THE POLITICAL ECONOMY OF ENVIRONMENTAL REGULATORY POLICY: THE CASE OF COME BY CHANCE

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The Political Economy of Environmental Regulatory Policy:

The Case of Come By Chance

by

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ABSTRACT

The intent of this research is to evaluate the implementation of environmental regulatory policy governing industry in Newfoundland generally and in the specific case of the Come By Chance oil refinery. Since effective regulation of industrial pollution is important to both human health and ecological sustainability, this research attempts to explain how government efforts to regulate industry and protect the environment might be compromised by specific limitations related to political and financial resources. Through an empirical case study, involving both archival research and interviews with informed individuals representing relevant interest groups, this thesis therefore examines how specific financial and political constraints affect and influence government implementation of environmental regulatory policy. This research found that in the Newfoundland political economy, specific resource limitations do compromise the environmental regulatory process governing the province's industrial polluters. Proposals for further research in industrial pollution control are also presented, including brief discussions of policies relating to social regulation and the development of zero-emission 'industrial clusters.'

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CHAPTER I: THE POLITICAL ECONOMY OF ENVIRONMENTAL REGULATORY POLICY

1.1 Introduction

At an ever increasing number of locations around the globe, the 'negative externalities' of the production processes of industrial capitalism result in the discharge of pollutants into the air, water and soil. In the province of Newfoundland, the operation of the Come By Chance oil refinery has resulted in specific environmental problems, in particular problems relating to atmospheric emissions. For many years, researchers have reported that industrial pollution represents a significant threat to the life sustaining ecosystems of the earth's biosphere. The media, as well, regularly report on the link between pollution and changes in global ecology, outlining the potentially life threatening consequences of environmental hazards such as ozone depletion and global warming. Affecting human life, industrial pollution is also associated with numerous health hazards such as 'industrial' and respiratory diseases, all of which negatively affect the quality of life of industrial employees and the exposed public.

Although many environmental hazards resulting from industrial pollution have been extensively researched and well documented, it continues to be an ever increasing problem around the world. The global nature of this problem, in part, reflects the importance of industry to the economies of Western, 'newly industrializing,' and developing nations. The Brundtland Commission (WCED, 1987:206) writes in Our Common Future that:

> industry is central to the economies of modern societies and an indispensable

> motor of growth. It is essential to developing countries, to widen their development base and meet growing needs. And though industrialized countries are said to be moving into a post industrial, information-based era, this shift must be powered by a continuing flow of wealth from industry. Many essential human needs can be met only through goods and services provided by industry.

Given the economic importance of industry to local, regional, and national economies, governments will often compete to support and promote the investment of private industrial capital. At the same time, Canadian federal, provincial, and municipal governments must display some level of legitimate environmental concern, as well as an institutional capacity to provide citizens with reasonable standards of environmental quality.

The environmental policy instruments developed by governments to facilitate the control of industrial pollution can take a number of specific forms, but are perhaps best viewed as part of a continuum of increases in the level of government coercion. The least coercive forms of environmental policy include self-regulation, economic instruments like tradable permits, tax incentives and cost sharing, while the most coercive policy instruments include environmental regulation (Shrubsole, 1989). Although economic instruments such as tax incentives and cost sharing have been employed by the Federal government through pollution control initiatives in sectors such as the pulp and paper industry, the principal means used in Canada to control the discharging of industrial pollutants into the environment is regulation. Thus, the primary focus of this research will be to examine the effectiveness of government efforts to control industrial pollution through the process of environmental regulation. Regulation here refers to the "imposition

of constraints, backed by government authority, that are intended to modify economic behaviour in the private sector" (Thompson, 1980:13). The implementation or enforcement of regulations is the "consistent application of formal rules and sanctions to secure compliance with the enabling legislation and promulgated regulations" (Snider, 1990:374). Although Canada's national government maintains jurisdictional authority over industrial pollution through statutes such as the Fisheries Act, the provincial governments maintain primary responsibility for implementing and enforcing environmental regulations in Canada (Skogstad and Kopas, 1992).

In Canada, the environmental regulatory process has been the focus of considerable criticism. Schrecker (1989:173) for instance, argues that "industry has enjoyed a traditional de facto right to deposit its wastes in the natural environment." As well, Snider (1993:192) argues that "control over corporate pollution...has been weak to non-existent". Given the importance of industry to the promotion of economic growth and development and since human survival is dependent upon a healthy natural environment, it is therefore imperative that the current policy problems associated with the control of industrial pollution be critically examined.

1.2 Research Problem

Over the past two decades, social science research has indicated that many ecological problems, including those associated with industrial pollution, are socially constructed. According to Newby (1990:4), the natural sciences have been most effective at defining

"the parameters of environmental change, but they will describe the symptoms and not explain the causes. The causes lie in human societies and their systems of economic development." Similarly, environmental policy is socially constructed as this process often involves social choices amongst alternative uses of a natural resource. A body of water, for instance, can be used for either recreational activities such as boating and swimming, or it can be used as a 'sink' for industrial waste (Schrecker, 1989).

The environmental policy process is also subject to considerable social and political influence. Schrecker (1990:179) observes that "policy outcomes are contingent upon not only the relative strength of particular groups...but also on the institutions and forms of organization characteristic of a particular political system." Furthermore, Newby contends that environmental policy decisions and outcomes are often the focus of political debate and conflict. The conflicting issues may include:

> the expansion of individual choice and the satisfaction of social needs; individual freedom versus a planned allocation of resources; distributional justice and the defence of private property rights; the impact of science and technology on society. Beneath the conflict over 'the environment' there is therefore a much deeper conflict involving fundamental political principles and the kind of society we wish to create for the future (Newby, 1990:3-4).

The process of developing and implementing environmental regulatory policy is therefore subject to and constrained by considerable political pressure and influence from multiple and often conflicting interest groups, each representing particular political, economic, environmental and community interests. In addition, environmental policy is influenced and affected by the relative power of these interest groups, mobilized for the purpose of

influencing both the development of policy and the effectiveness of implementation. Moreover, power directly affects the equity of environmental policy decisions. In this context, equity refers to the relative degree of public participation in the regulatory process and how the social costs of pollution are distributed in society (Hahn, 1990; Schrecker, 1989).

The concepts of equity and efficiency are commonly employed to evaluate the effectiveness of a regulatory program. In a study of regulation in Canada, the Economic Council of Canada (ECC) described equity as representing a measure of fairness. According to the ECC (1979:29), equity:

> is concerned with what people would consider to be fitting or right and includes synonyms such as 'just', 'unbiased', and 'legitimate.' Equity differs from efficiency in that it is a purely ethical concept whose definition lies in the values of the beholder, rather than an absolute measure of benefits and costs.

Determining the efficiency of a regulatory program often involves a cost-benefit analysis of the benefits of the activity versus the costs of regulation. The effectiveness of a regulatory program for pollution control is often described as the sum of equity and efficiency measures. In terms of evaluating regulatory effectiveness, Thompson (1982) maintains that although the benefits and costs of regulation are difficult to quantify, it is reasonable to assume that the benefits of environmental protection exceed the costs of regulation. However, regulatory effectiveness has been a problem in Canada. Generally the problems have been attributed to poorly defined goals and objectives, inefficient information systems, inadequate funding for programs and staffing, inconsistent

enforcement policies, and a lack of public participation (Thompson, 1982). An in-depth discussion of further problems or constraints affecting the environmental regulatory process will be presented in the literature review section below.

The central purpose of this research is to evaluate the administrative effectiveness of environmental regulatory policy in Newfoundland. The specific question to be investigated in this research is: Do financial and political resource constraints limit the effective implementation of environmental regulatory policy specifically in the case of the Come By Chance oil refinery and generally in the province of Newfoundland? Financial limitations facing government regulators may include insufficient resources, and limited personnel available for consistent monitoring of compliance agreements, conducting thorough investigations or prosecuting offenders in the case of industry non-compliance. Political constraints may include the power of industry to withhold or confound technical information regarding emissions data, and the threat of plant closure or job loss in response to strict regulation.

There appears to be very little empirical research regarding environmental policy in Newfoundland generally apart from the research relating to fisheries regulation and the ecological impact of fisheries policy. Thus, it is hoped that this study will not only expand upon social science research regarding Newfoundland environmental concerns, but may also serve as a basis or guide for future policy research in this area.

As noted above, environmental degradation resulting from industrial pollution is a global problem. Although this study will examine environmental regulation at the local

level, it is apparent that regulatory efforts to monitor and control industrial pollution must be effective at the community level as part of larger global efforts towards sustained environmental health.

1.3 Theoretical Perspective

Prior to a review of the literature and a discussion of the constraints affecting the implementation of environmental regulatory policy, it is important to specify the theoretical perspective of this thesis. The research will evaluate Newfoundland environmental regulatory policy from a political economy perspective. This theoretical perspective provides the analytical basis from which to explain how political and economic structures influence the environmental regulatory process in capitalist societies. Furthermore, "Marxist theory and method, divorced from orthodox dogma, still represents one of the most fertile intellectual traditions in which to locate ecological ideas, based as it is upon both the social construction of nature and the 'naturalization' of human consciousness" (Redclift, 1987:45). A political economy of environmental problems also permits studies of the transformation of nature under capitalism, the distribution of environmental costs and benefits associated with ecological change, and the ..."ideological content of environmental ideas..." (Redclift, 1987:46).

As mentioned previously, a political economy of environmental policy permits an examination of how power relations and political conflicts relate to the competition of uses surrounding a natural resource (Schnaiberg, 1994). Schnaiberg, for instance,

illustrates the inherent conflict in environmental policy choices in stating that:

> essentially, the dialectical tension in relationships between modern societies and their environments emerges from two axioms: (1) most elements of ecological systems cannot meet both exchange value (ie. market) needs and use-value (ie. recreational) needs; and (2) the treadmill of production places a primacy on exchange-value uses of ecosystems, while other ecological uses are a biological and social necessity for all classes (Schnaiberg, 1994:29-30). (Parentheses added)

An analysis of the inherent conflicts within environmental policy choices relates as well to the distribution of social costs and the equity of environmental policy decisions. In reference to equity, Faber and O'Connor (1993:18) contend that..."peoples and communities that have the least political power or social resources to defend themselves are most vulnerable." In addition, political economy provides for an analysis of the ideological underpinnings of environmental policy outcomes. As Deorn and Phidd (1988:53) observe:

> ideologies remain an important element of political life not because ideologies "cause" or automatically lead to policy preferences and action by governments in power, but because ideologies can help foreclose certain policy options or reduce levels of commitment to particular courses of action and to particular ideas.

A political ideology, for instance, may place greater importance upon economic and industrial development policies while maintaining a weak commitment to environmental quality and protection. This may include the presence of ideas and attitudes within government that support the now classic dichotomy of 'jobs versus the environment' as opposed to 'jobs and the environment' (Mobley, 1995).

Although the concepts of power, equity and ideology are not the specific focus of this research, they are fundamentally important to an analysis of the environmental policy

process. These processes also affect the manner and extent to which financial and political resources shape and influence regulatory decisions and policy outcomes. Thus, the issues of power, equity and ideology will be identified and discussed when directly relevant to the research.

A political economy of environmental regulation permits an analysis of the political resources of interest groups and the extent to which these resources are mobilized to influence the implementation and administration of regulatory policy. A political resource refers to:

> ...a means by which one person can influence the behaviour of other persons. Political resources therefore include money, information, food, the threat of force, jobs, friendship, social standing, the right to make laws, votes, and a great variety of other things (Schrecker, 1984/85:43).

Through a case study of the Come By Chance oil refinery, this research will evaluate the manner and the extent to which political and financial resources, such as departmental program finances, vital technical information, and the threat of layoffs and plant closure, have been used to constrain the effective implementation of environmental regulatory policy in Newfoundland. In addition to identifying specific financial and political constraints, this research will expand the literature which addresses the political economy of environmental problems. As Williams (1992:5) observes, "there is remarkably little written within the Canadian political economy tradition that directly addresses the degradation of our environment."

1.4 Literature Review

In a discussion of the constraints affecting the implementation of environmental regulatory policy, four specific areas in the literature are particularly important. These include environmental regulatory legislation, the prominent use of 'bargaining' for compliance in industrial pollution control, the position of corporate capital in the environmental regulatory process, and the role of government in environmental protection under capitalism.

1.4.1 Environmental Regulatory Legislation

Since the early 1970s, Canadian federal, provincial, and municipal governments have been increasingly developing and implementing environmental legislation, regulations, and by-laws to maintain standards of environmental quality. The general purpose of this legislation is to outline environmental protection objectives and enforcement guidelines for pollution control. An example of provincial environmental legislation of this type is the Newfoundland Department of Environment and Lands Act (1981). Canadian environmental legislation has, however, been the focus of considerable criticism. Schrecker (1989:174), for instance contends that it is "enabling" legislation and contains:

> laws which give ministers certain powers, but do not require them to do anything, and whose actual impact on economic activity and environmental quality is a function of the content of regulations made and administrative decisions taken under the provisions of the legislation.

According to Schrecker, provincial ministers of the environment therefore maintain

considerable discretionary power regarding the enforcement of environmental legislation.

At the federal government level, the central environmental legislation is the 1988 Canadian Environmental Protection Act (CEPA). This particular legislation represents a consolidation of earlier federal statutes and is primarily intended to provide national standards for environmental quality. According to Swanson and Hughes (1990:133), CEPA represents the "toughest" piece of environmental legislation in Canada, although they also note that the..."offense provisions have never been used to prosecute a polluter."

Although provincial governments maintain primary responsibility for implementing and enforcing environmental legislation and regulations, federal legislation such as CEPA is meant to serve as a guideline for national pollution control objectives and is intended to reduce the possibility of any one province becoming a 'pollution haven' (Schrecker, 1984). To further facilitate the development of national pollution standards, decision-making forums such as the Canadian Council of Ministers of the Environment (CCME) were established to promote intergovernmental cooperation and consultation between the federal, provincial, and territorial governments in the environmental policy field. In short, the process features: "federal leadership in proposing national guidelines and objectives; federal-provincial consultation and bargaining to establish regulatory standards; and provincial enforcement" (Skogstad and Kopas, 1992:44).

The intergovernmental environmental policy process in Canada, however, has experienced certain problems. These include jurisdictional conflict, difficulties relating to disharmony and duplication of policies, and significant costs and delays in policy

implementation associated with reaching a consensus between twelve different provincial and territorial ministries. In addition, Skogstad and Kopas (1992:50) note that a major constraint to the effective implementation of policy is that:

> 'key interests' in provinces have been able to influence the provinces to adopt relatively lenient standards, and the national government's acceptance of these lesser standards is owing to provincial jurisdiction regarding the environment and the federal desire to keep provinces on side.

The influence of key interests refers to corporate lobbying and the direct participation of industry in policy forums to the exclusion of other concerned publics.

In terms of stated environmental protection and quality objectives, "environmental statutes in Canada were designed to control the traditional forms of water pollution including suspended solids, biochemical oxygen demand, faecal coliform, and heavy metals, and air pollutants such as particulates, sulphur compounds, carbon monoxide, and hydrocarbons" (Nemetz, 1986:560-561). Although Canadian environmental legislation appears comprehensive in its coverage of known environmental hazards, this legislation is further criticised for being 'unrealistic' and failing to outline specific offense provisions to guide enforcement agency procedures (Webb, 1990). Similarly, Emond (1982:12) insists that "virtually all environmental statutes are vague. They profess commitment to environmental protection, but hope that regulators will discover, unaided, an acceptable level of environmental protection." Moreover, environmental legislation has been criticized for being too narrow in focus and thereby treating all pollution problems in a similar manner. Swaigen (1982) for instance, argues that the narrow nature of

environmental legislation has made it particularly ineffective at controlling the behaviour of major industrial polluters. The observed weakness in environmental legislation led McMullan (1992:91) to contend that:

> Canada's environmental protection strategy is incoherent and uncertain. It is expressed through a bewildering body of statutes, regulations, policies and principles, and is implemented by a confusing assembly of disparate groups that lack the resources to get the job done.

Environmental legislation in Canada has been the focus of further criticism for not containing provisions for 'environmental rights,' or more specifically, for not permitting the victims of pollution to obtain compensation for personal damages resulting from corporate pollution offenses. Swaigen (1982:107) insists that even if compensation were to be pursued through measures such as private litigation under tort law, "the victim has little chance of success against the corporate polluter, backed by his insurance company, his trade association, his in-house experts, and his hired consultants." In addition, the 1978 Regina v. Sault Ste. Marie case is often viewed as a critical turning point in environmental regulatory legislation. The decision in this case has been criticized for making it easier for corporate polluters to avoid social responsibility for pollution offenses (Jeffery, 1984). In Regina v. Sault Ste. Marie, the Supreme Court of Canada ruled that in certain cases the polluters must show only that they undertook all possible care or displayed 'due diligence' in attempting to avoid the polluting offense. Swaigen (1982:94) observes that:

> in practice the defense is used not only by companies that maintain a high standard of care, but also by defendants who can delude themselves or persuade

> the Court that their negligence amounted to mere errors in judgement. Since only the defendant knows what really happened, discharging the onus of proving on a balance of probabilities that he exercised reasonable precautions may be shockingly easy.

The ease in which industry may avoid prosecution for pollution offenses also reflects the significant discrepancy in environmental legislation between the written or 'black letter' of the law and the 'law in action' (Webb, 1988; Rankin and Finkle, 1982). For instance, pollution control in Canada is based upon the 'command-penalty' model of environmental regulation. Command-penalty measures imply a principle of strict adherence and application of law by regulatory authorities. Thompson (1980:46) illustrates this principle in stating that "normally, if you break the law, you expect to be prosecuted and to be punished if you are caught. That is the paradigm of the command-penalty model of regulation." However, this model appears to operate in a manner quite different than the term suggests. Rankin and Finkle (1982:170) observe that:

> though the written environmental legislation in a particular jurisdiction is stringent, industrial and other polluters accurately perceive, on the basis of the routine, habitual, and expected behaviour of public officials and politicians, that there exists little likelihood of any legal action being commenced against them for the violation of that legislation.

Furthermore, Webb (1988:17) notes that "what legislation suggests government is doing, and what government is actually doing have often been two different things." According to Webb (1988) an 'implementation gap' exists between the stated objectives of environmental regulatory legislation and its actual implementation and impact in practice.

As previously mentioned, any industry found to be in violation of a regulatory

statute or pollution 'standard,' (defined in either the legislation, control order, or in a compliance agreement with the polluting firm) is subject to an immediate punitive response by regulatory authorities. Under environmental legislation, the command-penalty control measures available to regulatory agencies include administrative orders and injunctions (revoking a pollution control licence or requiring the corporation to cease operations until abatement measures achieve compliance). In reference to the control measures utilized by regulators, Thompson (1982:62) observes that "the granting or withholding of permits and licences, and the opportunities they provide for imposing and enforcing terms and conditions, are the main bargaining tools of provincial pollution control agencies." Roman (1982) explains, however, that the polluting firm can avoid enforcement of its control order by applying routinely to the environment ministry Director to have the control order amended, and then apply to an appeal board each time the request for amendment is denied. The result is a lengthy delay in the government's response to alleviate a potentially hazardous pollution problem.

Another command-penalty measure available to regulatory authorities is legal prosecution. An advocate of prosecution, Swaigen (1982:90) insists that:

> when all attempts at negotiations have failed, when companies have violated the terms and conditions of their operating licences, and when Orders have been imposed but ignored, government agencies have turned to prosecutions as a last resort. Under these circumstances, prosecution has often been an effective deterrent. Prosecutions frequently result in changes in manufacturing processes and methods of waste disposal, and abatement of pollution.

Although many writers argue that prosecution is an effective deterrent against corporate

pollution offenses, it is rarely employed by regulators and is often viewed as the 'avenue of last resort' when all other attempts at achieving compliance have failed (Snider, 1993; Daily Commercial News, 1992; McMullan, 1992; Swaigen, 1982). Thus, surrounding environmental regulatory legislation is a limited bureaucratic intent to enforce the laws and regulations and to develop measures that effectively control industrial pollution at its source (Seis, 1993). Steidlmeier (1993:145), for instance, notes that:

> ... because the legislation has defined the disease (environmental pollution) as a collection of symptoms, it mandates only mitigating measures. The notion of preventing pollution - the only measures that really work - appears but fitfully in the environmental laws and has never been given any administrative force.

The limited administrative force behind environmental legislation significantly reflects the condition that "the terms of command-penalty legislation usually do not admit to the substantial amount of informal negotiation which takes place in conjunction with enforcement activities" (Webb, 1990:203). Instead, regulatory authorities tend to engage in informal negotiations or 'bargain' with corporate polluters for compliance.

1.4.2 Bargaining For Compliance

The tendency for regulatory authorities to bargain for compliance with industrial polluters indicates that the organizational mandate and enforcement procedures of regulatory agencies often operate along a 'compliance-deterrence continuum' (Gunningham, 1987). A review of the literature pertaining to the actions and procedures of environmental regulatory agencies indicates that the majority of agencies operate closer to the

compliance end of the continuum, generally preferring to maintain a cooperative relationship with the regulated firm (Swaigen, 1985). According to Aalders (1993:77), "the paradox of enforcement of environmental legislation leads us to the general conclusion that accommodative, conciliatory styles of enforcement by environmental law inspectorates are felt to be more effective than stringent, penal styles of enforcement." This paradox of environmental regulatory enforcement is also prevalent in Canada. Nemetz (1986:564) observes that:

> extensive consultation is undertaken with industry in Canada in the formulation of environmental standards at both the federal and provincial levels of government. More importantly, the actual practice of enforcement is frequently characterized less by the laying of charges than by a negotiating or bargaining process with industry in order to induce future compliance.

Thus, in the process of industrial pollution control, regulatory authorities typically refrain from exercising the full weight of their legal powers. This response by regulatory agencies "...suggests either that the regulated voluntarily comply in large numbers, rarely necessitating the use of the state's full force, or that effective enforcement has been stunted in some part by various factors in social organization" (Yeager, 1991:251). According to Hessing (1993), the state's preference towards a conciliatory relationship with the regulated firm reflects the nature of social organization under capitalism. Furthermore, Hessing argues that the bargaining process can be viewed as a 'game,' which often causes the implementation and enforcement of environmental regulatory policy to be socially compromised. For instance, the game "appears to be devoted to the maintenance of favourable economic conditions, rather than to the issue of environmental

protection. The current economic infrastructure is assumed to be a primary and universal condition of regulation" (Hessing, 1993:40).

Similar to other planning and policy forums, such as the environmental impact assessment process, the negotiation process surrounding compliance agreements for pollution control has been criticized for excluding the public from initial stages of planning and discussion, and for permitting public participation often late in the implementation process (Smith, 1982). According to Novek and Kampen (1993), the private and closed nature of regulatory bargaining serves to keep environmental concerns at a distance from both the social policy agenda as well as the public. In reference to environmental policy decisions, Schrecker (1989:211) contends that:

> In Canada, these decisions are characterized by broad areas of unappealable administrative discretion, high levels of secrecy and few formal avenues of access to information and participation....The effect is to facilitate the camouflaging of important ethical conflicts as decisions about scientific evidence or commonsense weightings of costs and benefits, especially when that process of camouflaging serves the ends of powerful beneficiaries of the status quo.

Regulatory authorities therefore make extensive use of conciliation with polluting firms, often at the exclusion of concerned and directly affected publics. Hence, Macdonald (1991) concludes that pollution control outcomes are the result of private negotiations between the corporate officials of the waste-generating industries and government authorities. This pattern of private "clientele-based" policy networks influences both the setting of pollution standards and the enforcement of environmental law by regulatory agencies (Winfield, 1994:132). Many researchers also argue that such a close conciliatory

relationship between the regulator and the regulated serves to limit the regulator's autonomy, legal authority and power, leading to agency 'capture' by the regulated industry (Snider, 1993; McMullan, 1992).

Private negotiations and client-based consultative bargaining over pollution control represent a significant departure from traditional methods of social control involving strict adherence and enforcement of the law. It is therefore important to examine the reasons why environmental regulatory authorities depart from tradition in exercising legal authority.

One explanation given for the prevalence of bargaining is the inherent nature of pollution offenses themselves. Webb (1988:20) for instance, argues that:

> the complex and ongoing nature of many pollution situations and the continuous attention frequently needed so that equipment can be adjusted to meet changing circumstances does not mesh well with the formal rules of procedure and the orientation of the courts to making single, discrete decisions about single, discrete events.

Although pollution control is a dynamic and complex problem, Webb (1988) also notes that in many cases the government is often aware that pollution control violations are taking place, but responsive action is delayed due to uncertainty regarding how to alleviate the problem. The result is an inherent slowness in regulatory response and action.

Equally important to understanding government regulatory procedures is the relationship between bargaining and the nature of social and political demands placed on government in the framing of regulatory decisions. According to Webb (1988:20):

> working out solutions to pollution problems is frequently an extremely difficult task given the technical, scientific and economic uncertainties which surround the various abatement options, and given the broader socio-political issues underlying these factors, such as pressure from environmental groups, riparian landowners and fishermen for immediate effective control versus demands from company officials, employees who feel their jobs are threatened, local politicians and business people to move slowly and thus maintain the economic viability of the operation.

It appears, therefore, that the prevalence of bargaining is partially the result of socio-political conflict, often reflecting government efforts to appease the interests of multiple interest groups. In addition, Thompson (1980:33) observes that the "rules stated in statutes or regulations are merely points of departure for negotiating modifications of behaviour; and 'compliance' or 'non-compliance' means 'agreement' or 'disagreement'." Hence, the often vague nature of environmental regulations permits corporate polluters to manipulate the bargaining process by shifting the focus of discussions away from a strict assessment of rule violations towards a point of disagreement based on relative values, opinions or beliefs. For instance, the limited and often contradictory information surrounding the ecological impact of the pollutant in question can be used by the regulated to direct discussions away from the law and towards a matter of 'scientific debate' or 'value judgements' (Thompson, 1980). According to Schrecker (1984/85), scientific uncertainty surrounding many environmental problems can be mobilized to bias the regulatory process.

The conflict and controversy surrounding the 'science of pollution' appears to be inherent to both the environmental regulatory and impact assessment process (Thompson,

1980; Schrecker, 1984; Richardson et al., 1993). For example, in a case study of the environmental assessment review process, Richardson et al. (1993:174) found that the development of standards and the assessment of the impact of pollutants on the environment are often not based on "good science - data to back up conclusions, replication of experimental trials, statements of uncertainty, and peer reviewed sources of data and information." As well, the prevalence of bargaining in the environmental regulatory process reflects the government's limited desire to acquire the accurate scientific information which is necessary for effective pollution control decisions. Thompson (1982:39) notes that:

> knowledge gaps require a negotiating and bargaining process which comprehends the wide range of technological and financial interests at stake, but the industry side in the negotiations will frequently be better informed than the governmental side as to many of these factors.

Often the 'more informed' position of the regulated firm is the result of maintaining direct access to privileged information concerning self-regulatory data, technological pollution abatement options and financial information. Industry control of scientific and technical information makes it particularly difficult for interest groups with limited resources to counteract industry assertions regarding the environmental impact of their activities. Rankin and Finkle (1982:173) observe that:

> negotiation amongst interest groups who are far from equal in their financial or information resources is, however, a relatively meaningless exercise. From the lawyer's perspective, the lack of formalized arrangements which experience has shown does not equalize the contest between the weak and the strong is a serious, perhaps fatal, deficiency in the bargaining process.

Moreover, the existing imbalances in negotiating power appear to be receiving limited attention as governments have not demonstrated any particularly strong interest in implementing the necessary information gathering processes to effectively alter the existing imbalance of power and knowledge. As Yeager (1991:268) indicates, "the lack of modern, comprehensive computerized data bases is by itself a substantial impediment to effective and rational enforcement of the law." In Canada, a study of the pulp and paper industry revealed "the failure of government to initiate information systems that will supply answers that are crucial to a successful pollution abatement program" (Thompson, 1980:40).

It appears that industry's privileged access to technical, scientific, and financial information represents a significant constraint on effective regulation, thereby forcing regulatory authorities into the position of negotiating for compliance. As DiMento (1989:113) observes, "to be effective, a regulatory agency needs access to information about the firm's subjective and shifting calculations of costs and benefits as well as the company's competitive profile." Indeed, in calculating the costs of regulation by the corporation, often..."the benefits of delay are typically...great in comparison with the costs of complying..." (Schrecker, 1990:167). In addition, political resources such as technical information often permit industry to define emission standards outlined in compliance agreements. For instance, the regulated firm is typically able to dictate the specific type of pollution abatement equipment that it will install. In Canada, the common policy of 'best practicable technology' permits the adoption of the most efficient pollution abatement

equipment that a company can reasonably afford (Schrecker, 1984). In essence, the corporation determines the actual pollution control standards since the firm dictates the type of abatement technology to be implemented (Schrecker, 1985). Even in the case where the best available technology is implemented by a firm, "the private sector will comply...only if government cares whether it complies" (DiMento, 1989:117). More often, however, industry will argue that investment in expensive pollution abatement equipment could jeopardize the economic viability of the firm and therefore its future as an employer in the community. This argument has been particularly effective at limiting regulatory efforts in the innumerable single industry towns that 'dot' the Canadian landscape (Schrecker, 1991). It is therefore important to examine the reasons why regulatory authorities often choose not to use coercive powers to secure compliance from waste-generating industrial corporations. Do limited enforcement and reliance on consultative bargaining also reflect the political resources of corporations under capitalism?

1.4.3 The Political Resources of Corporate Capital

The above limitations and constraints affecting environmental regulation often apply to both capitalist and socialist societies. Although Hessing contends that industrial capitalism is 'predisposed' to environmental degradation. According to Hessing (1993:33):

> characteristics of capitalist production - short term profitability, the lack of market

> incentives to ensure environmental protection, the "externalization" of the costs of environmental degradation, competition among firms and the minimization of production costs, increasing resource scarcity, rising production costs and inflation - discourage environmental protection.

Furthermore, it is argued that the current methods of production in a free market system based on competitive capitalism eventually lead to ecological degradation and conditions indicative of 'the tragedy of the commons.' Ophuls (1992:218), for instance, writes that:

> ...an unregulated, competitive, laissez-faire market system, in which all have access to the economic commons and in which common-pool resources are treated as free goods, has produced a tragedy of the commons: the overuse, misuse, and degradation of resources on which we all depend for ecological health and economic wealth.

Therefore, both environmental degradation and the existing constraints which compromise regulatory policy may reflect the dominant and influential position accorded to industrial corporations under capitalism. Schrecker (1984/85:50) notes that:

> indirectly it is possible to assess the extent to which programs such as environmental protection have to fit into a set of priorities built around economic growth and effects on investment climate on the basis of administrative requirements...to the effect that all new regulations must be preceded by an assessment of such factors as their impact on investment climate, the incentive to work and the formation of new businesses.

Environmental regulatory and enforcement policy is further constrained by the structure of capital relations with respect to corporate investment. Shareholders and managers of corporate enterprises often lobby or attempt to resist any social regulation which places restrictions on operations or reduces corporate autonomy. Corporate leaders often argue that any imposition of further regulations will adversely affect their competitive position in the marketplace as well as the investment climate of the region.

Moreover, corporations sometimes employ 'job blackmail' by threatening to close or move an operation to a less strictly regulated region or country. Threats of capital flight, disinvestment, and the loss of jobs provide a powerful countermeasure to increased regulatory and enforcement efforts by government (Grossman and Kazis, 1991; Schrecker, 1990). Schrecker (1984/85:50) also notes that:

> whether or not an explicit threat is made, the background possibility of production cutbacks, disinvestment, plant closure and job loss can be used to enlist the opposition of workers and local communities to environmental, or other, regulations.

Regulatory restrictions can therefore be viewed as "...barriers to accumulation, and their successful circumnavigation by pioneering economic agents can confer significant competitive advantages...as well as providing the opportunity to...operate relatively free from regulatory surveillance" (Leyshon, 1992:251).

A specific indication of policy decisions which favour large corporations may be seen in the organizational priorities of regulatory agencies. Given the limitations on available resources, the legal costs associated with prosecution, and the need to display an effective enforcement record, regulatory agencies are often forced to make choices that favour certain priorities or enforcement efforts over others. Yeager (1991:262), for instance, observes that:

> putting a large portion of the agency's limited resources into a few cases against powerful corporate adversaries that might win in court could be seen as less cost effective - from the standpoint of bureaucratic politics if not from that of the environment - than spending the same resources enforcing the law against smaller violators the agency could more readily expect to bring into compliance in the near term.

Consequently, regulatory priorities and actions will often favour large corporations on the basis of their relative political resources and economic power.

As noted above, economic power permits large corporations to manipulate important technical and financial information. Large corporations have access to financial resources which may allow them to purchase and utilize 'scientific expertise' for the purpose of supporting their legal position. In this regard, Yeager (1991:284-285) notes that:

> the indirect advantages involve the larger companies' greater access to technical agency procedures by which firms can generate exceptions to the regulatory requirements imposed on them, thereby bringing the law more into line with their intent or capacity to comply.

Thus, in a political economy under the dominant social, political and economic power position afforded corporate capital, the regulatory process may serve to reproduce economic inequality as well as structural biases in the operation of the law (Yeager, 1991).

In the Canadian political economy, current conditions tend to favour policies directed towards capital growth in order to provide the necessary conditions for short-term profits, desperately needed tax revenue and job growth. As a result, resource management and regulatory polices consistent with government's commitment to policies like 'sustainable development' will probably receive only limited consideration. Schrecker (1990:187) observes that:

> a more likely scenario involves attempts by both business and government to persuade the attentive public of the need to minimize the unproductive costs of

> pollution abatement, and to abandon the careful planning of development projects which is essential to sustainable resource management.

Corporate lobbying of governments for reductions in the 'unproductive costs' of pollution control and environmental regulation is generally consistent with 'Right Wing' ideology, and in particular the political agenda of the 'New Right' (Marchak, 1991). In reference to pollution control, business proponents aligned with the Right of the political spectrum often argue that pollution and regulatory conflicts can be more effectively managed or eliminated through the free market, and in particular through the use of economic instruments such as marketable effluent permits (Doern, 1990). Furthermore, Right Wing policies advocating greater regulatory cooperation between the regulator and the regulated are often legitimated on the basis of the failure of the existing command-penalty regulatory model. For instance, it is argued that existing legal and criminal sanctions are rarely used by state regulatory agencies and this is therefore an indication of limited state control over corporate activity and regulatory failure. In order to achieve more effective control, supporters of the Right argue that corporations would become more socially accountable by assuming greater responsibility for their own activities since external state controls are failing to 'force' corporations in this direction (Snider, 1990). In short, the policies of the Right advocate increased cooperation with industry through a process of environmental deregulation.

It appears therefore that environmental quality, regulatory policy and enforcement practices are indeed political issues. The relative power of the actors involved determines

the nature of policy initiatives and their implementation under capitalism. The political economy of environmental regulatory policy can be further explored through an examination of the role of government in environmental protection under capitalism.

1.4.4 The Role Of The Environmental State

Government can play a primary role in environmental protection. Although government is the primary 'conserver' of environmental resources. it plays an equally important role in stimulating business interests by promoting a favourable climate for capital investment and production. In short, government is responsible for protecting environmental resources while at the same time advocating their exploitation and utilization through economic and 'resource development' policies. Thus, the government maintains dual and often conflicting and contradictory roles. For example, in a study of provincial environment ministries and agencies, Gould observed that poor regulatory efforts resulted from the conflicting and often contradictory 'dual role' of government agencies, particularly in single industry, economically dependent, company towns (Gould, 1994). Gould (1994:240) argues that:

> in terms of environmental policies in particular 'the state has severe internal conflicts around environmental issues.' The result of these conflicts and contradictions is that government environmental agencies/ministries attempt to promote the least costly remediation with the greatest dampening effect on public consciousness (or international pressure), in order to achieve political legitimation for state industrial-economic policies with minimal hindrance to these policies.

A weak commitment to environmental protection was recently made evident at the

federal government level. An examination of the 1991 $3 billion 'Green Plan' indicates a weak commitment to regulatory reform. In the Green Plan, the majority of policy instruments are directed towards education and information dissemination programs, while containing "a surprising paucity of measures to directly protect the environment, whether regulations to restrict or prevent pollution, taxes to penalize polluting behaviour, or spending for clean up" (Hoberg and Harrison, 1994:119).

In the context of the Canadian political economy, the state appears to operate in a position of latent tension between the need to limit the potentially damaging affects of business activities on the environment and the need to support the necessary conditions for capital accumulation. According to Offe (1984:120):

> the institutional self-interest of the state in accumulation is conditioned by the fact that the state is denied the power to control the flow of resources which are nevertheless indispensable for the exercise of state power. Although the agents of accumulation are not primarily interested in using the power of the state, state actors must be interested - for the sake of their own power - in guaranteeing and safeguarding a healthy accumulation process.

From this perspective, environmental regulatory policy and implementation efforts can be viewed as contradictory to the relations within political institutions and the preferred motives of individual politicians under capitalism.

In the Canadian political economy, forces of regulatory opposition are equally significant in terms of Canada's representative system of government. The nature of the Canadian political landscape often maintains political divisions which emphasize regionally based issues and concerns. According to Schrecker (1990:180):

> Canada's electoral system rewards concentration on issues with strong regional winners and losers, and penalizes emphasis on policy positions (like many having to do with environmental protection) characterized by dispersed national support.

Thus, the degree of opposition to environmental regulation often relates to the politics and economic conditions of a particular region. Again this relationship is particularly evident in the 'one industry town,' in which a local pulp and paper mill, for example, is the largest employer and provides the basis for the local economy. Under these conditions, any attempt to enforce existing or further regulations may be regarded as a threat to the economic viability of the mill and may be strictly opposed by the company, its employees, the community, and therefore local politicians. Thus, regulatory policy advocating stricter effluent restrictions on the pulp and paper industry may have majority political support at both the federal and provincial levels, but may face stiff opposition at the local level.

The Canadian legal system appears to be equally constraining in terms of being highly restrictive of the opportunities afforded citizens to participate in the regulatory policy process and to influence government decision-making. Greater public participation in regulatory and environmental policy discussions is presently occurring in some jurisdictions, and political resources are being made available to citizens and advocacy groups, but participation rarely extends from the point of initial discussions through to implementation. In some cases, press releases and public hearings are legally required for proposed policy changes, but this more accurately reflects an opportunity to comment on the final content as opposed to actually participating in policy development (Schrecker,

1990).

In addition, Canadian environmental legislation (unlike the United States) restricts the ability of private citizens to use private litigation through 'environmental rights' to oppose government policy and regulatory decisions. Schrecker (1990:182) states that this means:

> that Canadian national governments are far freer than their U.S. counterparts to pursue accommodations with industry and to balance regional economic objectives (often achieved through extensive federal subsidies for energy and mineral development) against the achievement of broader environmental goals with less clearly defined and politically effective constituencies.

In essence, Canadian political leaders avoid any changes to environmental policy that would permit an increased role for private litigation or that expands the role of citizens in 'public' decisions. Indeed, a federal minister of the environment was quoted as saying "that entrenching employees' rights, environmental rights, and other bills of rights in the areas of public policy...could very well undermine the capacity of elected and therefore accountable people to represent the public interest as they see fit" (Schrecker, 1990:183). Instead of the citizenry being granted legal entitlement or rights to environmental quality, environmental advocates and the public are placated into assuming that such standards 'legitimately' exist through the use of environmental legislation typically framed and promoted in symbolic terms (Rankin and Finkle, 1982). Rankin and Finkle (1982:175) argue that:

> politicians can curry favour at elections by pointing to ostensibly tough environmental legislation which has been passed. Federal/provincial agreements may never be concluded, for a great variety of reasons. A programme may never

> be adequately funded or legal resources may not be provided so as to enforce the laws on the books.

Inadequate funding for environmental protection programs is not a problem inherent to only capitalist countries. The problem is similar to the difficulties surrounding government funding of other collective or 'social services' which can also be a problem in socialist countries. As Miliband (1989: 211-212) observes:

> The level of such services...varies from country to country; but public provision in the realm of health, education, transport, housing, the environment, leisure, social benefits, and pensions will continue to be generally poor, short of funds and resources, bureaucratically administered, and grudgingly, reluctantly dispensed.

Although this review has focused on the role of government in environmental protection under capitalism, significant environmental degradation has occurred and continues to be a serious problem in many socialist states as well. In particular, however, this review found that under capitalism, both environmental regulatory policy and standards of protection can be significantly compromised by governments that serve to promote economic growth through supporting the accumulation interests of capital while maintaining primary responsibility for environmental health and quality.

CHAPTER II:

RESEARCH METHODOLOGY

2.1 Introduction

This chapter provides a brief introduction to the case study method of research, outlining its strengths and weaknesses, and explains why the Come By Chance refinery was selected for the case study. In addition, the chapter links the theoretical framework of political economy to qualitative research and the case study method, concluding with a description of the data gathering process. Both the use of primary data sources and the interview selection process are discussed.

2.2 The Case Study Method

For an empirical analysis of the political economy of environmental regulatory policy in Newfoundland, this research utilizes a case study approach. A case study is broadly defined as "an in-depth, multifaceted investigation, using qualitative research methods, of a single social phenomena. The study is conducted in great detail and often relies on the use of several data sources" (Feagin et al., 1991:2). Furthermore, this method is a holistic examination of a phenomena which seeks "...to avoid the separation of components from the larger context to which these matters may be related" (Jorgensen, 1989:19). For instance, the constraints affecting the environmental regulatory process at the Come By Chance refinery may be related to problems affecting the regulation of industrial pollution in Newfoundland as well as in other regions of Canada. As Feagin et al. (1991:2) observe, "the case study is usually seen as an instance of a broader phenomena, as part of a larger

set of parallel instances."

The case study method of research is often identified as having both specific strengths and weaknesses. According to Mitchell (1989), criticisms of this approach include limited baseline data for the purpose of pre- and post-program comparison, the absence of control groups for isolating independent variables, and limitations associated with observations taken only at a single point in time. These shortcomings may undermine the utility of research employing case studies as their primary means of analysis.

The above criticisms are also relevant to a case study of the Come By Chance refinery. For example, prior studies of the constraints affecting the implementation of environmental regulatory policy at the refinery do not exist. Therefore, this study has no basis on which to compare its findings with other research on the Come By Chance refinery. In short, this case study of the refinery has no baseline data for the purposes of comparative analysis and no control group for isolating independent variables.

However, a particular strength of case study research is its usefulness in identifying significant variables and relationships. As Feagin et al. (1991:6) observe, "it provides information from a number of sources and over a period of time, thus permitting a more holistic study of complex social networks and of complexes of social action and social meanings." Mitchell (1989) further notes that the ability of case studies to identify complex and significant relationships is particularly valuable when little previous research has been conducted, as it permits further refinement of conceptual frameworks.

In addition, the analysis of a single and sufficiently important case can be used as a basis for a comparative case study, adding greater predictability to its findings (Jorgensen, 1989; Mitchell, 1989). Rather than being viewed as anomalies, the analysis of single cases should be accepted as a positive means of conducting empirical research. This conclusion suggests that single cases have value for study. Therefore, an examination of the constraints affecting environmental regulatory policy as it applies to the only oil refinery in Newfoundland presents an important case worthy of study.

2.2.1 A Case Study of Come By Chance

Although it is possible to examine other environmental regulatory concerns in Newfoundland, the Come by Chance refinery is an important case for several reasons. First, it is the only operating oil refining facility in the province of Newfoundland. Oil refineries throughout North America have been the focus of considerable political controversy and have received considerable public and media attention. The emissions and pollutants discharged from oil refineries often represent significant environmental and human health hazards to the communities in which they are located. These hazards are primarily associated with the release of toxins into the atmosphere, including chemicals known to cause cancer, birth defects and serious health problems. For example, hydrogen sulphide, a compound commonly released from refineries, is known to cause serious health impacts and death. In response to these environmental hazards, grassroots organizations such as the National Oil Refinery ACTION! Network in the United States

are taking legal action against the polluting activities of the oil refining industry (Karras, 1996). This case study of the Come By Chance refinery will indicate that certain environmental problems at the facility were specifically related to the refining process and the manner in which this facility was operated.

Second, from its initial conception, on into the construction phase, and throughout much of its operating history, the refinery has been associated with political controversy and has been the focus of considerable public and media attention.

Finally, the environmental problems surrounding the Come By Chance refinery have not been a subject of academic investigation until quite recently. To date, very little academic research on the refinery has been published. For the above reasons, a study of the constraints affecting the environmental regulatory process at the refinery represents an important case worthy of academic research.

2.3 Political Economy and Qualitative Research

A political economy of environmental regulatory policy examines how factors such as political and economic structures influence the policy process. Specifically, this research will evaluate whether or not the effective implementation of environmental regulatory policy is limited or affected by financial and political resource constraints. For example, the research will attempt to determine whether the provincial Department of Environment has adequate financial resources to implement and achieve the stated objectives of the existing regulatory policy. Are there sufficient resources and personnel available

consistently to monitor and enforce compliance agreements, or to investigate and prosecute cases of suspected non-compliance? Are environmental protection and regulatory program goals 'ideologically' constrained or affected by current policy discussions and initiatives promoting economic and industrial development and the deregulation of industry? Has the management of the Come By Chance facility ever successfully mobilized political resources to limit access to critical technical information required by both the public and provincial government regulators? Has the threat of refinery closure or 'job blackmail' been used to impede regulatory procedures?

This is a brief outline of the types of questions presented as part of the research process. For the purposes of data analysis, a qualitative approach employing a case study method is most suitable. This approach permits the identification of social processes and relationships that influence the policy making and implementation process in relation to a specific case. In addition, qualitative research permits the social scientist to explain better the underlying causal networks that shape a particular policy outcome.

2.4 Primary Data Sources

As part of the research for the case study of the refinery, extensive use was made of primary data sources. Through archival research, these data were obtained through an extensive review of Newfoundland community newspapers, magazines, CBC Radio and Television transcripts, Canadian oil industry journals and reports prepared by environmental consultants, all dating from approximately 1970 to the present.

Archival research was conducted at The Centre for Newfoundland Studies located in Memorial University and at the St. John's Arts and Culture Centre Public Library. These facilities each contained collections of local newspaper and magazine articles pertaining particularly to the importance of the refinery's construction and operation to the region's economic development. In addition, extensive use was made of a personal collection of newspaper and oil industry journal articles, ministerial letters and local media interview transcripts provided on loan by a Department of Environment regulatory official. This collection provided detailed information on the environmental problems and related controversies associated with the refinery over its operational history.

Further primary data were derived from the reports of independent environmental consultants, prepared for the Department of the Environment. At the request of the provincial government, the Toronto based consulting firm Concord Environmental conducted an on-site inspection of the refinery in 1993. The resulting report outlined the current status of the facility's environmental management procedures and systems. In particular, the Concord report assessed the refinery operator's compliance with a ministerial letter ordering a clean-up of the sources of obnoxious odours at the site. As well, the report described problems associated with sulphur emissions and the facility's sulphur recovery unit, in addition to identifying problems relating to the refinery's sub-standard heater and process equipment. Soon after the Concord report was released to the public, a second independent study was commissioned at the request of the Department of Environment. Dr. Lesbia Smith, an Environmental Health and Toxicology Consultant

from Toronto was requested to examine the possible relationship between the refinery's excessive emissions and the subsequent increase in health related complaints amongst citizens living adjacent to the facility. Together, these reports served as important sources of primary data for the case study.

As discussed in Chapter 1, the environmental regulatory process is shaped by the power and political resources of conflicting interest groups, often mobilized to influence the implementation of policy. This research must therefore identify those individuals directly affecting or influencing the implementation and administration of environmental regulations governing the Come By Chance oil refinery.

2.5 The Interview Selection Process

An evaluation of the extent to which financial and political resource constraints affected the implementation of environmental regulatory policy required conducting interviews with informed individuals representing various interest groups. A partial list of potential interviewees was developed on the basis of the names of regulatory officials and other 'experts' identified in media reports published in response to regulatory concerns at the refinery. In addition, the interviewees were identified and selected through the use of a network or 'snowball' sampling technique. As Neuman (1994:199) explains:

> it is based on an analogy to a snowball, which begins small but becomes larger as it is rolled on wet snow and picks up additional snow. Snowball sampling is a multistage technique. It begins with one or a few people or cases and spreads out on the basis of links to the initial cases.

For example, following the completion of an interview, the interviewee was asked to identify other individuals who have either participated in the environmental regulatory process or have expertise and knowledge of the process generally and its application to the Come By Chance refinery specifically. Once identified, initial contact was made with potential interviewees to explain the purpose of the research, further to determine their suitability, and if they were then identified as an eligible candidate, to arrange for an interview.

However, the use of a snowball sampling technique can be problematic as there is the potential for biased sampling. For instance, an interviewee may recommend that interviews be conducted with individuals holding similar opinions or positions regarding the effectiveness of the environmental regulatory process at the refinery. As a result, the sample, and in particular the empirical findings derived from the interviews, may be biased towards a particular position on the issues presented. Therefore, in the process of evaluating the suitability of the interview candidates for this research, all efforts were made to develop a 'balanced' sample by selecting individuals with differing professional or personal affiliations and positions.

The use of qualitative non-random sampling techniques are often criticized for not employing inferential statistics or similar techniques which permit greater accuracy in the evaluation of a population on the basis of the individuals sampled. For instance, the research data derived from an interview with a Department of Environment regulatory official is not necessarily representative of the views held by all provincial environmental

regulatory personnel employed in Newfoundland. Instead, this research has attempted, through the use of semi-structured interviews, to access a range of information and positions regarding the effectiveness of the environmental regulatory process governing the refinery.

The twelve individuals interviewed for this research project included both former and current employees of the provincial Department of Environment, a representative of Environment Canada, an environmental consultant, an environmental lawyer, employees of North Atlantic Refining Limited, including both management officials and a union representative, and individuals representing community interest organizations.

Although this sample permitted access to an adequate quantity and quality of data, attempts were also made to arrange interviews with three other potential interview candidates. In two of the three cases, involving individuals representing community concerns, the potential candidates were either away from the region or absent from the province for an extended period of time. An attempt was also made to arrange an interview with the former Minister of the Environment, Patricia Cowan. Ms. Cowan was selected as a potential interview candidate as she was Environment Minister in 1993 when considerable media attention and public concern regarding the refinery's atmospheric emissions was expressed. According to Ms. Cowan, she refused to grant an interview because "as a former Minister of Environment, I remain under an oath of secrecy re any decisions that were made in Cabinet, and do so for all my life. Therefore I feel it would not be appropriate for me to become involved..." (Personal Correspondence,

March 7, 1996).

Interviews with the Minister and with the absent community representatives may have provided greater depth to the information regarding community concerns about the refinery. Nevertheless, even without these interviews, a sufficient quality and quantity of data were derived through interviews with other community spokespersons. However, an interview with Environment Minister Patricia Cowan may have provided particularly important information in terms of the content of cabinet meetings and the specific manner in which regulatory decisions were negotiated between refinery representatives, senior Department of Environment officials and the Minister. Therefore, the absence of this information from the data collected will affect this research, in particular the findings regarding the constraints affecting the environmental regulatory process at the ministerial level.

At the time of both arranging for an interview and just prior to the interview itself, the interviewee was fully informed of the ethical guidelines governing the research and anonymity and confidentiality was assured. Given the nature of the interview questions, which often asked the interviewee to be critical of their respective employer or of other organizations, the assurance of anonymity and confidentiality proved essential to acquiring accurate data. Although these assurances were granted, the responses of the interviewees proved to be generally consistent with and supportive of the 'status quo.' In short, the interview data obtained from the union representative, environmental and legal representatives, government personnel, company officials and community spokespersons

were generally indicative of their personal or professional affiliations.

To help facilitate accurate data collection, ten of the twelve interviews were tape recorded. The two interviews which were not recorded were those conducted with the management officials of North Atlantic Refining Limited. One senior management official requested that the interview be conducted in an informal manner while the interview with the second refinery management representative was conducted over the telephone. Although not recorded, adequate and important information was derived from both of these interviews. In the cases where the interviews were recorded, the presence of the tape recorder did not appear to affect either the ease in which the interviewees responded or the content of the answers provided.

Finally, the interviews were semi-structured, employing open-ended questions and were not designed using a standardized format. Although the interviews were designed to address issues common to the environmental regulatory process, each interview was necessarily tailored to the specific background or expertise of the individual being interviewed. In the process of conducting the interviews, all of the questions presented were answered as none of the interviewees refused to provide a response. Thus, a significant quantity and quality of data were obtained from the interview process.

CHAPTER III:

THE POLITICAL ECONOMY OF COME BY CHANCE: A CASE STUDY

3.1 Introduction

Chapter 2 presented a discussion of the methodology employed in this research. By way of introduction to the case study, this chapter provides an overview of the political and economic history of the Come By Chance oil refinery. This will be followed by an examination of specific environmental problems arising at the facility since refining operations began in 1973. In the discussion of environmental problems, emphasis is given to the provincial government's response, particularly to that of officials with the Department of Environment. Unless otherwise specified, government will refer to "the provincial government of the province of Newfoundland, its Ministers, elected and appointed officials, and all employees, agents and representatives of the province" (ECI, 1994:3). The government's response to the facility's environmental problems permits an examination of sociopolitical conflict and legitimation within the context of a 'one industry town' located in an economically underdeveloped region.

The Come By Chance oil refinery is located 100 kilometres west of St. John's on the Avalon Peninsula of eastern Newfoundland. Situated on Come By Chance Bay in Placentia Bay, the refinery is adjacent to the communities of Come By Chance, Arnold's Cove and Sunnyside (See Figure 2.1).

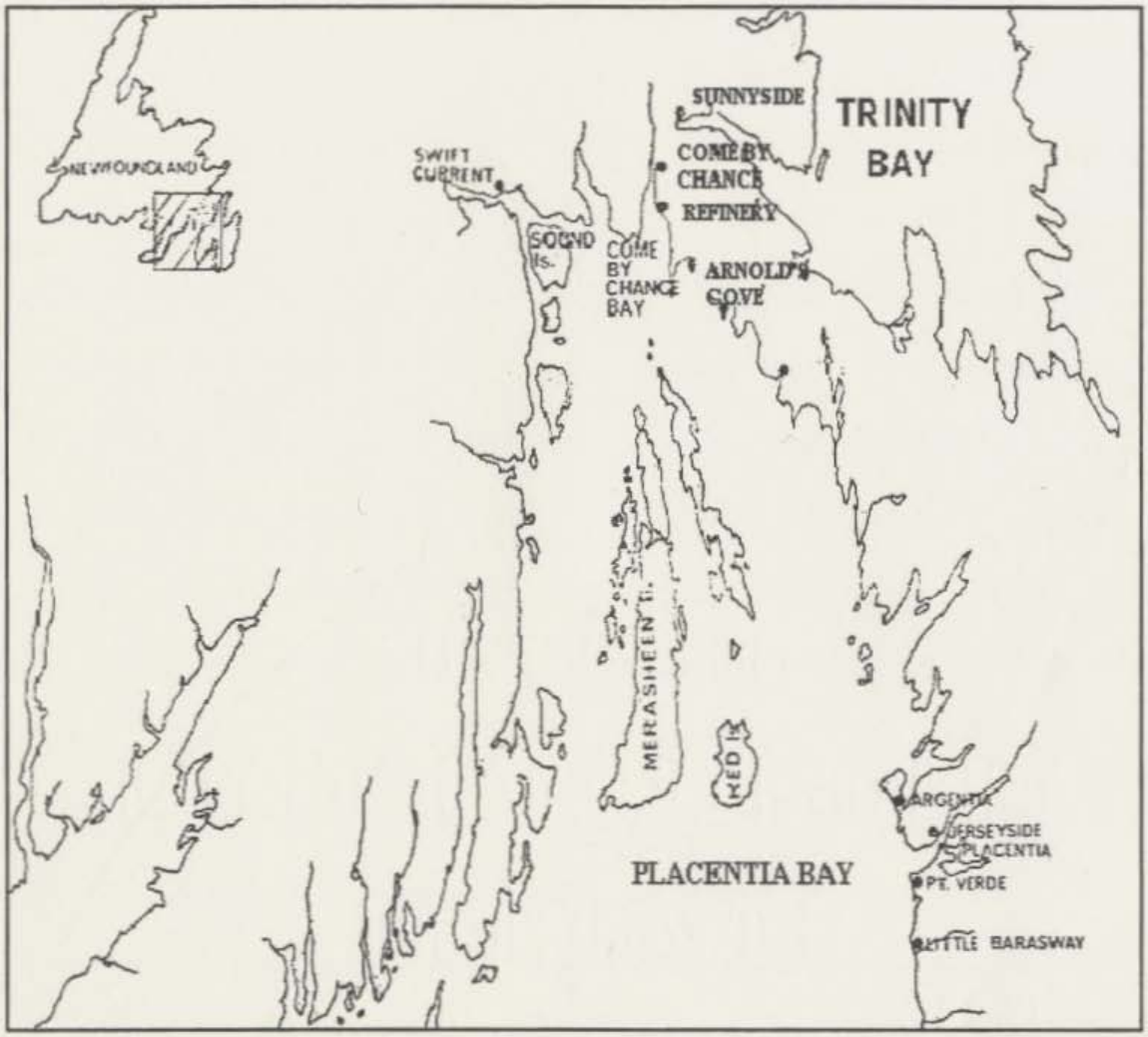

FIGURE 2.1:

PLACENTIA BAY, NEWFOUNDLAND AND THE LOCATION OF THE COME BY CHANCE OIL REFINERY

(Source: Hall et al., 1974)

3.2 The Case of Come By Chance

To mark the official opening of the Come By Chance refinery, former Conservative Premier Frank Moores ceremoniously stated that "Newfoundland is one of the world's last industrial frontiers in that we are only beginning to tap resources that in other parts of the world are nearly depleted" (Crocker and Benson, 1973:2). The construction of a 100,000 barrel per day refinery at Come By Chance represented the first stage in what politicians of the day envisioned would become a multi-million dollar industrial complex consisting of a second larger refinery, a petrochemical facility, and a pulp mill. The development of the Come By Chance refinery was the outcome of substantive political intent to promote economic and industrial development in the province. According to Rezori (1986:3), "the refinery was conceived by former Newfoundland premier Joey Smallwood as one of a number of industrial seed projects which were to usher in a new age of prosperity for the historically impoverished island." Prior to the refinery's construction, then Premier Joey Smallwood himself remarked that "Come By Chance will be turned into one of Canada's great industrial centres" (Benson, 1995:4).

As an indication of Premier Smallwood's strong commitment to the development of industry in the province, the Newfoundland government provided in 1970 an 'unsecured' second mortgage loan of approximately $30 million towards the construction of the refinery. The first mortgage holder and principal investor was a consortium of British Banks, most notably, Kleinwort Benson. Through the Exports Guarantee Department of the British government, the banks provided secured credit of $125 million

towards the estimated $198 million capital cost of the refinery. Additional financing for the refinery was obtained through federal government grants for specific projects and through equity loans.

Although the refinery was constructed and developed by a private company, Shaheen Natural Resources Company Inc. (SNR), the facility was developed through a consortium of provincial crown corporations to operate under the ownership of Provincial Refining Company Limited (PRL). Mr. John M. Shaheen, New York industrialist and president of SNR, then established a subsidiary company called Newfoundland Refining Company Limited (NRL) to manage the refinery's operations and to facilitate product sales and marketing. Under the terms of an agreement between SNR and the Newfoundland government, the company was to assume official ownership of the refinery in 15 years upon paying off the first mortgage along with payment of an agreed purchase price. Documented figures of the agreed purchase price vary widely from between $2000 to $10 million (McBride and Reid, 1995; Rezori, 1986; Felt and Carter, 1980; Watkins, 1971).

3.2.1 The Provincial/Newfoundland Refining Era

In many respects, the initial period of the refinery's development would reflect its subsequent troubled and controversial future. The two year construction process was hindered by a series of operational setbacks and labour disputes (The Evening Telegram, January 14, 1987). The labour problems resulted primarily from the decision by NRL to

contract with a non-union hiring firm. Although the labour dispute was not resolved to the satisfaction of the province's labour movement, construction was completed and the refinery was officially opened on October 10 of 1973 (Rezori, 1986). The refinery's official opening was a major political and social event for the 1000 invited dignitaries. NRL company president John Shaheen held the $1.4 million gala celebration aboard the ocean liner Queen Elizabeth II (Meany, 1987; Crocker and Benson, 1973).

Soon after initial operations began, however, NRL experienced significant financial problems. These difficulties included failed attempts to finance the expansion of the refinery's operating capacity, rising operating costs, restricted access to the United States oil market and high world oil prices, expenditures on what was criticised as being an unnecessarily large fleet of tankers, and technical difficulties producing the required quota of marketable product at acceptable quality. The company's financial difficulties were made public in October of 1975. By February of 1976, it was announced that the company was going into receivership through Clarkson Company Limited, and that the refinery was to be 'mothballed' (McBride and Reid, 1995; Rezori, 1986; The Newfoundland Quarterly, 1976).

With the demise of NRL, it was reported that the company had been losing $10 million dollars a month in its last year of operation. In addition, the government lost its claim to the unsecured loan, estimated with accrued interest to total $41 million dollars, and the principle investor, Kleinwort Benson of Britian, was owed $110 million dollars. Although as Rezori (1986:3) noted..."the biggest loser (was) the Japanese trading

company Ataka which provided the refinery with oil. It (ended) up holding $330 million in unpaid bills and (went) bankrupt shortly after." In the final assessment, NRL had incurred debts estimated to be between $600 and $700 million dollars and achieved the distinction of being the most indebted company in Canadian and international bankruptcy history (Benson, 1995; Finn, 1986; The Evening Telegram, September 28, 1987). By 1977, the decision was made by the refinery's subsequent receiver Peat, Marwick, Mitchell of Toronto to put the facility up for sale.

3.2.2 The Petro-Canada Era

Between the years 1977 and 1981, interested investors came forth to submit proposals to purchase and reactivate the refinery, but these bids were either rejected or fell through due to poor financial arrangements. It was not until July of 1981 that the federal crown corporation Petro-Canada announced that it would be purchasing the Come By Chance refinery from its receivers. Under the terms of the sales agreement, the British Bank Kleinwort Benson received $160 million dollars including profits from future production upon the refinery's reactivation. The government was also granted future interests in production profits but did not receive the estimated $41 million previously invested in NRL. (Rezori, 1986).

Unable or unwilling to establish a viable operation at Come By Chance, Petro-Canada announced a year later that it intended to sell the refinery, but promised not to dismantle and sell it piecemeal for scrap. However, by March of 1984, Petro-Canada was

unable to attract a buyer for the facility and reversed its position on dismantling the refinery. Over the following two year period, proposals to both dismantle and reactivate the refinery were received. For reasons not made explicitly clear to the public, the deadlines for these proposals were passed and the private negotiations between government officials and the various company representatives ended without a deal. It was later revealed that a promising bid to reactivate the refinery was put forth by the Israeli firm Dor Petrochemical but was rejected by the Newfoundland government due to the company's request for concessions and government assistance to rehabilitate the facility (Harris, 1986).

Finally in September of 1986, Petro-Canada announced that it would be selling the refinery for the nominal fee of $1. The refinery was sold to the Haseotes family of Massachusetts, owners of Cumberland Farms, a large retail gasoline and convenience store chain operating in the Northeastern United States. Incorporated in Bermuda but not in Newfoundland, the refinery was registered under the ownership of Newfoundland Energy Limited (NEL). The refining operation at Come By Chance became a NEL subsidiary called Newfoundland Processing Limited (NPL). According to NEL president Kenneth Brown, the decision to incorporate NEL in Bermuda was based on the firm's desire for corporate 'confidentiality,' and to minimize local public attention in case the planned operation failed (Walsh, 1986). With the purchase, NEL announced that it would be reactivating the facility to "... refine foreign crude for Cumberland Farms Inc. of Massachusetts, the third largest gasoline distributor in the United States" (Rezori,

1986:3). The sale of the refinery to NEL was made official on November 1, 1986.

Thus, Petro-Canada ended a costly ownership of the refinery. In the final analysis, the federal crown corporation purchased the facility in 1981 for approximately $15 million, paid off the principle mortgage holders, and spent an estimated $26 million maintaining it (Atlantic Insight, 1987). Although as Finn observes, "the refinery deal caps 10 years of speculation about a facility critics considered a monstrous white elephant" (Finn, 1986:1).

3.2.3 The Newfoundland Processing Era

The sale and reactivation of the mothballed refinery again provided an occasion for political rhetoric and fanfare. Then Conservative Premier Brian Peckford was pleased with his government's efforts to negotiate and secure the deal. Premier Peckford contended that the sale to NEL would "end years of industrial failures in Newfoundland by taking over the $200 million plant which in 1976 fell victim to the energy crunch" (Thorne, 1986:1). Placing the refinery's sale in a historical context, Premier Peckford further noted that:

> the history of our province is littered with the corpse of failed economic enterprises, enterprises that took with them untold millions of taxpayers' dollars...the Come By Chance reopening shows us again that there is reward for self-confidence, determination and hard work (The Newfoundland Herald, November 8-14, 1986:16).

The reopening of the Come By Chance refinery was also a source of renewed optimism for politicians representing the local communities surrounding the refinery.

Then Come By Chance Mayor Betty Gilbert stated that the refinery's reopening is "absolutely wonderful...it will mean a lot to Come By Chance and the entire area as far as jobs and spin-offs are concerned" (O'Neil, 1986:1). In the nearby community of Sunnyside, Ron White, then chairman of the Come By Chance Business Association, likewise stated that he "...hopes the area will recover from the economic shock it received when the refinery closed down 10 years ago" (O'Neil, 1986:1).

The reopening of the refinery was also economically significant for the Newfoundland government. The sale meant that the government was no longer required to spend public money towards the maintenance of the refinery. In the six month period prior to the signing of the agreement with NEL, the government contributed approximately $600,000 towards the refinery's maintenance (The Evening Telegram, November 7, 1986). Although the government transferred both the refinery's land and docking facilities to NPL, the government was pleased that public assistance was not required to rehabilitate the refinery. This condition of sale was a significant reason why the provincial government accepted NEL's bid to purchase and reactivate the facility. As part of the signed agreement, the company committed to an investment of approximately $70 million towards the rehabilitation and upgrading of the refinery (The Evening Telegram, November 4, 1986). In part, NEL's capital investments towards the expansion and upgrade of the facility were related to proposed future plans to utilize Hibernia crude once the field came into production.

The signing of the agreement between the government and NEL marked the

beginning of what can be termed the 'third era' in the history of the Come by Chance refinery. Although having a troubled past, the viability of the facility appeared positive for NPL as the company began operations with a secure 20 year contract to supply refined product to Cumberland Farms.

With the beginning of the NEL/NPL era it appears, however, that perhaps both the company and the provincial government failed to reflect on some of the difficulties experienced in the past. One such problem was the labour disputes which plagued the refinery's initial construction phase. Indeed, "it's ironic, the ink is barely dry on the agreement to reactivate the refinery and the troubles have already started" (The Evening Telegram, January 14, 1987:3). Once again, a labour conflict arose at the refinery. Although it was not explicitly stated that union workers were to be excluded from the hiring process, Marco Ltd. of St. John's, the company contracted to hire the refinery's employees, specifically indicated that they would not be paying union-scale wages. In response, the construction unions held daily demonstrations outside the refinery. At times 'militant,' a number of the union protestors were arrested by the RCMP. The provincial government had initially agreed to mediate a solution to the dispute, but later decided not to support the interests of labour through a negotiated settlement, and moved to distance itself from the conflict.

Following the labour dispute, NPL soon experienced further difficulties at the refinery. In the fall of 1987 during the refinery's initial reactivation and testing phase, two fires occurred. The fires were reportedly related to the spillage of gasoline at the refinery's

gasoline conversion unit. The first fire, occurring on September 27, was preceded by an 'explosion,' although there were no reported injuries to refinery personnel. According to an NPL estimate, it was to take over a month to implement the necessary repairs at a cost estimated at $1 million. The second fire occurred on November 27 at the same conversion unit but resulted in less damage to the unit's operation. Although this second fire reportedly sent five people to hospital with burns (The Evening Telegram, December 3, 1987).

In terms of the official response to the fires, both NPL officials and government safety inspectors insisted that the fires were not the result of inadequate safety procedures or precautions at the refinery. Although concern regarding the facility's safety procedures was expressed by then Come By Chance Mayor Betty Gilbert. According to Mrs. Gilbert, there was..."little communication between the refinery and the community about coordinating responses to such emergencies..." and she was "...uncertain whether the plant (had) an emergency medical response team on site, apart from one first aid worker" (Walsh, 1987:1). Moreover, a later report indicated that safety procedures at the refinery were a problem as "Employment and Labour Relations Minister Roger Grimes (admitted) to 200 accidents...being reported to his department between 1987 and 1992" (The Evening Telegram, February 14, 1994:4).

In the fall of 1990, there were initial indications that NPL might be experiencing financial difficulties. An internal memorandum, unintentionally released to the media, indicated that in the first nine months of operation the company had lost an estimated $8

million due to human error (Wangersky, 1990). Also at this time, the company began to assess the economic viability of earlier capital investment projects initiated as part of a plan to upgrade and expand the facility's refining capacity. In short, the company sought to determine if a future return on the millions of dollars invested in these projects would be realized. The amount invested was not specified, although an NPL spokesperson did report that it was a "significant sum that the company might not see a return on" (Cleary, 1990:2).

Two years later in the fall of 1992, there were initial indications that the refinery was again up for sale. At that time the rumoured sale was reportedly linked to financial difficulties surrounding the refinery's principle owner, Cumberland Farms of Massachusetts. As part of a move to restructure operations, it was reported that Cumberland Farms had filed for chapter II bankruptcy protection after incurring debts to creditors estimated at $2.7 million (Morton, 1992).

During this same period, NPL was also threatened with further financial problems stemming from a series of legal actions being taken against the company. In the first of the two suits against NPL, the sheriff of Newfoundland was ordered to take possession of $1,860,640 US worth of product from the refinery's tanks. This $44 million suit was brought forth by J. Aron and Company of New York, then principle supplier of crude oil to the Come By Chance refinery. J. Aron and Company alleged that NPL had misappropriated 2.7 million barrels of hydrocarbons for its own commercial use. The supply company argued that the hydrocarbons were used without proper consent and

payment of due compensation.

The second law suit involved a $27 million claim filed by General Electric Capital Canada Leasing Inc. In December of 1989, the company leased a hydrogen plant to NPL and later alleged that NPL had violated the terms and conditions of the licensing agreement (Doyle and Whiffen, 1992).

In both cases, the legal action taken against NPL resulted in a negative ruling. In the J. Aron and Company suit, the company was awarded a recovery order of $1.86 million after proving that NPL had withheld quantities of oil owned by its supplier. In the General Electric Capital Canada Leasing Inc. case, NPL was required to pay $26.8 million dollars under the terms of the licensing agreement (Will, 1994).

Under these difficult legal and financial circumstances it was rumoured at the time that the refinery might not be reopening following a maintenance shutdown scheduled between August and October of 1992. Also at that time, the speculation surrounding NPL's insecure financial status was further promoted by the company having difficulty meeting its payroll as 300 workers had to wait a few days to receive their overdue compensation (Vaughn-Jackson, 1992).

Speculation that the refinery was once again up for sale certainly reflected the significant legal and cash flow problems surrounding both NPL's principle investor Cumberland Farms and the company itself. Indeed, shortly after these significant problems were revealed, it was publicly announced that the Swiss based company Vitol S.A. Inc. was interested in purchasing the ailing refinery. By September of 1992, as part

of a move to become the sole processor and provider of crude oil to Come By Chance, Vitol began issuing debentures to provide the company with operating capital and to finance the rehabilitation of the refinery. Vitol, for instance, provided approximately $10 million towards the completion of the maintenance turnaround undertaken at the refinery in late August of 1992. It appears that under NPL management, the refinery's operating equipment had suffered from neglect and poor maintenance, reflecting the company's poor financial position and limited resources (Will, 1994).

3.2.4 The Vitol/North Atlantic Refining Era

The move to purchase Come By Chance by Vitol represents the fourth and most recent era in the history of this troubled and controversial refinery. A reportedly successful and resourceful company, Vitol is predominantly in the business of buying and selling oil products. The firm recorded sales of $14 billion in 1992. An international trader of petroleum products, Vitol has its administrative headquarters in Geneva, Switzerland. The company also maintains a corporate headquarters in Amsterdam, with trading offices in London and Houston. Vitol's Houston office, which manages the supply and distribution of products, is the principle overseer of the Come By Chance operation. Similar to previous owners of Come By Chance, the refining operation is managed through a subsidiary company called North Atlantic Refining Limited (NAR). Like NEL, Vitol was unwilling publicly to provide a detailed account of the company's owners or shareholders as part of a stated desire to maintain corporate confidentiality (Westcott,

1994).

Vitol's plan to purchase and assume control of the refining operation encountered significant impediments and delays. The actual purchase of the refinery in early August of 1994 occurred almost a year and a half after the initial negotiations for the sale began in December of 1992.

One of the initial delays surrounding the refinery's sale was the issue of the estimated $100 million NPL owed its creditors. The specific details of the debt as well as the manner in which this issue was resolved between the two parties were not revealed to the public (Jackson, 1994). The sales agreement was also impeded by a series of setbacks at the refinery including a major explosion and fire believed to be once again partially attributed to the poor maintenance and operating condition of the refinery's equipment. The explosion and fire which occurred on April 24 of 1994 resulted in a lengthy operational shutdown involving substantial layoffs, and caused damages estimated at $20 million (Connolly and Ducharme, 1994).

Two weeks prior to the deal's anticipated closing date, another significant obstacle arose. Vitol was informed by United States Customs authorities that they were initiating a review of the terms and conditions of the sales agreement. Vitol negotiated the purchase of the refinery under the assumption that it would be able to bring Come By Chance product into the United States (U.S.) duty free. U.S. customs, however, delayed the deal's closing in order to determine if the arrangement was consistent with regulations under the North American Free Trade Agreement (NAFTA). As a result of the intervention by U.S.

Customs, the deal was delayed for several more months due to "NAFTA red tape" (Gullage, 1994:2).

The sales agreement was eventually finalized in August of 1994. The actual negotiated purchase price for the refinery was never publicly released, although it is speculated that Vitol bought the refinery for between $100 and $150 million (Arnold-Foster, 1994). The refinery required significant capital investments towards repairs and to bring the facility to full production capacity.

Although significant capital investments were required, NAR manager Dennis Huckaby stated that the Come By Chance refinery was a good investment for Vitol for a number of specific reasons (Flanagan, 1995). According to Huckaby, the refinery maintains a strategic geographical location as it lies directly in the middle of shipping lanes between Europe and North America. This location will reportedly enable the refinery to negotiate bargain prices with crude carrying vessels in search of a purchaser, particularly when purchasers on the Eastern seaboard are not buying. Huckaby noted as well that although the refinery requires necessary investments in the area of staff skills development and management training, the wages at the refinery represent a significant cost savings as they are approximately 25% lower than similar refineries in the U.S. Furthermore, the deep waters of Placentia Bay and the refinery's 'first-class' docking facilities will permit the world's largest oil tankers to unload their cargo with relative ease. Huckaby observed that this advantage will result in transportation cost savings of approximately 40 cents per barrel. Further cost savings were also expected to be realized

from the refinery's ability to process sour crude which is between $1 to $4 cheaper than lighter crude. The existence of the hydrogen plant and the availability of spare hydrogen capacity were also cited as being an advantage to NAR's proposed petrochemical initiatives. Finally, Huckaby noted that support for the company from both the community and the government was 'outstanding' (Dean-Simmons, 1995).

With the purchase of Come By Chance, Vitol also publicly announced that the company would be making significant capital investments of between $25 million and $50 million to refurbish the refinery. The company's upgrading plans include utilizing 'hydro cracking' and 'vis-breaking' refining processes which permit the firm to process a wider range of different crude from anywhere in the world. In turn, this technology will enable Vitol to produce less toxic or 'greener' fuels, enabling the company to meet stringent regulations for gasoline sales to the Northeastern U.S. The company also proposed to invest $8 million towards the construction of a benzene saturation plant and to modify the existing tanks to enable more efficient storage of gasoline components (Arnold-Foster, 1994).

Once again the news of both the refinery's purchase and the proposed investments to modernize the aging facility was accompanied by positive political rhetoric. Liberal Premier Clyde Wells remarked that "Vitol being a major dealer of oil on the world market gives me encouragement they know what they're doing and have the resources to do it...That gives me reason to believe that the refinery at Come By Chance has a bright future" (Tompkins, 1994:1).

From this overview of the refinery's now 23 year history, it is apparent that significant public and private investments and political support were mobilized to maintain the facility's continued although at times very tenuous existence. Although at several times both the profitability and the viability of the facility indicated a questionable future for the refinery, the Come By Chance facility has repeatedly managed to continue and survive economic ruin, closure, and the threat of disassembly. However, the facility's poor health and safety and overall maintenance record appears to have been indicative of the refinery's often tenuous financial position. Thus, it is in the context of the significant economic and political support mobilized for the refinery's continued existence that the facility's environmental problems must be analysed.

3.3 Environmental Problems at Come By Chance

At the opening ceremony for the refinery in October of 1973, then Minister of Regional Economic Expansion Don Jamieson gave his assurance that the refinery met with the highest environmental protection standards. According to Mr. Jamieson, "Mr. Shaheen voluntarily invested an extra $9 million to make sure pollution standards are met and we are assured that this refinery is one of the cleanest in the world" (Crocker and Benson, 1973:2). As will be presented below, however, significant environmental problems have occurred at the refinery throughout its history. The specific environmental hazards to be examined include toxic waste, oil spillage, discharges of hydrogen sulphide gas, and sulphur dioxide and hydrocarbon emissions.

3.3.1 The Problem of Toxic Waste

In the fall of 1986, NEL successfully negotiated a deal to purchase and reactivate the mothballed refinery at Come By Chance. During this same period it was revealed by the media that the refinery site contained three waste sites. One site in particular received primary attention as it contained toxic chemicals and represented a potential environmental and community health hazard. Located approximately 800 metres north of the refinery site, this 'main site' was estimated to cover an area of 10,000 square metres and to contain a total volume of 20,000 cubic metres of waste (Wangersky, 1986). Although the main site was determined to be large and indicative of poor waste management practices, the primary concern was related to the nature of the chemicals present at the site. Studies conducted by independent environmental consulting firms, contracted by the government's environment department, found 'significant' levels of chemical contamination. The contaminants reportedly found at the site included oils, grease, tank bottom sludge, refining by-products, spent refining catalyst, caustic soda, various acids, and heavy metals such as arsenic, cadmium and lead. Although the chemical compound of most concern present at the site was polycyclic aromatic hydrocarbons (PAH), a compound linked to cancer in humans (Harris and Wangersky, 1986).

Generally, the studies were conducted to analyse the exact nature of the contaminants, to determine the extent to which the site might pose a threat to the environment and to human health, and to recommend measures to either contain or

eliminate the problem. Harris (1986:6) contended that the independent studies were required at the time because..."no one in Newfoundland, including the minister of the environment (knew) what was chucked into Come By Chance's cesspool back in the days when construction projects were more important than environmental issues affecting human health." The limited information available regarding the site and its contents also reflected the dumping practices of NRL. The dumping was never granted proper government approval and the company itself failed to keep a record or 'waste log' of what was deposited at the site (Harris and Wangersky, 1986). Harris contended that when the refinery closed in 1976, NRL management paid little regard to the safe disposal of hazardous waste, and the..."politicians of the day didn't pay attention to environmental issues either" (Harris, 1986:6).

At the main waste site area, there was further concern that the site was not properly contained and that there existed the threat of chemical contaminants leaching into the water table. This concern partially reflected the determination that no prior hydrogeological study had been conducted at the site to determine its adequacy for containing hazardous waste. Harris and Wangersky (1986:1) observed that:

> if no studies were done, government officials would have no way of knowing where chemical contaminants went once they move through rock formations and possibly reached the water table. Hydrogeological studies are an important planning element in waste disposal sites because the type of rock formation determines the location's ability to contain wastes within a designated area.

At the main site, both the nature of the contaminants involved and the possibility of leachate seepage therefore represented an environmental problem of considerable

concern, particularly for citizens residing adjacent to the site in the community of Come By Chance.

Although the existence of a toxic waste site represented a hazard to both the local environment and to the residents of the area, for many years the community was completely unaware that the hazard existed. At the time the existence of the toxic waste site at the refinery was reported to the public by the media, it was also revealed that government officials had prior knowledge of the site since 1976, but had decided not to take action and remedy the problem (Walsh, 1986).

The Come By Chance Mayor at the time, Betty Gilbert, was very surprised that it took so long for the existence of toxic waste at the refinery to become public knowledge. Although Mrs. Gilbert noted that "some people who worked there had to know about it, but I guess it was only a handful and they kept it a secret. Sometimes it's pretty easy to keep a secret" (The Evening Telegram, December 22, 1986:1). It appears, therefore, that in the absence of routine on-site inspections or the enforcement of safe waste disposal procedures by government authorities, NRL was able to prevent public knowledge regarding the dumping of toxic waste at the refinery site.

In terms of some of the determinations made in a study conducted by the environmental consulting firm Acres International Inc., it appears that the local community and its residents were justified in their concerns regarding the site and the potential for watershed contamination. In reference to this 1987 study, Strowbridge (1989:3) wrote:

> a "white and yellowish" leachate spring on the west side of the ridge was found to be contaminated with nickel and heavy metals. Several other springs carried "floating oil product." And some of the contaminated runoff...was floating down a series of gullies through a ditch and into a creek two miles outside Come By Chance.

Mayor Betty Gilbert noted in reference to the contaminants found in the creek that..."that's a fishing creek"..."people go trouting there" (Strowbridge, 1989:1).

It appears as well that few protective measures were taken to protect the public following the determination that contaminants were entering a local watercourse. Former Come By Chance Deputy Mayor Rex Benson observed that..."right now there are no fences, there are no signs to warn us" (Strowbridge, 1989:1). Thus, it appears that the community was well justified in its concerns, as well as in its criticisms of the way the problem was responded to and managed by provincial environment officials.

In response to growing media attention and local community criticism, the Environment Minister at the time, John Butt, stated that "the province has agreed to accept responsibility for any long-term environmental or health problems resulting from unauthorized dumping of toxic chemicals by the refinery's former owner" (The Evening Telegram, December 22, 1986:1). The government was prepared to accept this responsibility, although Mr. Butt was unable to explain why government authorities had refused to undertake any environmental remediation of the site in the past (Walsh, 1986). The government also implemented the decision not to hold the refinery's former operator NRL legally accountable for either the unauthorized dumping practices or the costs incurred in the site's future remediation. Similarly, the provincial environment ministry

assured the new owners NPL that government would assume full responsibility and incur all costs associated with the proposed clean-up effort. To avoid establishing 'blameworthiness' for the problem, Environment Minister John Butt attempted to legitimize the negligence of past government regulatory and monitoring efforts. According to Minister Butt, "the knowledge and technology that has been developed to handle hazardous wastes has all been developed since the late 1970's after the Come By Chance refinery was mothballed"..."and provincial, federal, and most other environmental regulatory agencies were in their "infancy" in the early 1970's (Butt, 1986:1).

Environment Minister John Butt also attempted to downplay concern with the toxic hazards present at the refinery site and the potential for contamination of the town's watershed. Prior to receiving the determinations of the Acres International study, he stated that "even if there is some leakage from the site...it would be physically impossible for it to get into the watershed because of the geography of the area" (Walsh, 1986:1). Government officials further contended that the main waste site contained very little hazardous waste. According to Mr. Butt, in the main site..."well over 90 percent of all the material (was) cement or scrap metal, they are certainly not about to endanger the lives of workers or nearby residents" (Butt, 1986:2). In addition, he also contended that because of the limited amount of hazardous waste at the refinery, the measures required for remediation would not..."cost Newfoundland taxpayers any great amount of money" (Evening Telegram, December 23, 1986:1).

In the final determination, however, the government would spend approximately

$250,000 on five independent studies into the hazardous waste problem. Although the estimated cost for remediation of the sites was originally set at $400,000, the cost of clean-up, consolidation, and sealing of the site would later rise to approximately $2 million, requiring financial assistance from the federal government to facilitate the cleanup effort. In addition, the successive environmental assessment studies conducted at the site and in the surrounding area to determine the extent of contamination resulted in significant delays in the onset of the cleanup effort. The government was aware of the toxic waste problem in 1976, the public was informed of the problem 10 years later, but it would be 1990 before concerted efforts began to remove this environmental hazard from the area of the refinery and the community of Come By Chance.

3.3.2 The Problem of Oil Spills

In 1973, Premier Frank Moores stated in reference to oil and other environmental pollution controls at the refinery that the government is "...happy that all safeguards that could possibly be taken have been taken in this regard" (The Daily News, 1973:7). Although NRL operated the refinery for only 28 months, the 1986 reactivation of refining operations at Come By Chance again meant the possibility of oil spills occurring at the refinery site. Then Opposition Environment Critic Roger Simmons noted that "with a refinery this size- it has a capacity of 100,000 barrels a day- a "mid-size" spill can be expected every four years or so" (Doyle, 1988:14). Moreover, Mr. Simmons further observed that between the time of the refinery's reactivation by NPL in the fall of 1986

and March of 1988 there were reportedly six oil spills at the refinery (Doyle, 1988). Indeed, at the time of the refinery's reactivation Come By Chance Mayor Betty Gilbert, noted her concerns regarding oil spills at the refinery. Mrs. Gilbert stated that "a lot of fishermen are concerned about spills. I can only hope they are using oil booms around the ships" (Johnson, 1987:16).

It appears, however, that two spills in particular, the first on March 5, and the second on March 7 of 1988, brought the potential environmental hazard of oil spills at the refinery to the immediate attention of government officials. The first relatively minor spill on March 5 was the result of a broken weld on the off loading tanker, leading to the release of between 15 to 20 barrels of crude oil into Come By Chance Bay. The second spill on March 7 was the result of human error and involved a crew member failing to properly close a valve on the same tanker. This spill resulted in the discharge of 500 barrels of oil into the bay. Of the estimated 22,500 gallons of oil spilled, approximately one half was recovered through the use of available containment booms and suctioning equipment (Walsh, 1988). The other half remained on the surface and either moved out into Placentia Bay or ended up on the shoreline. The oil recovery effort was partially hampered by high seas and unfavourable weather conditions (Doyle, 1988).

Since the oil spills affected salt water and involved marine tankers, both the recovery efforts and the subsequent investigation into the spills were carried out by the Canadian Coast Guard. The investigation resulted in the laying of charges for two breaches of the Oil Pollution Prevention Regulations of the Canada Shipping Act. The

tanker's owners, Wallemship Management Company of Hong Kong, were also required to post bond to cover the "extraordinary" costs of the cleanup (Doyle, 1988:14).

Angered by the presence of oil pollution on her community's shoreline, Betty Gilbert was highly critical of the off loading practices employed by oil tankers at the refinery. Mrs. Gilbert contended that "It's a holy mess out there... I think it's a lot of stupidity and trying to go too fast too soon... When the tankers come in here they don't care, they just want to load and unload and to hell with it" (Walsh, 1988:2). In response to such criticism, the Environment and Lands Minister Jim Russell admitted that the company's resources were inadequate for effectively responding to a large environmental emergency of this nature. Mr. Russell stated that "the experience in dealing with the recent spill at the Come By Chance refinery indicates there may not be sufficient equipment on site to handle a major spill" (Doyle, 1988:2). In addition, it was further indicated that the refinery did not contain an adequate disposal site for safely storing the debris normally associated with oil spills. Referring to this inadequacy, former Opposition Environment Critic Roger Simmons argued that the refinery's operator should..."be ready to contain the damage, and to have secure storage sites so the damage is not continuing to the environment and the fishery and so on" (Doyle, 1988:14).

When giving his assurance that more effective oil spill response measures would be implemented at the refinery, Environment Minister Jim Russell stated that "his officials have already met with representatives of Newfoundland Processing, Environment Canada, and the Coast Guard as a first step towards firming

recommendations that would see improved response to future spills from this industry and more formal debriefing is planned" (Doyle, 1988:14). However, the environment minister failed to explain why an adequate stockpile of oil recovery equipment and a proper debris storage site were not in place to ensure adequate environmental protection at the time of the refinery's initial reactivation. As well, Mr. Russell did not indicate whether the provincial government would be developing or implementing regulations which would govern the adequacy and effectiveness of the refinery's oil spill recovery procedures. Indeed, six years later there are indications that the facility's capacity to manage liquid wastes including oil has worsened and is causing local environmental damage. According to Woolridge (1994:1):

> the workers say things have been getting steadily worse at the refinery...Thousands of barrels of slop oil and water. Reservoirs which are supposed to be empty in case of a spill are nearly brimming over. All kinds of chemicals are spilling into Placentia Bay. The complaints go on and on.

It appears therefore that the provincial environment department did very little to initiate legal or other measures to force NPL to improve the company's oil spill recovery procedures. Indeed, the 1994 Environmental Compliance Initiative between the government and NPL indicates that the proper storage of oil spill debris continues to be a problem at the refinery. Although under the terms of the compliance agreement environment officials conceded that "decisions concerning the disposal site for oil related debris will be at NPL's discretion..." (ECI, 1994:12). The government therefore does not appear overly concerned that little was done to remedy the problem in the past or that past

performance might predict future behaviour in the absence of strict regulations and enforcement.

3.3.3 The Problem of Hydrogen Sulphide Gas

In April of 1991, residents of the communities of Sunnyside, Arnold's Cove and Come By Chance noticed and began to complain of a "stench like rotten eggs" emanating from the refinery site (Cullen, 1991:7). With the wind blowing from the refinery's direction, the odour was also detected as far away as the community of Garden Cove, approximately 35 kilometres from the refinery. Come By Chance Mayor at the time, Wilson Gregory, described the smell as "very sickening" and also noted its pervasive nature. According to Mr. Gregory, the smell of rotten eggs penetrated the clothes, homes and cars of affected residents. More than an irritant, the odour was causing some residents to experience nausea, stomach and breathing problems, and irritation to the skin, eyes, nose and throat. Concerned with the possible effects the gas might be having on their health, more than 30 local residents contacted the provincial environment department between May 13 and June 5 of 1991 formally to complain (Alyward, 1991).

It was quickly determined that the stench and the health problems experienced by local residents were primarily the result of hydrogen sulphide gas emanating from the refinery site. The gas was evaporating from 'sour water' which had reportedly 'leaked' into an impounding basin located at the refinery (Cullen, 1991). Furthermore, "the gas was

produced because the fuel being processed at the time had a sulphur content higher than that of fuels normally processed" (The Evening Telegram, June 29, 1991:10). Thus, both the sour crude being processed and the sour water in the impounding basin contained unusually high levels of sulphur.

In response to the complaints, Charles Maclean, then environmental officer for the refinery, assured both local residents and politicians that NPL was investigating the problem and was proposing a cleanup operation to remove the sour water from the basin (Alyward, 1991). The company had previously indicated that it would be "installing a second sour water stripper, which will ensure that the sour water containing the heavier levels of hydrogen sulphide (would) not be discharged into the impounding basin where it evaporates into the air giving off the foul odour" (Cullen, 1991:7). A sour water stripper or 'API separator' removes oil from water so the oil can be reused (Jackson, 1994). The hydrogen sulphide and ammonia vapours produced from sour water stripping then can be fed into a sulphur recovery unit where they are recovered and oxidized (ECI, 1994). However, there have been significant problems associated with the refinery's sulphur recovery unit since it was implemented in 1973.

The provincial environment ministry responded by stating that the regulatory standards governing the emission of hydrogen sulphide gas had never been previously implemented. An environment ministry spokesperson noted that the department had never encountered a hydrogen sulphide gas problem in the province before, and therefore did not have monitoring equipment in place for this particular compound. In an attempt to

resolve the problem, Frank O'Dea, environmental engineer with the provincial environment department stated that his department would "...try to convince refinery managers to convert their sulphur dioxide monitors to give them the capacity to monitor both gases" (Alyward, 1991:3). In addition, Mr. O'Dea indicated that his department would be conducting periodic calibration checks of the monitoring equipment to ensure that regulation levels were not being exceeded. The environment ministry, however, would later encounter problems due to their reliance on both the refinery's monitoring equipment and the company's emissions data.

In conclusion, later reports would indicate that hydrogen sulphide gas continued to be a problem for area residents well after the initial complaints were made. In March of 1993, it was reported that "there was a problem last year when children at school were getting sick and basically from what I heard they were throwing up at their desks and people suspected it was because of the smell" (Dooley, 1993:3). As well, a review of the 1994 Environmental Compliance Initiative between the provincial environment department and NPL indicates that the government continues to request that the company improve its methods for managing sour water production. For instance, the compliance agreement states that "the sour water stripper facility will be modified and expanded to accommodate all sour water produced in the Refinery on a regular basis" (ECI, 1994:9).

3.3.4 The Problem of Atmospheric Emissions

At the time area residents were complaining about the foul odour, similar concerns were

expressed regarding the smoke and the 'blue haze' hanging in the air surrounding the refinery. Area residents also began to notice that specific environmental changes were occurring in the area. Most easily discernable for residents was the increased acidity of gardening soil and changes in local air quality. In terms of air quality, area residents began to complain that the air had a "strong sulphuric"..."oily, gas-like smell" (Dean-Simmons, 1993:2).

The problem of sulphur dioxide and hydrocarbon emissions further served to increase existing concerns regarding the potential impact of the refinery's emissions on the health of area residents. For instance, Calvin Lockyear, a resident of Sunnyside, stated that:

> my biggest concern is the long term health effects. Those of us who are middle aged probably have less to worry about because our time is less but for children growing up here it's not very healthy and I think long term we're going to discover in ten, twenty years that the emissions are harmful to our health (Lockyear 1993:3).

Dr. Peter Cleary, a physician practising in Arnold's Cove, expressed similar concern about the emissions and their possible impact on the health of area residents. When discussing the issue of potential long term toxicity, Dr. Cleary stated that the effects were "possibly neurological with the hydrogen sulphide component. Sulphur dioxide itself...is certainly an irritant to anybody with chronic bronchitis or lung disease" (Cleary, 1993:4). He expressed further concern about the limited information available to the public regarding the specific content of the smoke generated at the refinery. Dr. Cleary contended that:

> the impression, and its hard to get a true story because nobody seems willing to admit exactly what's in that smoke, but the impression is certainly of unburned hydrocarbons being dumped on everybody's head chronically from that refinery...I have a funny feeling that it really hasn't been analysed in any depth to see what's in it (Cleary, 1993:4).

When directly approaching NPL to discuss community concerns regarding refinery emissions, area residents and politicians found the company to be disinterested and uncooperative, and to display only a weak commitment to the eventual reduction of emissions. According to Come By Chance Mayor at the time, Wilson Gregory:

> they said it would be improved and we wouldn't have the problem anymore after another six or seven months, but from what I've gathered since that they had no intentions of doing anything about it. Right now they've just got it running out there and that's their concern, as long as it's running I guess that's their only concern and what people around here have got to put up with then, that's their problem (Gregory, 1993:5).

Area residents were therefore frustrated and became increasingly angered by NPL's limited response to their concerns and what was viewed as poor public relations. The media also criticized the government for not forcing the company to be accountable to the public, for adopting the position of company 'messenger,' and for essentially 'apologizing' for NPL's inaction to the problem (The Evening Telegram, November 12, 1993). Frustrated by the perceived lack of response to local area concerns, certain residents began to engage in what could be described as an 'outside plea for help.' Ron White, Chairman of the Concerned Citizens' Committee stated that:

> I feel we live under a cloud of darkness where light is forbidden to shine. The sacred animal I'm referring to is the Come By Chance Oil Refinery. For years there have been no answers given to the people of this area regarding the operations of that facility and that terrifies me. We may be living with what may

> someday be called the biggest cover-up in Newfoundland's history. If anyone cares for human life in our area, please help now. If you have information about the operation of the facility, share it with us please! Our communities STINK. Our schools STINK. Our houses STINK. Our clothes STINK... (The Packet, October 5, 1993:2).

Although area residents and local community organizations continued vehemently to express their environmental and health related concerns, officials of the government's environment department maintained that the refinery was operating in compliance with ambient air quality standards as defined under the existing provincial air pollution control regulations. This determination of compliance referred specifically to standards for sulphur dioxide emissions only and was based solely on data provided by the refinery's own monitoring program (The Evening Telegram, May 18, 1993). The data for sulphur dioxide emissions at the facility was collected at NPL's own monitoring stations located in the surrounding communities of Come By Chance, Arnold's Cove, and Sunnyside.

Limited government response to the emissions problem led to further conflict and criticism as area citizens began to question the government's legitimacy and ability to control industry and protect the environment. The provincial government environment department was criticized for several specific reasons. First, the department was criticized for relying on and 'taking the company's word' in regards to emissions data. Second, the data collected refered only to sulphur dioxide and later hydrogen sulphide emissions, while approximately 75 other 'potentially harmful' compounds are also emitted into the environment (The Evening Telegram, July 5, 1993; Kirby, 1993). The department was also criticized for not conducting routine tests to evaluate the possible effect of emissions

on local water and soil. This criticism in part, reflected the primary concern that department officials were not monitoring the type of feedstock or crude oil entering and being processed at the refinery. Sunnyside resident Ron White stated that he ..." was very disturbed to find out there's very little being done. Basically, what's coming out (of the stacks) no one knows and if they do know, its only the company that knows...and that's not good enough" (Dean-Simmons, 1993:2). The concern over the type of feedstock entering the refinery reflected the determination that for approximately two years NPL had been processing 'heavy hydrocarbons' or residuals obtained from Russia referred to locally as 'Russian Resid.' A residual refers to the thick 'sludge' that remains following the removal of the lighter components from the original crude (Kirby, 1993). The Come By Chance refinery is one of only a few refineries in North America both capable of and 'permitted' to process this low grade, high sulphur sour crude. Given the high sulphur content, a refinery processing this particular feedstock is often noted for being a 'pollution haven.' Although, the primary reason for refining this highly polluting substance is the significant profits that can be achieved in comparison to processing more expensive lighter crude (Whalen, 1993). It appears, therefore, that a correlation existed between the processing of low grade or high sulphur crude at Come By Chance and both increased atmospheric emissions and increased environmental and health related problems affecting the area. Finally, the provincial government was criticized for not appreciating or investigating the nature of NPL's business transactions, given that the majority of the company's crude oil purchases took place under conditions of relative secrecy on 'the high

seas' (Whalen, 1993).

In response to the mounting conflict, community pressure and criticism, provincial environment officials initiated a review of NPL's environmental procedures, including the refinery's air emissions monitoring program. This review revealed "that incorrect readings of sulphur dioxide had been taken from the three monitoring stations set up in the area for over a year" (Dean-Simmons, 1993:1). In addition, the environment department in July of 1993 ordered a clean-up of the facility after it was determined that NPL had been improperly disposing of gases and liquids (Edwards Stacey, 1993).

To address air quality and health concerns of area residents, the provincial environment department hired the Toronto based consulting firm Concord Environmental to review NPL's existing air emissions monitoring program. Although it was noted that for this study "all information provided by refinery and environment department officials was to be taken as accurate without further verification through documentation or records searches" (The Evening Telegram, March 6, 1994:2). In short, Concord was asked to determine whether the refinery met with generally accepted air emissions standards and to determine if NPL had undertaken the 'clean-up' order as outlined in a Ministerial letter from Environment Minister at the time, Patricia Cowan. In addition, Concord was asked to determine if air emissions at the refinery constituted a health problem (Dean-Simmons, 1993).

Even with imposed restrictions on the data utilized, the Concord study supported many of the assumptions and concerns long expressed by local area residents regarding

air emissions at the refinery. In essence, the report..."confirmed that there was a problem with the department's program to monitor emissions," and that the refinery was at times exceeding the legal air quality standard for sulphur dioxide emissions (Dean-Simmons, 1993:1). For instance, emissions for sulphur dioxide in 1993 were determined to be 61,255 tonnes, a level which exceeds the province's own standards for this particular compound (Flanagan, 1994). Furthermore, Concord reported that on the basis of a comparative study of four other refinery's in Canada, Come By Chance emits an estimated average of 37,000 tonnes of sulphur dioxide per year or several times more emissions than the next worse polluting refinery in the country (The Halifax Chronicle Herald, March 21, 1994; Concord Environmental, 1993). In a further reference to sulphur dioxide emissions, Dean-Simmons noted that "the World Health Organization (WHO) standard of 350 micrograms/cubic metre is significantly lower than the provincial standard of 900 micrograms/cubic metre..., and...that WHO recommends a never-to-be exceeded 10 minute average of 500 micrograms/cubic metre" (Dean-Simmons, 1993:2). On the basis of both the Concord study and the WHO recommended limits, it appears therefore that the province's air quality standard for sulphur dioxide represents a potential environmental and human health hazard.

The Concord report was first presented on October 11 of 1993 at a closed meeting involving only 'hand picked' representatives of the Trinity Placentia Development Association, Environment Minister Patricia Cowan and other government officials. Denying public access to the meeting angered many area residents who were demanding

that their personal experiences and health concerns be heard by the government. Over 100 people gathered outside the municipal building in Come By Chance to stage a formal protest (Dean-Simmons, 1993). Environment Minister Patricia Cowan agreed to meet with the public on October 21 of 1993, stating that she was now better prepared to address the public's concerns given the necessary 'experts' would be in attendance to answer questions. At this meeting, Ms. Cowan admitted that the Concord study was not particularly comprehensive in regards to addressing adequately the public's primary concern of the effects of refinery air emissions on local health.

In order to appease the public's concerns, the Environment Minister announced at the meeting that NPL had committed to a $15 million clean-up of the facility. More specifically, the company had agreed to measures to improve air emissions including processing a less sulphurous or 'sweeter' crude, overhauling the refinery's burners for a more complete burning process and activating the Sulphur Recovery Unit (SRU). Reportedly capable of eliminating between 75% and 95% of the sulphur emissions, the SRU was installed when the refinery was constructed but has rarely been in operation,..."and when it did it didn't work properly" (The Evening Telegram, March 7, 1994:8). According to the 1994 compliance agreement between the provincial environment department and NPL, the operation and consistent performance of a SRU is "in accordance with Accepted Industry Practices or Standards..." (ECI, 1994:5).

The Concord study and NPL's proposed maintenance program did not, however, adequately address the health concerns of area residents. In response, both the provincial

departments of environment and health announced that another study would be conducted to examine further the relationship between refinery emissions and regional health problems. This study conducted by Dr. Lesbia Smith, an Environmental Health and Toxicology consultant from Toronto, again confirmed some of the concerns of area residents. Her report indicated that general health problems as well as significant health risks, particularly respiratory problems, can result from excessive exposure to sulphur dioxide. Although an extensive long-term study would be required to document a direct relationship between the refinery's emissions and local health problems, Dr. Smith agreed with many of the recommendations made in the Concord report. In particular, she noted the need for..."appropriate monitoring, evaluation and feedback for control of operations when problems arise. The implementation of these recommendations will minimize the impact of this industry on both community health and environmental quality" (Dean-Simmons, 1994:14).

In essence, both of these studies, conducted on behalf of the government, indicated that the present standards for monitoring air emissions at the refinery were inadequate and represented a potential environmental and regional health hazard. The studies also indicated that the underlying problem was not one of regional health but the government's unwillingness to impose strict environmental regulatory standards and to enforce those standards through the effective monitoring of the refinery's operations. As well, it was argued that "the province still needs environmental laws with teeth and a minister who is just as strong an advocate for people and the environment as she is for

business" (The Evening Telegram, January 30, 1994:4).

By January of 1994, the emissions reduction program agreed to by NPL had not been completed. In response, local area representatives formed a community liaison committee referred to as the 'Regional Environmental Group.' The primary purpose of the committee was to lobby the provincial government..."for legislation for better standards of emission control, including a structure of penalties for breach of regulations" (Hebbard, 1994:3). The committee was particularly concerned that the provincial environment department did not have a penalty or fine structure in place for violation of pollution control standards. In addition, the group would inform the local communities of what was happening at the refinery in regards to operations and potential environmental concerns (Westcott, 1994).

The purchase of the refinery by Vitol in August of 1994 in many ways served to lessen the existing 'pressure' and conflict between the government and the communities surrounding the refinery. With the purchase, Vitol announced a commitment to capital improvement investments of between $20 million and $50 million and announced that a compliance agreement with the provincial environment department had been reached regarding planned reductions in air emissions at the refinery (Murphy, 1995). However, Murphy (1995) noted that many of the proposed capital investments and upgrading initiatives planned for the refinery are conditional upon Vitol's bid to have Come By Chance become a trans-shipping site for future Hibernia crude. In the absence of strict penalties and enforcement procedures, it appears that the government is once again

willing to 'wait and see' if the company follows through with its commitment to improved environmental practices at the refinery.

Over the 23 year history, the repeated attempts to achieve an economically viable refining operation at Come By Chance have coincided with the hope that the facility would promote economic development and provide employment opportunities to this underdeveloped region of the province. An examination of the environmental problems and conflicts arising from the refinery indicated that the government's response to both the hazards and the demands of local residents was woefully inadequate. Although government officials repeatedly stated that measures would be taken to eliminate or to reduce the risks associated with the environmental hazards at the refinery, these hazards were never effectively regulated or eliminated. Indeed, at one point Environment and Lands Minister Pat Cowan spoke of shutting NPL down if more effective pollution control measures were not implemented at the refinery. This, of course, did not happen. In most cases, the environmental problems appear to have become worse even though considerable public pressure was exerted on the government to address these problems. In many respects, the government was either ill-prepared or lacked the necessary resources effectively to monitor and regulate the environmental hazards associated with a corporate industrial complex like Come By Chance. Indeed, a 1990 media report indicated that the government maintained an agreement with NPL not to inspect the refinery without prior company notice and approval and as of 1990 "...the province has so far chosen not to inspect the refinery operation" (Wangersky, 1990:2).

This chapter has provided a political and economic history of the refinery as well as an analysis of the environmental problems and conflicts resulting from the facility's operation. Moreover, an analysis has been presented of the government's response to the conflicts occurring at the refinery and its environmental problems, which included toxic waste, oil spillage, hydrogen sulphide gas and sulphur dioxide emissions. The chapter indicated that the government was ineffective at implementing and enforcing both existing regulatory and monitoring procedures, and at controlling the environmental hazards at the refinery. In many respects, the environmental hazards presented are consistent with the waste stream of a refinery or an industrial complex of this size and type. Do political and financial resource constraints affect the implementation of environmental regulatory policy governing the Come By Chance refinery? Chapters 4 and 5 will examine the various constraints affecting the environmental regulatory process governing this facility.

CHAPTER IV:

RESEARCH FINDINGS (PART ONE): POLITICAL AND FINANCIAL RESOURCE CONSTRAINTS AND ENVIRONMENTAL REGULATION

4.1 Introduction

The intent of this research is to examine the political economy of environmental problems resulting from the operation of an industrial facility. In the preceding chapter, an overview of the political and economic history of the Come By Chance refinery as well as a description of specific environmental problems attributed to this facility was presented. The specific environmental problem which is given particular attention in this research is the refinery's atmospheric emissions and their impact on local air quality. Of all the environmental hazards associated with the refinery, atmospheric emissions proved to have had the greatest negative impact on the communities adjacent to the facility. In order to examine the political economy of environmental hazards, this research has attempted to determine if political and financial resource constraints affect the implementation of environmental regulatory policy as it applies specifically to the refinery and generally to industry in Newfoundland.

The political resources which are mobilized by various interest groups who may compete to influence policy processes include money, information, the threat of force, jobs and votes (Schrecker, 1984/85). Doern and Phidd (1988:107) further observe that within governments, "a scarcity of resources also accounts for shifting priorities. Many priority concerns and policy fields have inadequate resources of time, money, personnel, and political will." For the implementation of environmental regulatory policy to be

effective, political will is an essential exercise of power and therefore received particular attention in this research. However, a government's willingness to respond to industrial environmental problems through regulatory procedures is influenced and affected by several factors. These factors include the perceived impact of the environmental regulatory process on employment and job creation, and conflicting political and policy agendas within government. In addition, this process is affected by media and public pressure, the quantity and expertise of regulatory personnel and the financial resources of government regulatory agencies. This research examined each of these factors in relation to the environmental regulatory process governing the Come By Chance refinery.

4.2 Political Will

Outlining the specific stages of the policy process, Doern and Phidd (1988:96) explain that "the intent of implementation is to produce results in a reliable, predictable way to meet the ideas and objectives sought." For any policy initiative to be reliable and effective, sustained political will and ongoing support is required both throughout the policy process and following implementation. However, as discussed in Chapter 1, environmental regulatory policy in Canada has been criticized for being vague, unrealistic and rarely achieving its promulgated objectives.

In the context of this research, political will refers to the government's willingness and intent to impose regulatory controls in response to the atmospheric emissions problem at the refinery. Particular reference is made to the period from 1991 to 1993

when community complaints regarding air quality in the vicinity of the refinery received extensive public and media attention.

In evaluating the government's willingness to respond to the atmospheric emissions problem at the refinery, the research findings indicate 'polarized' results. Several interviewees viewed the government's political will to be both adequate and effective while others maintained the government displayed limited willingness to impose regulatory controls on the refinery's operator. The results also indicate that the respondents presented views which are generally consistent with and supportive of their professional or personal affiliations and positions. For example, an interviewee currently employed with the Department of Environment argued in support of the actions taken by the government and by his department in response to the environmental problems at the refinery. However, other interviewees, including former regulatory officials and community spokespersons, were openly critical of the government's willingness to respond to these problems. Arguing that the government's political will was adequate, a lawyer with expertise in environmental law and the regulatory regime governing the refinery stated:

> I have never sensed that there was a limited political will. I've never sensed that there were political powers that were operating to rein in the regulators...I've never had a sense that a minister or a premier, for example, was saying to his investigation people, "leave the refinery alone."

A regulatory official with the Department of Environment further argued that political will was evident from the government's decision to impose a ministerial order on

Newfoundland Processing Limited (NPL). Generally speaking, this order required NPL to initiate a clean-up of the various sources of obnoxious odours emanating from the refinery site and to implement a process for responding to community complaints. Although soon after the ministerial order was issued, negotiations began for the sale of the refinery. Eighteen months later the facility was purchased by Vitol S.A. to be managed and operated by North Atlantic Refining Limited. As part of the terms and conditions of sale, the government negotiated an 'environmental compliance initiative' intended to impose more effective environmental controls on the new operator of the refinery. Similar compliance agreements had never been imposed on Newfoundland Processing Limited or any other previous operator. Referring to the government issuing a ministerial order to NPL, an environment department regulatory official argued:

> ...I guess the political will was there because when the advice was passed up, the ministerial orders were issued and the company was in the process of attempting to abide by those orders, and then they went into negotiations with the new owners. The will was here to enforce the agreement upon them as a condition of sale, and it seems to be successful to date.

Outside the sample of refinery management, regulatory and legal officials, other interviewees argued that the government displayed limited willingness to respond effectively to the environmental problems at the refinery. For example, an environmental consultant argued that limited political will was evident because:

> ...they weren't regulating it at all, they had no impact whatsoever on the refinery's decisions. I think when things were at their absolute worst, they were feebly trying to get the company to comply with basic standards, but the company was being completely unresponsive. Then there was a sale, of course, and they were more concerned then, transferring it to a company that they could have a better working

relationship with.

Furthermore, the government's political will was held to be limited and was viewed as a considerable problem by a union representative at the refinery. Referring to the restricted efforts put forth by an environment department regulator, a United Steelworkers of America (USWA) refinery employee observed:

> ...you had men like (regulator) had done everything he could do in his power, just to try to help us there, and still, he was stopped by politics and nothing else...he actually told me himself. Like where he'd wrote up stop work orders... Might of went above his level...and the minister of the environment stopped it, so politics killed it.

Therefore, in this broad assessment of political will, the respondents presented often opposing positions which were generally consistent with or representative of their assumed community or professional affiliations and interests. As well, the positions of the respondents reflected their personal expectations in terms of how the government 'was supposed' to respond to the atmospheric emissions problem at the refinery.

4.2.1 Political Will and Concerns About Employment

Corporate threats of capital flight, disinvestment and the loss of jobs represent powerful countermeasures to increased regulatory and enforcement efforts by government. Often these countermeasures are employed when government regulators attempt to impose stricter control over the polluting activities of the regulated industry. In many instances, the regulated firm argues that forced investment in expensive pollution abatement technology that will never provide an adequate return, compromises the company's

economic viability and could therefore result in potential job losses or plant closure (Grossman and Kazis, 1991; Schrecker, 1990).

This research also attempted to examine the relationship between the government's willingness to impose stricter environmental controls on the refinery operator and their potential impact on employment at the facility. This relationship was identified specifically as it is often argued, particularly by business proponents aligned with the Right of the political spectrum, that government regulations are an unnecessary 'cost to the economy,' and restrict corporate efforts to raise profits, expand investments and therefore create employment. Furthermore, it is argued that government 'red tape,' including environmental regulations, represents a significant cost to the firm that can only be 'made up' by reducing other operating expenses such as those associated with labour costs (Overton, 1995).

The research findings indicate that the majority of interviewees held that the government was reluctant to impose stricter environmental standards on NPL due to the potential impact these measures would have on employment at the refinery. For instance, the environmental consultant interviewed contended:

> ...they were reluctant for one primary reason and that was their concern about jobs, the financial situation being what it is and local pressure to keep the thing open at all costs. The thing started up again after many years of being defunct purely and simply for the purpose of providing jobs, and naturally they weren't going to want to close it down again.

The government's limited political will was also seen as reflecting broader political issues such as the poor state of the Newfoundland economy and concerns that

job losses would lead to consequential reductions in government tax revenues. Describing the political and economic pressures surrounding environmental regulatory decisions, and the often limited support for strict enforcement from senior politicians, a former refinery regulator with the Department of Environment and Lands noted:

> ...it's certainly frustrating when you're sort of in the front lines, and you know that you're not going to get a lot of, shall we say, political support, for taking a very severe action against a whatever, a Come By Chance or a Corner Brook Pulp and Paper or whatever...You know that you can negotiate, you can push it, but these guys always have hanging over the province's head, you know, if you push us too far, we'll go somewhere else...You can see if I was a politician, I'd be exactly the same way, you know. God, can you afford to lose four hundred jobs, six hundred jobs, whatever it is? You know, it's a big deal, in a desperate province like this, where every job counts for something.

As this person indicates, government environmental regulatory and enforcement decisions are often influenced and affected by economic considerations such as their impact on employment, particularly in 'single industry towns' (Gould, 1994). In the case of Come By Chance, for example, the refinery is economically significant to the region surrounding the facility, both in terms of capital investment and as a major employer paying relatively high 'industrial' wages.

Although nine respondents held that employment considerations served to constrain the government's willingness to impose strict environmental controls on NPL, the current provincial environmental regulator overseeing the refinery disagreed with this position. Referring specifically to internal discussions between officials of the environment department and other government ministries like Industry, Trade and Technology, this person argued:

> I'm not aware of any situations where we had to back down from an internal government decision related to a potential job loss or where we have been overruled on an enforcement issue or an environmental compliance issue because another government department feels that it's going to turn into a job loss.

In addition, the data derived from an interview with a federal regulator from Environment Canada indicated that the environmental regulatory process, particularly in regards to enforcement decisions, is relatively straightforward. Although many factors can influence the outcome of regulatory decisions, this federal regulator argued that issues such as political will and conflicting policy agendas have no discernable impact on regulatory procedures at the federal level. According to this official, the factors influencing regulatory decisions more often reflect a particular firm's compliance record, in addition to economic considerations such as the company's ability to afford and implement changes over a negotiated period of time. However, both current and former provincial regulatory officials did indicate that political and policy agendas do at times conflict and affect environmental protection and regulatory decisions.

4.2.2 Political Will and Conflicting Policy Agendas

In the environmental policy arena, governments assume conflicting and often contradictory 'dual roles.' In Canada, provincial governments maintain primary responsibility for protecting environmental resources while at the same time promote their exploitation through economic and resource development policies (Gould, 1994). In Canada, there are also variations in environmental legislation as well as in the extent to

which provincial governments strictly enforce industry compliance. For instance, the province of Ontario "...has been the leading jurisdiction in Canada and in fact one of the leading jurisdictions in the world in environmental rules" (Mittelstaedt, 1996:B1). Although in most cases, unless an actual crisis occurs, industry will continue to resist legislation and government will continue to resist enforcing control over industry (Miliband, 1989; Snider, 1987).

The findings from this research indicate that ten of the interviewees viewed the provincial government as maintaining a 'pro business' economic policy agenda that is incompatible with adequate environmental regulation. This agenda has been evident over recent years by the provincial government's many economic development initiatives, primarily directed towards attracting commercial investment and industrial capital to the province. According to a regulatory official with the Department of Environment, policies directed towards promoting industrial development in the province do often "indirectly" conflict with policy proposals for greater environmental protection. This conflict primarily arises between the interests of environmental protection represented by the environment department and larger government departments with economic development mandates. According to this regulatory official:

> It's obvious which side is usually favoured. If you look within government, there's IT&T (Industry, Trade and Technology), which is several times larger than our department. There's the Economic Recovery Commission. There's a number of groups strictly defined for, there for development. Mines is there to develop mines. Forestry is there to exploit the forest...virtually a large segment of the government is designed to encourage employment and therefore it's very clear that government and the people have clearly favoured jobs over the environment.

When asked if government is moving beyond the now classic dichotomy of jobs versus the environment and shifting to develop policy guidelines which incorporate and promote 'sustainable development' principles and practices, this regulatory official stated that "I might be overly optimistic but I would say there has been a very small shift so far." Both current and former environment department employees also noted that the government's primary agenda of economic development reflects the fact that departmental resources are inconsistent with the realities of pollution in the province and the less than comprehensive nature of existing environmental regulations and enforcement policies.

A former environment department official described the policy agenda of the provincial government as "swinging like a pendulum." In other words, political agendas shift between policies driven primarily by economic considerations, returning very slowly to incorporate some minor changes to environmental regulatory and protection policies. This former environment department official contended:

> ...here in Newfoundland pendulums don't seem to swing very fast. They swing awfully slow and nothing concrete was ever done in the environment department all the while I was there...there were little bits and pieces of amendments put in place to fix this or to patch that hole, but nothing concrete has ever been done.

Several interviewees further noted that the political will for policies promoting strict regulatory standards and environmental protection is constrained by the limited power and prestige accorded the environment portfolio within the cabinet 'hierarchy' of government. For example, an environmental lawyer noted:

> Ministers who were ministers of the environment tended to be first time ministers

> without previous cabinet experience, and were often not there very long. You know, they'd get in, get their feet wet, learn what it was to sit at the cabinet table, and then if they were cabinet material, they'd be moved on to another portfolio. So it was kind of cabinet kindergarten, at least that's how it looked from the outside.

Several interviewees made specific reference to the political status and cabinet influence afforded Patricia Cowan, then Minister of Environment, during the 1991-1993 period when considerable controversy surrounded the atmospheric emissions problem at the refinery. A community spokesperson stated:

> I pitied Pat Cowan when she was there. Honest to God, I mean, she was somebody put out on a limb, and somebody was going to cut it off and let her fall. I really think that she wanted to see the thing cleaned up, but she didn't have the power or the influence in cabinet to make it happen. I mean, she just didn't have it, and she was sort of sent adrift. "You go out there and deal with them people. Do whatever it takes to get this problem solved. Don't spend any money. We won't be changing the regulations because of the fuss that's going on there..."

On the basis of these findings, it appears that the government's willingness to undertake both regulatory and environmental initiatives is generally constrained by both conflicting political agendas and the political power afforded those individuals in cabinet representing the interests of environmental protection. These findings indicating that the 'institutional self-interest of the state' and provincial politicians are primarily directed towards supporting and promoting the capital accumulation process is consistent with arguments presented in other research (ie. Schrecker, 1984/85; Offe, 1984). Although in the case of Come by Chance, community action and subsequent media attention appears to have at least prompted government officials into undertaking an investigation of the sources of the air quality complaints.

4.2.3 Political Will and the Media

Although the research findings indicate that the majority of interviewees viewed the government as displaying limited political will in responding to the environmental problems at the refinery, several interviewees outlined the positive effects of bringing air quality concerns to the attention of the media. Given what was perceived to be a limited response by both NPL management and environment department officials, several interviewees noted that negative media attention served to develop greater public awareness of the problems, leading eventually to a political response. For example, a regulatory official with the Department of Environment observed that both community complaints and subsequent media attention "made some people in government sit up and realize that the items that we had been saying were a problem for some time, were quite a serious problem with regard to community complaints, and that they should be dealt with even if we didn't have specific regulatory limits and parameters." Further outlining the importance of bring the problems at the refinery to the attention of the media, a USWA union employee at the refinery explained:

> I had people approach me from the Fifth Estate, CBC Prime Time News and so on. They were jumping like to do an interview, and we wanted to give it to them. So we didn't do that because again a lot of it was media hype. But when it did come to the last, when CBC was in there doing it- we decided either this goes to the public or we're going to have somebody killed, well, let's go...It was the only choice, we had to do it. They would not look at anything, the government would not push anything.

A community spokesperson representing the interests of area residents concluded that "once the media got involved , that's when the government sort of switched over." This

indicates that political will is not a constant, but is variable and subject to influence. In the presence of considerable public criticism and media attention, the environment department initiated an investigation into the sources of the obnoxious odours emanating from the refinery. This investigation resulted in the government issuing a ministerial order, requiring NPL to begin a process of cleaning up the sources of the odours, to implement measures to begin improving the quantity and quality of the stack emissions and to initiate procedures for responding to community complaints. In addition, the government sought the advice of the Toronto-based consulting firm Concord Environmental and an environmental health expert to determine the principle causes of the air quality complaints and their potential impact on the health of local residents. Thus, media attention appears to have served an important role in prompting a government response to the atmospheric emissions problem at the refinery.

4.3 Quantity and Expertise of Regulatory Personnel

4.3.1 The Issue of Numbers

The environmental regulatory process is often constrained by resource limitations as well as the expertise and the number of personnel available to routinely inspect for and enforce industry compliance, and to conduct thorough investigations if non-compliance is suspected (Yeager, 1991). However, regulatory officials from both the federal and provincial levels of government maintain there is an adequate number of personnel available to monitor industrial operations in the province effectively. In addition, an

environmental lawyer argued that "because Newfoundland doesn't have very many industrial facilities, the people in the Industrial Environment Engineering Division can concentrate their efforts on two or three facilities that require their attention. They do pay lots of attention." In the Department of Environment, there are currently 8 regulatory personnel employed to monitor and enforce the environmental regulations governing the polluting activities of all of the province's industrial operations.

Although regulatory officials generally maintained that the number of personnel was adequate to oversee industry in the province effectively, a provincial regulator did indicate that more personnel would improve the department's ability to "pro actively" respond to industrial environmental problems. This interviewee observed that:

> ...there's a lot of small or unique industry problems that it would be nice to get in and look at some of these things in advance. In a certain number of cases we are responding reactively to problem situations and only responding when they become problems. Ideally, it'd be nice to be proactive and spot things before they come up, but in all honesty I don't think we have an adequate number of staff to be able to do that. When things do become problems we manage to deal with them. Sometimes it takes a certain period of time, but, in general, I think staffing is adequate to handle the industries we have.

In most cases, any desired increases in staffing were viewed as both unrealistic and unlikely given current government initiatives towards deficit reduction and the recent layoffs of public sector employees. Furthermore, a regulatory official with the Department of Environment argued that staffing limitations in the department generally reflect the public's unwillingness to pay for environmental protection. This interviewee stated:

> ...that's a political question. If I were to say, no, there isn't, then my boss would be down my back. If I say yes there is, that's not telling the truth either. There's never enough. If you were to employ every single person in this province in environmental protection, you could never cover everything that needed to be done, just like if you put every dollar into health care, you could never keep everybody healthy all the time....People decide how much they're prepared to pay on the environment, and you get what you pay for.

The data derived from interviews with regulatory officials further indicated that staffing limitations necessarily lead to the development of departmental 'priority lists.' In essence, the department ranks and responds first to those problems representing the greatest environmental risk or potential harm. In addition, a former regulatory official with the Department of Environment noted that the department often responded first to those problems that generated the most complaints or "...issues which are causing us more verbal abuse, etc...and unfortunately that tends to be the way, when you're understaffed with a lot of problems, that tends to be the way you operate. You tend to say, if it ain't broken, don't fix it." This interviewee further noted that during the mid 1980s when there were several complex environmental concerns surrounding the commercial and industrial operations at Hope Brook, St. Lawrence, Long Harbour and Come By Chance, departmental staffing did prove inadequate, particularly in terms of inspecting and enforcing compliance with environmental regulations. This former regulatory official recalled:

> We got six guys doing all of that, so you know you need six guys minimum. If you were going to enforce as opposed to negotiate and inspect compliance, but if you were going to enforce compliance, you would need six guys virtually full time at the refinery. Well, maybe that's an exaggeration, but you'd certainly need a virtually constant presence out there....Then there's a bunch of minor stuff that's

> going on...you are lucky if you're getting a guy out to the refinery once a month.

In terms of current regulatory procedures and the level of inspection at the refinery, it appears that with the recent change in ownership and subsequent improvements in environmental management at the facility, the Come By Chance refinery is no longer the departmental priority it once was. A USWA union representative observed that:

> ...right now the watch dogging unit, I guess you could call it, the overseeing by the government is a lot less now than it ever was because they basically, once they saw that the company started to increase, improve their environmental status and so on, they backed off.

Therefore, there has been a slight (ie. two staff) increase in the number of industrial environmental regulatory personnel in the Department of Environment since the mid 1980s. The current level of personnel appears to be adequate when departmental priority lists are manageable, although limitations require staff to 'react' to industrial problems either on the basis of complaints or the problem's relative level of environmental risk.

4.3.2 Competency and Expertise of Regulatory Personnel

The interviews with regulatory personnel, refinery management and legal officials, indicate that there exists sufficient departmental knowledge and expertise to regulate effectively and oversee the refinery as well as the province's other industrial operations. For instance, an environmental lawyer argued that:

> ...everything that I've seen from the Department of Environment, both federally and provincially, indicates to me that the people with that responsibility are

> competent and know what they're doing...once again, from what I can understand, the level of regulations or the level of monitoring and the level of intervention by Newfoundland regulatory officials with respect to the refinery is not out of line with what you'd expect in most other jurisdictions in Canada...

Referring specifically to the Come By Chance refinery, an environment department regulatory official noted that sufficient knowledge and expertise of refining industry operations and processes were similarly evident at the time of the refinery's construction as they are currently. This regulator observed:

> ...from reviewing correspondence and memos and minutes, I think that there was more than adequate expertise here and it was also augmented by Environment Canada personnel nationally who were down. And I think they probably did a lot of ground work for the province based on refinery experience in other areas as to agendas the province should pursue with regard to ensuring that the start up of the refinery didn't result in significant problems. Currently... yeah, once again, I'd say yes we do. You know, with the problems that have appeared over the last few years, we've obviously significantly increased our experience...

Outside the sample of regulatory, refinery management and legal officials, however, most interviewees indicated that the provincial government's regulatory personnel did not possess sufficient expertise to effectively oversee and regulate an industrial facility like the refinery. Referring to the competency of the environment minister specifically and departmental staff generally, an environmental consultant argued:

> Pat Cowan as Minister was completely incompetent. I don't mind saying that. I would say that to Pat Cowan herself. In fact, actually, I have...It's been my contention all along that we don't have the expertise in our Department of Environment to adequately deal with these high tech industries. I may be overlooking somebody who's a genius at this kind of thing, I don't know, but none of the people I've encountered have impressed me with a huge amount of knowledge.

A community spokesperson also compared the competency and expertise of the regulatory engineering staff within the Department of Environment to the engineering personnel employed at the refinery. According to this interviewee, the more experienced and competent industrial engineers tend to pursue a career in industry given the availability of significantly greater financial rewards. With specific reference to expertise regarding the refinery's atmospheric emissions, this spokesperson argued:

> I mean the people they got working in their department is certainly not as qualified to talk about emissions as the people who's working in that refinery today...they got experts in there, and I mean, they know how much smoke is produced in a half a barrel of oil, and everything like that. The government don't have the expertise in their offices to really get out and talk to those people and really muscle them down, you know. I mean, it's going to take some smart people, working for the departments and government is not paying the wages. I mean, some of those fellers, engineers, chemical engineers, they're probably getting in excess of a hundred thousand dollars, whereas government then are only paying sixty, seventy thousand dollars. So, I mean, those chemical engineers are going to work for refineries, and not for government departments, so that's a problem.

Finally, the interview data from a USWA union representative indicated that an official assigned by the Department of Environment to oversee the refinery's operations appeared to have received minimal prior training from the department in regards to refining processes and essentially received 'on the job training' through the assistance of refinery personnel. In reference to overseeing atmospheric emissions, this union representative observed:

> ...well what it would come down to is that the Department of the Environment trusted the company to report if the emissions went over until an (environment department official) was assigned there full-time. And (he) told me his self, he had to basically learn. He was not an oil refinery engineer or anything, he was just an environmental engineer and a new engineer basically. I don't know how long

> he was with the Department of Environment, but he got no expertise in oil refineries and so on, right? Not as such as regard to years of experience or anything, right? He had to basically learn the process his self. Like when I had to come out there and sat down with him and told him these bench studies, he didn't know what I was talking about there. I had to explain to him to a tee what it was about. And no offense like I say to him, that's just the way it was.

According to an environment department official, the necessary training for regulating the refinery can be partially obtained through oil refining and industry related courses offered outside the province in locations such as Texas. Furthermore, the specific training requirements are identified by the person in the position who then submits a request that the training be provided by the department. The provincial Auditor General reported in 1994 that employees of the Department of Environment must submit a personal request for training because "...there is no formal process in place to identify individual training needs" (Marshall, 1994:123). Additional training for overseeing the refinery is obtained through self-instruction and from materials gathered from sources such as college programs and the American Petroleum Institute. Although as indicated above, important and essential training is obtained 'on the job' from the refinery's process engineers who explain to the regulator step by step the functions and purposes of the various process units.

While it appears to be the contention of legal personnel, refinery management and regulatory officials that there is sufficient expertise to oversee and regulate industry in the province effectively, other interviewees disagreed with this assessment. The problems relating to the expertise of provincial regulatory personnel were generally seen as being

related to the government not providing departmental staff with the specialized training required to regulate a particular industrial operation effectively.

4.4 Financial Resource Constraints

According to Caputo (1989), environmental regulatory and enforcement agencies in Canada operate under conditions of financial constraint and often "...lack the resources to get the job done" (McMullan, 1992:91). In a general way, this research examined government financial constraints and their possible impact in terms of regulating both the Come By Chance refinery and industry in the province generally. The research findings derived from this analysis generally indicate that sufficient financial resources are currently available for the monitoring of the province's industrial operations. With specific reference to monitoring the refinery, an environment department official contends:

> I know that we have the resources available to maintain the effort that we're maintaining at the moment which I see as certainly being adequate, particularly in light of the improvements that have occurred out there in the last couple of years. One more staff might be nice. I don't think that's an absolute necessity. I think that we can continue to regulate the refinery with the resources that we have.

This regulatory official also noted that although current departmental finances are sufficient to support current monitoring efforts, 'extra' resources would probably not be available for initiatives such as a terrestrial effects monitoring programme at the refinery. The official commented that:

> ...if the government opted to do a terrestrial effects programme out there or if I

> desire it, I don't think the money would be available for it. But what we've been doing is pursuing industry to undertake these studies themselves in conjunction and consultation with the department, and that what's occurring out there at Come By Chance.

Similar to the issue of departmental staffing, several interviewees noted that budgetary restrictions result in decisions regarding departmental priorities, based again on relative severity or the immediacy of existing problems. According to a federal regulator, "you put your balance where it has to go. Everybody does that. If all of a sudden, everybody decided to be bad, you could get in a lot of trouble. I don't know, but you'd find the resources somewhere."

Although the interviews with federal and provincial regulators indicate that existing financial resources are sufficient to monitor the province's industry effectively, a regulatory official with the Department of Environment did state that environment departments will never receive sufficient financing relative to the extent of society's pollution problems. According to this official,..."there's always things you would like to do and need to be done, and there's never enough dollars...The fact that there's pollution out there means that we haven't done everything that can be done."

Finally, the provincial government's relative commitment to providing resources for environmental protection is perhaps a reflection of budgetary expenditures for the operation of ministerial departments. In reviewing the 1995 provincial budget tabled by Finance Minister Winston Baker, the government's gross expenditure for the Ministry of Environment was $7.2 million. In comparison, the gross expenditure for the operation

and the numerous 'enterprises' of the Ministry of Industry, Trade and Technology was $50.1 million. On the basis of this simple comparison, it appears that the government is more committed to the "identification of new business investments, trade opportunities and market development for the Province" than to the financing of programs and policies directed towards environmental protection (Government of Newfoundland and Labrador, March 23, 1995:3). Thus, it appears that the provincial government's current commitment to policies based on the principles of 'sustainable development' is perhaps limited given the inequitable distribution of the government's budgetary expenditures.

CHAPTER V:

RESEARCH FINDINGS (PART TWO): REGULATORY AND LEGAL CONSTRAINTS AND THE POLITICAL RESOURCES OF NPL

5.1 Introduction

In Chapter 4, the research findings pertaining to regulatory constraints associated with political will, the quantity and quality of regulatory personnel and departmental financial resources were presented. A review of the literature also indicates that the implementation of environmental regulatory policy is further constrained by factors such as the content of environmental regulations, enforcement procedures, the legal system and by the political resources of the regulated firm. It will be argued here that the ability of the regulated firm to mobilize political resources to constrain the environmental regulatory process is not a constant but varies with the political climate over time and is typically most effective when the government in power promotes a 'pro-business' political agenda. This chapter examines the research findings in relation to each of these factors with specific reference to refinery operator Newfoundland Processing Limited.

5.2 Regulatory Constraints

Laws, statutes and regulations represent the outcome of political policies through which governments attempt to constrain or modify economic behaviour in the private sector (Thompson, 1980). In the context of air pollution,

provincial regulations generally outline objective standards for environmental quality relative to specified limits or calculated parameters for pollutants emitted into the atmosphere. In Newfoundland, "the provincial Air Pollution Control Regulations use both ambient air and point-of-impingement standards to determine compliance...the ambient air standards generally follow the federal maximum accepted values, while the point-of-impingement levels are similar to Ontario's" (Concord Environmental, 1993:6-9). To determine regulatory compliance with the point-of impingement standards governing the refinery, sulphur dioxide (SO2) emissions are monitored on an hourly, daily, monthly and yearly basis using a network of receptors located in the communities surrounding the facility. As mentioned above, SO2 emissions are also calculated in terms of a province-wide standard (ie. kt/year) or a maximum of SO2 emissions generally based on federal guidelines. The 1993 Concord Environmental (1993:6-9) report explains that:

> Newfoundland reduced its sulphur dioxide emissions from 58 kt in 1980 to 43 kt in 1986. The federal-provincial accord (to reduce acid rain) sets the maximum sulphur dioxide emissions for the province at 45 kt, so that at that time it was below its target. However, due to current refinery operations the province now exceeds the target.

Therefore, the quantity of SO2 emitted at the refinery can also be calculated relative to the facility's 'contribution' to the provincial maximum standard for SO2.

However, in the environmental policy field, the objective content of legislation and regulations has been criticized for being unrealistic in terms of defining pollution parameters precisely, and for being vague, difficult to enforce and generally ineffective for controlling the behaviour of large industrial polluters (Webb, 1990; Emond, 1982; Swaigen, 1982). More importantly, environmental legislation is criticized for outlining only mitigating measures for pollution control instead of operating from the premise of actual prevention (Seis, 1993; Steidlmeier, 1993). In the case of the refinery, data derived from the interviews indicates that the air pollution control regulations governing the facility proved to be ineffective in providing acceptable community standards for ambient air quality. According to these data, existing air pollution control regulations were ineffective for a number of reasons.

First, the regulations were found to be outdated, in need of review and not applicable to specific emissions problems encountered at the refinery. According to a regulator with the Department of Environment, "...we could certainly do with improved standards. I believe the air pollution control regulations date from the early 70's, so they are certainly due for review and replacement." In addition, the existing regulations do not contain standards governing hydrocarbon concentrations in ambient air. Hydrocarbons, in particular, were identified as being a

principal cause of the air quality problems in the vicinity of the refinery from 1991 to 1993. Hydrocarbons were also a primary source of citizen complaints regarding the 'blue smoke' and the 'propane oily smells.' The provincial regulator for air emissions at the refinery noted:

> ...we've run into situations that weren't contemplated during the draft of the previous legislation and our regulations, and it has stymied us. For example, hydrocarbon concentrations in ambient air. That may have been an ideal solution to deal with the community complaints a couple of years ago, but unfortunately it was an item that we would have liked to have had and it just wasn't in our back pocket to use...We knew hydrocarbon odours were a big concern out there but we were left without the regulatory device to do it...So that left us with no regulatory muscle in terms of going after them for that. We had to pursue them on a nuisance odour basis.

According to a number of interviewees, the hydrocarbon emissions problem was primarily the result of unburnt hydrocarbons being emitted from the refinery's heaters. Generally speaking, the refinery heaters heat the refinery fuel oil to a range of extreme temperatures causing a process similar to distillation to occur. The various components of the distilled fuel oil are then removed and sold in the form of more familiar hydrocarbons such as gasoline, diesel fuel and home heating oil. Although the process of refining fuel oil or 'waste oil' is a standard procedure for a 'sour crude' refinery like Come By Chance, the high hydrocarbon emissions were generally attributed to the age, poor maintenance and inefficiency of the refinery's sub-standard burners.

Although the previously cited regulatory official indicated that the existing provincial environmental regulations proved inadequate in regards to the hydrocarbon odour problem, another regulator interviewed from the Department of Environment

argued that the issue of refinery odours is consistent with problems encountered in other jurisdictions. This regulatory official contended:

> I think the problem may be the regulations don't address the problems that were there. The problem was probably more odour than sulphur dioxide and dealing with an odour is not as easy as dealing with a chemical because you can't put a number on odour. So maybe the regulations were inadequate in that sense, but no more so than probably the regulations anywhere else. It's something that people have not come to grips with, so we're no further off the track than anybody else or no further behind than anybody else.

According to this official, sulphur dioxide (SO2) emissions were only part of the problem in terms of ambient air quality concerns at the refinery. Although a 1993 evaluation of air emissions at the Come By Chance refinery by the consulting firm Concord Environmental did indicate that the refinery's SO2 emissions were six and a half times greater than any comparable refinery of its size in Canada. As discussed in Chapter 3, the high gross total of SO2 emissions at Come By Chance were generally attributed to factors such as the facility's malfunctioning sulphur recovery unit and the significant number of open vents at the refinery. Several interviewees argued that the increase in hydrocarbon and SO2 emissions between 1991 and 1993 was also partially related to economic factors such as the company's decision to refine a less expensive feedstock. These interviewees noted that the visible quality of the emissions noticeably changed after Newfoundland Processing Limited (NPL) switched from refining the 'sweeter,' low sulphur and more expensive North Sea Brent crude to considerably less expensive but high sulphur 'sour' crude. According to these interviewees, without the proper functioning of the refinery's sulphur recovery unit, the switch to refining high sulphur fuel oil would

have significantly affected the level of SO2 emissions emitted at the refinery.

Although the SO2 emissions at the refinery were found to be excessive as compared to other refineries in Canada, only on a few occasions did refinery operator NPL actually violate the regulated limit for this compound. In the opinion of several interviewees, the ambient air quality standards for the province are simply too "generous." For example, a community spokesperson argued that:

> ...the problem was the way that the ambient air is done. It's divided into so many parts per million, but it's also done province wide. So yes, that refinery has a negligible effect on the environment of Newfoundland as a whole. So they are complying with the new environmental laws, but I'm not living on a stretch across Newfoundland...I'm much more worried about a forty kilometre radius than about everything else...That's what we were saying constantly to the Department of the Environment. You have to be much more specific in what's being belched out to the atmosphere in a local area, not just tell us no, this is not dangerous to the health of all Newfoundlanders. Of course we know it's not dangerous. If it was, god help us all, from one refinery.

Furthermore, several interviewees noted that the province's air pollution control standards as applied to the refinery's emissions are too generous relative to the limited number of industrial pollution sources in the province. For example, a union representative observed that the Long Harbour phosphorus plant is now closed and the electrical generating station at Hollyrood installed filters to reduce the emissions coming off the facility's heaters. Therefore, "Come By Chance has all kinds of leeway to go up!...The times what the government called exceeding the emissions, they basically were exceeding emissions for the whole damn province, that's what they were doing."

It appears that the existing provincial ambient air standards proved to be

problematic, particularly in terms of providing air quality standards acceptable to the communities adjacent to the refinery. Indeed, one interviewee cited a comparison made between the air pollution control regulations governing Come By Chance with refineries operating in other jurisdictions. According to a USWA union representative:

> ...there was a guy who came up here from R.A. Parsons Limited which is the original designers of the sulphur plant back in the 1970s, to look over the plant and tell what needed to be done with her. And he said, the only other place you see it as bad, when you come in the roadway and see the emissions that are going off the place, is in the... Philippines. And he said, anywhere in the state of California or even any of the eastern states, you'd be shut down in five minutes. He said to have what was coming out of that place, California would shut you down. It was just a simple as that. But because there's no environmental regulations here, there's still no environmental regulations here. Like the figures even now that's been going out into the atmosphere, you wouldn't get away with it anywhere else.

This union representative also compared occupational health and safety regulations in Newfoundland with those found elsewhere in Canada. According to this interviewee, "you go through the Occupational Health and Safety (OH&S) Act of Newfoundland and you go through the OH&S Act of Alberta and it's like chalk and cheese when it comes down to refineries." Referring to the existing Act as well as recently proposed amendments, this interviewee observed that in comparison to Alberta, Newfoundland's legislation contains few basic provisions pertaining specifically to industrial workplaces such as "confined spaces and the isolation of pipelines." Furthermore, limited regulatory provisions pertaining directly to industry generally and the refinery in particular, have on occasion constrained the union's ability to have safety concerns at the refinery adequately addressed by OH&S officials. Citing an example of

such an occurrence, the union representative stated:

> ...regarding hydrogen sulphide gas monitors, stationary monitors put in the unit. Now in Alberta this is a given. I mean to say, you go up in any refinery in Alberta and so on, you'll find hydrogen sulphide gas monitors...And we would try to get them. We had men go down, knocked down, knocked out with H2S, and if we hadn't got the air packs out to them, they would have been dead. And the government was told this. The answers I got back from Ken Dunphy, the manager of Occupational Health and Safety, was that there was nothing in the Occupational Health and Safety Act of Newfoundland that says that the company has to have hydrogen sulphide gas monitors on the units. That was it, so that was that. Same thing with the life boat, we tried to get a life boat put on the jetty. Same answer. Nothing in the regulations that says that they have to put it there...

A review of the OH&S regulations of Newfoundland and Alberta indicates that unlike Alberta, Newfoundland's OH&S regulations do not contain a section which outlines workplace exposure limits for specific chemical hazards. In Alberta's OH&S regulations, the section pertaining to 'Occupational Exposure Limits for Chemical Substances' outlines the specific limits for workplace exposure to hydrogen sulphide (H2S). For example, over an 8 hour period, the exposure limit is 10 ppm and 14 mg/m cubed and the total 'ceiling' occupational exposure limit is 20 ppm and 28 mg/m cubed (OH&S General Regulations, Province of Alberta, 1995). When determined to be a potential occupational hazard, H2S monitors must therefore be installed in a work unit if an employer is to properly evaluate whether they are in compliance with Alberta's OH&S regulations.

Given the above examples of both the limited environmental and health and safety regulatory constraints and the inefficiencies in relation to the refinery, this research also addressed the issue of regulatory amendment and reform. In reference to amending the air

pollution control regulations as a means of addressing the air quality problems at Come By Chance, a regulatory official stated that:

> ...it sounds like a simple solution, but it does take a significant amount of time to review possible regulations, items that are necessary for inclusion, items that would be enforceable by the department and then to have those regulations drafted and adop' ' ..d promulgated...it's a very time consuming process and it couldn't be done on short order.

Interviews with provincial regulatory officials revealed that the province's existing environmental regulations are currently undergoing an extensive review. The review of environmental regulations is occurring in conjunction with a larger government initiative to amend provincial regulations held to be negatively affecting both potential development proposals as well as existing commercial activities. For instance, a primary objective of the government's recently proposed reforms to the environmental assessment process is "to determine the extent to which the existing environmental assessment process may be creating unnecessary impediments to economic and business development in the province..." (Government of Newfoundland and Labrador, 1995:1). In short, the intent of this initiative is to streamline government regulatory procedures, including making it easier to obtain pollution permits, and to make government services 'user friendly' for business and prospective capital investors. Referring to the proposed amendments to the Environment Act, regulatory officials with the Department of Environment argued that unless they're subsequently "watered down," the changes will generally strengthen the department's ability to control pollution and protect the environment. Although in the environmental regulatory process, the existence of 'stronger

regulations' does not necessarily lead to their actual enforcement.

It appears therefore, that the constraints associated with the province's existing air pollution control regulations are similar to those problems identified in other research (Webb, 1990; Emond, 1982; Swaigen, 1982). Referring to Newfoundland's environmental legislation generally, the Auditor General also reported in 1994 that "...much of the legislation is outdated and vague, making it difficult to enforce compliance" (Marshall, 1994). In short, the province's ambient air pollution standards were ineffective for controlling the specific atmospheric emissions problems encountered at a large industrial facility like the refinery.

5.2.1 Regulatory Inspection and Compliance

A significant constraint affecting the environmental regulatory process is not just the regulations governing pollution activities but also the extent to which the regulations are actually enforced. As Aalders (1993) observes, the 'paradox' of environmental regulation is that regulatory inspectors more often employ an accommodative and conciliatory approach to enforcement than a stringent, penal style of enforcement. Industry violations of regulatory standards often do not result in a fine or a penalty being levied against the polluter. More often, regulatory officials will attempt to bargain for future compliance (Nemetz, 1986).

In reference to the Come By Chance refinery, the research data indicate that

during the period in which NPL operated the refinery, significant concerns regarding compliance and the effectiveness of regulatory inspection did arise. According to a USWA union representative, government health and safety inspectors were easily manipulated by refinery management and the inspectors themselves were significantly under qualified to carry out inspections at the facility properly. The USWA representative interviewed observed:

> ...the operation's manager...would question the inspector to a point that he was crossing out directives that he already wrote, directives I mean that were violations of the OH&S Act...He didn't know the difference, inspector didn't know the difference. And this is why we kicked up holy hell, like I say, we put resolutions into the Federation of Labour and everything else, but it was a waste of fucking time to send an inspector who didn't know what the christ he was looking at. An inspector had to come out and ask me what H2S is, what the christ is the good of an inspector...And like a lot of times, the directives were wrote up and they would not even come back to see if they were carried out...they wouldn't even recheck back on it.

Problems associated with regulatory inefficiency and non-compliance were further evident by the number of health and safety violations which occurred during the period NPL operated the refinery. In 1994, "Employment and Labour Relations Minister Roger Grimes (admitted) to 200 accidents...being reported to his department between 1987 and 1992" (The Evening Telegram, February 14, 1994:4). And according to the USWA union representative cited above:

> there were 256 violations of the (OH&S) act. There were 69 workplace violations alone. And I'd say out of the 256, I'd say a 100 of them, probably to a 120 easily...this is over a five year period...were repeated...I don't know if any other facility has had that many violations who has not been issued a stop work order or has not been shut down. I don't know of any. If there has, it's news to me. Because of the fact that it was repeated and repeated and repeated. We knew, and it was

> only by luck that we didn't have somebody killed. That's all, pure luck. Like I can say incidents off the top of my head, that the regular public, if they knew about it, they'd shut the place down their selves.

Although not officially documented as specific violations of the province's air pollution control regulations, the venting of various gases directly into the atmosphere was particularly evident at the refinery. According to a USWA union representative, "they'll tell you, even admit their selves that basically anything that they could vent to atmosphere was going to atmosphere. If it wasn't a problem, if it was something that wasn't putting some body down, that's where it was to." For example, "the vacuum tower steam injector vents. They were putting out roughly 200 and 300 ppm hydrogen sulphide gas. This was a steam vent, it was going to atmosphere...They were not supposed to be going to atmosphere. Right now they're not going to atmosphere." This interviewee also observed untreated sour water contained in the facility's impounding basins being put under pressure, "pumping it basically into a spray and releasing it" into the atmosphere. Benzene in a gaseous state was also released, causing workers to go "home spewing their guts up, sick as a dog, had the worst kind of headaches and everything because of it." In addition, pressurized cooling tubes blew out of an improperly maintained process unit. This resulted in a "hydrogen cloud, this was seventeen thousand ppm hydrogen sulphide (H2S) going out over the control room, over the tank farm and out over the Bay. If it had come back the other way, it would have struck the heaters, and with the hydrogen, she would have blew to hell." In all cases of environmental and workplace incidents and violations at the refinery, union representatives formally complained to both company

management and government officials. In reference to addressing health and safety concerns at the refinery, a USWA union representative explains:

> We had meetings with them (the company), we had meetings with the government, we had meetings with the inspectors. I spoke myself several times, including at a government sponsored symposium on Occupational, Health and Safety (OH&S), about the fact that they never issued a stop work order or never fined the company and I told this plain and plump to them...the deputy minister of labour was there, the director of the OH&S division was there, the manager of the OH&S division was there.

These brief examples of environmental and health and safety violations appear to indicate that both regulatory inspection procedures and enforcing compliance proved both ineffective and problematic at the refinery. Although the extent of past violations would appear to indicate adopting stricter inspection and enforcement measures, a community spokesperson noted that the government and the refinery still maintain a long standing policy regarding inspections at the facility. According to this spokesperson, regulatory officials continue to be required to provide three days notice prior to a visit and 'surprise' inspections are not permitted by the refinery operator.

This inspection policy appears to reflect the current shift towards "regulatory co-operation" and from government enforcing compliance to "industry self-monitoring." According to a former Department of Environment official, these changes in enforcement policy are generally related to government initiatives to attract capital investment and industrial development to the province while reducing environmental regulatory expenditures, in particular, those government expenditures associated with maintaining a staff of regulatory enforcement personnel. In reference to changing regulatory

enforcement procedures, the former department official noted that:

> ...politically they saw that having too much in place is a bad thing because you don't want to scare people off...Rather than protect the environment, it's changed to doing it in a co-operative sense with respect to compliance agreements and empowering the industries themselves to take care of their own ball court...We're going to monitor you monitoring yourself, and then if something goes wrong, well, then we'll stop you. But rather than have hordes of resource people, herds of environmental inspectors out there every day watching everything you do, we can't afford that.

The above examples of limited enforcement appear to indicate that OH&S and environmental regulatory procedures in Newfoundland are firmly located on the cooperation or compliance end of the enforcement continuum as the government attempts to promote economic policies favourable to capital investment while also reducing the number of enforcement personnel. For example, a former regulatory official explained that a significant and perhaps symbolic reduction took place in the Spring of 1995 when the government eliminated its Environmental Enforcement Branch, a division specifically mandated to enforce the province's environmental legislation. Thus, there are currently only 8 regulatory personnel assigned to enforce the province's environmental regulations on a full-time basis. These are employed within the Department of Environment's Industrial Environment Engineering Division.

Finally, in reference to the Auditor General's 1994 evaluation of the Department of Environment's monitoring procedures, it was noted that "the Department does not have a current and complete inventory of dischargers, discharges and discharge points to aid in monitoring...and tracking compliance with legislation and standards" (Marshall,

1994:121). In addition, the Auditor General found that:

> There is no clearly defined work plan to prescribe the nature and frequency of monitoring activities. The monitoring process relies to a great extent on self-reporting by dischargers. As a result, the Department cannot ensure that all dischargers are monitored on a regular or cyclical basis and violations may remain undetected for extended periods (Marshall, 1994:129).

5.3 Constraints By The Legal System

In the environmental regulatory process, the legal system represents the 'threat of force' but is often employed by governments only as a last resort when unlawful polluters have repeatedly refused to comply with imposed regulatory limits (Yeager, 1991). As well, legal determinations of regulatory offenses through an assessment of the environmental impact of pollutants is often constrained by factors such as 'scientific uncertainty' and 'knowledge gaps' (Richardson et al., 1993; Thompson, 1980).

The research findings derived from interviews with regulatory officials having direct experience and participation in the legal system indicate that legal processes in Newfoundland often constrain regulatory efforts to achieve both enforcement and environmental protection goals. For example, a former regulator with the Department of Environment states in reference to enforcing compliance with provincial air pollution control regulations that:

> It's difficult because it requires a lot of effort and a lot of work, a lot of personnel to in actual fact gather evidence of an environmental violation...let's talk about air pollution in a refinery...that's probably one of the more difficult ones because you measure it on a ambient monitor. You know, if you wanted to take that to court...the court would probably end up prosecuting them on one violation but you

> would have to show that there were consistent violations. Just to show that your monitor was working, you'd have to have your monitor calibrated on a regular basis which would almost require, if there was a violation gonna take place in the next hour, that I would have to have calibrated it now. Who calibrated it? I would then have to show the credentials of the person and the equipment that I calibrated the monitor with...The other thing is... suppose you could successfully collect all the evidence, you know, meet all the requirements of the law, you go to court. Usually you'll find that the public prosecutor, who comes out of the Department of Justice, and the judge- the legal system that supposedly is gonna look at this issue, is not very knowledgeable on the technicalities of it. They don't understand what sulphur dioxide is or you start talking about micrograms per cubic metre per hour... this was an allowable level, and they'll say why?...It's very difficult to explain these issues. Suppose you even get past that. The statutes, and the record of prosecutions in environmental cases in general tend to give companies very small fines...Maybe a severe fine might be five thousand bucks. You know it's cost you many more than five thousand bucks to get that fine, and then you look at the company who might have, you know, cash flows of many times five thousand bucks per day being fined five thousand bucks...there are well known cases where these guys walked out smiling. Their biggest expense was not the fine they had to pay, their biggest expense was the lawyers they had to pay.

Other than constraints related to gathering evidence, the limited scientific knowledge of legal officials and the often negligible fines imposed on industrial polluters, interviewees further observed problems relating to the extensive time required to receive legal advice from the provincial justice department and to bring a case to court. Referring to enforcement delays, a former environment department employee noted:

> ...quite often you need an answer on something quickly or you need to write up something and send it to the Justice Department for referral to get their interpretation on whether you can proceed or not. And I mean, I actually still have copies of letters, of things that I sent over to the Justice Department and waited two years, three years, and never got replies back. And I've sent over reminders and even complained on the telephone and complained at meetings, and the answer, well, we're just too busy...And once it becomes a court case, of course there are delays and postponements, and there are stays of proceedings and this sort of thing. We've had cases that have been delayed and got into the courts for two or three years, still in the court system.

The constraints affecting provincial environmental enforcement procedures appear to be partially indicative of systemic 'overload' and justice department officials operating under conditions of severely limited resources. For example, the interviewee cited above also noted that:

> ...when I was with environment, we had cases where people were found guilty in court and were required to pay a fine, and were given sixty or ninety days to pay the fine. It was never paid. And you know there was no process in place for the courts to go back and follow up and see if that fine has been paid...And unless we ourselves used to follow up on these things, to find out if they were being paid or not, it was just left. So basically you can go to court and get a fine and just wait for a while and some one will forget about it...The legal process, that's the responsibility of the Justice Department and the whole court system, but they weren't being followed up, and the reason being they don't have the power, resources, they don't have the funds available, and so on and so forth.

Finally, regulatory officials noted that the legal and courts systems generally constrain efforts to protect the environment. For example, a former regulatory official with the Department of Environment contended:

> ...any province or probably the feds who is working for the environment, and has as their backing a set of environmental regulations, then irrespective of how good or bad these regulations are, most of these guys are not looking for court cases. And the reason is that most guys very quickly work out that it doesn't get you anywhere. That really, if your job is to protect the environment, and you're serious about it, the last thing you really want to do is end up in court because you'll never protect the environment in courts. Sad as that may seem, in my opinion, not many guys might actually say this openly, but in my opinion, it's very difficult to protect the environment from within the court system.

Given these constraints associated with protecting the environment through the legal system, most of the regulatory officials interviewed argued that bargaining for compliance becomes the preferred and most effective approach to enforcing compliance with

environmental regulations. A federal regulator observed that "what you are prepared to do is to explain to the company what the rules are. Then you keep your part of the bargain, and they are obligated to keep theirs. That's the way it works here, anyway."

Therefore, it appears that regulatory enforcement procedures in Newfoundland are constrained and affected by similar factors to those identified by other researchers examining legal procedures and environmental protection in other jurisdictions. Indicated in other research, constraints such as the limited legal and judicial knowledge and understanding of the 'science of pollution,' negligible fines for pollution offenses and the tendency to enforce environmental regulations through negotiated compliance appear to be similarly relevant to the regulatory and enforcement process in Newfoundland.

5.4 The Political Resources of Newfoundland Processing Limited

Political resources used to influence the behaviour of others may include money, information, the threat of force, and the right to make laws (Schrecker, 1984/85). In the environmental regulatory process, the regulated firm often maintains direct control over important information such as self-regulatory data, technological pollution abatement options and financial information (Rankin and Finkle, 1982, Thompson, 1980). As a result, the environmental regulatory process can encounter problems such as significant delays in achieving compliance with the regulated firm (Yeager, 1991; Webb,1988; Thompson, 1980).

The empirical data derived from the interviews reveals that the environmental

regulatory process governing the Come By Chance refinery was constrained by specific actions taken by refinery operator Newfoundland Processing Limited (NPL). In particular, these data indicate that the principal resources mobilized by NPL to constrain the regulatory process were the control of vital information and delaying compliance with scheduled regulatory agreements.

5.4.1 Controlling Information

The problem of accessing information from NPL developed soon after local communities began to raise concerns regarding both the possible environmental and human health effects resulting from the refinery's emissions and the discernable decline in local air quality. To address these concerns, area community representatives first approached NPL officials to obtain an explanation for the visible changes in the refinery's stack emissions. Several interviewees, including government regulators, noted that NPL officials flatly refused either to discuss, provide information or offer an explanation for the change in emissions. And in this case, the burden of proof appears to be with the complainant. According to a community spokesperson:

> ...if they had come across at the beginning and said well all right, right now we're having a problem with the SRU (Sulphur Recovery Unit), which is what removes the sulphur from the atmosphere, and it's down, it's not working. Then a lot of people in the local area would have said all right, what are you emitting?... fine. But how long is it going to continue? Instead of that there was nothing wrong with the refinery...you don't need to know, it's a business, it's part of a business, and we have no intention of giving you information...we're operating within government standards, so if we're operating within government standards, it's none of your

> business...Up until that time, until they were actually forced, we had no kind of correspondence with them at all. We would send in letters, get no reply back, or a reply that due to the fact that this is a private company, we have no intention of releasing what could be delicate information.

After being refused desired information and not provided a satisfactory explanation from refinery officials, community representatives then proceeded to address their concerns to the government and in particular forwarded their complaints to officials with the Department of Environment. According to a spokesperson representing area residents, environment officials placated their concerns by minimizing the potential harm or impact resulting from the stack emissions. This spokesperson stated:

> ...they came out dead solid on the side of the refinery when we were complaining. I mean they put us down, I mean like we were silly to be complaining. I mean we had nothing to worry about and things like that. It was just a bit of sulphur, and things. I mean the refinery people were trying to do their best. Basically the government was on the side of industry.

Dissatisfied with the response provided by both NPL and government officials, area residents began to assess and mobilize community resources. An organization of 'concerned citizens' was formed, which then proceeded to bring the concerns of residents to the attention of the media. Media involvement and publication was viewed by community representatives as being the most effective medium through which to pressure the government to take action against the refinery operator. A community representative explained:

> ...the way we looked at it was if we can make enough noise, government will respond. But we had to make a lot of noise before they were willing to respond, really. And the minister at the time was Pat Cowan. Basically we had to embarrass her every way we could and that's what we did...

Once government officials appeared willing to respond to the air quality concerns of the area residents, community representatives proceeded to request specific information from the Department of Environment. In particular, samples of the emissions data generated by the refinery's sulphur dioxide (SO2) monitoring network were requested. Once again the community's request for information proved problematic. An interviewee representing the local communities recalled:

> ...we contacted the Department of the Environment. But the Department of the Environment had units that were supposed to be monitoring the emissions, so we asked them for the data on their machinery. All of a sudden it came back that the machinery was down and wasn't operating over this period of time that we were interested in. It was down for longer than two months. In some cases, a lot longer. We weren't quite sure. We could probably get the information now, but at that time, we knew they were down for at least two months. Perhaps longer.

The interview data further indicate that the installation of monitors, overseeing their calibration and maintenance, down loading the data generated, and later forwarding this information to environment department officials for analysis is a process controlled by the refinery operator. As indicated above, the emissions monitoring program did experience problems when NPL was responsible for overseeing the program. A regulatory official with the Department of Environment explained:

> I guess the problems that we did see with the monitoring effort were that the quality control and experience in maintaining the equipment was lacking...In terms of capital budgets for supplies, calibrations, that did have an impact on the quality of the data and there was a significant proportion of invalid data during the first few years of NPL's operations...in the past they tended to just collect the data and forward it to us without great concern for what it showed or meant or whether it was providing information that was an approximation of reality versus just numbers that the equipment was generating.

Although this interviewee was critical of the quality of the information provided by NPL, another regulatory official from the Department of Environment argued that the government should assume at least partial responsibility for the problems associated with the emissions monitoring program. Uncertain whether NPL intentionally provided inaccurate emissions data to confound regulatory procedures, this official stated:

> I can't remember the exact details of it, but I know that we did determine that it was unreliable and it's not strictly the company's fault. I mean there is some obligation on government to ensure that the data provided is up to the standards that we want, so we do have to let them know the standards. You could fall down there to some degree. So that's why, you know, I do say they did provide it, but whether it was used to interfere with the process or not, I'm not sure.

Although it would be particularly difficult for environment department officials to 'prove' that NPL had been impeding regulatory procedures by manipulating emissions data since the company was solely responsible for the monitors as well as their calibration and maintenance.

Further problems associated with inaccurate information from the monitoring network were attributed to delays in retrieving the site data and the region's complex terrain and atmospheric conditions. According to an environmental lawyer, the inherent delays associated with refinery officials having to visit each monitoring site and then down loading the emissions data meant that "the refinery could see what had happened but couldn't see what was happening, so they couldn't adjust their process to address a problem in real time." Computer systems with data transfer modems have since been installed to help alleviate this problem and the information from the network's monitoring

sites is presently coming into the refinery on a real time basis. The emissions data from the monitors are then logged and then forwarded to the Department of Environment on a monthly basis. Although the installation of data transfer modems has improved the accessibility of data generated at each of the four stationary monitoring sites, the relative accuracy of the data generated continues to be significantly affected by 'lakeshore effects' and changes in local atmospheric conditions. The environmental lawyer interviewed noted:

> ...if the emissions are going straight up in the air and blowing out into Placentia Bay or crossing into Trinity Bay and disappearing into the high atmosphere, they are still emissions, no doubt about that, but they are not going to be picked up by the monitors because they don't impinge upon the monitors. The same emissions, or even smaller quantities, could show higher peaks on the monitors if you had an inversion layer and it pushed the emissions down.

The above problems associated with changing atmospheric conditions and the relative accuracy of the SO2 emissions data has led several interviewees to recommend that a 'mobile' monitoring system be implemented. In particular, community representatives argued that daily meterological conditions such as fog and wind direction should be consistently factored into monitoring procedures. In other words, it was recommended that a monitoring receptor be situated in the "most sensitive" location where it will generate data reflective of 'true loadings' and the actual dispersion pattern of the refinery's emissions. According to the community representatives interviewed, both refinery and environment department officials considered this recommendation of a mobile monitor to be too expensive, particularly in terms of personnel and equipment costs. Currently, the

stationary SO2 monitors are situated in a 'radius' around the refinery in the communities of Come By Chance, Arnold's Cove and Sunnyside, with a fourth monitoring station more recently introduced to the Hibernia site at Bull Arm.

As indicated above, the emissions monitoring program did encounter specific problems when NPL was responsible for the operation and maintenance of the network. Indeed, in 1993, the consulting firm Concord Environmental, hired by the provincial government to study the emissions problems at the refinery, recommended that the Department of Environment assume full responsibility for overseeing the monitoring program. According to the Concord Environmental report (1993:7-3), "the sulphur dioxide monitoring network seems adequate but is not known to be accurate since quality control practices need improvement and regular application, nor are the results used in a pro-active way. We recommend that IEE Division take over the operation of the network." To date, this recommendation has not been implemented. According to a regulatory official, the department's responsibilities currently involve conducting routine checks on the performance of the monitors. Perhaps the government's decision not to assume full responsibility for the network might be related to the maintenance and other costs associated with acquiring the information from the monitors. An environment department official noted:

> North Atlantic Refining, they pay for all aspects of the monitoring, they perform all the maintenance, provide all supplies, all ongoing costs for the network are borne by the company. All equipment was purchased by them. All sites are administered by them. All that we really do with regard to the monitoring effort is oversee the performance of the monitors. We have direct access to the monitoring

equipment and call it up to check it frequently.

Thus, the refinery operator still maintains primary control over the monitoring network, generating the SO2 emissions data and making this information available to regulatory officials with the Department of Environment. In terms of controlling information generally, a community representative observed that refinery officials maintain considerable influence over the manner in which information regarding refinery operations is discussed and presented to the public. In reference to monthly meetings involving environment department personnel, refinery officials and community representatives, this interviewee commented:

> Well, what I found from attending those meetings is that when you go to meetings even now, the operator and their engineers, the company's engineers, will come out and they'll spend eighty-five percent of the meeting talking about things they're doing, technical things and everything like that. And you've got government people there, your people from your departments, they nod their heads. They know a little about what's going on, but you can certainly see that they're not very knowledgeable about what's happening at the refinery...I mean those refinery engineers can certainly talk circles around all of us, and the government people the same way.

This interviewee therefore indicates that public access to quality data, but perhaps more importantly, understandable and useable information is constrained by the often highly technical and limiting language used in presenting information regarding refinery operations. Therefore, the refinery operator maintains primary control over regulatory information such as emissions data as well as the manner in which information regarding refinery operations is disseminated to the public.

5.4.2 Delaying Compliance

Delaying compliance with scheduled regulatory agreements was another tactic used by NPL to constrain the environmental regulatory process at the refinery. According to a regulatory official with the Department of Environment, NPL used what could perhaps be described as systematic methods for delaying compliance. This interviewee contended:

> Newfoundland Processing tended to manipulate the process through delay. If we would bring an issue up with them, essentially they would object to it and fail to respond to it for a period of time, object to it in correspondence, knowing that was going to buy them another several days, several weeks or several months for a response based on the importance of the issue at the time. I think they used that quite well by proposing to do things, setting a schedule, and then falling slightly behind the schedule or dramatically behind the schedule, and generating another round of discussion. They would provoke interest by the department in discussion and changing the schedule a little bit and then fall behind it again. It seemed to be effective for them. It was frustrating in the department seeing it being done, but we had to in all fairness give them the opportunity to respond and not try and short circuit the process. But they were politically smart in that regard and they worked it rather well.

It appears that NPL clearly constrained and manipulated the environmental regulatory process through delay. However, the empirical data derived from interviews does not indicate that the company publicly employed 'job blackmail' or threatened negative consequences such as refinery closure in response to imposed changes in environmental regulatory standards. Although it was indicated that any statements to this affect would have been made during private discussions at the ministerial level. For example, a community representative stated:

> No, I'm certainly not aware of their ever threatening it, and I would say that they never threatened it publicly, but I'm saying that when they're behind closed doors and they're negotiating with government on regulations, they got input in helping

them set up some of these regulations, I'm sure they can say it then.

In addition, an environment department regulatory official speculated that NPL was able to influence regulatory procedures given their power and significance as a large employer in the region. In terms of influence, "I think they did have that. They're talking hundreds of jobs, they very clearly had the power to influence. I'm sure they did, but I mean I wasn't aware of it...they met with the Minister."

Thus, several interviewees argued that NPL maintained significant power and influence over regulatory decisions at the refinery. As well it was argued that corporate uses of power, influence and threatening negative repercussions in response to imposed environmental standards is inherent to the regulatory process. Referring to NPL employing threats of closure and job blackmail, an environmental consultant interviewed stated:

> Yes of course, that's what they do. That's their tool, that's their mechanism, that's their lever...We push them too far and the company is just going to say we can't afford to make those changes. And we're just going to have to close down. Kruger does it out in Corner Brook. That's what industry does. That's their game.

In reference to the influence of industry generally and NPL in particular, an environment department regulatory official further noted that "they've used whatever persuasion they could in those ways...I think it's the case with everyone, that whatever regulatory regime you put in place, if it's going to have a negative impact on someone, they will do whatever they feel is appropriate to address their concerns and their particular interests."

A management official with the current refinery operator North Atlantic Refining

Limited agreed. According to this official, imposed changes to environmental standards will be resisted, particularly when the changes require investments in environmental technology which are not easily recovered and may compromise the company's competitive position in the marketplace. In addition, this official argued that any imposed changes to environmental regulatory standards should apply to all firms in a particular industry and not a single firm within a given region. Otherwise the 'level playing field' of competition will be compromised. And it is economically compromised firms that typically violate or resist changes in environmental standards. Furthermore, this interviewee observed that given NPL's very compromised financial position it would be of no surprise to him if the company employed any or all means available to avoid complying with the orders to improve environmental standards at the refinery. Indeed, both NPL's compromised financial position and the company's management style were frequently cited reasons for the company delaying compliance with imposed changes to environmental standards.

As mentioned above, NPL's financial position was noted by several interviewees as being one of the primary reasons for delaying compliance and for the company's manipulation of the environmental regulatory process. As discussed in Chapter 3, in 1992 NPL's parent company Cumberland Farms had applied for bankruptcy protection, the company was forced to pay substantial fines resulting from a series of law suits, and at the time of the sale to Vitol S.A., NPL had reportedly owed $100 million to its creditors (Jackson, 1994; Doyle and Whiffen, 1992; Morton, 1992). Describing the problems

associated with NPL's financial position, a regulatory official with the Department of Environment explained:

> the difficulty with Newfoundland Processing was to get them to commit the money in the first place, and then once they had committed it, for them to actually find the money and spend it. And that was the most difficult aspect. They were operating with their back so close to the wall that they had very little manoeuvring room in terms of capital expenditures. I think that was the prime reason behind their attempts to delay.

In addition, a USWA refinery employee argued that one of the primary reasons for the company's violations of health and safety and environmental regulations was due to the company's unwillingness to make the required financial expenditures to improve conditions at the refinery. Although this interviewee also argued that compliance delays should also be attributed to the current status of Newfoundland regulations and their enforcement. According to the USWA union employee:

> Money, I think it was they didn't want to spend any money. That was the whole root of the problem...you can have what you like there in regards to safety committees... environmental technicians on staff, you can have safety technicians on staff, it doesn't matter. If you haven't got commitment from top management and from the owners, you're not going to get nothing because the Newfoundland regulations are so lax, on occupational health and safety, particularly to refineries...The environmental regulations the same thing. It's not an industrial province. And the government...don't even want to put anything in the acts because of trying to attract investment into the province, and they're not concerned if the person's following the act or not...if Vitol came down tomorrow and said we cannot do this right now, and we need another year to do this, they'll get it. They do. There's no difference between here at this oil refinery and on the west coast. I mean to say, Kruger over there in Corner Brook has been putting out for years, waste water into the Humber, and so on, and they didn't push them when the paper mill prices were down. They push him now, the paper prices are up, because they know they're making money, but they're not going to push one damn thing if they thinks there is any kind of idea that the company is leaving the province or shutting down...It's politics.

It was also indicated that the delays and the government's reluctance to enforce compliance were related to NPL's significant outstanding debts, including monies owed directly to the government. The USWA union representative cited above noted:

> They knew the position they were in, in regards to being on the edge of going bottom up. All the time right? The government, they owed the government over eight hundred thousand dollars, Newfoundland Hydro, in unpaid hydro bills. And they wouldn't even push that, because they knew if they did push it, they would put up a flap, right? And again, it's like they say, you can't draw blood out of a turnip.

These data indicate that NPL's precarious financial status proved to be a significant reason why the company delayed compliance with the imposed changes to environmental regulatory standards governing the refinery. The findings also revealed that regulatory non-compliance was more generally related to the company's management attitudes, particularly towards such concerns as environmental quality standards and employee health and safety. A number of interviewees made reference to the general attitudes and management style of NPL executive personnel. In reference to the company's willingness to discuss and provide information to area residents, an environmental lawyer interviewed observed that "it may have just been a management style. I think that there is a kind of "throw up the barricades" mentality that typifies certain business owners." Furthermore, the federal regulator interviewed noted in reference to NPL that:

> ...how you manage it depends a lot on upper management. It depends on what comes down from the top. You have a choice. You could either maintain the status quo and just stay within the regulations but don't do anything proactive, or you can be proactive and then apply your problem or even cut costs...If they're happy staying within your regulations, then fair enough, that's the way they want

> to do business. Legally, that's all they have to do...They just could have been better corporate citizens....they could have spent more money on maintenance, a few repairs here and there, and things like that.

Thus, these data reveal that the environmental regulatory process governing the Come By Chance facility was further constrained by the refinery operator's control of important technical information regarding atmospheric emissions and through delays in compliance. In particular, the delays in compliance were attributed to NPL's precarious financial position as well as the attitudes of refinery management towards issues of health and safety and environmental protection. On the basis of the government's response to previous regulatory violations and with no objective penalty or fine structure contained in the regulations, NPL would accurately perceive that in delaying compliance there was little likelihood of any legal action being commenced against them.

CHAPTER VI:

THESIS SUMMARY AND PROPOSALS FOR FURTHER RESEARCH

6.1 Conclusions

This research has examined specific financial and political resource constraints affecting the implementation of environmental regulatory policy governing industry in Newfoundland generally and the Come By Chance oil refinery in particular. It is therefore important to discuss the reasons why these specific limitations exist and the extent to which they are attributable to the political economy of Newfoundland.

In this research, the poor state of the Newfoundland economy as well as related employment concerns were identified as potential constraints affecting the government's willingness to impose stricter regulatory standards in response to the atmospheric emissions problem at the refinery. Furthermore, strict environmental regulatory standards were perceived as having a potentially negative impact on new capital investments in the province generally and on employment at the refinery in particular. Given the province's very high rate of unemployment, limited employment opportunities such as those at the refinery assume greater social, political and economic significance. Thus, the poor state of the Newfoundland economy appears to constrain the government's willingness to implement stricter environmental standards, particularly those governing the province's industrial polluters.

Surprisingly, this assertion is supported by the government's own Economic Recovery Commission (ERC) in their recently published report entitled, The Environment and the Economy: An Examination of Issues and Opportunities in

Newfoundland and Labrador. In this 1995 report, the ERC stated that:

> Resource developments in Newfoundland and Labrador have focused on the need to generate wealth and create jobs. The province's weak industrial base and poor economy have been a persistent deterrent to introducing environmental requirements... (Elton and Poynter, 1995:9).

In 1993, the Department of the Environment went outside the province, seeking the advice of Ontario-based environmental consultants in order to address the air quality complaints of citizens residing adjacent to the refinery. The decision to contract with 'outside experts' was presumably necessary due to the limited resources of the department. Indeed, the province's poor economic status was also found to cause specific financial and human resource constraints, affecting the environmental regulatory process governing both the refinery and industry in the province generally. Although there are relatively few industrial facilities operating in the province, departmental staffing and resource limitations often require regulatory personnel to respond to industrial environmental problems in a reactive manner. In addition, these problems are more often identified either on the basis of complaints or by reports voluntarily provided by the regulated firm rather than by proactive measures such as consistent monitoring and enforcement procedures. Furthermore, this research revealed that NPL refinery management exercised considerable influence over the Occupational Health and Safety (OH&S) inspection process, affecting the outcome of important enforcement decisions made by OH&S personnel assigned to inspect the facility. Thus, the health and safety compliance and inspection problems at the refinery were found to be generally attributable to the

government's limited resources, particularly those resources necessary to provide OH&S inspectors with the specialized training required to inspect the facility effectively.

The unregulated venting of various gases directly to atmosphere was also found to be evident at the refinery, representing significant hazards to both refinery personnel and the surrounding local environment. It appears, therefore, that effective and routine inspection and enforcement procedures at the refinery were either not particularly important to the government or were compromised by the limited resources allocated for these functions. The latter opinion is supported by the ERC. According to the ERC, ..."violations and potential violations in all areas of environmental management are so widespread that the financial and human resources are simply not available to deal with them" (Elton and Poynter, 1995:44). Referring specifically to the resource limitations affecting the Department of Environment's Industrial Environmental Engineering Division, the ERC further noted:

> ...the Department of Environment has a separate Division to address issues of industrial compliance but does not have the resources to monitor and enforce...The Industrial Environmental Engineering Division depends heavily on the company's monitoring programs in making its decisions, such as whether to prosecute a company for violation of provincial standards, (and)...large industrial firms have been successful in having the province delay deadlines for environmental targets. Departmental officials indicate that compliance requests are often ignored and, despite violations by our large industries, there has never been a prosecution under the law (Elton and Poynter, 1995:45-46).

In light of the government's record of failing to prosecute industrial violators of provincial environmental standards, this research also found that the implementation of environmental regulatory policy in Newfoundland is affected by the legal system and by

the limited resources of the provincial Department of Justice. Although similar to problems encountered in other jurisdictions, the enforcement of environmental regulations in Newfoundland is generally affected by legal officials possessing a limited knowledge of environmental science; difficulties associated with scientific uncertainty as it relates to the gathering of 'irrefutable' evidence; and the often negligible fines imposed by the courts for pollution related offenses. Furthermore, significant time delays affect both efforts to proceed with enforcement and the processing of environmental cases in court. In short, these delays are generally attributed to systemic overload which reflects the limited resources of the Department of Justice. For instance, in non-industrial cases that actually proceed to court and result in a conviction involving a fine, the justice department currently has no system in place to confirm later whether or not the imposed fines have actually been paid.

As a result of these problems, environmental regulatory officials in Newfoundland often choose to avoid enforcement through the legal system and instead prefer to negotiate for regulatory compliance. This preference toward bargaining for compliance with industrial polluters as opposed to employing strict standards of enforcement is generally consistent with regulatory procedures in other jurisdictions of Canada. Negotiating for regulatory compliance in Newfoundland and other provinces therefore serves to illustrate an inherent contradiction within the existing 'legalistic' command-penalty model which guides the 'enforcement' of environmental regulations in Canada.

In overseeing the operation of the Come By Chance refinery, it is evident that the

provincial government chose not to employ strict enforcement measures or a command-penalty approach to regulation. Furthermore, refinery operator NPL was able to manipulate the environmental regulatory process by maintaining primary control over important emissions-related information and by delaying compliance with negotiated regulatory agreements. Consequently, both community representatives and environmental department officials experienced difficulties acquiring specific information from NPL explaining the qualitative and quantitative changes to the refinery's stack emissions.

Similar to problems encountered in other jurisdictions, information control and delaying compliance represent important instruments of power used by regulated industries to resist imposed pollution control standards and to generally constrain the implementation of environmental regulations by government. Citing an example of industry resistance to imposed pollution control standards, the ERC noted that:

> The Come By Chance Oil Refinery has avoided various environmental requirements with potential safety implications. For Instance, the province requested that the former operator (NPL) post a $100,000 bond for the establishment and use of a hazardous waste site designated by the province, but the bond was not deposited and the company stockpiled its waste in an undesignated site (Elton and Poynter, 1995:11). (Parentheses added)

In Newfoundland generally, the ERC further contends that "...industry has exercised considerable influence over government's actions in pushing for enhanced environmental measures" (Elton and Poynter, 1995:9).

Although NPL was able to delay compliance effectively, the environmental regulatory process at the refinery was also compromised by the content of the province's

existing environmental regulations. In Canada, the implementation of environmental regulatory policy has been found to be affected by often vague regulatory standards proven to be unrealistic for governing industrial pollution (Webb, 1988). In Newfoundland, the province's existing environmental regulations were generally determined to be inconsistent with the reality of pollution in the province. In particular, the regulations controlling air pollution were found to be outdated, in need of replacement and ineffective for providing the local communities adjacent to the refinery with acceptable standards of ambient air quality. For instance, the absence of regulatory standards governing hydrocarbon emissions and related odours served to limit the government's ability to legally respond to these problems in a forceful and effective manner. However, limitations relating to political will, the resources of the environment department as well as the power and influence of NPL may explain why the existing standards were not amended or new regulations drafted to address the atmospheric emissions problem at the refinery more effectively. Although, the ERC observes that limited political will or the "government's weak commitment to the environment to date is also illustrated by a reluctance to enforce environmental regulations by industry and a reluctance to implement environmental initiatives which may have cost implications for consumers or industry" (Elton and Poynter, 1995:97).

Finally, the environmental regulatory process is often constrained by the provincial government's role in environmental protection. For many years in Newfoundland, provincial government economic policies have been directed toward

promoting conditions favourable to capital and commercial investment in the province. Significantly large financial expenditures in support of ministry operations and other economic initiatives such as the Ministry of Industry, Trade and Technology and the Enterprise Newfoundland and Labrador Corporation serve to illustrate the government's primary economic development agenda.

In the political economy of Newfoundland, the economic policy agenda often conflicts with policy initiatives for greater environmental protection. The government's primary political agenda is evident in the less than comprehensive content of the province's existing environmental regulations, the comparatively small budgetary expenditures allocated for the Department of Environment, the minimal influence and prestige accorded the environment portfolio in cabinet, as well as the government's limited commitment to promoting and adopting ecologically sustainable land use planning policies and practices. Furthermore, the economic development agenda relates to the government's current regulatory reform initiatives involving efforts to remove regulatory barriers seen as impeding proposed capital investment and development opportunities in the province. These regulatory reform initiatives as well as the recent reduction in full-time environmental enforcement personnel appear to indicate a gradual policy shift towards greater cooperation with business interests and the deregulation of industry. Thus, in the Newfoundland political economy, any policy conflict between the government's dual role in environmental protection and resource development is generally decided in favour of the economic development agenda. And any policy initiatives

promoting strict environmental regulation and protection will be in conflict with policies promoting the capital accumulation process and the 'institutional self-interest of the state' in Newfoundland.

However, this research found that considerable public pressure and media attention did prompt the government to initiate an investigation into the air quality complaints brought forth by the citizens residing adjacent to the refinery. And unlike the divisions which often surround environmental conflicts of this type, both the public and the refinery's unionized employees were mutually supportive of each others' concerns regarding the atmospheric emissions problem at the facility. Although refinery personnel were understandably protective of their employment status, both parties generally agreed that stricter regulatory measures were required to respond to the facility's environmental problems effectively.

This research has therefore found that specific financial and political constraints affect and influence government implementation of environmental regulatory policy in Newfoundland. Moreover, this case study of the Come By Chance refinery identified several inherent weaknesses of the command-penalty model of environmental regulation. Generally speaking, this approach to strictly regulating industrial pollution often fails to achieve its promulgated objectives. Again, the specific problems associated with this model include: environmental legislation and regulations with limited objective content for pollution prevention; industry-government negotiations at the exclusion of other concerned publics; and significant problems relating to non-compliance and enforcement.

Thus, this research found that many of the problems associated with the command penalty model of regulation are to be found with environmental regulation in Newfoundland. Given the political economy of the command-penalty model and the limitations which often compromise its effective implementation, further research toward more effective industrial pollution control policies is proposed.

6.2 Proposals For Further Research

6.2.1 Community Regulation

From this case study of the Come By Chance refinery and the examination of the atmospheric emissions problem in particular, it is apparent that local communities are often the 'end users' of industrial pollution and therefore bear the external costs of this pollution. As Naud (1995:64) observes:

> one of the main weaknesses of the market economy derives from the fact that external costs resulting from polluting activities are born not by those who are principally responsible for those activities but by the other members of society.

In an effort to respond to the significant atmospheric emissions problem at the refinery, concerned citizen's mobilized community resources and formed the 'Community Liaison Committee.' This committee was established for several specific reasons: to promote greater communication between the refinery and the citizens of all communities adjacent to the facility; to provide an open forum whereby the concerns of committee members can be freely discussed; to help promote greater public confidence in the operation of the refinery; to provide a forum to address community concerns to representatives from both

provincial and federal levels of government; and to provide the opportunity for refinery representatives and the communities to meet on a regular basis (Constitution, NPL/Come By Chance Area Community Liaison Committee, 1993).

Since the establishment of the committee in 1993, area residents have experienced improved community relations with the refinery's operator, have witnessed a visible improvement in the quality and quantity of the refinery's stack emissions, and generally have greater confidence in the overall environmental management of the facility by the current operator North Atlantic Refining Limited (NARL). In many respects, NARL's improved record of regulatory compliance and superior environmental management of the refinery reflects a greater commitment to these concerns by NARL senior management as well as the company's stronger financial position. Since taking over the facility in August of 1994, NARL has reportedly made $3.4 million in 'environmental investments' at the refinery, including $1.8 million to revamp the Sulphur Recovery Plant and $116,000 invested in S02 monitoring equipment (Personal Correspondence, March 5, 1996).

The establishment of the Community Liaison Committee at Come By Chance illustrates an inherent need for greater 'social regulation' of industry and direct public participation in the environmental regulatory process. This participation serves to make the decisions of government regulatory officials more accountable to the public. As Tingley (1994:7) explains, "...those who engage in public consultation perform a public policy audit function where they review government policy and account to those who are unable or unwilling to undertake such a review on their own." Furthermore, it is argued

that community participation in environmental decisions go "...beyond citizen involvement in conventional intervention to actual citizen management of an economic resource with regard for ecological, cultural and spiritual as well as economic values" (Tester, 1992:38). The recent demand for 'citizen's rights' in environmental decisions reflects the fact that many communities have witnessed their local environment and natural resource base being exploited for profit with little regard for the future sustainability of either the resource or the community. The citizen participation movement of the 1990s is not only questioning "the undemocratic structure of business enterprise" but also "challenging the fundamental assumptions as well as the organizational structure of liberal democratic capitalism" (Tester, 1992:40).

Direct public participation in the environmental regulatory process represents a significant change from the predominant regulatory model involving bilateral bargaining and the participation of only ministry officials and industry representatives. A few jurisdictions in Canada (ie. Yukon, NWT, Ontario) have introduced 'environmental rights' legislation which outlines greater public participation early in the decision making process and facilitates the 'triangulation' of regulatory bargaining. The triangulation of regulatory bargaining generally refers to the inclusion of the public in the bargaining process as a means to circumventing the accountability problems often associated with the more predominant bilateral model. As Roman and Hoey (1993:65) further explain, "the purpose of triangulation is not to slow the process down but, rather, to ensure that the officials engaged in bargaining take into account the opinions of interested persons as to

whether the proposed instrument should be granted and, if so, on what terms."

In addition to regulatory triangulation, it is proposed that environmental policy research further examine the potential role of community-industry environmental monitoring programs. Although the selected community representatives would be required to possess considerable technical knowledge, these individuals would routinely monitor and evaluate the firm's environmental management procedures and report any concerns to both the company and the community. For instance, oil refineries have an untold number of pipes, seals and valves which may leak vapours into the atmosphere due to wear and poor maintenance. Given the significant number of connections and valves at a refinery, vapour leaks often go undetected for lengthy periods of time. To improve the rate of leak detection, it is proposed that community monitors participate in a routine inspection program. As Epstein and Wiener (1994:16) observe, "a quarterly "leak detection and repair" (LDAR) program checks each component that can leak once every three months. Such a program can prevent enough releases to pay for itself in saved raw materials."

Further policy research is therefore required to examine the various ways in which communities can be become more directly involved in the environmental regulatory process governing local industry and actively participate in those decisions which directly affect the health of citizens and the local environment. Research and policies advancing the social regulation of an industrial operation like Come By Chance represent important steps toward improving the current model and methods of environmental regulation.

Although social regulation perhaps represents an important intermediate stage, the fundamental objective of environmental research in this area must be to further advance policies which promote the development of ecologically sustainable industrial processes.

6.2.2 Ecologically Sustainable Industry

The negative externalities resulting from industrial production, particularly the discharge of inorganic industrial pollutants and hazardous waste, severely threaten the earth's life support systems, bio-diversity and the integrity of ecosystems. Furthermore, the biotic systems which sustain human and natural life are currently showing indications of molecular change as they are proving incapable of absorbing or assimilating man-made waste and toxins (Hawken, 1993).

In many respects, the concepts of ecological 'sustainability' and 'sustainable development' were developed in response to the above environmental hazards and other concerns associated with industrial development and production. The concept of sustainability has existed since the 1970s but it was the 1987 Brundtland Commission report Our Common Future that elevated this concept to the level of international political forums and to the forefront of environmental policy discussion and research. For many years, researchers from multiple disciplines have engaged in an ongoing effort to further define and operationalize this concept. But as the Netherlands Scientific Council for Government Policy (NSCGP) explains:

> It is, however, critically important to acknowledge that there are a number of

> highly divergent and in some cases conflicting perceptions of sustainability that exist side by side. Each of these perceptions provides its own interpretation of the two most important aspects of sustainable development: the ecological norms and values to be respected and the socio-economic norms and values to be respected (NSCGP, 1995:31).

A complex and controversial concept, sustainability generally refers to "the persistence over an apparently indefinite future of certain necessary and desired characteristics of the socio-political system and its natural environment" (Robinson et al., 1990:39). Although a 'two-sided' concept, particular emphasis is given by many researchers to defining sustainability in terms of 'environmental utilization space' (EUS) or the determination of the environment's 'carrying capacity.' According to the NSCGP (1995:32):

> In this respect sustainable development has been interpreted as a form of economic development which ensures that the resulting environmental burden can be "ecologically assimilated." By this is meant that the future functioning of regeneration systems, absorption capacities and other elements of the EUS are qualitatively and quantitatively guaranteed as regard the exploitation potential.

However, the development and use of specific sustainability indicators such as EUS is currently plagued by scientific uncertainty, particularly in terms of determining the precise risks of industrial pollution to complex and unique ecosystems. Given this uncertainty, any assessment of what constitutes a sustainable or unsustainable activity more often necessitates normative and ethical judgements based on relative risk. As the NSCGP (1995:21) observe:

> The inability to foresee the future means that any assessment based on the sustainability of future trends must derive from an estimate of the associated risks. The estimate may vary depending on whether a more environmental-risk-avoiding

or environmental-risk-accepting attitude is adopted.

The current command-penalty model of environmental regulation 'manages' industrial pollution but does not promote or facilitate efforts to eliminate this hazard or its potentially life-threatening consequences. Therefore, avoiding the risks associated with industrial pollution and promoting a sustainable future will require further research towards eliminating this form of pollution altogether.

In particular, current research efforts should continue to examine how industries can be 'clustered' together, industrial processes integrated as a total throughput and designed to greater resemble or assimilate, the self-sustaining and self-regulatory 'operations' of natural systems. In short, the waste or 'outputs' generated through industrial production must be in a form that can be effectively utilized as an 'input' in other productive processes. And if the output factor is not to be used in production, environmental laws must require that all legally allowable waste be in a form that is easily absorbed and utilized as a natural input of ecological systems (Pauli, 1995; Hawken, 1993). Pauli (1995:29) explains that with industrial clusters:

> All forms of waste will have to be integrated into the mechanism; waste from one industry, in whatever form, must become an input factor for another business. Companies will decide to locate next to each other because they need each other's waste. Cities and counties will target specific investments, because they realize that attracting one industry is likely to attract another, while also solving a pressing environmental problem.

Although the concept of industrial clusters represents an 'ideal type,' a previous step to the integration of industrial processes should be that environmental law "...force industry to

use alternative technology, with the aim being the eventual elimination of emissions all together" (Seis, 1993:76). For instance, environmental laws bounded in 'biocentrism' would force industrial firms to use alternative sources of power such as hydrological, wind and solar technologies which are "more commensurate with the ecology of the planet" (Seis, 1993:76).

The integration of industrial processes and environmental laws bounded in biocentrism for the purpose of eliminating industrial emissions are important and achievable goals. But as Pauli (1995:26) notes "industry must be willing to put its present selection of raw materials under scrutiny, rethink the manufacturing and distribution process, and engage in a search for zero-emissions manufacturing."

Thus, ecological sustainability will not be achieved by simply adopting stricter regulatory enforcement practices based on the current command-penalty model of environmental regulation. It will require instead fundamental changes in the ideological assumptions of capitalist social organization and the methods of production. It will be critical to change the assumptions surrounding humanity's place in nature (no longer can the environment be viewed as a source of unbridled exploitation or as a waste depository), to develop a greater understanding of the 'true' ecological costs associated with the externalities of industrial pollution, and to derive a better understanding that the purpose of environmental law may be to force change rather than simply regulate or 'manage' ecologically destructive human behaviour. The existing structural relations of power, ownership and authority under capitalism must change so that industrial

production and resource development are not based solely on considerations such as profit, but are democratically determined through the collective decisions of community members. Only when these social and structural changes are implemented will ecological sustainability be achieved. Social regulation and the integration of industrial processes therefore represent areas of further environmental policy research as well as necessary steps toward an ecologically sustainable future.

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