H. "Bureaucratic Politics: A Paradigm and Some Implications." in Tanter, Raymond and Ullman, Richard. *Theory and Policy in International Relations*. Princeton: Princeton University Press, 1972.

Anderson, Ian. "With a Little Help Among Friends." *Maclean's* 94:23 (June 8, 1981): 22-23.

Baker, Steven. "Monopoly or Cartel?." *Foreign Policy*. 23 (Spring, 1976): 202-220.

Ball, Desmond. "Australia and Nuclear Non-Proliferation." *Current Affairs Bulletin* 55:11 (April, 1978): 16-30.

Bloomfield, Lincoln. "Nuclear Spread and World Order." *Foreign Affairs* 53 (Summer, 1975): 743-755.

Brecher, Michael, Steinberg, Blema, and Stein, Janice. "A Framework for Research on Foreign Policy Behaviour." *The Journal of Conflict Resolution*. 13:1 (March, 1969): 75-102.

Bull, Hedley. "Rethinking Non-Proliferation." *International Affairs* (London) 51 (Spring, 1975): 175-89.

Cohen, Samuel T. "Enhanced Radiation Warheads: Setting the Record Straight." *Strategic Reveiw*. 6 (Winter, 1978): 9-17.

Doub, D.O. and Dukert, J.M. "Making Nuclear Energy Safe and Secure." *Foreign Affairs* 53 (Summer, 1975): 756-72.

Eckstein, Harry. "Case Study and Theory in Politcal Science." in Greenstein, Fred I. and Polsby, Nelson W., eds. *Handbook of Political Science*. Vol. 7. Don Mills: Addison-Wesley, 1975.

Friedman, Todd. "Israel and the Atom." *Bulletin of the Atomic Scientist* 30: 30-36.

Gall, Norman. "Atom for Brazil - Dangers for All." *Foreign Policy* 23 (Summer, 1976): 155-201.

Gourevitch, Peter. "The Second Image Reversed: The International Sources of Domestic Politics." *International Organization*. 32:4 (Autumn, 1978): 881-911.

Hunt, Constance D. "Canadian Policy and the Export of Nuclear Energy." *University of Toronto Law Journal*. 27:1(Winter, 1977): 69-104.

Indyk, Martin. "Australian Uranium and the Non-Proliferation Regime." *The Australian Quarterly* 49:4(December, 1977): 4-35.

Johannson, P.R. "Politics, Parliament and Foreign Policy - the 1965 Uranium Debate." Paper Presented to the Canadian Political Science Association; Montreal, June, 1980.

Johannson, P.R. and Thomas, J.C. "Canada's Nuicear Dilemma: Promotion vs. Regulation." Unpublished Manuscript, 1979.

Johannson, P.R. and Thomas, J.C. "A Dilemma of Nuclear Regulation in Canada: Political Control and Public Confidence." *Canadian Public Policy*. VII:3 (Summer, 1981): 433-443.

Katzenstein, Peter. "Introduction: Domestic and International Forces and Strategies of Foreign Economic Policy." *International Organization*. 31:4(Autumn, 1977): 587-606.

Katzenstein, Peter. "Conclusion: Domestic Structures and Strategies of Foreign Economic Policy." *International Organization* 31:4(Autumn, 1977): 879-920.

Keeley, James F. "Non-Proliferation in the 1980's: A House Built on Sand." Unpublished paper presented to the Canadian Political Science Association, Montreal, June 1980.

Keeley, James F. "Canadian Nuclear Export Policy and the Problems of Proliferation." *Canadian Public Policy*. 6:4 (Autumn, 1980).

Krasner, Stephen. "A Statist Interpretation of American Oil Policy Toward the Middle East." *Political Science Quarterly*. 94:1 (Spring, 1979): 77-96.

Lecraw, D.J. "Economic Rationale for Canada's Future Uranium Policy." *Resources Policy* 5.3 (September, 1976): 208-216.

Lijphart, Arend. "Comparative Politics and the Comparative Method." *American Political Science Review* 65.3 (September, 1971): 682-693.

Mandelbaum, Michael. "A Nuclear Exporters Cartel." *Bulletin of the Atomic Scientist* 33:1 (January, 1977): 42-50.

Morland, Howard. "The H-Bomb Secret: To Know is to Ask Why." *The Progressive* 43:11 (November, 1979): 14-23.

Morrison, Barrie and Page, Donald M. "India's Option: The Nuclear Route to Achieve Goal as World Power." *International Perspectives* (July/August, 1974): 23-26.

Myrdal, Alva. "Peaceful Nuclear Explosions." *Bulletin of the Atomic Scientist*. 31: 29-33.

Quester, George H. "Can Proliferation Now Be Stopped?" *Foreign Affairs* 53 (Fall, 1975): 75-97.

Ranger, Robin. "NATO's New Great Debate: Theatre Nuclear Force Modernisation and Arms Control." *International Journal* 36:3 (Summer, 1981): 556-574.

Rose, D.J. and Lester, R.K. "Nuclear Power, Nuclear Weapons and International Stability." *Scientific American* 238:4 (April, 1978): 45-57.

Roser, Thomas. "Nuclear Energy and International Relations: The Case for the Federal Republic of Germany." *Proceedings of the 73rd Annual Meeting of the American Society of International Law*, Washington, D.C., Apr. 26-28, 1979, pp. 169-70.

Schelling, T.C. "Who Will Have the Bomb." *International Security* 1:1(Summer, 1976): 77-91.

Sharp, Mitchell. "Canada-U.S. Relations: Options for the Future" *International Perspectives*. (Autumn, 1972).

Sheinman, Laurence. "Security and the Transnational System: The Case of Nuclear Energy." *International Organization*. 25:3 (Summer, 1971): 626-649.

Stevenson, Adlai. "Nuclear Reactors: America Must Act" *Foreign Affairs*. 53 (Fall, 1974): 64-78.

Stewart, Larry R. "Canada's Role in the International Uranium Cartel." *International Organization* 35:4 (Autumn, 1981): 657-689.

Stewart, Walter. "How We Learned to Stop Worrying and Sell the Bomb." *Maclean's*. 87:11 (November, 1974): 29-33.

Strämpel, Ulrich. "The Forgotten Link: Canada - EURATOM, and Canada - European Nuclear Relations, 1959 - 79" Unpublished paper presented to the Canadian Political Science Association, Banff, Alberta, 12-14 Dec., 1980.

Verba, Sydney. "Some Dilemmas in Comparative Research." *World Politics*. 20:1 (October, 1967): 111-127.

Willrich, G. and Marston, B. "Prospects for a Uranium Cartel." *Orbis*. 29:1 (Spring, 1975): 167-84.

"Four Corners." *Australian Broadcasting Commission*. 17 Aug. 1980.

"Gulf Denies Responsibility for High Uranium Price" *Northern Miner*. June 16, 1977

"Nuclear Bluff." *The Weekend Australian*. June 14-15, 1980. p. 2.

"Safeguard Pact may Spur New Uranium Orders." *Toronto Globe and Mail*. 7 July 1981. p. B9

"The Atomic Hit-Squad." *The Australian*. 26 July 1980.

"Uranium Market Seeing Fundemental Change." *Northern Miner*. July 17, 1980.

GOVERNMENT DOCUMENTS

Australia. House of Representatives. Justice F. Fox. *Ranger Uranium Environmental Inquiry: First Report* (1976) and *Second Report* (1977). Canberra: Australian Government Publications Services.

Canada. Auditor General of Canada. *Report of the Auditor General*, 1977. Ottawa: Information Canada, 1977.

Canada. Department of External Affairs. *Foreign Policy for Canadians*. Ottawa: Information Canada, 1970.

Canada. Department of Consumer and Corporate Affairs. Restrictive Trade Practises Commission. *The State of Competition in the Canadian Petroleum Industry*. Ottawa: Minister of Supply and Services, 1981.

Canada. Department of External Affairs. *A Foreign Policy For Canadians*. Ottawa: Minister for Supply and Services, 1972.

Canada. Parliament. *Report of the Royal Commission on Corporate Concentration*. Ottawa: Minister of Supply and Services, 1978.

Canada. Revised Statutes. *Atomic Energy Control Act*. R.S.C. 1970, C. A-19, S. 17.

Canada. Revised Statutes. *The Combines Investigation Act*. R.S.C. 1970, C-23, S. 1.

Canada. Revised Statutes. *Export and Import Control Act*. R.S.C. 1970, C. E-17.

Canada. Revised Statutes. *Uranium Information Security Regulations*. SOR/76-644. 23 Sept. 1976.

Canada. Senate. Report of the Senate Committee on Science and Technology (The Lamontagne Committee). *A Science Policy for Canada*. 3 Vols. Ottawa: Information Canada, 1970-73.

Canada. Treaty Series. *Agreement between the Government of Canada and United States of America for Co-operation in Atomic Energy*. 15 June, 1955. Can. T.S. (1955) No. 15.

Canada. Treaty Series. *Agreement between the Government of Canada and India Co-operation in the Peaceful Uses of Atomic Energy*. 28 April, 1956. BSP Col. 162. p. 845.

Canada. Treaty Series. *Agreement between the Government of Canada and the European Atomic Energy Community (EURATOM) for Co-operation in the Peaceful Uses of Atomic Energy*. 6 Oct., 1959. Can. T.S. (1959) No. 22.

Canada. Treaty Series. *Agreement between Canada and Sweden on Co-operation in the Peaceful Uses of Atomic Energy*. 6 Dec., 1962. 529 UNTS 9.

Canada. Treaty Series. *Agreement between Canada and India on the Rajasthan Atomic Power Station and the Douglas Point Station*. 16 Dec., 1963. Can. T.S. (1963) No. 10.

Canada. Treaty Series. *Agreement between Canada and Spain on Co-operation in the Peaceful Uses of Atomic Energy*. 8 Sept, 1964. Can. T.S. (1965) No. 7.

Canada. Treaty Series. *Agreement between Canada and Pakistan on the Karachi Station*. 24 Dec, 1965. Can. T.S. (1965) No. 26.

Canada. Treaty Series. *Agreement between Canada and Iran on Co-operation in the Peaceful Uses of Atomic Energy*. 7 Jan, 1972. Can. T.S. (1973) No. 2.

Canada. Treaty Series. *Agreement between Canada and Argentina for Co-operation in the Development and Application of Atomic Energy for Peaceful Purposes*. 30 January, 1976. unpublished.

Canada. Treaty Series. *Agreement between Canada and South Korea for Co-operation in the Development and Application of Atomic Energy for Peaceful Purposes*. 26 January 1976, unpublished.

Canada. Treaty Series. *Framework Agreement for Commercial and Economic Co-operation Between the European Communities and Canada*. October, 1976.

Canada. Treaty Series. *Exchange of Notes betweeen the Government of Canada and the Government of the United States of America Relating to the Agreement for Co-Operation concerning the Civil Uses of Atomic Energy*. 15 November, 1977. Can. T.S.(1977) No. 35.

Great Britain. Statutes. *British North America Act*. Sec. 92(10)(c).

United Nations. International Atomic Energy Agency. "Communications Received from Members Regarding the Export of Nuclear Material of Certain Catagories of Equipment and Other Material" INFCIRC/209. *International Legal Materials*. 3 Sept, 1974, 14: 543-552.

United Nations. International Atomic Energy Agency. "Communications Received from Certain Member States Regarding Guidelines for the Export of Nuclear Materials, Equipment or Technology." IAEA, Jan. 1978. *International Legal Materials*, 1978, 17:220-234.

United Nations. Treaty Series. *Treaty for the Prohibition of Nuclear Weapons in Latin America*. 14 Feb., 1967.

United Nations. Treaty Series. *Treaty on the Non-Proliferation of Nuclear Weapons*. 1 July, 1968.

United States. Congress. Congressional Research Service. *Nuclear Proliferation Factbook*. Washington: U.S. Government Printing Office, 1977.

United States. Congress. *Hearing Record of the House Subcommittee on Oversights and Investigation of the Committee on Foreign and Interstate Commerce.*

94 Congress. Second Session. November 4, 1976. "International Uranium Cartel." Vol. I

95 Congress. First Session. May 2, 1977. "International Uranium Cartel." Vol. II.

95 Congress. First Session. December 8, 1977. "International Uranium Cartel." Vol. II.

OTHER DOCUMENTS

Leonard and Partners Ltd. *Economic Impact of the Nuclear Energy Industry in Canada*. Ottawa: Leonard and Partners Ltd., 1978.

Nuexco. *Monthly Report* August 19.

Nuexco. "Significant Events in the Uranium Market, 1969-76." October 15, 1976

O.J.C. Runnals. "A Brief Submitted to the Cluff Lake Board of Inquiry." April, 1977.

Uranium Canada Ltd. *Annual Report, 1978.* Hull: Minister of Supply and Services, 1979.