SIR ADAM BECK, ONTARIO HYDRO AND THE RADIAL RAILWAY CONTROVERSY: A POLITICAL ANALYSIS

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by DAVID RALPH SPENCER

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ABSTRACT

ADAM BECK, ONTARIO HYDRO AND THE RADIAL RAILWAY CONTROVERSY

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This thesis investigates an issue which culminated in a Royal Commission investigation in Ontario in 1920-1921 and the political climate surrounding the plan by Ontario Hydro to build a series of electric railways biased to the Toronto-Hamilton-Niagara and Kitchener Waterloo (Berlin) areas.

In 1913 Hydro launched a scheme to convince Ontario municipalities to undertake a co-operative effort to link Ontario's major municipalities by electrically powered railway systems. To acheive its ends, the Hydro Commission formed The Hydro-Electric Railway Union to pressure MPPs and the Ontario Government to approve the scheme. The first section of the thesis investigates the early history of Ontario Hydro and its role in using presure groups to gain its objectives with the Government. In particular the personality of Hydro's first Chairman, Adam Beck is examined.

Hydro advanced its scheme in spite of serious complications in the existing electric railway industry. In the United States most of the industry was in financial difficulity and some parallels existed here. Hydro contended that if electric railways possessed some of the same advantages as steam lines, such as high speed urban access, they would not be facing financial problems. Thus, the Hydro plans attempted to compensate for some of the deficiencies of existing lines.

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INTRODUCTION

Each summer, hundreds of Londoners travel a short twenty-six mile route to the Lake Erie resort at Port Stanley to enjoy some sun and sand in Ontario's all too short summer. About four miles north of the town, a road side sign invites holidayers to visit a mini zoo containing a limited supply of jungle creatures. The zoo, near the hamlet of Union, is a short walk away from the rusting skeleton of the London and Port Stanley Railway, the first link in a plan to connect Ontario municipalities with high speed electric railways, built and managed by the Hydro-Electric Power Commission of Ontario.

Little of the railway remains at this point. If one were to look carefully, the weed covered right of way can still be seen, travelling a straight line to Port Stanley. Underneath the overpass bridge, a small stucco way station still stands. Next to farmers' fields, rusted rails occasionally peek up through the mud as the only remaining memory of what was, and what could have been.

The London and Port Stanley was only one of a series of electric railways which operated in and around most Ontario centres. Although some electric lines survived until the early sixties, most ceased to operate during the Great Depression. They fell to the automobile, shaky finances and unsympathetic governments. They suffered as well, from a number of technical biases which will be discussed in depth later in this work.

Although a number of scholarly and popular publications analyze Adam Beck's years in Hydro, the radial railway debate that took place between Adam Beck and two Ontario premiers, William Hearst and Ernest C. Drury has received little attention. The most extensive discussion

exists in two volumes. In his section dealing with Beck and the Drury Government, W.R. Plewman outlines the history of the conflict in Sir Adam Beck and The Ontario Hydro. The book is a journalist's view of this epoch of Ontario Hydro history. It is a colourful volume, tracing Adam Beck from his birth to his death. The book was written in 1947, twenty-two years after Beck's death and contains no notes or bibliographic sources. The material in the book came from a number of encounters that Plewman had with Beck in his role as a Toronto alderman and reporter for the Daily Star as well as information provided by Horace Beck, Adam's nephew and retired Director of Supply for Hydro.(1)

The second volume is Sir Adam Beck and The Hydro-Electric Railways, an unpublished Master's Thesis in history for the University of Western Ontario. The work, submitted by Leonard Owen in April, 1967, is a purely historical document. It traces the initial support for the radials as early as 1912 and completes the work with the collapse of the project after the Sutherland Commission Report in 1921 and subsequent attempts to revive the scheme in 1923. Owen pictures Beck primarily as a railroad man, which he was not. Much of the work deals with the biases of technology, rigidities in existing electric railway systems which made them easy prey for more convenient transportation systems such as roads and automobiles.

For historical research on the Canadian lines, J.F. Due's The Electric Railway Industry in Canada, is a valuable document. Due gives brief outlines of all electric railways which operated in Canada, with special emphasis on Ontario where the majority of lines operated. Readers interested in the era can find dates of charter, operation, types of technology used, capitalization and expiry dates of franchises. Other

than a small ten page pamphlet written for the Upper Canada Railway Society, Adam Beck and the Radial Railways, Due does not deal with the Hydro scheme.

As much as the radial proposals have been ignored, Hydro has received considerable scholarly attention. Viewpoints are as varied as the books in which they are written. Along with Plewman, Hydro scholars are directed to H.V. Nelles, The Politics of Development, which contains considerable information on Hydro's early years under Beck. This work deals with resource development in the framework of political debate. The influence of Hydro, both on the Government and the Province in general is outlined in detail in this work. Nelles is unique in the fact that he deals with resource development from the political as opposed to purely historical viewpoint.

In the late fifties, Merrill Dennison was commissioned to write a history of the early Hydro years. The book, The People's Power, traces the historical development of Hydro from the Berlin Convention of 1903 onward. It is a historical document, and generally pictures Hydro in a very favourable light. Other books on Hydro's development include E.B. Biggar's, Hydro Electric Development in Ontario, published in 1920, E.M. Ashworth's, Toronto Hydro Recollections, and W.S. Murray's Government Owned and Controlled Compared with Privately Owned and Regulated Electric Utilities in Canada and The United States. Both the Biggar and Ashworth works favour public ownership of hydraulic resources. Murray's opposes the concept.

In any discussion which surrounds Hydro's early years, one cannot separate Adam Beck, history and political controversy. It is this writer's

contention that the radial issue had more political implications than any previous work has dealt with. Therefore, the first chapter will deal with Adam Beck and his political instincts and practises, and the issue of public ownership in both Canada and the United States.

The second chapter will concentrate on the state of the Ontario electric railway industry at the time Adam Beck was attempting to gain support for a system of radials to be constructed and operated by Hydro. I feel that an understanding of the state of the industry is vital, especially when compared to the uniqueness of the Beck proposals.

The third chapter will concentrate on the key witnesses at the Sutherland Commission hearings which took place in Toronto in 1920 and 1921. Witnesses deemed vital by Hydro and the Commission will be examined in depth and an analysis of the testimony will be included.

An assessment of the impact of Hydro's political role as a result of the Sutherland Commission hearings will be discussed in the conclusions. The epilogue will deal with modern electric railway transportation, and a brief comparison will be made between the Hydro proposals and today's commuter systems in Ontario's Golden Horseshoe.

NOTES

1. Interview, Diana Beck Bolte, May 12, 1982

CHAPTER ONE

ADAM BECK, THE PEOPLE, THE GOVERNMENT

THE HYDRO AND PUBLIC OWNERSHIP IN ONTARIO

Sir Adam Beck was a peculiar and difficult man. His professional relationships were disastrous. "I know he didn't get along with him (E.C. Drury) but then he didn't get along with anybody. He was opinionated and strong." (1) Yet, he had the ability to inspire loyalty in those persons who worked around him. He inspired them to accept the theme of his professional life, that Hydro was not just a job it was a cause. Beck's presence and state of mind permeated the Hydro staff. He was the type of man, who, once he made a decision, took every step to make sure it was carried out. Edward V. Buchanan retired General Manager of the London Public Utilities Commission and long time Beck associate remembers hearing Beck admonish Sir James Whitney, Premier of Ontario, when the Hydro Chairman was advised a law prevented Sir Adam from carrying out one of his decisions. Beck's response was "change the law." (2)

The man who was to change the face of Ontario was born in Baden, Ontario on June 20, 1857. He was the son of German immigrants Jacob Beck and his wife Charlotte Hespeler. His father took up farming near Baden and rose to be a leading member of the community. Adam Beck's father accumulated enough resources to eventually send his son to a private boys school in Galt.

In 1885, Adam Beck moved from Baden to London. He had formed a partnership with his brother William and his cousin William Hespeler to manufacture cigar boxes. The business, which later expanded into printing and embossing and extended to Hamilton, Montreal and Toronto was successful enough to allow Sir Adam to expand the horizon of his activities to politics. He stood for election in the 1898 provincial contest as a Conservative in London. Although he lost this vote, he ran

successfully for the London mayorality in 1902. The same year, he ran again provincially in London. This time he was elected to the opposition benches at Queen's Park.(3)

Beck came into contact with the movement for public power the following year, in 1903. As mayor of London, he joined with other municipal representatives to discuss the issue in Berlin, now Kitchener-Waterloo. According to Nelles, Beck came to the Berlin Convention as an observer and left as a participant in the movement which was advocating cheap power for Ontario's small to medium manufacturers. Beck, sharing a perception common to many small and medium businessmen that private power developers were exploiting them, was to provide the leadership that the public power movement needed inside the Conservative Party which had been elected in Ontario in 1905. Beck's only potential rival for leadership of the movement was E.W.B. Snider of Berlin. Snider who was closely associated with Liberal Premier Ross, found himself in a position of declining influence with James Whitney's election.(4)

Whitney tackled the public power issue shortly after his election. Beck, a Minister without Portfolio in the new government, was appointed Chairman of the Hydro-Electric Power Commission of Ontario. The HEPC was appointed to study the power issue and recommend action to the Ontario cabinet. Whitney was faced with trying to compromise segments of the public power movement who envisaged total government ownership and control of electric generation with powerful, private electric developers such as Sir William MacKenzie, Sir Henry Pellatt and Frederick Nichols. Compromise was difficult. Private interests which had already begun to develop the hydraulic possibilities of Niagara Falls feared they would lose their

investments and any potential future earnings. Whitney and his cabinet received pressure from both parties in the dispute, plus others in the centre seeking some form of compromise.

In 1906, the Hydro-Electric Power Commission of Ontario was changed by an act of the legislature into a permanent body. From a commission of inquiry, it became a body which was allowed to obtain power from private interests and sell it to municipalities who requested it. The HEPC also obtained the right under the act to build and operate its own transmission lines. The Commission also had the power to regulate the private companies, and if they refused to co-operate with Commission undertakings, it had the power to expropriate their holdings.(5) In his appointment of Adam Beck and the inclusion of the expropriation clause, James Pliny Whitney unconsciously began the development of a world model in the public ownership of natural resources. However, it must be made clear that Whitney had not originally intended to eliminate private holdings in the power field. It was Adam Beck who was to later determine they had no role to play in Ontario's hydro-electric future.

It is a necessary exercise to examine both the mood of toryism in Ontario and Beck's concept of it before any understanding of his role in the public power movement and its ancillary activities is possible. Adam Beck was nearly fifty years of age when he became the HEPC's first chairman. He was a committed large "C" Conservative with small "c" conservative attitudes which he inherited from nineteenth century Canada. Toryism, or small "c" conservatism had inherited the concept of Edmund Burke's organic society from the Family Compact of Strachan and John Beverly Robinson. Although the philosophy in practise had been diluted by the structures of

responsible government and party politics, it still received sympathetic hearings in the Conservative Party. Essentially, the doctrine taught that political and social leadership should be restricted to the "respectable classes" who had been born into families accustomed to leadership.(6)

The concept of public ownership and government intervention was not foreign to the tory mind. Burke's philosophy had taught conservatives that their inherited right to rule was combined with an obligation to take care of the ruled. In early twentieth century terms, this could easily be converted to public ownership, which in some cases, the tory mind felt would develop a form of common good. Canadian tories had been involved in economic activity for some time. The Family Compact was involved in the construction of both the Welland and Lachine canal systems. Sir John A. Macdonald had involved his government in the construction of the CPR, which it left in private hands.

Adam Beck's attitude toward hydro-electric development reflected a concept of toryism seen earlier in Canadian history. Buchanan described him in this way

> Beck was a Conservative, . . . but he was a socialist, and frankly, he might even be called a communist, because Beck had very little communication with Joe Oates on the farm or Mary Smith in the house, but he thought of the farmers in mass and the housewife in mass. He wasn't particularly concerned with people as individuals, but that is the communist philosophy, isn't it?(8)

If one accepts the contemporary media concept that government intervention is somehow socialist or communist, Buchanan's view of Adam Beck is correct. However, it has been argued that Canadian toryism and Canadian socialism do share common ingredients. In particular, both believe that society is organic, in which the whole social organism should take

precedent over any of its given parts. The two ideologies part company on the question of democracy. Toryism taught deference to a higher authority. Socialism taught democratic action by the activities of the working class in particular. In theory, it is democratic, where toryism is not.(9)

Typical of Beck's toryism was his attitude to the Ontario Legislature. Nelles claims that Sir Adam felt he could simply requisition huge sums of public money without having to account for it. Beck saw himself as the leader of a popular will which transcended the elected body at Queen's Park. Thus, he felt the duty of MPP's was to obey his dictates in matters concerning Hydro.(10)

His paternalism was apparent in the development of sanitarium facilities in and around London, Ontario. When his daughter Marian contracted tuberculosis at the age of six, Beck attempted to find treatment facilities in Ontario for her. Distressed by the quality of Ontario tuberculosis hospitals, he eventually sent Marian to Europe for treatment. While Marian was recovering, Adam and Lady Beck began the movement which resulted in the Beck Sanitarium. The day Sir Adam's hospital opened its doors, it received six hundred patients. The facility was a community unto itself, which eventually played a large role in the eradication of tuberculosis as a major health threat in this province.(11)

Not everyone saw the philanthropic side of Sir Adam Beck. James Mavor, a distinguished professor of political economy at the University of Toronto, referred to the Hydro Chairman as "The Dictator of Ontario."(12) Mavor was referring to Beck's ability to wield political power through the Hydro chairmanship. Mavor was disturbed by Beck pressure groups such as

the Niagara Power Union, The Ontario Municipal Electric Association and The Ontario Hydro-Electric Railway Association. Membership in these organizations crossed political party lines in early twentieth century Ontario. Through the doctrine of non-partisanship, they remained loyal to only one entity, the Hydro-Electric Power Commission of Ontario. While remaining a Conservative, Beck had succeeded in removing Hydro from the focus of party infighting. With his pressure groups, he had constructed what resembled extra-parliamentary parties.(13)

Hydro under Beck grew to a large enterprise by the time of the Beck-Drury radial confrontation in 1920-21. Up to February, 1921, the Ontario Government had advanced seventy-three million dollars to participating Hydro municipalities for various electric development projects. Of this, twenty-seven and one-half millions were directed to the construction of the Chippawa Canal at Niagara, the world's largest hydro-electric development of its time. While the Sutherland Commission was sitting at Osgoode Hall, Chippawa was draining two million dollars a month from the Provincial Treasury.(14)

As much as Adam Beck used the Ontario Municipal Electric Association to promote the Chippawa scheme, he used the Hydro-Electric Radial Railway Association to build popular support for his radial railway plans. The two organizations were based in the grass roots of Ontario politics and contained many of the same actors. Electricity was spreading across Ontario during the first two decades of the twentieth century, embracing small farms and large cities. It appeared that the radial railway plans would only complement Ontario's move to electric energy.

The first radial railway Act was passed in 1913 and amended in 1914.

The Hydro-Electric Railway Association, born in 1914, did not hold its first meeting as an association until February 26, 1915 in Toronto. It is necessary to understand the basic clauses of the Act to perceive the necessity for the Association. Thus, our first attention will be to the Act, which will be followed by an examination of the Association.

In summary the Act stated:

> 1. The Commission (HEPC) agreed (a) To construct and operate the railway; (b) To issue bonds to cover cost of construction; (k) To apply the revenues derived from operation to pay operating expenses, annual charges for sinking fund, interest, etc.
>
> 2. The municipalities agreed (a) To bear their share of construction and operation; (b) To issue debentures to be deposited with the Commission to be held and disposed of by the Commission as provided for in clause 4, which expressly includes the sinking fund.
>
> 3. The Commission was authorized to issue and sell its bonds to be charged on the railway. To meet payment of such bonds, the Commission was authorized to set aside sinking fund out of the revenue of the railway after payment of operating expenses. The debentures deposited by the municipalities to be held by the Commission in trust for the bondholders as collateral security for payment of the bonds.
>
> 4. If the revenues derived from operation proved insufficient in any year to meet operating expenses, sinking fund and bond interest, etc., such deficit to be paid by the municipalities upon demand. In the event of failure of a municipality to pay upon demand its share of the deficit, the Commission was authorized to sell the deposited debentures of such municipality held by the Commission.
>
> 11. The railway to be vested in the Commission on behalf of the Corporations (municipalities) and the Commission to have a lien thereon for all moneys expended by it under the agreement and not repaid. (15)

The Act provided Hydro with the legal exclusive right to manage both the finances and the railways once they were constructed. It was up to Adam Beck and the HEPC to convince Ontario municipalities the one sided arrange-

ment could work to their collective benefit. Thus, the Hydro-Electric Railway Association was founded as an umbrella organization which could include all interested municipalities while at the same time it had the possibility of serving as an agent to persuade doubtful municipalities whose co-operation was necessary for the success of the scheme.

Adam Beck was keynote speaker at the Association's first meeting. Beck was elected honourary president of the group, with J.W. Lyon, Mayor of Guelph as president. Other executive members included Mayor 'Tommy' Church of Toronto, and long time Beck colleague, Dan Detweiler of Berlin.

The Association's constitution declared that the organization existed solely to aid in providing a system of electric railways in Ontario. Reflecting the Act, the Association asked members to give Hydro the exclusive right to manage the system although ownership would remain in the hands of the municipalities. It reminded representatives of each of the municipalities present that they were obliged to raise funds for construction which they were to deposit with Hydro. The Association announced it would bring pressure to bear on each level of government to ensure the project's success. Association services were offered in the drafting of money by-laws connected with the radial plans. It also said it would pursue any lawful course that would prevent the extension of existing electric railway franchises, or the issuance of any new ones.

For organization purposes, the Association divided itself into districts encompassing most of Southern Ontario. The St. Lawrence district took in counties east of Frontenac and west of the Ottawa River. The Kingston and Ontario district consisted of Frontenac, Hastings, Northumberland and Peterborough. The Toronto East District took in York east

of Yonge Street, Ontario, Durham and Victoria counties. The City of Toronto remained on its own. Toronto West constituted the area of York west of Yonge Street, Peel, Halton, Wentworth and Simcoe counties. The Hamilton district included the city plus Wentworth and Halton. The Niagara district included Lincoln, Welland and Haldimand. The Guelph and Georgian Bay District was formed from Wellington, Waterloo, Dufferin and Grey. The Erie East District had Norfolk, Elgin, Brant and Oxford. Its counterpart, Erie West, included Kent and Essex. The London and Huron District had Middlesex and Lambton and the Stratford and Huron District included Perth, Huron and Bruce.

Although Buchanan describes Beck as a poor orator, he concedes the man had charisma. He stated that Beck had "some of the qualities of Churchill, Mussolini and Hitler. We would have them standing and cheering at the end of a speech."(16)

At the meeting, Beck spoke to eight-hundred municipal representatives in the Toronto Labour Temple. He used the occasion to attack the policies of the federal government and the national railways. Beck told the delegates he felt the country had enough transcontinental routes. He wanted the federal government to stop what he felt were generous giveaways to the national lines. He asked the delegates to bring pressure to bear on MP's and MPP's in order to get them to stop land grants, bonuses and subsidies for national railways. He hinted that some private promoters were lining their own pockets with federal funds. He stated Ontario would be far better off if its transportation tax money was used in the province exclusively.

Beck felt the delegates owed thanks to the City of Toronto for its

participation in the scheme. Cautioning members about their "hogtown" attitude, he noted Toronto's participation was required if the project were to succeed. The City had agreed to provide a nineteen million dollar development on the waterfront which would allow free and quick access to the city's core by Hydro radials. He implored the delegates to work unceasingly in the overall interests of Hydro and the radial scheme in particular.

Beck's appeal was not in vain. Before the meeting adjourned, the delegates voted to demand subsidies of $6,400 per mile of line from the federal government. They reiterated the point made by Sir Adam. The amount was small in comparison to the $230,000,000 in land grants and subsidies that the federal government had given to the national railways the previous year in the Maritimes alone. The Association stated that the plan would be healthy for business. It would promote trade, provide employment, encourage rural settlement, increase farmers' profits, reduce transportation costs and help cities grow more orderly. Lyon asked delegates to speak of these positive trademarks, while reminding MP's and MPP's the Association was aware of the fact elections at the provincial and federal levels were soon due. He did not accept the theory the subsidy would be impossible because of war costs.(17)

The campaign for the radials was taking on a similar momentum to that of the public power movement. Beck had succeeded in gathering around him municipal politicians from the smallest principality to Ontario's largest city. The quest for radials was the factor that held them together. He also succeeded in obtaining the editorial support of the Toronto Star, The Globe and The Evening Telegram. Adam Beck was a

favourite of the newspaper media. He had been made honourary president of the Queen's Park Press Gallery. He made himself available to news people, and in return, the press could be counted on to lend a sympathetic ear to the Hydro Chairman when he needed them.(18)

The Globe gave its support to the Association on February 25, 1915. In its lead editorial, it stated

> . . . the Globe has the utmost sympathy with the objectives of the Hydro-Radial Union. . . . There are many other advantages which may be reasonably anticipated from the introduction of publicly owned trolley lines throughout Ontario. Wherever the trolley goes cheap power will go with it. The opportunity for intensive cultivation will be greater. Schools will be located along the trolley routes, and one of the big educational problems resulting from our severe winters will be partially solved. . . . It is to be hoped that the Radial Union will receive from the Government of the Province no less consideration and support than have been granted in the past to private transportation ventures. (19)

Shortly after its meeting in Toronto, the Union, as it was now popularly called, began to assert its position with federal and provincial members of parliament. On March 10, 1915, a deputation from the Union visited Prime Minister Robert Borden in Ottawa. The delegation, headed by Sir Adam Beck, included J.W. Lyon,'Tommy' Church,Toronto Controllers Foster and Spence, Peterborough Mayor Buller, Mr. H. Clay of Windsor and Union Secretary T.J. Hanningan. On March 26, the delegation addressed itself to Sir William Hearst at Queen's Park.

Beck and his associates marched into Queen's Park with 1,000 representatives of Ontario municipalities led by the Chatham Boy Scouts pipe band. In a speech to the gathering, 'Tommy' Church called the delegation thoroughly representative of the Ontario population. Various speakers

repeated familiar Radial Railway Union themes such as extravagant subsidies to private corporations. They stated they felt it was the turn of the public sector to receive similar consideration. Adam Beck, the last to speak, was introduced to the assembly as Colonel of the Hydro. In his speech, he demanded the province subsidize the radial scheme for at least $3,500 per mile.(20)

The Association's main themes had been drafted in 1914 before the formal organization of the group in 1915. Both Borden and Ontario's Acting Premier J.J. Foy had been presented with memorials in 1914 by the men who were to eventually form the Association. The memorials pointed out the strengths of the public power movement in Ontario. They noted that power had been brought both to farm and city at cost. This they felt enhanced industrialization in the city while relieving Ontario's farmers of many day to day tasks which required heavy labour for long hours and the need for manpower. The memorials stated farming was becoming more efficient with the use of electricity. They also stated that if this trend were to continue, Ontario would require more hydro-electric generation.

The memorials also noticed the decline in farm population. They showed how 96,000 Ontarians had left agriculture between 1905 and 1915. Rather than blame modernization, the memorialists pointed out that the lack of an adequate transportation system in their view forced young men to seek work in the cities. To them, the city was growing at the expense of the farm, not in conjunction with it. They felt that both farm and city would benefit by electric railways. They stated

> that electric roads will bring the market to the door of the producer and conserve to the community a large amount of energy, thus reducing the high cost of living, by encouraging the people of the Province to go back to the Land. (21)

The Association demanded five concessions from the Provincial Government. It wanted the Government to allow Hydro to immediately develop the power potential of the spillway in the new Welland Canal with provincial funding. It demanded the Government encourage contracts between municipalities and Hydro to build and operate the radials. It wanted the Province to give it assurance it would live up to its stated intention to guaranteeing radial bond issues. It felt the Government should legislate against the operation of sinking funds for at least ten years. It also wanted the Government to legislate, if necessary, the participation of municipalities along proposed lines who did not want to co-operate in the plan.(22)

The federal memorial, while much the same in tone and content, included a section in which it outlined federal participation in railway development. It noted that the Guelph Junction Railway; The Oshawa Railway and Transportation Company; The Quebec, Montmorency and Charlevoix Railway; The Lake Erie and Northern and The Temiskaming and Northern Ontario Railway had all received some form of federal assistance. It stated that the Dominion Government

> has granted two hundred and eighteen million dollars to private railroad corporations and land equal to the whole of the Maritime Provinces (22)

Should the politicians fail to act on the requests, the memorialists left a reminder of the strength of the movement.

> . . .the deputation of your Memorialists is composed of representatives from almost every County from the St. Clair River and Lake Huron to the Ottawa River and the lower St. Lawrence, one of the largest and most representative deputations that ever visited Ottawa; that it represents the wishes of the Hydro-Electric Radial Union of Ontario, the Niagara District Hydro-Electric Radial Union and the Hydro-Electric Radial Union of Western Ontario, these three organizations in themselves representing over two hundred and fifty municipalities together with the Great Waterways Union of Canada; that some measure of the earnest of your Memorialists may be grasped by the fact that over forty municipal councils are represented almost as a body. (24)

The Union attempted to convey the message to both the Dominion and Provincial Governments that its support was far from an illusion. However, it did state it was a one issue organization. It hinted at the fact, that should its ends be achieved, it would cease to exist. It promised both levels of government that it would ensure that no private gain would be accrued from the construction and operation of the lines. It wanted to have the system remain in public hands forever for the mutual benefit of the Province's residents. This could all be realized if the Dominion Government would add to the Provincial subsidy of $3,500 a further $6,400 per mile.

> Wherefore your Memorialists humbly pray that your Honourable Government may be pleased to sanction the passing of the usual full subsidy of $6,400 per mile to such Hydro-Electric Railroads as shall be recommended by the Hydro-Electric Power Commission of Ontario and built by virtue of the Hydro-Electric Radial Act of 1913. (25)

On Saturday March 27, 1915, The Union and the memorials received editorial attention from The Globe. The newspaper supported many of the claims made by the memorials, in particular the concept that rural

de-population was due to an absence of an electric railway system. It pointed to the states of Ohio, Michigan and Indiana where agriculture was undergoing a technical revolution. The newspaper claimed that this process of modernization was accompanied by the fact farmers could easily access urban markets by electric railways. It felt the construction of the Hydro-Electric Railways could help alleviate Ontario's rural de-population. It summarized its feelings by stating that the demands for federal and provincial subsidies were justified. (26)

By the end of March 1915, Beck and Hydro controlled the collective power of Ontario's municipalities. Through his control of the Union, Beck had brought pressure to bear on the Dominion and the Province to virtually pay for the radial plans. Had he succeeded in gaining the total subsidy, the two senior levels of government would have paid thirty-two million dollars toward the proposed forty-five million dollar construction cost.

The centre of the radial scheme was The City of Toronto. Without Ontario's largest municipality, the plan had no future. The City was growing rapidly. It had doubled in acreage between 1899 and 1914. The land mass now occupied nearly 20,000 acres with a population of 470,100 persons. The City was so concerned about transportation planning that it appointed a committee of council to study the situation and make recommendations. The Civic Transportation Committee hired the City's Commissioner of Works, R.C. Harris; The Chief Engineer of The Toronto Harbour Commission, E.L. Cousins and Frederick Gaby, Chief Engineer of Hydro. (27)

The thrust of the report, which will be discussed in more detail in

Chapter Two, indicated Toronto would be the axis around which the radial scheme would operate. Adam Beck complemented the report by unveiling all of Hydro's plans to a closed meeting of Board of Control on Wednesday, December 1, 1915. He told Mayor Church and the controllers that Hydro planned to build 1,000 miles of electrically operated lines in the Province. He felt a $3,000,000 contribution to the scheme plus access guarantees by the City would ensure the proposals' success. (28)

The prospect of a high speed radial system centred in Toronto had appeal with the city's politicians. In 1915 Toronto was served mainly by the Toronto and York Radial, owned by the MacKenzie-Mann interests. The radials, which did not enter the city's core, connected with the Toronto Railway Company's street car lines, also owned by MacKenzie-Mann. None of these lines were of the high speed variety. They operated with the worst characteristics of most American inter-urban lines. The result was a growing frustration in the City with the privately owned system.

Beck used the meeting to articulate his grievances with the MacKenzie-Mann interests. He pointed out that if Hydro's schemes were adopted, they would necessitate the elimination of all three branches of the Toronto and York Radial. He stated that with this end in mind, Hydro had attempted to buy the railway along with the company's power plants in the City. Beck who was unsuccessful in his negotiations with MacKenzie stated the only solution was to drive the private operators out of business by constructing the Hydro radials. (29)

In 1916, Hydro and the Union were actively promoting the radial plans across Ontario. In May, 1916, Canadian Railway and Marine World reported that applications for radial studies had been received from 158

townships, 47 villages, 46 towns, 15 cities, 8 police villages and 7 miscellaneous committees and boards of trade. The journal also reported these requests totalled 2,164.14 miles of potential track.(30)

The massive support for the radial scheme placed the Provincial Government in a difficult position. It was faced by a large coalition of Ontario municipalities which it was hesitant to offend. Yet, if the radial scheme were to be instituted, Hydro would control virtually every electric railway in Ontario, excepting the Canadian Pacific interests in and around Brantford and Guelph. As a result, the Government refused to state its support or rejection of the scheme. It remained totally non-committal.

The Union continued to pressure the Hearst Government for action in 1916. However, The First World War provided the provincial administration with the excuse it needed to at least postpone the construction phase of the proposals. The Government stated that steel was in short supply and with many soldiers in Europe, manpower was at an all time low. The result was artifically inflated prices and wages at home. As a result, the Government advised the Union it could only justify beginning the project when the war concluded.

The Government made its position official with Railway Bill 167, passed in 1916. The legislation froze any work until the conclusion of the War. The Union retaliated by accusing the Government of ignoring the wishes of the municipalities who had democratically voted in favour of the plans. It questioned how Hearst and his government could ignore

> . . . the many resolutions, memorials and petitions presented to your honourable council during the last two or three years. (we are) asking for immediate action in regard to this project. (31)

The Union did concede war-time inflation had over priced materials and labour. It demanded however, that Hydro should be allowed to continue to conduct surveys and purchase rights of way. The Government accepted the compromise.

That Beck and Hydro could mobilize support through Ontario's municipalities is a subject that merits attention unto itself. Yet, without an initial investigation in this work, the political implications of Hydro's role in Ontario life could not be understood.

The role of Hydro and its allied municipalities was examined on a number of occasions before the Sutherland Commission. In his testimony in 1920, Frederick Gaby described the municipally-based Hydro-Electric Radial Railway Association as

> . . .an Association of the municipalities to co-operate in the interests of the establishment of better transportation, electric railway transportation, and to have the Commission assist the municipalities in understanding the situation and the Act.(32)

Gaby's statement hints at a father-son relationship between Hydro and its municipalities. Representatives in both the Radial Railway Association and The Ontario Electric Association were well known Hydro sympathizers who had been chosen by local councils as opposed to the ratepayers they supposedly represented. These groups, in turn, were responsible for the many memorials presented to government. These memorials were the documents by which Hydro interpreted 'the will of the people'.(33)

Gaby admitted the Hydro Electric Radial Railway Association and the Ontario Electric Association, one of Hydro's earlier pressure groups, were comprised of many of the same people. The pattern of Hydro - OMEA relationships characterized the relationship Hydro had with the Radial

Railway Association. When questioned about the co-operation between Hydro and its municipalities, Gaby remained vague in his answers to the Royal Commission. Counsel Robertson, when questioning Gaby about municipal participation stated

> I am endeavouring to suggest to you that the municipalities after all have not got a great deal to say about this. (34)

Lester Weaver, Mayor of Hespeler from 1916 to 1920 related Hydro tactics to the Royal Commission. When recalling a debate which took place concerning radial routes through the town, Weaver said

> . . . in fact, we were practically told, well, putting it crudely, that it was none of our business where it would go through the town. We had no assurance as to any special location. (35)

Weaver continued

> We had to furnish a free right of way over municipal property, then we had to submit to letting them control our street so far as franchises were concerned for a period of 50 years, something I feel we were not entitled to submit to. (36)

The architect of the pressure on Weaver was T.J. Hannigan, Secretary of the Radial Railway Association. Hannigan was attempting to get the town to pass the necessary money by-laws under the Act. At the same time, he told Weaver, Hespeler should stop preventing Sir Adam Beck from presenting the radial case in person to the town council. However, Weaver's interpretation is slightly different. He told Hannigan

> I would be very delighted to have Sir Adam Beck address the citizens of Hespeler on the question. But he (Hannigan) said Sir Adam would not speak in Hespeler till the council had given it its first reading. (37)

The question re-appeared when W.R. Robertson, General Superintendent

of HEPC Railways appeared before the Commission. Commission Counsel I.F. Hellmuth told Roberston he was aware of the fact that Adam Beck had applied pressure on St. Catharines City Council not to renew the city's street railway franchise which expired in 1920. Hellmuth stated Hydro was attempting to use city council to pressure the CNR, owners of the system, to obtain a good price for the Niagara, St. Catharines and Toronto Railway which Hydro wanted to incorporate into its plans. Robertson declared he knew nothing of the suggested incident.

Hellmuth introduced the topic for a third time when T.U. Fairlie, Head of Railway Engineering for Hydro took the stand. He told Fairlie that he was aware that Hydro was attempting to pressure the City of Brantford into cancelling the franchise of the Grand River Railway, a company which operated a radial line to Galt as well as the city's street car service. When Fairlie denied any knowledge of such pressure, Hellmuth used the occasion to describe what he saw in the Hydro-municipal relationships in Ontario.

> I desire to show that the Hydro Electric has actively interfered, has urged municipalities to act independently, that they have gone to the municipalities and have actively said to them, 'Now, you do so and so.' I think that this commission has a load of questions to be determined by it, whether or not the administration of hydro electric railways should be in the hands of the hydro electric commission. . . I perhaps thought I might be permitted later to call some evidence here along that line to show that this commission has not been a silent trustee but has been very aggressive. (39)

A further insight into the Hydro-municipal relationship was revealed in 1927. The City of St. Catharines, terminal point of the Toronto-St. Catharines radial, had deposited $688,538 with Hydro in 1917

as its share of the scheme. When the radial scheme collapsed after the Sutherland Commission hearings in 1920-21, The City of St. Catharines asked the HEPC to return its money. Citing that it was not legally obliged to do so, Hydro refused. St. Catharines appealed to the courts. The final Privy Council decision was issued in 1927. The decision stated Hydro was not obliged to return the money since no provision had been made in the legislation for such contingencies. (40)

Whether the 'will of the people' was represented or not must be questioned. In an internal Hydro memo, dated September 17, 1920, an unidentified writer directed these remarks to Mr. R.T. Jeffrey of the Chief Engineer's office.

> . . .with regard to the number voting on money by-laws, the writer begs to point out that in the majority of municipalities a large proportion of the owners of property entitled to vote on such by-laws do not reside in the municipality and therefore few of such owners vote. Consequently the vote on money by-laws is always low, and in many instances does not exceed one quarter of the total number of voters listed. Furthermore in most of the smaller places, few such by-laws have been voted on in the past few years and in one of two instances no record could be secured of any such by-law. (41)

The memo's author had taken an industrial and voting survey of the towns of Weston, Woodbridge, Georgetown, Acton, Guelph, Mimico, New Toronto and Port Credit, communities served by existing radial service. In Weston, with a population of 2,600, 1,100 were eligible to vote. Five hundred actually cast ballots. Woodbridge, with a population of 650, had 200 voters listed. Only 60 voted. In the town of Georgetown, with a population of 2,121, 290 voters of 455 listed cast ballots. Acton, with a population of 1,568, listed 368 voters. The turnout was

258. In Guelph, the largest city on the list with 18,000 residents, only 2,853 people were eligible to vote. Only 1,360 actually did. Mimico had a population of 3,729. There were 982 voters on the list. Two hundred and eight voted. In New Toronto with a population of 2,580, 96 of 794 eligible voters turned out. Port Credit had a population of 980, of whom 384 were listed as voters. There is no record of any vote taken. Of those eligible to vote, the combined turnout was less than forty percent. (42)

In spite of what would appear to be lack of enthusiasm at the polls, local dignitaries in these cities were supportive of the radial plans. Mr. McEwen, manager of the Bank of Montreal in Weston complained to Hydro that the existing service was inadequate. He stated it was so over crowded in rush hour that women could not use the cars because labourers abused them. Mr. Wallace, Reeve of Woodbridge, complained about the Toronto and York's lack of speed. Ewan McDonald, President of the Guelph Chamber of Commerce wanted the radials to integrate with existing service in the city to increase the speed of service and to assist the community to grow.(43)

The extent of political interest in the radial scheme can be seen in the letterhead of the Toronto Radial Association. In a 1922 correspondence, it listed under the slogan "Us for Toronto", the names of its Honorary Presidents. At least one alderman for every ward appeared, including W.R. Plewman, later to be Beck's biographer.(44)

In his memoirs, E.C. Drury felt that Adam Beck used Hydro and its participating municipalities to expand his power base in the Province. Although Drury does not question Beck's devotion to the cause of public

ownership, he questions his role in it. He felt that Beck's favourite phrase, "hands off the municipalities" was in truth, "hands off Beck." (45)

The view is extended by Nelles.

> Adam Beck consciously installed Hydro between the municipal and provincial jurisdictions where it was effectively beyond accountability to either. He ran Hydro as a curious kind of plebiscitory corporation. He would first organize his pressure groups and then the Conservative Party behind the appropriate permissive legislation for his projects. Then he would pour the resources and influence of Hydro, plus his own considerable personal energies, into countless municipal by-law campaigns to win popular approval for them. With that generally overwhelming mandate to go ahead, Beck would simply requisition funds from the defenceless government. (46)

It is a monument to Adam Beck's skills and persuasive techniques that the radial railway proposals which resulted from a very one sided Act could receive the popular support that it did. However, Beck was supported by his own history. He had made the movement for public power successful. It had contributed to Ontario's industrial development and advancing farm technology. He had succeeded in placing the hydro-electric issues above partisanship seen in political parties. However, as the years passed, more and more decision making was being removed from the Legislature. The role of the democratically elected members of the Legislature had to be uncertain in the Province's future development plans.

The Conservative Government led by Sir William Hearst was a weak and inept administration. Hearst had inherited a party, which in 1914, had rested on the laurels of accomplishment of the Whitney administration. During the final years of the Whitney's tenure, the government had passed very little new or innovative legislation. It remained in

power, however, by forging a coalition of widely varied interest groups, carefully compromised by Whitney himself.(47)

Peter Oliver, in "Sir William Hearst and the Ontario Conservative Party", contends that Hearst had little understanding of the political pragmatism of his predecessor. Hearst inherited a party with three powerful factions in it. One was led by W.J. Hanna, a businessman and competent administrator with ties to the big business community. However, Hanna had links with the liquor community, a factor which clouded his value in the cabinet. The second faction was led by Frank Cochrane, a hardware merchant from Sudbury. He was the Ontario party's chief organizer, and after joining the federal Conservative Party, he remained close to the provincial administration as an advisor. Cochrane was also a Hearst supporter. The third faction was led by Sir Adam Beck.(48)

With Hearst's ascension to the leadership, the Conservative Party was faced with keeping all three groups in the party together. Hanna agreed to join the cabinet. Hearst's election brought the Cochrane interests into the coalition. However, when John Hendrie, a foe of Adam Beck's, was appointed to the Lieutenant Governor's office, Beck declined to serve. Without Beck in the cabinet, the public power advocates had little choice but to ally themselves to Beck and Hydro outside the councils of government.(49)

A divided Hearst administration was faced with a powerful Prohibitionist movement. Although Hearst was sympathetic to liquor control, he did not favour total Prohibition. He attempted to compromise both the Pro and Anti factions with the appointment of the Liquor License Board in 1915. With this move, he attempted to counter the total prohibition

attitude of the Liberal Party. Under the legislation, bars would remain in Ontario, but would close at eight in the evening as opposed to eleven.(50)

The legislation and the Ontario Temperance Act, which provided for a referendum on Prohibition after the war, satisfied neither the pro nor anti forces. The Liberal's alliance with prohibition groups had forced the liquor interests to join the Conservative Party. Yet, the party was also aware of the fact that prohibitionist sentiment was becoming a majority opinion in Ontario. Hearst, ignoring the prohibitionist feelings, continued to press for his personal, compromise position on the subject.(51)

As well as alienating the prohibitionist sentiments, the Hearst administration appeared to be insensitive to the needs of Ontario farmers. Hearst's original Minister of Agriculture, James Duff was widely perceived as being ineffective in a cabinet made up of businessmen and lawyers. When Duff died in 1916, Hearst assumed the portfolio himself. He did not appoint a new minister until May, 1918.

Ontario's farmers were bitter at the Hearst administration for failure to persuade the Unionist Government in Ottawa to exempt farm labour from the military draft. The irritation was compounded in 1919 when the Disqualification Act prevented defaulters from voting or holding public office for ten years. Although the act was all-embracing, the majority of persons affected by the legislation were farmers' sons. The result of the farm dissatisfaction was the growth of the United Farmers of Ontario (UFO) which had expanded from 15 clubs in 1917 to 1,130 in 1919. These clubs had memberships of 43,000 people.(52)

In spite of the fact the Hearst administration had refused to take

into account two of Ontario's major political movements, it counted on the divisions within the Liberal Party to remain in power. The Conservative Cabinet seemed oblivious to the fact that both the Prohibitionist movement and the United Farmers could be forged into a dissatisfaction so great that the government could be removed from office.

The Liberal Party's fortunes seemed even more dim than that of the Conservative Party. The Liberals had been defeated decisively at the polls by Whitney and his successor four times between 1905 and 1914. The party was split between a wing led by a reforming, prohibitionist named Newton Rowell and a more conservative element under Hartley Dewart. When Rowell left for federal politics, Dewart unseated the Rowell protegé in the 1919 leadership convention. The split in the party was further widened by Dewart's win. In the 1919 election, a weak Conservative Party was faced by only 72 Liberals in one hundred and eleven ridings. As well, many Liberals publicly claimed support for the policies of the UFO prior to and during the 1919 provincial election.(53)

Ontario was suffering from a crisis of political confidence following the First World War. The traditional party structure could not accommodate the grievances of the electorate which eventually rejected both the Liberals and Conservatives for the UFO-ILP coalition. Yet, the victory of the coalition can only be described within the framework of the politics of protest. The subsequent defeat of the Drury administration in 1923 saw a return to traditional political alignments in Ontario. However, with the 1919-1923 period, the Province was witness to an unstable party structure, one which could be vulnerable to a strong organization with a charismatic leadership.

With the party system in a state of flux, the Hydro organizations were in a position to move into the vacuum created by weak party structures. The question which must be determined is in which direction did policy making flow? In traditional liberal-democratic theory, decision-making flows from the wishes of the electorate. When a party system is unable or unwilling to respond, a confused and leaderless electorate leaves itself more vulnerable for policy making from the top. In effect, the flow becomes reversed. In 1919, Adam Beck and the HEPC were in a position to mould public opinion in favour of public ownership in general and specific Hydro projects in particular.

One Hydro information source was "The Bulletin" which universally advanced the cause of electric energy. As an example, the November, 1915 issue suggested readers provide an electric Christmas. Among gift suggestions were electric automobiles for women. As well, Hydro designed newspaper advertisements and Christmas cards which it suggested local utilities could use to promote electric use.(54)

As the twenties approached, "The Bulletin" became more vocal in its promotion of electricity. It carried articles promoting the cause of railway electrification, electric delivery vans, and conversion to electric appliances. It began to refer to the Hydro Chairman as a man with vision. Although it paid little attention to the radial dispute, it reported some of the voting patterns during the period 1916 to 1920. It called those municipalities which voted in favour as "loyal" and in its own fashion, it described losses as minimal, or marginal. In every case, it did not report actual voting numbers. The Bulletin did promote the radial proposals however, linking the plans with the development

of public power in Ontario. It suggested that the radial scheme could only work if it were owned and operated in the same fashion as the Hydro co-operative, by the people and at cost.(55)

Hydro had been able to place itself in a position of spokesman for Ontario municipalities because the provincial government had refrained from serious interference in its affairs in the decade between 1906 and 1916. Hearst, for one, was afraid of the influence of Adam Beck and preferred not to deal directly with the Hydro Chairman. He left this task to two of his ministers, Thomas McCarry and G. Howard Ferguson.

While Beck was directing Hydro attention to Niagara Falls and its future development, Ferguson had completed negotiations with the Seymour Power interests in Central Ontario to become part of the HEPC system. The Seymour interests were not in Beck's immediate plans and the proposed purchase infuriated him. This action represented the first significant intrusion into Beck's Hydro world by the Government.(56)

Relations between the Government and Hydro, already strained by Ferguson's actions, became more strained when McCarry appointed a Mr. J. Clancy to audit Hydro's accounts. Beck resisted the audit and finally Clancy wrote to McCarry on February 21, 1916 to complain about the HEPC's attitude toward the procedure.

> . . .it has been found impossible to complete or to make any progress approaching the completion of an audit of the expenditures of the Commission for each or any of the fiscal years 1909, 1910, 1911, 1912, 1913 and 1914, owing to the attitude and conduct of the Commission in failing to furnish for each or any of such years complete accounts for adjustment and audit. (57)

Clancy was particularly concerned about a double book-keeping system used by Hydro. He noted that the first set of books recorded expenditures

What Shall I Give?

A list of suggestions for perplexed customers.

For Children:

Battery
Battery lantern
Bicycle lamp
Christmas tree lighting outfit
Corn popper
Electric engine
Electric top
Flashlight lamp
Mechanical toys (motor operated)
Optical illusion box
Permanent magnet
Picture projector
Shock coil
Telegraph instrument
Telephone bank
Toy aeroplane
Toy automobile
Toy fan
Toy electric range

For Men:

Alarm clock
Auto battery lamp or lantern
Auto engine warmer
Battery lantern
Bed lamp
Cigar lighter
Drink mixer
Electric horn
Floor portable
Shaving mirror
Silk hat iron
Traveler's lamp
Traveling iron
Traveling stove
Vibrator

For Women:

Air heater
Automobile (electric)
Beauty lamp
Boudoir lamp
Toaster
Cereal cooker
Chafing dish
Coffee pot
Coffee urn
Dish washer
Disc stove
Egg boiler
Egg beater
Electric comb
Electric fan
Electric range
Flat iron
Grill
Home ironing machine
Illuminated mirror
Heating pad
Immersion heater
Massage vibrator
Percolator
Piano lamp
Plate warmer
Radiator
Samovar
Sewing machine motor
Toaster-stove
Traveling iron
Utility motor
Vacuum cleaner
Washing machine
Water heater

For Older People:

Bed lamp
Electric bath cabinet
Hearing devices
Heating pad
Medical battery
Nurse signal
Radiator
Sterilizer
Toaster-stove
Ventilating fan
Water heater

EVERYONE SAYS THE SAME: "USEFUL GIFTS THIS YEAR"

—Santa Claus

DO NOT consider your Xmas list complete until you have visited the Hydro Shop. Our stocks are complete—our service is courteous, and electric appliances are the most pleasing gifts you can give.

This radiant electric heater, with its ruddy, glowing coils, is a lasting dispenser of Xmas cheer. Just attach it to a lamp socket the same way as you do with your iron. You can have the "coziest corner" in any room in your house. Simple, clean and economical—a present your friend will appreciate.

Price, $6.50

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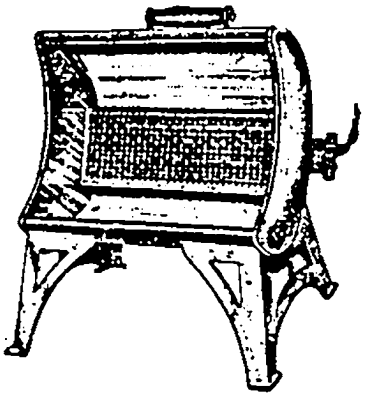


PEOPLE'S HYDRO SHOP

HYDRO AVENUE

(Suggested Form of Newspaper Ad.)

The front page of the Xmas Folder is shown above. When folded this circular fits a standard No. 8 envelope. Original printed in two colors.

that Hydro charged to the Provincial Treasury. From 1909 to 1915, these amounted to $835,718.35. However, Clancy noted that Hydro had failed to detail uses for the money. As well, money was regularly shifted from this account for a number of projects, all of which were generally, but not specifically noted.

The auditor accused Hydro of violating Section 23 of the Power Commission Act. Under this section, municipalities who entered into contracts with Hydro were obliged to pay annual interest charges to the HEPC on the amount spent by the Commission by way of the Capital Account, for construction or purchase of all works. These charges were to be paid to the Treasurer of Ontario.

The HEPC evaded this clause by setting up Hydro as a contracting corporation which became a debtor to the Province. As a result, the Commission paid interest on advances by the municipalities to itself, replacing other potential contractors. Thus, money intended for the Provincial Treasury found itself in Hydro's account. In Clancy's opinion

> . . .this, as might be expected, had led to erroneous interest imposts and in some instances to inextricable confusion.(58)

Clancy was also concerned about the $1,564,098.66 expenditure consumed in the electrification and upgrading of the London and Port Stanley Railway. The auditor was of the opinion that Hydro had exceeded its original mandate with its involvement in the L&PS, and thus, such expenditures were both illegal and unjustified.

> . . .the fact remains that the legislature has not so far seen fit under the Power Commission Act to confer upon the Commission power to enter upon and carry out such undertakings, nor has it conferred upon the Commission power to use or loan monies in

> their hands belonging to the municipalities even with a view of showing profits. (59)

Clancy felt that Hydro had manipulated its books to the degree that it collected more money from the municipalities for the sale and transmission of power than it was entitled to do under Section 23 of the Act.

> . . .it would seem obviously clear that the Commission have no power to levy and collect money from the Municipal Corporation for this or any other purpose not specifically provided for under the Act. (60)

In his report Clancy noted that Hydro had billed the Province for $4,190,620.55 in expenditures for which there were no accounts for the years between 1909 and 1915. He blamed

> . . .the absence of even the semblance of legislative control over the expenditures of the Commission-- in striking contrast with the complete legislative control over the expenditures of the Executive Departments. The other, the seeming defiant disobedience of the Act creating the Commission with their power and duties. (61)

Clancy's condemnation of Hydro operations led to an investigation of Hydro by the Public Accounts Committee of the Ontario Legislature. The committee's recommendations led to an amendment to the Power Commission Act which authorized the government to appoint a comptroller for Hydro. The appointee would have the power to countersign cheques for Hydro projects if he felt the undertaking were justified. The comptroller also had the authority to keep the Commission's books, file an annual financial report, force either the Chairman or Vice-Chairman to verify his statements, and report on Hydro's financial affairs directly to the Provincial Treasurer should the Treasurer request it. The Toronto firm of Clarkson, Gordon and Dilworth was appointed auditors to the HEPC. (62)

The Clancy Report pitted Beck against the Conservative Party and the cabinet in particular. However, the split never reached the surface, and

was healed somewhat by an audit done by the Clarkson Company. The provincially-appointed auditors were only willing to support one of Clancy's charges of wrong-doing, the over expenditure on the L&PS. In Hydro's viewpoint, this incident was justifiable. In an inter-office memo, Secretary Pope wrote to Adam Beck

> . . .so far as the City of London was concerned, they got the benefit of the experience of the Commission's engineers and electricians, therefore they benefitted and the expenditure of the money in the way indicated was entirely in the interests of the municipalities, none of which had made complaint. On the contrary, they were quite satisfied. (63)

In spite of the McGarry incident, no specific charges of wrong-doing could be directed at Beck and his Commission. In the end, the appointment of a Hydro comptroller amounted to little more than a gentle reprimand of Beck by the Provincial Government. As the Pope memo suggests, Hydro still retained the confidence of its municipalities, the legitimate base of its political power. This left the Commission virtually free to pursue its twin objectives, the construction of Chippawa and the radial railway proposals.

Although the relationship between Adam Beck and William Hearst had been strained by the Province's actions in 1916, Beck and his allies in the Radial Railway Association agreed to let the war take its course before pressing for radial construction. With the war's conclusion in 1918, Hearst lost his most credible excuse for postpoining the radial plans and he and his government were left alone to face Sir Adam Beck and the Association.

The issue re-surfaced on April 17th, 1919 when Beck wrote to Hearst demanding action on the radial question.

> . . .my dear Sir William: I have felt for sometime that the Hydro-Electric railway projects of the Municipalities were receiving but a small degree of sympathy from the members of the Government, and that it is useless to attempt to go on with them unless there is a change in the present attitude of the Government. I feel there is little or nothing being done to enable the Commission to proceed with the undertakings, which have received the strongest popular approval, and I do not think it is consistent with my own-self respect, or a fair return for the confidence shown in the Commission by the Municipalities, that I should submit to this any longer without a public statement of the facts. I propose therefore, to make such a statement and to place the responsibility for the universal disappointment at the failure of Hydro-Electric statements where in my judgement it rightly belongs. I regret the necessity for this exceedingly, but I have already allowed my sense of party loyalty to restrain me too long, and after mature consideration, I can see no other course open to me. (64)

Hearst was placed in a position where he had to deal with the radial question and its promoter. Applying more pressure, Beck reminded Hearst on July 30, 1919 that no legal obstacles stood in the way of construction of the Port Credit to St. Catharines line. All votes had been taken, and the money by-laws had been approved. One month later, Hearst submitted and advised Beck that the necessary orders-in-council authorizing the line had been issued.(65)

The Premier had succumbed without a battle with Beck. On August 30th, 1919, Hearst agreed to assist Hydro in its railway plans. He suggested a meeting should be arranged at Beck's convenience to discuss the issue. One week later, he invited Beck to correct any misconceptions, real or perceived that he (Hearst) may have had concerning the Port-Credit St. Catharines project.(66)

By September 1919, Beck had Hearst on the defensive. The situation had developed to the point where the Province's highest paid civil

servant was dictating procedures to the Province's highest elected official. The bureaucratic servant had become the master. The supposed master found itself serving a structure which it had created.

Just over a month after Hydro received provincial approval to start work on its first radial, an event took place which would change the fortunes of both Adam Beck and Hydro. On October 20, 1919, the Ontario Conservative Party returned only twenty-five members to the Legislature on election day. The traditional Liberal opposition fared only slightly better returning twenty-nine members. On the government benches were forty-five members of the United Farmers of Ontario and eleven members of the Independent Labour Party. Missing were the two old adversaries, William Hearst, defeated in Sault Ste. Marie, and Adam Beck, defeated in London. (67)

The Hearst-Beck battle had not been reconciled before the election had been called. As a result, Beck, feeling his personal magnetism was stronger than his party ties, chose to leave the Conservative Party and run as an Independent. He alienated those voters who traditionally vote on party lines, with the result that the Mayor of London, Dr. Hugh Stevenson won the city for the ILP. Dr. Stevenson accused Hydro of charging exorbitant fares on the L&PS, and urged a fixed rate of twenty-five cents return on the line. His appeal won votes, and on election day, for the first time in his long career, Adam Beck found himself without a provincial seat and without allies on the government side. He had only the Chairmanship of Hydro, and faced a man he knew little about, Ernest Charles Drury. (68)

The man who was to eventually curb Adam Beck's ambitious schemes

was from Simcoe County where he was born on January 22, 1878. He grew up on the farm, and later went to the Ontario Agricultural College at Guelph. His father, the Honourable Charles Drury, had been Ontario's first minister of agriculture from 1888 to 1890.

In 1909, E.C. Drury was appointed Secretary of the Canadian Council of Agriculture. He was elected UFO president in 1914. In 1917, he ran unsuccessfully as a federal independent Liberal Candidate in Simcoe North. His defeat ended his political career until the UFO-ILP coalition in 1919.(69)

The UFO had not planned on winning the 1919 Ontario provincial election. Its candidates were nominated to press the ruling Conservatives for concessions to agriculture. However, with the defeat of the Hearst administration, a reluctant UFO found itself with the largest representation in the legislature. The party had not elected a leader for the campaign, and its president Drury, did not contest a seat.

With its electoral success, the UFO flirted with the idea of drafting Adam Beck to lead it. Beck attended the organization's leadership convention, but, during the day, the Hydro Chairman decided to reject the offer and remain with Hydro. As a result, the convention chose Drury to lead the party. Later, Drury succeeded in getting a seat in Halton County in a by-election. The radial railway battle would emerge again between the nineteenth-century tory Adam Beck and a dedicated small-l liberal, Drury, who had in Nelles' words, an

> . . .intuitive scepticism of big government, debt and bureaucracy (which) naturally predisposed him to be suspicious of such an imperious organization (such as Hydro) (70)

In Adam Beck, the Farmer-Labour Government had a rival which could

question its desire and right to run Ontario as it so designed. The weakness of the Hearst administration had allowed Beck to build Hydro into a multi-million dollar operation which was now producing the majority of its own power. As well, the Commission controlled Ontario's numerous municipalities through its various ancillary organizations such as the OMEA and the Radial Railway Association.

Drury had inherited the Beck "problem" and he was deeply suspicious of the Hydro Chairman and his intentions. In his memoirs, he said

> I couldn't remodel him. My job was to work with him as far as possible, for the benefit of the whole province. One day we had a particularly acrimonious discussion, which lasted far beyond the usual lunch hour in the Cabinet dining room. We were alone, for all the others had eaten and gone. Sir Adam looked at me with a twinkle in his eye. 'Drury', he said, 'why don't you fire me? I'm nothing but a bother to you.' 'Sir Adam', I said, 'I'm not only not going to fire you, I'm not going to give you a reasonable excuse to resign.' I am not sure that he would not have welcomed dismissal. At that time he was undoubtedly the most influential person in the province. He had a large and devoted following and adequate support. In the Hydro-Electric Association he had an efficient organization. In spite of all he said, he undoubtedly had political aspirations. If I had dismissed him, he would have become a martyr and could easily have headed a Hydro-Electric Party and swept the Province. He was far more dangerous out of the shafts than in them. My task was to keep him in the shafts and control him as far as possible. (71)

In the time period between the election and the announcement of the appointment of the Sutherland Commission on July 6, 1920, Hydro made no progress in attempting to persuade the Drury Government to honour commitments made by the previous Hearst administration. The radial question was still being debated both at the municipal level and in the councils of government at Queen's Park when the decision to appoint the Commission

of Enquiry was made.

On July 8, 1920, The Hydro Radial Association met in Toronto. The Globe, which covered the event, reported Beck as saying

> . . .the financial groups of Montreal and Toronto, the railway group at Montreal and the somewhat dead railway group of Toronto are trying to stampede the Drury Government to delay this work. This is my conviction, and I am not going to tell you one-half of what I know. (72)

Drury was disturbed by Beck's innuendo. In a letter to the Hydro Chairman written the following day, the Premier stated

> . . .in view of the seriousness of this statement made by yourself at a public meeting, it seems to me you should be prepared to come forward and tell the Government and the Province not only half of what you know but all of what you know. We cannot allow such implication of our motives to go unchallenged, and we must ask you to be specific and definite in your statements. (73)

Adam Beck took four days to respond to Drury's letter. He inferred that the Premier had mis-interpreted the speech.

> . . .you will observe that my statement in the paragraph quoted by you is that certain financial groups of Montreal and Toronto, etc., are trying to stampede your Government, and I expressly stated, and am so reported, that I did not wish it to be inferred that you were appointing a Royal Commission to investigate the Hydro Radial project to please the enemies of the Hydro, but that such an appointment would give pleasure to its enemies. As you know, certain financial and other interests have for some years attacked the program of the Hydro Commission and myself personally, and a systematic campaign has been carried on to undermine public confidence in the various undertakings, and in myself as its chairman. I did not, and do not question the honesty and sincerity of your personal motives in the appointment of a Commission, and I do not consider that my language is open to such an interpretation. My only regret is that your Government before deciding on the appointment of the proposed Royal Commission did not afford this Commission an

> opportunity to assist you in securing such further information and expert advice as you and your Government might deem necessary. The fact that this has been done will give pleasure to our opponents, however unintentionally on your part. That there should have been any misunderstanding by you of my remarks is a matter of sincere regret. (74)

During the course of the summer and into the autumn, Drury and his cabinet remained non-committal. Then, the Government's position was revealed to Beck on October 12, 1921. During a meeting with the Hydro Chairman, Drury announced that he would not consider giving provincial support to bonds raised by the municipalities for radial purposes. Beck suggested that the government accept the principle that the municipalities and Hydro guarantee the bonds themselves. He left the meeting with the impression that the Government would accept his compromise. Provincial guarantees were one of the most attractive elements of the radial scheme. They removed any insecurity that the municipalities may have had regarding participation. Without these guarantees, Beck was faced with the difficult task of re-selling the idea to municipalities who would certainly be more cautious than previously.(75)

The Drury Government again did not act on Beck's request. Just over two months after meeting with Drury, Beck received a letter on December 17th, 1921 in which the Government announced it was invalidating existing agreements to purchase The Toronto Suburban Railway and The Niagara St. Catharines and Toronto Railway from the Dominion Government. Beck responded to the letter on December 22, 1921. He told Drury that he felt betrayed by the decision. He stated that he was under the impression that the Province would allow concerned municipalities to re-vote on the purchase issue. He was distressed because the Government had waited until

the seventeenth of the month to inform him of the denial. Thus the issue could not be included on ballots in the January First voting in 1922.(76)

The Province informed Beck that it felt he had violated the standard form of agreement with the municipalities in question under the Hydro-Electric Radial Railway Act. In particular, it related two incidents. The Province suggested, with Hydro control of municipal funds for the purchase, the municipalities in effect would lose control of operation of the lines once they came under Hydro management. In his response, Beck told the Premier that no matter where the money was situated, either in or out of Hydro hands, the Act and its agreements clearly left responsibility for ownership in municipal hands while Hydro had management rights. This, he claimed, was the purpose of the Act in the first place and purchase of the federal railways would not change the situation.(77)

The Government also objected to the fact that the purchase of the lines would put Hydro into transportation fields other than railways. At issue was the lake steamer, "City of Dalhousie", owned by the Niagara-St. Catharines and Toronto Railway. The Government felt the Hydro-Electric Railway Act and its various amendments would not allow Hydro to enter any other transportation field aside from railways. Beck, after consulting Hydro's legal advisors, told Drury that his interpretation of the Act was wrong on both counts.(78)

The Drury Government was clearly showing signs that it was not as enthusiastic about the radial proposals as Sir Adam Beck and the HEPC. It had successfully prevented Hydro from laying a single foot of track during the first fifteen months of its life, while at the same time, it had prevented open warfare with Beck and his Commission. The Drury

administration was in a conflict of patience with Hydro, a conflict it was determined to win.

In an interview with Fred Schindeler and Mrs. J. James which took place on March 19, 1965, Drury admitted that he wanted Beck and the HEPC to drop the radial proposals themselves. He also stated that of the three man Commission, Beck and his ally, I.B. Lucas were not likely to be persuaded to do so.(79)

The third Hydro Commissioner, Colonel Carmichael, did not support Beck or the radial proposals. Carmichael suggested to Drury that he dissolve the Beck-Lucas alliance by removing Lucas from the Commission. Drury agreed with the idea and created a permanent legal department at Hydro with Lucas, a former attorney-general as director. Then, on Carmichael's suggestion, Frederick Miller, a Toronto contractor and member of the TTC, was appointed in Lucas' place.(80)

According to Plewman, Miller received the Hydro appointment on the condition that he would forge an alliance with Carmichael to stop Beck's radial plans inside the HEPC. Shortly after his appointment, Drury was advised of the fact that Miller could not be relied upon to vote against Beck. When confronted with the accusation by Drury, Miller told the Premier he could not vote against the proposals. He confessed that Beck had hired a private detective to check Miller's background before his Hydro appointment. Beck had discovered some unsavoury elements in the contractor's past. The Hydro Chairman had advised his commissioner that either voting against the plans, or his resignation, would result in a public airing of the detective's report.(81)

Adam Beck was a solitary and friendless man. In his own mind, the

public ownership cause and Hydro in particular, superceded his personal relationships. In a Sunday breakfast at his Headly estate, Beck told Edward Buchanan .

> . . .you know, I've got into the habit of fighting so hard against these private companies for public ownership of Hydro, and then I go and fight with my friends and lose them for no reason. (82)

Beck may not have seen a reason for his status, but if the Miller incident were reflective of his actions, it is not difficult to deduce why he had no friends. The Hydro Chairman was not gentle in his dealings with people or institutions that he perceived blocked his projects, as R. Home-Smith and The Toronto Harbour Commission discovered in 1921.

Hydro needed high speed access to downtown Toronto to make the radial scheme a success. As we have seen, the Commission had the sympathy of Toronto City Council and Board of Control, but faced some reluctance from the Harbour Commission. At stake was a tract of land, one-hundred and three feet in width and eight miles long. Hydro wanted the land for its tracks and terminal. It also wanted exclusive rights to the land granted in perpetuity. The result would have been a permanent denial of TTC access to the waterfront.

The Harbour Commission had evaluated the property at five million dollars. Hydro wanted to rent the strip for one dollar per year. When no agreement could be reached between Hydro and The Harbour Commission on a rent, the Harbour Commission recommended in December, 1921, that Toronto City Council vote to reject Hydro access to the land.

The Harbour Commission felt it was objectionable to place such a valuable piece of real estate in the hands of a provincially appointed three man Commission (HEPC). In its report, it stated that once granted,

the city would have no right of grievance on the land should it object to Hydro's use of property. In the final analysis, The Harbour Commission felt that Adam Beck was the wrong person to dictate Toronto's waterfront development.

In a letter to Toronto City Council on December 13, 1921, Home-Smith related his objections to Hydro.

> The Ontario Hydro Power Commission has given the Board of Control, The Toronto Transportation Commission and the Harbour Commissioners only one month in which to study their draft agreements covering this complicated and supremely important transaction. The members of the City Council, the press and the public were given about forty-eight hours for consideration between the publication of the printed document of twenty-seven pages and the demand at last Friday's council meeting, that the agreement be adopted on the basis that the Harbor Commissioners if necessary be finally coerced into giving their consent. (83)

Home-Smith pointed out that ratepayer approval of the radial access to Toronto had not been updated since the original vote on January 1, 1916. He felt that the city should re-examine the plan since newspaper support for the scheme had started to turn against it. Re-examination was critical because the City had not elected one member of the UFO-ILP coalition at Queen's Park and thus could not count on provincial support, should it decide to deny Hydro its access. Finally, he warned council members to take caution in their dealings with Adam Beck.

> . . .it is no light matter to write thus to the Board of Control and the City Council, with whom, over the long period of ten year's service, the Harbor Commissioners have had the most pleasant and helpful relations. Neither is it a pleasant task to oppose the will of Sir Adam Beck, whose advice this city has so long and so eagerly followed. (84)

Home-Smith and Eddie Cousins, The Harbour Commission engineer both received extra scrutiny from Adam Beck. Plewman recalls an incident when, while sitting on the porch of Home-Smith's Toronto home on St. George Street, both men noticed a man watching them from across the street. Later they discovered that the individual was a private detective in the employ of Adam Beck.(85)

R.J. Fleming, a member of the Harbour Commission and a long-time opponent of Adam Beck, sought the mayorality of Toronto in the January 1, 1922 municipal elections. He was opposed by Alf Maguire, a protegé of Beck's friend "Tommy" Church, and a pro-Hydro campaign. Beck supported Maguire and actively intervened in the campaign. In an election speech, he painted both Home-Smith and Fleming as large private developers who wanted to turn the MacKenzie-Mann interests over to the Harbour Commission as opposed to Hydro. In his conclusion, Beck asked his audience to respond to the question "Where is the Nigger in the fence now?"(86)

Beck's relationships with people or institutions that he perceived as anti-Hydro were stormy. In 1921, this included E.C. Drury, R.J. Fleming and R. Home-Smith. A description of the Beck-Drury relationship was outlined in a letter to a federal MP, W.F. Maclean. The writer, a Mr. T.A. Curran, offered the following observation.

> I note what you say about Drury and Beck. I regret the differences that have arisen between them. I think probably Beck has been accustomed to having his own way a good deal and Drury has a very square jaw. (87)

It wasn't until after the Sutherland Commission reported its findings that Drury publicly confessed his fears about Adam Beck and the political power of Ontario's Hydro Commission. In a speech to the

Canadian Club on Friday, November 11, 1921, Drury said

> . . .we appointed a Commission and oh, things were noisy for a while. I did not know how long the government would last. It looked as though we might be blown out of the water by the violence of the hurricane. (88)

Beck's actions in dealing with "enemies" of Hydro can partially be explained by his attachment to the question of public ownership of resources used in the generation of electricity. In Adam Beck's tenure as Hydro Chairman, water power was the main source from which the energy was manufactured. Large segments of power generation remained in private hands, owned by the MacKenzie-Mann interests entrepreneurs such as Henry Pellatt and Frederick Nicholls, and the Dominion Power and Transmission Company of Hamilton. As long as these interests remained in operation, the concept of public ownership in the electrical field was open to debate.

In the years between 1906 and 1920, Adam Beck had transformed the Hydro-Electric Power Commission of Ontario from a transmitter and regulator of electric power into a producer. In 1917, the HEPC began construction on the world's largest hydraulic electric generating station at Chippawa. This, combined with the purchase of the MacKenzie-Mann interests in the so called "clean-up" deal in 1921, put Hydro in the forefront of public ownership schemes in the country. By the time the Sutherland Commission began hearing evidence, Hydro had acquired ninety-four different companies with a capitalization of sixty-six million dollars.(89)

Adam Beck had been successful in convincing Ontario that public ownership was the single most important element in Hydro's success. Yet, not all politicians at Queen's Park supported the vision of massive public ownership as articulated by the Hydro Chairman. The legislature still

had members sympathetic to the concept of mixed private and public control of electricity. The Conservative cabinet under Hearst had members who disliked Beck and his methods, and could not be counted on to support Hydro expansion.(90)

With factions opposing him at Queen's Park, Beck delivered the message of public ownership to the source of his support, Ontario's municipalities. In May, 1915, just as the war effort was gaining momentum, Beck announced that rate reductions for Hydro customers were imminent. He noted that from January 1, 1915 to May 1, 1915, Hydro had produced a revenue of $710,324.95 from eighty-four participating municipalities. It had also contracted for a further 10,000 horsepower from the Ontario Power Company, bringing its total commitment to 90,000 horsepower. As well, it authorized construction of installations in Owen Sound, Chatsworth, Dutton, Thamesville, Ridgetown, Blenheim and Rothwell.(91)

Bringing electric power to Ontario's farms was a key ingredient in gaining support for Hydro projects. Although the move to urbanization had taken hold in the Province, the rural constituencies still held the majority of the voting power in Ontario. Rural electrification, combined with a rigid adherence to the service at cost principle, could never be interpreted as a negative factor in dealing with Hydro.

In a speech in Toronto on September 13, 1923, Beck outlined Hydro's achievements in rural electrification to the Public Ownership Conference. He announced that the programme had started in 1912, but had been stopped by the war effort in 1917. However, at the time of his speech, Hydro had extended service to 13,500 farm customers over 835 miles of transmission lines.

Beck noted that an imbalance did exist between service received on the farm and that in the towns and cities. However, he said that if left in private hands, virtually no rural electric system would exist in the Province. He also felt that many small towns and villages served by Hydro would have been ignored by private concerns since demand was not high enough to produce a profit. Only in places such as the irrigation discticts of California would private enterprise find rural electrification attractive. He emphasized to the Conference that

> . . .the policy of the Commission has been, and is, to give the widest distribution of power consistent with possible limiting costs. (92)

At the time of his speech, Hydro had an aggregate capacity of 1,000,000 horsepower, ten times the amount of its original contract twelve years earlier.(93)

Due largely to Hydro's success, public ownership of resources and transit was being discussed actively amongst municipal, state or provincial and federal politicians across Canada and the United States. Groups interested in the concept had founded The Public Ownership League. Its mandate was to bring together all those forces who were interested in

> . . .the wealth we own in common--schools, roads, and bridges, the postal service, libraries, parks, forests, waterworks, electric light and power plants and similar public utilities. (94)

Hydro was a member of the League. The organization was more than a propaganda device. It assisted interested communities who had little or no experience in public ownership by relating the experiences of member communities who had success with public ownership schemes. As a group lobby, it pressured all levels of government to promote and accept the concept of public ownership where the League felt it was necessary to

use it.[95]

The concept of public ownership was faced with an ideological dimension in the United States that did not exist to the same degree in Canada. As much as Canadian toryism could accept the principle, it was totally foreign to the American liberal mentality. American liberalism had produced large entrepreneurs such as the Carnegies and Rockefellers who produced the largest segment of American wealth. Vast interests had penetrated the electricity field in the United States. As capitalism grew and produced results, both on the farm and in the cities, ideologies espousing an idea foreign to private ownership became redundant and received little sympathy from the American public.[96]

The previous summary should not lead to the conclusion that the public ownership debate was not prevalent south of the border. What is suggested is the fact that those in a position of power were not sympathetic to the idea. The dimension of the American difficulty can best be demonstrated with a few quotes from a bulletin from an organization calling themselves "The National Popular Government League" of Washington, D.C.

The director of the organization, Judson King, spent ten pages discussing the Hydro experience in his April 10, 1923 issue. Although the tone of his article was very sympathetic to Hydro, he concluded in the following fashion.

> . . .its glory is dimmed somewhat by the fact that it is monopolistic, and we are opposed to monopolies. (97)

Unwittingly, King gave a demonstration of the support for Hydro in Ontario. He had visited a Niagara Falls home which had an electric

range, an electric fan, an electric washing machine, electric irons, an electric vacuum cleaner, a percolator, a toaster, a hot water tank, an electric bed pan and thirty-five electric lamps. In July, 1923, the homeowner had consumed 334 kilowatt hours of electricity for a cost of $3.55. The same home's yearly bill was around $45. King noted his December bill in Washington had registered 334 kilowatt hours for a price of $23.18.(98)

Electric prices in Ontario were considerably lower than any jurisdiction in the United States. Toronto's rates were 2.2¢ per kilowatt hour, St. Catharines was 1.4¢, Windsor was 3¢ and London, 1.9¢. Prior to Hydro, Ontario communities paid an average of 10¢. While rates declined in Ontario, prices continued to rise in the United States. Public reaction to electric rates forced the National Electric Light Association, a private lobby in the U.S., to run an advertisement in the March 31, 1923 edition of the Saturday Evening Post defending the position of private electric production in the United States.(99)

Cheap electric rates in Ontario were major contributors to the modernization of the Province. Hydro was able to appeal to the farmer, the urban homeowner and industrial sectors simultaneously. The linch-pin which held this coalition together was based on the concept of public ownership of electric production and transmission.

E.C. Drury never doubted Beck's role in the public ownership debates which took place in Ontario in the first two and one-half decades of this century.

> Adam Beck was wholeheartedly, almost fanatically and I think honestly devoted to Hydro and the cause of public ownership. (100)

Beck's obsession with public ownership disrupted his personal life

in 1924. His daughter Marian announced her engagement to John Strathearn Hay of Toronto. Hay, a stockbroker was related to the Hendrie family of Hamilton, large shareholders in the Dominion Power and Transmission Company. When the Hydro Chairman discovered that a member of the largest private power and electric railway interest in the Province was about to become his son-in-law, he adamantly refused to attend the wedding. It was only the persuasiveness of Frederick Gaby, Major Pope and G. Howard Ferguson which finally took him to St. Andrews Church in Toronto for the ceremony.(101)

Beck's continuing campaign for public ownership in general and the radials in particular received the sympathy of the Toronto press. His suspicions about private enterprise were enhanced by the Telegram especially which during the radial debate carried a series of political cartoons supporting the proposals and Adam Beck. The Tory paper was owned by John Ross Robertson, who in spite of an argument with Beck, generally remained in support of Hydro. The newspaper, aimed at Toronto's working class, attempted to link the Drury Government to vested interests such as the Canadian Pacific Railway. (see opposite pages)

Although no direct link between large, vested interests and the defeat of the radial proposals was ever proved in Canada, the suspicion that private enterprise played an active role in the destruction of American electric lines was vindicated in the United States. The central set of actors in the American scenario were the automobile companies; specifically General Motors. The American automobile manufacturer had purchased a small, family owned bus company, The National City Lines in the mid twenties. In turn, the company bought several urban transit systems under the bus

company charter. Overnight, rails and trolley poles disappeared in cities such as Los Angeles, and buses replaced them. As well, the company developed an inter-city trucking business.

At the beginning of the Depression, GM abandoned both its urban bus service and inter-city trucking lines. American cities, faced with the growing pressure of automobile congestion and inadequate transit, responded by building the now familiar expressway systems. This, as we now know, led to more automobile traffic and less emphasis on the development of transit. However, the General Motors role in the conspiracy did not surface until 1949 when a federal court convicted the company of violating American anti-trust laws. In spite of several appeals, the conviction was upheld.(102)

Public ownership of transit and inter-urban systems in the United States was offered as one solution to the growing problem of electric railway bankruptcy which was taking place at the same time Hydro was proposing the radial system for Ontario.

In November, 1918, The American Electric Railway Association met in New York to discuss the problems of the industry. J.D. Mortimer, the meeting's keynote speaker encouraged private operators to sell their holdings to their respective municipalities. Mortimer felt they should provide every ease of facility in making the transition. However, the delegates did not accept his recommendation without debate. They referred the question to the Association's Executive Committee for further study.(103)

Mortimer based his recommendation on eleven problems that he said afflicted electric railways. He noted that there had been no expansion since 1913. This discouraged investors who viewed the lines as risky.

U.F.O. C.P.R. PICNIC

HON. W. E. RANEY—"We're not running this picnic with any idea of helping the C.P.R."

PRESIDENT E. W. BEATTY—"We know you're not, but this anti-Beck stuff you're giving us is most refreshing."

The Evening Telegram, July 23, 1920

THE CRY IN THE PALACE

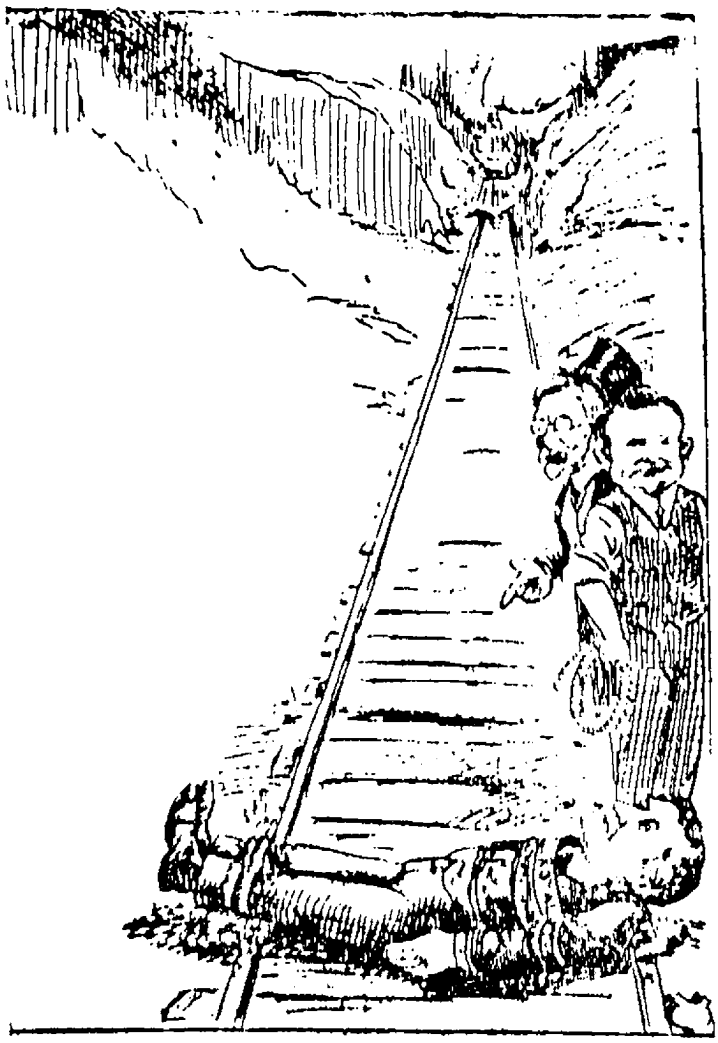
HON. W. E. RANEY—"What are the people crying for?"

HON. E. C. DRURY—"They are crying for Hydro radials."

J. J. MORRISON, ESQ.—"Why don't they ride in motor cars."

The Evening Telegram, July 13, 1920

HELPING THE HYDRO



HON. E. C. DRURY--"Sir Adam will untie himself before he's run over."

HON. W. E. RANEY--"It would be too bad if he didn't"

The Evening Telegram, July 27, 1920

THAT'S WHAT

J. J. MORRISON.—"Eddie Beatty, of the C.P.R. outfit, is shootin' up the town and preparin' to hold this province up for $500,000 a day, an' what are you doing?"

HON. W. E. RANEY.—"Me and P. C. O'Drury are sleepin' at Adam Beck's doorstep."

The Evening Telegram, September 16, 1920

TWO HOLD-UPS

P. C. RANEY.—"Aw, help yourself; I've a hold-up dub of my own to attend to."

The Evening Telegram, September 20, 1920

In addition, the electric railways were beginning to feel the effects of bus and taxi competition. He noted that since most railways were virtual monopolies, they had responded poorly to this new mode of transportation. The industry had been cursed with rapidly increasing costs due to the First World War. As a result, many railways were faced with high court costs when they attempted to seek injunctions limiting competition by bus and taxi. Lack of capitalization prevented the lines from benefitting from the war time economy. Many railways were unable to undertake the necessary expansion needed to transport both workers and goods to and from industrial sites linked to war production. As well, he pointed to the fact that many railways were operating on fixed fares, particularly in urban areas where it had been legislated at five cents per ride. When the railways appealed for increases, in the majority of cases, decisions were delayed for months or denied. Mortimer also accused most states of failing to develop a coherent and consistent railway policy. Lines were treated and examined on their own merits, or lack of them, rather than in the general state interest. Thus, contrasts in service and fare structure resulted in cases in which some electric railways became rich at the expense of others. Finally, he made an appeal to organized labour to soften contract demands. With fixed fares he said, the electric railways were in no position to respond positively to labour.(104)

Mortimer felt that some flexibility was needed in fare structure, but elevation beyond six cents per ride in urban areas would create loss of ridership. Giving an overview of the American problem, he said

> . . .public ownership of electric railways should not possess the terrors for investors that have been heretofore been assigned to it. Much good may

> come from the advocacy of public ownership. It will at least destroy a popular issue among politicians, and the electric railway operators need not think because they advocate it, that public ownership is likely to become any more popular. (105)

P.H. Gadsden of the United States War Board also supported the public ownership solution at the meeting. He presented a report which demonstrated the performance of 388 electric railways consisting of 63 percent of all American mileage. Gadsden noted that collective income had dropped 82 percent in the first six months of 1918 when compared to the previous year. When, however, the National War Labour Board arbitrated a wage settlement on the lines, they added a further $100,000,000 in expenses to an industry operating on fixed fares.(106)

By the following March, the Association had not taken a stand on Mortimer's resolution. Instead, it offered its offices in assisting lines in difficulty to find individual solutions to their respective problems. In its closing statements at the New York meeting, the Association said

> . . .that electric railway transportation is a community problem to be solved by the community and the company acting together and animated by a spirit of civic interest and devotion to the public service and having as its objective the establishment of such regulations as will give the public the greatest efficiency, economy and enterprise in the operation of their transportation utilities. (107)

The following autumn, The Public Ownership League of America debated public ownership of electric railways. The meeting, held in Chicago at the Congress Hotel from November 15 to November 17, 1919 heard four papers dealing with the topic. League president Albert Todd supported public ownership of American lines by using the British success in the area as a model. Dr. Delos F. Wilcox felt American municipalities did not

sympathize with the concept. He reiterated the fact that Chicago had passed legislation in 1906 enabling the city to bring the system under municipal ownership. At the time of the meeting, Chicago had not enforced its legislation. A similar situation had existed in Toledo, where failure to act led to the cancellation of the city's privately owned street railway system. Only Seattle, according to Dr. Wilcox, had purchased its railway system which was operating successfully under municipal ownership. This example, he felt, should encourage other American cities to follow suit.

Dr. Wilcox warned delegates about those he perceived to be enemies of public ownership, in particular businessmen. With their large resources, these people could force public ownership advocates to become more radical in their views. In Wilcox's view, polarization of opinion between business and public ownership promoters could only lead to a dangerous confrontation which would benefit neither the ailing industry or cities and counties wishing to "municipalize" electric railways.(108)

An early advocate of public ownership of electric railways was Bion J. Arnold, a Chicago engineer who was later to become a central figure in the Sutherland Commission Inquiry. Arnold warned as early as 1915, that public ownership was the most likely solution to the problem facing electric railways in the United States. In a speech to the American Electric Railway Association he said

> . . .we (should) cease wasting our energies in opposing a public movement that will surely come in spite of opposition, if it is economically sound, and direct our energies toward the terms of purchase clause and the conditions of a resettlement franchise. (109)

With few exceptions, the United States never acquired a publicly owned system of railways. While the move to public ownership in

transportation was gaining ground in Canada, particularly Ontario, the gulf between private and public enterprise was widening in the United States. While Canadians still retain one national railway, plus several provincial and municipal lines which are publicly owned, only a few large American cities are attempting to operate municipally owned railways.

When the American electric railway industry could not resolve its own difficulties, the Federal Government appointed a commission on May 15, 1919 to investigate the circumstances surrounding the potential collapse of most US lines. Its members were E.E. Elmquist, President and General Solicitor of the National Association of Railway and Utilities Commissioners; E.F. Sweet, Assistant Secretary of Commerce; P.H. Gadsden, of the American Electric Railway Association; R. Meeker, Commissioner of Labor Statistics; L.B. Wehle, General Counsel, War Finance Corporation, Treasury Department; C.W. Beall of Harris, Forbes and Company, bankers; W.D. Mahon, President of the Amalgamated Association of Street and Electric Railway Employees of America and L. Baker, Mayor of Portland, Oregon, representing American Cities League of Mayors.(110)

In October, the following year, the Commission made its recommendations public. It felt the electric railway industry should be recognized as a public utility which should be subject to public control of rates and service. It felt the industry should investigate methods by which it could stabilize rates while keeping its investors secure. While condemning the five cent urban fare as unrealistic, it felt that the railways could improve their financial position by economies of operation combined with improvements in track, rolling stock and service. It recommended that the lines begin negotiations with banks in order to acquire

expansion capital. It stated that strict regulations be drawn up to limit competition from bus and taxi service. It suggested that organized labour avoid strikes, and advocated the use of compulsory arbitration. The commission opposed the use of public subsidies, save those situations in which railways faced bankruptcy. It also felt that regulation of the railways should be passed from municipal to state authorities.

The Commission did not advocate public ownership, although it did state that where legal obstacles existed which would prevent it, those obstacles should be removed. In its final analysis on the subject, the federal commission said

> . . .while eventually it might become expedient for the public to own and operate electric railways, there is nothing in the experience thus far obtained in this country which will justify the assertion that it will result in better or cheaper service than privately operated utilities could afford if properly regulated. Public ownership and operation of local transportation systems, whether or not it be considered ultimately desirable, is now, because of constitutional and statuatory prohibitions, financial and legal obstacles, the present degree of responsibility of our local governments, and the state of public opinion, practicable in so and operation must as a general rule be few instances, that private ownership continued for an extended period. (111)

Public ownership advocates in the Unted States had taken a major set back from the presidential commission. The industry was left to find solutions to its own problems, a feat which it would be unable to accomplish. In Hydro's view, the American system suffered under private ownership. This, coupled with over capitalization and very high power costs were built-in factors which would deny success to most urban and inter-urban systems in the United States. Beck and Hydro were aware of the American problem. In proposing the Ontario system, they designed a

system which would eliminate the worst elements seen in the United States. The Hydro-Electric Radial Railways were to be built and operated on the same basic set of principles that Hydro itself had used to expand successfully.(112)

1. Interview, Edward V. Buchanan, London, Ontario. August 27, 1981. Mr. Buchanan was General Manager of the London Public Utilities Commission at the time Adam Beck was Chairman of the HEPC and Conservative MPP for London. Mr. Buchanan was a frequent guest at "Headly", Beck's estate which still stands two blocks from the Buchanan home in London.

2. E.V. Buchanan, London's Water Supply, A History, London: 1968, The London Public Utilities Commission, p. 105.

3. Department of Travel and Publicity, Press Release, "Sir Adam Beck to be Commemorated", June, 1960. Although Beck is a central character in a number of volumes written on Hydro, there is only one biography of the man, W.R. Plewman, Sir Adam Beck and The Ontario Hydro, Toronto: The Ryerson Press, 1947. Plewman was a journalist for the Toronto Daily Star and a Toronto Alderman during the radial railway question. The book, written twenty-two years after the death of Beck, is a journalist's viewpoint on both the good and bad sides of the Hydro Chairman's character and business methods. Regretably, Plewman did not document his sources for the study.

4. H.V. Nelles, The Politics of Development, Toronto: MacMillan and Company of Canada, 1974, p. 247.

5. R.N. Beattie, "The Impact of Hydro On Ontario", in Ontario Historical Society, Profiles of a Province, Toronto: 1967, p. 172. Nelles also gives an account of Hydro's original objectives in the work cited above. See pages 267, 281.

6. S.F. Wise, "Upper Canada and the Conservative Tradition", in Profiles of a Province, pp. 24-26. Also see David Spencer, Evolution of Toryism, unpublished Honours Dissertation, York University: Toronto, 1978.

7. S.F. Wise, pp. 28-29. Another and more convincing case for traditional government intervention in Canada, especially by the Conservative Party is made by H.A. Innis, "Government Ownership and the Canadian Scene, in Essays in Canadian Economic History, (Mary Q. Innis, ed.), Toronto: University of Toronto Press, 1956, pp. 78-96.

8. Interview, E.V. Buchanan, August 27, 1981.

9. The relationship between the development of Canadian socialism and Canadian toryism is discussed in G. Horowitz, "Conservatism, Liberalism and Socialism in Canada: An Interpretation", in Hugh G. Thorburn, Party Politics in Canada, (4th edition), Toronto: Prentice-Hall of Canada Limited, pp. 52-76. Horowitz offers the argument that the three mainstreams of political thought in Canada have been tainted by each other, but that toryism and socialism are characteristic of the Canadian political mind. They emerged from Europe and provided protection against those factors nineteenth century Canadians considered to be vulgar American democratic republicanism.

10. H.V. Nelles, p. 385.

11. Interview, E.V. Buchanan, August 27, 1981.

12. Nelles, pp. 406-407.

13. Nelles, pp. 401-402.

14. W.R. Plewman, pp. 265-266. Also see Transcript, In The Matter of Inquiry Into The Hydro-Electric Radial Railways, The Sutherland Royal Commission, Osgoode Hall, Toronto, 1920-1921, Testimony of C.A. Mathews, Deputy Provincial Treasurer, pp.4636-4639.

15. The British Privy Council, Copy of Reasons for Judgement of Logie, delivered 15th of December, 1927, SCO, The Corporation of the City of St. Catharines vs. The Hydro-Electric Power Commission of Ontario, pp. 3-4. We have summarized from this source the essential elements of an original six page document which became the standard form of agreement drafted in 1914. The Ontario Hydro Archives contains a number of completed agreements for radial plans for those interested in examining all clauses contained therein.

16. Interview, E.V. Buchanan, August 27, 1981.

17. Canadian Railway and Marine World, April, 1915, p. 143. This journal followed the radial controversy with a fair amount of detail. The editors were meticulous in listing details for persons or organizations involved in the transportation business. An account of Beck's speech was printed in The Globe, February 25, 1915.

18. Plewman, pp. 305-306.

19. The Globe, February 25, 1915.

20. Canadian Railway and Marine World, April, 1915, p. 143. Also see

The Globe, Saturday March 27, 1915. The headline on the story left little doubt about how the newspaper interpreted the issue. It stated, "Ontario Is Afire for Hydro-Rails."

21. Memorial of The Hydro-Electric Radial Unions of Ontario, to J.J. Foy, MPP, March 31, 1914, p. 2, Ontario Hydro Archives.

22. Ontario Memorial, pp. 2-3.

23. Memorial of The Hydro-Electric Radial Unions of Ontario, to The Right Honourable R.L. Borden, P.C., M.P., March 26, 1914, p. 7, Ontario Hydro Archives.

24. Federal Memorial, p. 7.

25. Federal Memorial, p. 7.

26. The Globe, Saturday March 27, 1915.

27. Report to The Civic Transportation Committee, On Radial Railway Entrances and Rapid Transit for The City of Toronto, Volume 1, 1915, p. 29. Ontario Hydro Archives. More of this report will be introduced in subsequent chapters. Its acceptance by the City and Harbour Commission was vital to Beck's plan to access downtown Toronto. It was also offered into evidence at the Sutherland Commission Inquiry.

28. The Evening Telegram, Thursday, December 2, 1915, p. 17.

29. The Evening Telegram, Thursday, December 2, 1915, p. 17.

30. Canadian Railway and Marine World, May 1916, p. 195. This report

was a summary of Hydro's annual report which was published October 31, 1915. The article deals with the type of technology proposed by Hydro and the contentious issue of whether the municipalities had a right to enter into contracts with the Hydro under existing Acts. The author refers only to the actual survey results to give readers an indication how far the proposals had gone by this time.

31. Canadian Railway and Marine World, September 1916, p. 379.

32. Sutherland Commission Transcripts, pp. 258-259.

33. Sutherland Commission Transcripts, pp. 259-260.

34. Sutherland Commission Transcripts, p. 266.

35. Sutherland Commission Transcripts, pp. 4409-4410.

36. Sutherland Commission Transcripts, pp.4409-4410.

37. Sutherland Commission Transcripts, p. 4426

38. Sutherland Commission Transcripts, pp. 3898-3899.

39. Sutherland Commission Transcripts, pp. 4140-4141.

40. British Privy Council, Copy of Reasons for Judgement of Logie, p. 6.

41. Letter, from Assistant Engineer to Chief Engineer's Office, HEPC, Att: Mr. R.T. Jeffrey, September 17, 1920, p. 1, Ontario Hydro Archives.

42. Jeffrey Letter, pp. 8-9.

43. Jeffrey Letter,pp. 2-5.

44. Letter, from F.G. Hassard, Secretary, Toronto Radial Association, to Secretary, Toronto Power Co. Ltd., December 15, 1922, Ontario Hydro Archives.

45. E.C. Drury, Farmer Premier, Toronto/Montreal: McClelland and Stewart, 1966, pp. 117-118.

46. Nelles, p. 402.

47. Peter Oliver, Public and Private Persons, The Ontario Political Culture 1914-1934. Toronto/Vancouver, Clarke, Irwin and Company, 1975, pp. 19-20.

48. Oliver, pp. 20-21.

49. Oliver, pp. 20-21.

50. Oliver, pp. 22-23.

51. Oliver, p. 25.

52. Oliver, p. 30.

53. Oliver, pp. 128-129.

54. The Hydro Monthly, Volume 1, no. 15, November 1915, pp. 30-32. There is another good example of similar devices in The Bulletin, Volume VII, no. 1, January, 1920, p. 2.

55. More detailed examples can be found in The Bulletin, especially

between 1916 and 1920. The reader's attention is drawn to the following volumes as representative examples of journals which published pro-electric articles. The Bulletin, Volume 1, no. 6, December, 1916; The Bulletin, Volume II, no. 2, August, 1917; The Bulletin, Volume III, no. 4, April, 1918; The Bulletin, Volume VII, no. 1, January 1920.

56. Plewman, p. 193.

57. Letter, to T.W. McGarry, K.C., M.P.P., Provincial Treasurer, from J. Clancy, Auditor, February 21, 1916, Ontario Hydro Archives, p. 1.

58. Clancy Letter, p. 3.

59. Clancy Letter, p. 4.

60. Clancy Letter, p. 4.

61. Clancy Letter, p. 5.

62. Inter-Office Executive Correspondence, W.W. Pope to Sir Adam Beck, November 1, 1918, Ontario Hydro Archives, p. 2. More references on the same subject were made in a memo issued the previous day to Beck by an unknown writer.

63. Pope Correspondence, Nov. 1, 1918, p. 5. Reference to the issue is also discussed in Peter Oliver, pp. 36-37.

64. Letter, Adam Beck to William Hearst, April 17, 1919, Ontario Hydro Archives.

65. Letter, Adam Beck to William Hearst, July 30, 1919, Ontario Hydro Archives.

66. Letter, William Hearst to Adam Beck, August 30, 1919, Ontario Hydro Archives. A second letter on the same subject was written by Hearst and sent to Beck on September 6, 1919.

67. Oliver, p. 41.

68. Interview, Edward V. Buchanan, August 27, 1981.

69. Press Release, Department of Travel and Publicity, May 24, 1962. p. 2.

70. Nelles, pp. 413-414.

71. Drury, p. 122.

72. The Globe, July 8, 1920. This reference was also found in an unidentified set of speech notes in the Ontario Hydro Archives. Research on the topics in the speech led to belief that they are notes for the speech by Beck referred to by Drury. One paragraph in particular is interesting. "Unless the municipalities go on with their scheme independently, all of the transportation, if carried out as announced by Sir Henry Thornton, will be controlled and operated from the City of Montreal under the influence and power of the railway interests in the Province of Quebec."

73. Letter to Adam Beck from E.C. Drury, Toronto, July 9, 1920, Ontario Hydro Archives.

74. Letter, to E.C. Drury, from Adam Beck, Toronto, July 13, 1920, Ontario Hydro Archives.

75. Letter to E.C. Drury from Adam Beck, Toronto, December 22, 1921, Ontario Hydro Archives, p. 2.

76. Beck Letter, p. 2.

77. Beck Letter, p. 2.

78. Beck Letter, p. 1.

79. Interview, E.C. Drury with F. Schindeler and Mrs. J. James, March 19, 1965, Ontario Hydro Archives.

80. Plewman, p. 288.

81. Plewman, p. 288.

82. Interview, E.V. Buchanan, August 27, 1981.

83. Letter, to the Mayor and Toronto City Council, from R. Home-Smith, Chairman, Toronto Harbour Commission, Toronto, December 13, 1921, Ontario Hydro Archives, p. 3.

84. R. Home-Smith Letter, p. 4.

85. Plewman, p. 316.

86. Speech Notes, Adam Beck, Ontario Hydro Archives. Although the author is not identified, there is little doubt, that by the content, that Beck wrote these notes. There are a number of references to

the author as "The Chairman". Beck signed his letters in the same fashion. The speech deals with the harbour front radial access rights.

There are tributes to Mayor Maguire and his eighteen aldermen. This leads one to believe that Beck was addressing city council. The speech must have been made shortly after Home-Smith wrote his letter to the mayor and council. Beck refers to the Harbour Commission and R.J. Fleming's mayorality candidacy throughout the notes. Since municipal elections were held on New Year's Day in this time period, and Home-Smith's letter was written on December 22, one could conclude that Beck's speech was made somewhere in the last nine days of 1921.

87. Letter, to W.F. MacLean from T.A. Curran, Winnipeg, Manitoba, February 27, 1922. Although Curran does not identify his profession on the letter, or his interest in Beck and Drury, the fact that it was written on Federal House of Commons letterhead indicates Curran could have been either an MP or senior official of the House. Ontario Hydro Archives.

88. E.C. Drury, Speech to the Canadian Club, November 11, 1921, p. 6. Ontario Hydro Archives. The entire speech dealt with the Government and the Sutherland Commission report. It is a very functional type of speech, citing costs and lack of feasibility for the Government's decision to remove bond guarantees. Only on page six does Drury refer to the fact that the dispute had political overtones.

89. Plewman, p. 260.

90. Oliver, pp. 20-21.

91. The Globe, Thursday June 24, 1915.

92. The Bulletin, Vol. X, no. 10, October, 1923, p. 324.

93. The Bulletin, Vol. X, no. 10, October 1923, p. 324.

94. The Bulletin, Vol. X, no. 10, October, 1923, p. 328.

95. The Bulletin, Vol. X, no. 10, October, 1923, p. 328.

96. The American liberal ideology is described in Louis Hartz, The Liberal Tradition in America, New York: Harcourt, Brace and World, Inc., 1955, 329 p. Hartz argues that ideological differences in American political culture emanate from the struggle between two types of liberal thought, right wing, which represents big business groups and left wing, which is the liberalism which developed from Jackson. Hartz feels that the United States lacks any form of organic political thought such as toryism or socialism. In his theory, the smothering effect of liberalism in either of its two variations will prevent the development of socialism or toryism. Emerging socialist thought in the late nineteenth and eraly twentieth centuries faded out by the mid-twenties only to re-emerge briefly during the Depressions years.

97. Judson King, Human Nature, Efficiency and Electricity, Bulletin no. 23, April 10, 1923, National Popular Government League,

Washington, D.C., p.s. Ontario Hydro Archives.

98. King, pp. 2-3.

99. King, pp. 2-3.

100. Drury, pp. 117-118.

101. Interview, Edward V. Buchanan, August 27, 1981.

102. Jonathan Kwinty, "The Great Transportation Conspiracy", in Harper's, Volume 262, No. 1569, February, 1981, pp. 14-21.

103. Canadian Railway and Marine World, December, 1918, p. 559.

104. Electric Railway Journal, Vol. 52, no. 3, p. 116. Also see Electric Railway Journal, Vol. 52, no. 18, November 2, 1918, p. 795.

105. Electric Railway Journal, Vol. 52, no. ?, July 20, 1918, p. 116.

106. Electric Railway Journal, Vol. 52, no. 18, November 2, 1918, p. 796. The same issue carried a speech by Richard McCulloch, entitled, "Public Ownership, the Obvious Policy for Electric Railways." On page 772, he states "the unusual of today may well be the commonplace of tomorrow--public ownership would solve the many present problems of operation."

107. Canadian Railway and Marine World, April, 1919, p. 206.

108. Electric Railway Journal, Vol. 54, no. 20, November and December, 1919, pp. 895-896.

109. Canadian Railway and Marine World, December, 1915, p. 480.

110. Canadian Railway and Marine World, October, 1920, p. 558.

111. Canadian Railway and Marine World, October, 1920, p. 558.

112. Plewman, pp. 247-248.

CHAPTER TWO

THE ELECTRIC RAILWAYS OF ONTARIO AND THE HYDRO ELECTRIC PROPOSALS

Unlike many major urban areas in the United States, Ontario did not have a clearly rationalized scheme of electric transportation in either of the two fields, urban transit or interurban systems. The most highly developed areas were in and around Toronto and Hamilton and in Windsor-Essex. Prior to the development of the Hydro radial proposals, all these areas were operated by private entrepreneurs. It was widely believed by Ontarians that these systems operated for profit only and thus against some ill-defined "public interest".

The two major promoters existed in the Toronto-Hamilton area. The Toronto interests were controlled by Sir William Mackenzie and Sir Donald Mann. The Hamilton system was operated by the Dominion Power and Transmission Company. Of the two, the Mackenzie-Mann holdings were the larger. Since Toronto was critical to the radial plans, Hydro had to arrive at some form of accommodation with Mackenzie and Mann.

Mackenzie started life on a farm at Kirkfield, Ontario, near Lindsay. He began working as a rural school teacher but lost interest in the profession and took up house building instead. As a contractor, he was successful and began to develop an interest in larger and more expensive projects. This desire eventually led him to investments in electrical development and railroading. By 1920, his partnership not only included Mann, but Frederick Nicholls, President of Canadian General Electric, E.A. Wood, a Toronto financier and YMCA developer and banker Aemilius Jarvis. The partnership had interests in the Toronto and York Radial System, The Toronto Suburban Railway, The Niagara, St. Catharines and Toronto Railway, The Winnipeg, Selkirk and Lake Winnipeg Railway and The Chatham, Wallaceburg and Lake Erie Railway. The Mackenzie-Mann interests

also controlled the street railway systems in Toronto, London and Winnipeg.

The Mackenzie-Mann interests began to experience serious financial problems during the First World War. Prior to the outbreak of European hostilities, Sir William had promoted the building of an Ontario based railway system called the Canadian Northern. The company began to develop on funds acquired from loans and government subsidies. When financial pressures generated by the war effort became acute, the Canadian Northern Railways declared bankruptcy in 1917. The company's properties were acquired by the Federal Government and became the base upon which the Canadian National Railways was built.

A second instability in the company's activities centered around its properties in the city of Toronto. Mackenzie and his associates were continually feuding with city politicians about their street railway and power holdings. As a result of several legal disputes, the City announced its intentions to purchase the Mackenzie-Mann holdings inside the city as early as 1912. The municipal politicians had tried unsuccessfully to pressure the company into expanding its street railway and power developments to meet rapid urban growth which began after the turn of the century. When the company refused, it suffered a loss of public confidence.

The City was primarily interested in purchasing the railway franchises which included the three divisions of the Toronto and York Radial and The Toronto Railway Company. These constituted the majority of the city's street railway system. However, the Mackenzie-Mann group refused to discuss sale of the railways unless the City agreed to purchase the power plants with them.

Original charters, granted to the Toronto and York Radial's Mimico and Scarborough Divisions, had integrated the company's railway and power holdings. The Mimico division had been chartered as The Toronto and Mimico Railway, Light and Power Company. The Scarborough Division had been chartered as The Toronto and Scarborough Railway, Light and Power Company. Only the Toronto and York's Metropolitan Division did not have a power plant affiliation.

Attached to the railway properties were several power companies owned by Mackenzie-Mann which serviced the City and surrounding jurisdictions. These were The Electrical Development Company, The Toronto and Niagara Power Company, The Toronto Power Company, The Toronto Electric Light Company, and The Toronto Incandescent Light Company. Of these, The Electrical Development Company and The Toronto and Niagara Power Company had generating plants at Niagara Falls.(1)

Only the railway properties were eventually merged under a common charter. The three divisions were incorporated under the unified name of the Toronto and York in 1904.

The oldest and longest division was the Metropolitan which was incorporated in 1877 although it did not begin operation until 1884. In Toronto the line began just south of Yonge and St. Clair and ran parallel to Highway Eleven to Newmarket. Then, it travelled across country terminating at Sutton on Lake Simcoe. The final link to Sutton was not completed until 1907. In 1904, a branch from a junction at Aurora was completed to Schomberg. The Metropolitan operated on a gauge standard of 4 feet, 8 and 1/2 inches. This made it incompatible with the Toronto street railway system which operated on a gauge standard of 4 feet,

10 and 7/8 inches.

The Metropolitan began electric operation in 1891. The maximum speed possible on the line was eighteen miles per hour with slow-downs to ten miles per hour on Yonge Street hills. In 1899, it had nineteen passenger cars, one freight locomotive and four freight flat cars. It operated on 550 volt DC current. As a result of a legal dispute with Toronto City Council, it was prevented from making direct connections with the street railway system. Passengers disembarking from the Metropolitan at Yonge and St. Clair were forced to walk five blocks south on Yonge Street to make street car connections.

The Scarborough Division was initially known as the Kingston Road Tramways in the early 1880s. With the issuing of its second charter on August 18, 1892, it became the Toronto and Scarborough Electric Railway, Light and Power Company. The line was electrified on July 1, 1893 and passed to the Mackenzie-Mann holdings on March 6, 1895. The line operated from Woodbine and Queen along Kingston Road and terminated at West Hill. Its West Hill connection was not completed until 1905. The railway operated on street railway gauge.

The Mimico and Scarborough Divisions operated as suburban street railways and the Metropolitan operated as an inter-urban line. Along with the Toronto and York, the Mackenzie-Mann interests also operated The Toronto Suburban Railway Company.(2)

The Toronto Suburban was formed in 1894 by merging two smaller companies, The Weston, High Park and Toronto Street Railway Company and The Davenport Street Railway. Prior to acquisition by Mackenzie-Mann on June 20, 1911, The Toronto Suburban was a street railway serving

communities in the west end of Toronto. Since it was chartered as a suburban operation, it did not cross into the city proper.

Although expansion plans were developed, it was not until October 10, 1914 that any extensions went into operation. A link from the town of Weston to Woodbridge began operation on that date. In 1913, the Guelph line was commenced. It was completed on April 14, 1917. With the acquisition by Mackenzie-Mann, the track was converted to 4 foot, 8 and 1/2 inch inter-urban gauge. The line operated on 1,500 volt DC current for inter-urban travel and 600 volt DC current in areas close to Toronto. It was only one of three lines to use the 1,500 volt system, the others being the Lake Erie and Northern and the London and Port Stanley.

The Mackenzie-Mann group planned to extend the railway in two directions. One proposal was to connect the Guelph line to London via Berlin and Stratford. The second proposed a Hamilton connection from Toronto's west end via Swansea. These lines were never constructed. When the Canadian Northern collapsed, the Toronto Suburban became part of the Canadian National Railways.(3)

Ownership of The Toronto and York Radial and The Mackenzie-Mann power interests reverted to Hydro on December 4, 1920. Railway properties inside city limits were sold to The Toronto Transportation Commission (TTC) which was formed in 1921. Hydro retained ownership of the power interests and along with the TTC managed those portions of the Toronto and York Radial which ran beyond city limits. The Mackenzie-Mann sale, referred to by the Toronto press as the "clean-up" deal, was negotiated by Sir Adam Beck for a price of thirty-two million dollars. The proposal was presented

to Toronto ratepayers on New Year's Day, 1921. The sale was approved by a vote of 28,609 to 1,864.(4) The result gave the City of Toronto a totally publicly owned street railway system. Hydro increased its generating capacity to 1,000,000 horsepower, making it the largest electric system in the world.(5) According to the agreement, Hydro was not responsible for any losses incurred on those sections of the Toronto and York Radial it managed on behalf of the TTC. As well, Hydro gained an exclusive supply contract for TTC operations.(6)

The Hamilton situation paralleled that of Toronto. The city had four radial railways plus the Hamilton Street Railway, all owned by the Dominion Power and Transmission Company. The radial lines were the Hamilton, Grimsby and Beamsville, The Brantford and Hamilton Railway, the Hamilton and Dundas Street Railway and The Hamilton Radial Railway. Dominion Power and Transmission used the name Hamilton Cataract Power, Light and Traction Company when it was founded in 1903. It changed its name in 1907 and in 1930, its holdings were purchased by Hydro.

Dominion Power and Transmission operated its radial railways under separate charters. Although it used a common management, the lines interchanged cars and drew power from the company's generating station at DeCew Falls near St. Catharines. All the radials entered the city by street railway tracks and terminated at a common quarter-million dollar station on King Street East which opened in 1907. As well as the railways and street cars, the company operated two-hundred miles of power transmission lines.

The Hamilton, Grimsby and Beamsville line was the oldest Dominion Power railway. It was chartered in 1892 and completed in 1896. It was

a low speed line which followed the highway to Beamsville, running right on the highway in some areas. It derived most of its revenue from passengers and fruit shipments when in season. The company had plans to extend the line to St. Catharines. In 1904, an extension was completed to Vineland. However, it was abandoned in 1905.

The early years were prosperous for the railway due to its proximity to growing centres of population. But, with highway improvement and its slow speed of fifteen miles per hour, it declined rapidly in the twenties. It was also impeded by its original design which featured light fifty pound rails. Only re-construction to heavier eighty pound rails would have allowed the line to use higher speed trains and heavier freight traffic.

In comparison to other Ontario electric railways, the Brantford and Hamilton Electric Railway was developed late. Its original promoters, the Von Echa Company, also owned the Brantford street railway and the Grand Valley Railway which ran from Brantford to Galt. For most of its route, The Brantford and Hamilton Railway featured private right of way and eighty pound rails. For a number of years, it provided hourly service between the two cities.

Control of the line passed to the Dominion Power interests before its completion in 1908. In 1916, the track was extended one mile into the City of Brantford terminating at the Union Station. This terminal facility allowed a connection with the Lake Erie and Northern Railway.(7)

The shortest Dominion Power railway was the Hamilton and Dundas Street Railway which ran only seven miles. It used the street railway tracks in Hamilton to the city limits and travelled a short distance on its own right of way to Dundas. However, this right of way was close

enough to the highway that high speed was impossible. It was a passenger service which featured once per hour service daily. The railway owned eighteen passenger cars.

Dominion Power's busiest line was the Hamilton Radial Electric Railway. It, like other radials in the Hamilton area, used the street railway tracks to get to the city limits. After leaving Hamilton, the line was double-tracked to the town of Bronte on the north. In 1908, the line was extneded to Oakville. However, the extension proved unprofitable and was abandoned soon after construction had been completed. The road made nearly all its money from passenger fares, especially in the summer months when traffic to Burlington Beach was at its height. Its total length was twenty-one and a half miles. It ran eighteen cars a day in winter and half-hourly service in the summer months.(8)

In 1904, the Dominion Power and Transmission Company acquired the franchise for the Hamilton Street Railway. The company and its predecessor had been supplying power for the street railway system before taking control of it. It had twenty-two miles of track with 80 cars all designed for passenger traffic.(9)

Since the geography surrounding Hamilton was a challenge to any railway promotor, the city saw the birth of two incline railways designed to scale the Niagara escarpment on the outskirts of the city. Although the two lines which were constructed were owned by partners in Dominion Power, neither line was officially affiliated with the company. The first of these railways, The Hamilton and Barton Incline Railway opened on June 3, 1892. It operated until 1934. The track remained in place until 1947. The line operated on cables generated by a steam plant.(10)

The second incline railway, The Hamilton Incline Railway, opened in 1900. It operated until 1936 and the structure remained in place until 1949. It terminated near the head of Wentworth Street. It operated on electric batteries which were re-charged every evening by a steam generator. A third incline railway which was to run from the foot of Ottawa Street was never constructed.(11)

Dominion Power drafted plans to construct three other radial lines around the turn of the century. None was completed. The Hamilton, Waterloo and Guelph Railway was promoted in 1906. However, the company dropped its plans when it was unable to gain a suitable right of way into Hamilton. The planned route also clashed with the Mackenzie-Mann proposal to build a line from Swansea to Hamilton. The combined problem led to abandonment in 1913.

In 1908, a group of Wellandport businessmen promoted the construction of the Dunnville, Wellandport and Beamsville Railway with Dominion Power backing. Five miles of the line were graded in 1909. In 1912 and 1913, a further eight miles were added. When the TH&B announced plans to construct a spur line to serve the same communities, the electric proposals were dropped in 1924.

The Hamilton, Caledonia and Lake Erie Railway was proposed in 1901. Grading was started in 1904. When natural gas was discovered on the right of way, the railway plan succumbed to the development of the gas resources.(12)

Prior to its purchase by Hydro, Dominion Power formed the second largest inter-urban bus system in Ontario, eclipsed only by the TTC and its subsidiary, Gray Coach Lines. By purchasing a number of small

Ontario services, the company ran regular routes to Guelph, Galt, Preston, Brantford, Binbrook, Simcoe, Dunnville, St. Catharines, Waterdown and Milton. An exchange agreement with the Wherry Bus Lines in St. Catharines allowed it to send passengers into Niagara Falls and Buffalo. In the late twenties, the company added several bus routes in Hamilton to supplement its street railway operations.(13)

The third largest radial system in the province was owned and operated by the Hydro-Electric Power Commission. Its two major lines operated in and around the Windsor area. The larger, The Sandwich, Windsor and Amherstburg Railway was the first Canadian street railway to use electricity. Electric service began on June 6, 1886. It originally ran two miles from downtown Windsor to suburban Walkerville. When it was owned by the Detroit United Railway in 1901, it extended service to Amherstburg, a town on the Detroit River near Lake Erie.

Like its Toronto and Hamilton counterparts, it did not operate on a private right of way within city limits. While privately owned, it feuded constantly with Windsor politicians. In 1920, it became publicly owned and managed by Hydro. Hydro totally rebuilt the system and operated it until 1934.

The other Hydro line was the Windsor, Essex and Lake Shore Rapid Railway Company. It was chartered in 1901 and completed in 1905. Like its counterpart in Windsor, it used street railway tracks inside city limits. Outside Windsor, it ran on its own private right of way on eighty pound rail to the town of Leamington, where like Windsor, it used the town streets to gain access to the urban centre. From Leamington, it ran to Kingsville on Lake Erie which made it popular with summer vacationers.

It ceased operation on September 15, 1932.(14)

Since the London lines were vital to the Hydro radial proposals, their histories will be discussed along with the proposals later in this chapter. However, a brief outline should be made of the other electric lines in Ontario.

Other than lines previously noted, one other existed in South-Western Ontario. It was the Chatham, Wallaceburg and Lake Erie Railway which terminated at Erie Beach on Lake Erie. It began operation in 1903 and stopped on August 17, 1927. In 1913, it was sold to the Mackenzie-Mann interests.(15)

The Canadian Pacific operated two electric lines in the Grand Valley area of Southern Ontario, The Grand River Railway Company and The Lake Erie and Northern.

The Grand River Railway began operation on July 26, 1894. In 1896, it took the name Galt, Preston and Hespeler, a title which it used for many years. At the turn of the century, the CPR purchased the road but did not change the name to the Grand River Railway until 1918. It operated as a spur line for CP steam service in the area mainly between Brantford and Kitchener-Waterloo. Passenger service did not terminate until April 24, 1955. The electric catenaries were replaced by diesel on October 2, 1962. The tracks are still used today.

The Lake Erie and Northern ran between Port Dover on the south and Kitchener-Waterloo on the north. The line which began as a steam road in 1911, switched to electricity on July 22, 1916. Since it was constructed with eighty pound rails, it could move both frequent passenger services and heavy freight.

In 1931, Canadian Pacific introduced common accounts for both its electric lines. Like the Grand River Railway, passenger service was discontinued on April 24, 1955. Freight diesel service was introduced in 1963. The Simcoe to Port Dover link has been abandoned.(16)

Two smaller roads which operated in Southern Ontario were the Grand Valley Railway Company and The Woodstock, Thames Valley and Ingersoll line. Both roads were promoted by the Von Echa interests as beginning links in larger schemes. However, extensions were never constructed.

The Grand Valley Railway Company also owned the Brantford street railway system. The city purchased the company in 1915 and in 1916, the Lake Erie and Northern absorbed the Paris-Galt connection. Since this line paralleled the CP's Grand Valley Railway and Lake Erie and Northern tracks north of Brantford, the company bought the line only to keep it from a possible competitor.

The Woodstock, Thames Valley and Ingersoll was a short railway with a short history. It began operation on November 8, 1900 and ceased in 1925. It ran alongside the highway from Woodstock to Ingersoll and travelled city streets inside Woodstock.(17)

There were two electric railways in the Niagara peninsula, The Niagara, St. Catharines and Toronto Railway Company and The Niagara Falls Park and River Railway Company. The larger, The Niagara, St. Catharines and Toronto began when the company was founded to acquire the assets of the bankrupt St. Catharines and Niagara Central steam railway in 1899. Heading the new owners was Aemilius Jarvis who modernized the line and electrified it on July 19, 1900. In 1901, the railway opened a connection from St. Catharines to Port Dalhousie. The same year, the company acquired

the assets of the Port Dalhousie, St. Catharines and Thorold Railway, which, when integrated with the NS&T, gave the promoters a connection to Thorold.

The Mackenzie-Mann interests took total control of the line in 1908 and integrated it with the Canadian Northern project. The company eventually extended the line south to Port Colborne, then added a link from St. Catharines to Niagara Falls and eventually from St. Catharines to Niagara-on-the-lake. The Mackenzie-Mann interests discussed extension of the service to Toronto. However, this never materialized. The company also operated four sidewheel steamers, The Lakeside, The Garden City, The Dalhousie City and The Northumberland between St. Catharines and Toronto.

The railway became part of the Canadian National Railways in 1917-1918 when the Canadian Northern collapsed. Passenger service was discontinued in March, 1959. Conversion to diesel power took place in 1960. When Sir Adam Beck began promoting his radial plans, he announced his intentions to purchase the line to gain access to the Niagara Peninsula. However, Hydro never acquired the franchise.(18)

The other Niagara line, The Niagara Falls Park and River Railway began operation on May 24, 1893 between Chippawa and Queenston with a link to Niagara Falls, Ontario. In the late 1890s, it was extended to Niagara Falls, New York. The railway did not operate as a traditional inter-urban service, gaining most of its revenues from sight-seeing tours in the summer. It discontinued service on September 11, 1932.(19)

The foregoing histories of Ontario's electric railways demonstrate the varieties of technologies and services in the province during the time

period that Hydro was promoting its radial schemes. Most of the lines had been developed independently of each other with no plans for future integration. Some were mixtures of passenger and freight service, others purely passenger. There were solely inter-urbans such as the Toronto and York Metropolitan Division. Some were basic street railway systems, such as the Hamilton and Dundas line. Others were combinations of both. Railways like the Lake Erie and Northern featured advanced technology and heavy rail. Others, such as the Hamilton, Grimsby and Beamsville were built with antiquated electric systems and light rail which impeded future expansion at reasonable cost.(20)

The Ontario system, if it could be defined as such, had a number of vital missing links. No electric connection existed between Port Credit and Oakville. No electric service existed between Beamsville and St. Catharines. Thus, a freight or passenger customer could only travel by rail by the use of steam service in these areas, unless he was prepared to switch from electric line to bus and back. This rigidity placed electric railways in the Golden Horseshoe at a competitive disadvantage with steam lines. Yet the steam roads were reluctant to exploit the short haul passenger and freight service best suited to the electric road. Transcontinental passenger and freight service had proved highly profitable for the steam roads and all efforts were made to expand and exploit this area of business. And, as the First World War came to a close, bus and motor truck technology began to intrude into areas such as short haul freight and passenger service creating further problems for electric railways.

Integration of existing electric railways in both Canada and the

United States was further impeded by the lack of a common electric technology. Three different systems of electric transmission were being considered when the move to railway electrification began in the late eighteen hundreds.

One concept, called the three-phase system, used two overhead trolley wires which gave electric engines nearly constant speeds on grades and main lines. This method was used primarily in long distance travel. The most popular system, and the one in common use in Ontario, was the single phase technique. It used only one overhead trolley wire, but could generate enough current for long distance travel without the use of large numbers of substations. A single phase electric locomotive was as efficient as a steam locomotive, especially over long hauls. The third alternative was used mainly in subway construction. Its transmission method was an insulated third rail. However, it needed to use heavy feeder cable and numerous substations because it used city power supplies which it needed to convert from alternating current into direct current.(21)

The three systems varied in power consumption. The three phase motor and the third rail method were capable of tolerating high voltages which resulted in more efficient use in both locomotives and passenger cars with motors. The single phase system, while simpler to construct and design, was incapable of handling voltages above 600 DC prior to the First World War. The Ontario lines used the single phase almost exclusively until the three aforementioned lines switched to 1,500 volt DC.(22)

Before the development of the 1,500 volt system, rolling stock was interchangeable from road to road, providing gauges were compatible. Massive conversion was not needed if one road decided to sell used rolling

stock to another. However, the development of the 1,500 volt system made this interchange impossible without the installation of two motors, each capable of different capacity.

More serious than electric technology was the problem of incompatibility of gauge. Since many inter-urbans and street railway systems developed independently of each other, rail gauges were often different. For example, the problem existed in Toronto between the Toronto and York Radial and The Toronto Railway Company while the Dominion Power's lines in Hamilton were compatible to each other. Passengers in Hamilton could ride to city centres on one train. In Toronto, they could not.

The need to use street railway tracks developed into technological rigidity. Although inter-urban lines could make relatively good speed in the countryside, they had to share tracks with street cars inside city boundaries. In many cases, this added fifty percent to travelling time between cities. Steam roads were not inhibited. They had been designed to gain high speed access to city centres. They needed to slow down only for level crossings. As well, most street railway systems were constructed of relatively light rail, normally in the 50 to 60 pound range. Thus, electric railways were prevented from carrying heavy freight into urban centres.

In spite of its disadvantageous position via steam railways, the electric railways conducted a prosperous business until the First World War broke out. Canadians were actively involved in promoting both the industry and its ancillary organizations, the main one of which was a Canadian railway car building industry geared to serving electric lines in both Canada and the United States.

The largest of these organizations was the Ottawa Car Company which was organized in 1892. It built railway rolling stock for over half a century. The company's customers included virtually every inter-urban line in Ontario and the Toronto Transportation Commission. It made its last car in 1947 for the Ottawa urban system.(23)

The Preston Car and Coach Company had a short history, lasting only fifteen years from 1908 to 1923. The company specialized in custom orders and pioneered the design of all steel electric and steam railway cars. It was purchased by a Philadelphia company two years before its closing. Its clients included some of Ontario's larger inter-urban systems such as The Toronto Suburban and The Toronto and York Radial Railways.(24)

There were other smaller firms although their respective histories are somewhat sketchy. The Crossen Car Company of Cobourg built cars for the Hamilton Radial among others. Patterson and Corbin of St. Catharines constructed cars for the Port Arthur Electric and The St. Catharines, Merriton and Thorold lines. The Rathbun Company of Desoronto included the Oshawa Railway among its clients. The St. Charles and Pringle firm operated out of Belleville. The small tobacco town of Tillsonburg had the Tillsonburg Electric Car Company. In business part time was the Canadian Car and Foundry Company of Montreal, Canadian General Electric of Peterborough and The National Steel Car Corporation of Hamilton.(25)

Prior to the development of the Hydro radial proposals, the electric railway and the steam railway developed business in very different areas. Motive power was not the major difference. In both Canada and the United States, the electric railway was traditionally a shorter line than most steam railways. The electric lines attracted business from a variety of

sources, specifically inter-urban, short haul, and frequent passenger service. Some entered the light freight and express field. Very few combined both freight and passenger service. Most travelled on light rail with the common size being 50 pound rail. Very few had direct access to urban cores.

The steam railway was in both the passenger and freight business but specialized in long haul traffic. The lines felt that instituting short haul service would impede the number of trains able to travel long distances, since existing tracks would have to service both types of train. They felt frequent stops, especially for long trains, was not cost efficient. They were interested only in the national market place. As well, most steam railways were constructed with at least 80 pound rail which would allow the operators to assemble long trains and carry heavy freight.

Ideally, the electric and steam services should have complimented each other. However, both felt as if they were competing for the same business. This attitude was particularly enhanced when a coal shortage developed during the early years of the First World War. Several engineers suggested that certain steam lines, especially in and around urban centres, should convert to electric motive power. Inter-urban operators in particular felt that this move would constitute a threat to their existence.

Adam Beck's hydro-electric radial railway proposals were designed to eliminate the worst technical characteristics of existing electric lines. Throughout the debate which took place before the Sutherland Commission hearings, Hydro maintained that electric railways could profitably serve the inter-urban passenger and freight client. To achieve this goal, Hydro

radials would combine the heavy rail technology of steam railways with high speed access to urban cores while maintaining electricity as a motive power. The Hydro system would also combine inter-urban and freight traffic with high volume rapid transit service from suburban Toronto.

Hydro added the concept of public ownership to the proposals which originally were designed to serve the majority of communities in Southern Ontario. The role of electric railways in the province had come to the attention of the provincial government as early as 1910. In the spring of that year, the Whitney Government had amended both the Ontario Railway Act of 1906 and the Ontario Railway and Municipal Board Act of 1906 to give the province a regulatory role in the operation of street railways.

The amendments to the Ontario Railway Act gave the municipalities the power to open competition for franchises in the municipalities which deemed the original franchises were in violation of the terms of their franchises. As well, the municipalities were given the power to regulate construction plans.

The Municipal Board was empowered to over-rule agreements between private street railway operators and the cities they served. This included the right to regulate schedules, conditions of track and rolling stock, stopping points and the health and welfare of riders.

The transportation journal, Railway and Marine World complained that

> . . .the two bills as forced through the House by the Premier were confiscatory legislation of the most pronounced type, showing absolute disregard of vested rights. Added to previous legislation, they will effectually prevent the investment of capital in electric railway construction and render it impossible to secure the construction of inter-urban systems which are so necessary through the rural districts of older portions of the province. (26)

These two amendments stopped short of turning the electric railway industry into a public utility. However, the laws forced private investors to be cautious about entering the field. They had the effect of creating a vacuum whereby any renovation or expansion of the Ontario system would best be accomplished by a public utility. Since the generation of electrcity and its use by railways was intertwined, an organization such as Hydro appeared to be a natural promotor of electric railways.

The first Hydro-Electric Radial Railway Act was passed by the Ontario Legislature in May, 1913. It was amended in 1914, 1915 and 1919 by Conservative governments. Its clauses, which are discussed in chapter one, remained virtually the same until the Drury Government made major amendments in 1922.

Although the Act subjugated Ontario municipalities interested in electric railways to Hydro, the relationship was accepted by the municipalities because Hydro combined railway construction plans with proposals to electrify rural and small town Ontario. Part of the railway plans included an eight mile electric corridor on either side of the tracks which rural communities would be able to use. Ontario farmers felt that the advance of both the railways and electricity would bring cheap electric rates to the farms which in turn would stop rural de-population. They also felt that electrification would increase the value of farm land and decrease the burden of farm labour.(28)

Hydro had been successful in promoting the cause of public power by guaranteeing supply and stabilizing rates. However, with the electric railway industry in a state of flux on both sides of the border, Hydro needed a successful model through which it could sell the concept of a

publicly owned system of radials. The line chosen was the London and Port Stanley Railway, a short 23.66 mile route which travelled between Beck's home town of London and Lake Erie's Port Stanley.

The L&PS was an ideal candidate for the modernization which was announced in 1912. The line, which was owned by the City of London, had been leased to the Pere Marquette Railway which was due to cease operation in 1913. The road competed against another low technology electric line,The London and Lake Erie Railway. The L&PS had been allowed to disintegrate over the years, putting it at a competitive disadvantage with The L and LE. Canadian Railway and Marine World noted that

> . . .the track is in very bad condition, and it will be necessary to entirely reconstruct it, as the rails and ties are of no value other than scrap. The buildings are in fair condition, and with a moderate outlay for repairs, can be made to answer the purchase of the road after electrification. (29)

The road had been established in 1856 to provide London with a lake port and to offset the monopoly of The Great Western Railway. The London and Port Stanley was plagued with financial problems from its initiation. After operating the line for a number of years, the City leased it to The Great Western for twenty-one years in 1874. The Great Western did not renew its option. The City attempted to get the Grand Trunk to lease it. When this failed, the Michigan Central agreed to operate the railway on a month to month basis.

On December 1, 1893, the line passed to the control of The Lake Erie and Detroit River Railway on a twenty-year lease. In 1906, the Pere Marquette purchased The Lake Erie and Detroit River Railway and assumed the L&PS lease. The Pere Marquette wanted the line to gain access to

London. In 1913, it announced it wished to renew the lease for another twenty years when its franchise expired on January 1, 1914. Sir Adam Beck resisted the renewal, suggesting that the railway should pass to the City under the management of a London railway commission. He convinced the City that the line's continuing problems could be resolved by modernizing the track and rolling stock and converting to electric power.(30)

Hydro hired S.B. Storer, a consulting engineer from Syracuse, New York to prepare a report on the L&PS. Working with Hydro engineers, Storer reported that the line should install modern, 80 pound rails and use an over head catenary system which would allow the use of the triangular pantograph contact instead of the single trolley pole. The report also recommended double tracking the line from London to St. Thomas and the use of the newly-developed 1,500 volt DC system.

Storer and his colleagues suggested the purchase of six passenger-baggage cars capable of top speeds of fifty miles per hour. For freight service, they recommended four locomotives with hauling capacity of 750 tons at 25 miles per hour. The order would be completed with the acquisition of two snow plows and six trailers.

The Storer report recommended service on the road be increased. It suggested half-hourly passenger service between London and St. Thomas and hourly service between St. Thomas and Port Stanley. In the summer, the investigators recommended the schedules from St. Thomas to Port Stanley be increased to half hour service with the possibility of fifteen minute service. With the recommended improvements, the London to St. Thomas trip would take twenty-four minutes and the London to Port Stanley trip would take fifty-four minutes.

Adam Beck presented the Storer Report to the London City Council. He told the councillors that rehabilitation of the line would cost $890,573. The price would include reconstruction of the roadbed and the laying of new track, overhead wire construction, rolling stock, substations and a new freight shed at Port Stanley. The modernization would produce a passenger and freight revenue of $261,500 annually. When combined with operating expenses of $220,545, net profits would be $40,955. Beck recommended that the City use this money to buy back bonds to be issued for the reconstruction as well as depreciation costs.

The Storer Report and Beck's recommendation were discussed at a meeting of the London Board of Trade on November 11, 1912. The Board formed a citizen's committee to examine the proposals and report on them. The L&PS modernization also came to the attention ot the Mackenzie-Mann interests who operated the London Street Railway. As private railway owners, they announced that they were not in favour of Hydro's involvement in the L&PS and the concept of public ownership that Hydro was advancing.(31)

In August 1913, The General Manager of the Windsor, Essex and Lake Shore Rapid Railway, A. Eastman delivered a report to the Mayor of London on the proposed L&PS renovation. Eastman was satisfied with Storer's concept that six passenger cars would meet the L&PS' needs. However, he felt that the railway needed smaller freight locomotives with 300 ton capacity. He estimated his renovation cost at $640,000 which would produce an annual profit of $75,055. Like Beck, he recommended these monies be used to offset bond and depreciation costs.

A third report to the City was prepared by railway promotor A.N. Warfield of Berlin. He stressed the point that unless the line were updated,

it could expect to lose at least $33,444.05 annually. Unlike the other two reports, Warfield gave the council two options on electrification. The first, use of storage batteries, would allow the line to show a profit of $17,667.86 annually. The more conventional use of overhead wires would produce an annual surplus of $38,034.64.

All three reports emphasized the fact, that with renovation, the L&PS could show a profit. The City had been spending money on the line with only deficits to show for its effort. In 1903, a total of $1,332,854 in L&PS bonds had been issued. Interest payments on the bonds totalled $234,992.61. At the time, the capital value of the railway had decreased from a high of $765,311 in 1854 to only $442,340 in 1903.(32)

The proposal to update and electrify the London and Port Stanley brought Hydro into conflict with both the Mackenzie-Mann interests and the Grand Trunk Railway. Essential to the Hydro plan for the L&PS was the use of the Grand Trunk station in downtown London. When the GTR refused to consider sharing the terminal, Beck took his case to the federal government. Eventually the L&PS was allowed access to the station.

The Grand Trunk retaliated by announcing it would fight Hydro's entry into the railway industry. On June 2, 1915, just months before the first electric train travelled the L&PS, H.E. Whittenberger, Superintendent of the GTR's Ontario Division told The Globe that the railway would

> . . .buck the public-owned project and endeavour to cripple the projected Hydro radial enterprise by boycotting The London and Port Stanley line on the electrification of that road. This is to be effected by withdrawing all shipments of coal over the line from Port Stanley from Rondeau to Chatham. (33)

Adam Beck responded to The Globe story by inviting the GTR to make good

on its threats. Nothing more was heard of the idea from that point.

Hydro completed the London and Port Stanley renovation by opening the line on July 22, 1915. Present to witness the event were Sir Adam, Lillian Beck, numerous MLAs, local mayors and reeves and members of The Hydro Electric Radial Railway Union. After a return trip on the L&PS, six hundred guests sat down to a sumptuous banquet in "the gorgeously decorated banqueting hall of the Masonic Temple."(34) The first link in Hydro's radial proposals began operating after $1,564,098.66 had been spent. This was nearly 100% higher than the sum quoted by Adam Beck three years previous.(35)

When the City of London accepted Hydro's modernization plans for the London and Port Stanley in 1913, other Ontario communities began to express interest in radial development. With the passing of the Hydro-Electric Radial Railway Act of 1913, the Province gave the municipalities the legal right to use Hydro resources for railway endeavours.

Newspaper stories in the St. Thomas region reported requests for radial surveys as early as 1913. Hydro engineers began examining proposals for a line which would connect St. Thomas to Windsor. The concept included plans for a route through Dutton, West Lorne, Rodney, Ridgetown, Chatham, Kingsville to Windsor.(36) Local politicians also recommended that Hydro integrate railway and power transmission development in the Southwestern Ontario corridor. Parties interested in the twin developments met in St. Thomas late in 1913. Not only did they recommend that Hydro develop the St. Thomas to Windsor line, they passed a resolution which would promote radial development along the entire Ottawa-Windsor route. The meeting also formed sub-committees with the express purpose

of spreading pro-Hydro sentiments in Southwestern Ontario.(37)

Pro-radial sentiment was also being developed in 1913 east and north of Toronto. In May, the combined councils of Scarborough, Markham, Uxbridge, Pickering, Whitby and Reach requested a feasibility study from Hydro.

These communities were interested in a seventy-one mile line which could follow any one of three potential routes. The major link was a connection which would travel from Scarborough on the south through Unionville to Markham. The second proposal was a track which would join Port Whitby on the south and Port Perry on the north. Should both lines be constructed, the councillors wanted a link between them which would travel from Stouffville and join the eastern line at Brooklin.

Hydro's report was prepared by Frederick Gaby. He recommended the north-eastern system should have frequent service with regular stops for passengers and agricultural products. This he felt would allow the steam railways operating in the area to remove themselves from competition for local business in order to concentrate on through service. Gaby felt that the line was capable of producing a surplus as high as $73,770 annually. He recommended that the Scarborough-Stouffville connection be constructed first.(38)

In order to promote the scheme, the north-eastern municipalities formed a committee of local politicians. On July 21, 1914, the committee sent a letter to all potential voters in the district to entice a "yes" response on voting day, September 21, 1914. The letter referred to

> . . .the Hydro-Electric Railways as a 'new proposition, advanced and developed by Sir Adam Beck, as a legitimate and natural outcome

> and evolution of the Publicly-Owned Hydro-Electric Power System of the Province of Ontario, advocated and approved by both Leaders of the two Great Parties in Ontario. The proposition, as authorized and contemplated by the Ontario Legislature, is that the Railway is to be run and operated on a plan similar to the Hydro Power System--that is, at the lowest cost compatible with satisfactory service and accomodation to all parts and persons--to be operated, not for the purposes of making the greatest amount of profit, but firstly for public welfare and convenience. (39)

The letter centred around themes which had become well known in Ontario during the campaign for public power, service at cost, non-partisanship and public ownership. As well, it assured the participating municipalities that

> . . .in all reasonable probability the municipalities will never be called upon for a dollar of their guarantee of the bonds. (40)

The committee also promised that it would hold a series of public meetings at which Gaby and Beck would speak and respond to voters' questions.(41)

Events similar to those which were conducted in the north-eastern district took place across the Province in 1914 and 1915. By November 1915, the HEPC had received study petitions from 138 townships, 38 villages, 42 towns, 11 cities, 4 police villages and 7 miscellaneous committees such as Boards of Trade and Chambers of Commerce. Two survey teams from Hydro's head office had inspected more than 1,200 miles of potential roadbed in Ontario.(42)

Along with engineering assistance, Hydro's head office staff actively assisted interested municipalities in a variety of other concerns connected to railway development. These included pricing rolling stock, right of

way acquisition, and population and business surveys. Hydro's legal department drafted radial money by-laws and held meetings to explain their implications to voters.(43)

Monthly issues of Canadian Railway and Marine World in 1915 carried summaries of municipalities who announced their intentions to join the radial scheme. By the end of the year Hydro had been asked to survey land in nearly every county in Southern Ontario from Lake Huron to the Ottawa River.(44)

With the growth of interest in radials, the Ontario Legislature amended the Hydro-Electric Radial Railway Act in March, 1915. With the amendment, Ontario was divided into radial zones. This simplified what had previously been a complicated task for Hydro's legal staff. Instead of having to appeal to each village, town, or township through which a proposed line was to pass, radial proponents could appeal to larger segments of population. Thus, a negative vote in a small community would not endanger the project if other communities in a zone voted in favour. The amendment to the Act was drafted by Attorney-General I.B. Lucas, a Beck ally who later joined the HEPC as legal counsel.(45)

Even though it was a war year, 1915 proved to be crucial in the development of the Province's transportation future. While Adam Beck was planning to cover Ontario with electric railways, the Provincial Government began to develop an interest in highway construction. Eventually the two concepts would conflict with each other.

In March 1915, the Ontario Government announced that it would contribute funds for highway construction, up to a maximum of forty percent of total cost. When he introduced the bill in the Legislature,

the Minister of Public Works, the Honourable F.G. Macdiarmid classified the Ontario highway system into four categories. They were market or county roads, township roads which connected to county roads, suburban roads in centres of population and inter-urban roads or main provincial highways. Of these four types of road, the county road was to be the largest beneficiary of the subsidy programme. The Government promised to pay up to forty percent of the cost of construction and up to twenty percent of the cost of maintenance.(46)

The campaign for better highways coalesced into an organization called the Good Roads Association. Its founding meeting was held in Toronto in March, 1915. It attracted delegates from every province in Canada and state in the Union. The key-note speakers were Ontario Lieutenant-Governor J.S. Hendrie and Toronto Mayor "Tommy" Church. Church condemned Canadian governments for what he called a pro-railway bias. He reported

> . . .as President of the Canadian Association of Municipalities, I have the assurance of the Government that when the war is over, we shall have legislation providing not only Provincial roadways, but a system linking up the Provinces of the whole Dominion. (48)

It is ironic, considering Church's stance in front of the Good Roads Association, that he was to become one of Adam Beck's fervent supporters in the radial railway debate.

The first link in the Province's highway network was the Toronto-Hamilton route. It was a concrete road which was started in the spring of 1915. After construction began, politicians in the Toronto-Oshawa corridor began to pressure the Provincial Government for construction of a similar road at a cost of a quarter of a million dollars.(49)

The commencement of highway construction was to have a serious impact on Adam Beck's railway plans. First, a highway was much cheaper to construct and maintain than a railway. It was not inflicted with the need for expensive rolling stock since the purchase of an automobile or truck was an individual's own choice. Only the high cost of purchasing either of these two vehicles inhibited the development of public sentiment in favour of road transportation.

While the Province was developing improvements in transportation in both road and rail, the City of Toronto announced its intention to form a municipally owned transit commission in 1915. In its policy statement, the City advised the Mackenzie-Mann interests that its Toronto Railway Company franchise would not be renewed when it expired in 1921.

The Toronto Railway Company was the largest street railway system in the Province. The company held franchises which operated on Bloor Street, College Street, Queen Street, King Street, Gerrard Street, Dundas Street, Lansdowne Avenue, Bathurst Street, Bay Street, Yonge Street, Church Street and Parliament Street. It also owned a number of short connecting lines.(50)

The formation of the Toronto Transportation Commission (TTC) came as a result of an election promise made by "Tommy" Church when he was elected Chief Magistrate in January, 1915. He commissioned a Board of Control Committee (The Civic Transportation Committee) to study the operations of the Toronto Railway Company, and the Toronto and York Radial as well as possible high speed radial entrances to Toronto and a potential subway system. The committee hired R.C. Harris, Toronto Commissioner of Works, E.L. Cousins, Chief Engineer of the Toronto Harbour

Commission and Fred Gaby to conduct the investigation.(51)

The City was particularly distressed with the Toronto Railway Company. The company had been franchised to operate within Toronto's 1891 city limits. When the city began to expand rapidly after the turn of the century, the company refused to expand its tracks to meet new settlements in what had previously been suburban areas. The company noted that its charter did not compell it to expand. The City retaliated by opening civic owned and operated street railway lines along St. Clair Avenue, those sections of Gerrard Street, Danforth Avenue and Bloor Street not serviced by the Toronto Railway Company. The civic lines and privately operated franchises served a population of 450,000 of whom 100,000 lived in areas beyond the Toronto Railway Company's franchise area.(52)

The investigating committee felt that Toronto needed to allow high speed radial access into the city centre. This would allow a potential traveller to connect with future TTC lines in the city instead of at city limits which was the most accepted method in most Canadian and American cities. In 1915, The Toronto and York Radial could not provide this kind of service.

The third part of the investigation dealt with rapid transit inside the city limits. The Civic Report noted that rapid transit was seldom efficient in cities under 1,000,000. However, the reporters, noting Toronto's rapid growth, felt the city should develop a working policy on some sort of rapid transit for future needs. As a result, the report offered suggestions for five possible types of rapid transit, underground subways, elevated railways, a combination of both, total grade separation by elevation or depression and suburban steam railway service.(53)

Of the variations, the concept of an underground subway held the highest possible appeal for Toronto politicians. In 1908, City Engineer C.H. Rust studied the possibility of constructing subways under Yonge Street, King Street and Queen Street. His system would comprise fifteen and a half miles of line to be constructed at a cost of $1,500,000 per mile for double track and stations. The idea was terminated when Rust reported that it would not be feasible until the City reached a population of 1,000,000.(54)

However, the idea was re-introduced in 1909. In the January 1, 1910 civic elections, voters were asked to approve a rapid transit system. The new idea featured only 3.75 miles of subway in combination with grade separated surface lines which would be eighteen miles in length. The cost was estimated at $4,885,000.(55)

With an affirmative vote at the polls, the City commissioned the consulting firm of Jacobs and Davies of New York City to study the rapid transit concept for Toronto. The firm delivered its report to council on August 25, 1910.

The report stated it felt that Toronto was fairly well served by its existing transit system with the exception of Yonge Street where congestion was serious. However, the engineers stated that future development must include the standardization of gauge between the street railway and radial systems.

Although Jacobs and Davies were satisfied with the existing system in 1910, they pointed out that Toronto would experience future problems if the pattern of city growth continued. The combination Toronto Railway Company and Civic Car Lines were biased in an east-west system while

growth was pushing the City northward. The report noted

> . . .the traffic situation in Toronto is such that it will be one growing only in the northerly radiations in relation to the business centre; also there can be little question but it will grow fast; and unseemingly congestion in the streets may be avoided even with profit financially by the adoption of subways in the not far distant future. (56)

The firm suggested two possible concepts for a rapid transit system. The first was a circular plan with a northern boundary running along St. Clair Avenue. The southern portion would run along Broadview Avenue, Danforth Avenue and up Woodbine. The third section would commence at the foot of Yonge Street travelling in a westerly direction to a termination point on north Keele Street. The busiest link would be a Yonge Street line from St. Clair to Wellington Street. It was also recommended that a future line be constructed to connect the southern portion to the Yonge Street line in the downtown core. The report recommended that the system connect to all terminal points on the Toronto and York Radial with the exception of the Mimico Division. The cost of the proejct was to be $23,685,000.(57)

The second proposal was less ambitious. It was basically a Yonge Street subway which would bring passengers from the Toronto and York Radial's St. Clair station downtown. The consulting firm suggested three possible routes, one under Yonge Street, another under Bay Street and a third option, running under Victoria Street. The engineers also recommended the construction of a short beginning line along Bloor Street which would cross the Don Valley on a viaduct. The plan was estimated at $6,825,000 with an additional $2,613,000 budgeted for the viaduct.

The company also included a third option. This was a proposal to build a rapid transit system which would commence at the foot of Yonge Street. It would include two diagonal type lines, one in a north-westerly direction, the other travelling north-easterly. Both would terminate at the city limits. The $17,700,000 plan would not connect with any existing radial lines. As well, some surface routes would have to be reconstructed in order to make connections. As a result, the Jacobs and Davies report gave the plan a low priority.(58)

The firm felt that Toronto suffered from higher transit costs than American cities of comparable population. This was due to Toronto's large geographic area. The consultants also recommended that the favoured plan "one" be connected to the Toronto and York Radial, although co-operative stations were not included in the estimate. The report also recommended that no matter which subway plan was chosen, the system should be built to carry freight traffic at night. As a final note, the report recommended that the city contract for construction but the system should be owned and operated by private enterprise.(59)

Toronto ratepayers approved the second of the Jacobs and Davies plans in a referendum on January 1, 1911. Eleven firms tendered for the construction work with estimates ranging from $2,474,781 to $5,196,542. The line was to run under Bay Street beginning at Front and Yonge and terminating at the Toronto and York Radial station at Yonge and St. Clair. Included in the proposal was the expansion of street railway service on St. Clair Avenue. There were no plans to connect with any other radials serving communities beyond the city limits.(60)

The idea remained moribund until it re-surfaced as part of the Report

of the Civic Transportation Committee. In dealing specifically with rapid transit, the report reiterated the Jacobs and Davies theme. Unlike its predecessor, the Civic Report felt that the existing transit system could provide only adequate service until 1921. In order to provide improved service, the Report stated that the TTC had to extend tracks and improve the street railways' rolling stock.

In differing with the Jacob and Davies report, the Civic Report recognized a need for high speed radial access from the east, west and north. It noted that only the Metropolitan Division of the Toronto and York Radial had the potential of providing easy access to downtown and this was dependent on construction of the Yonge Street subway. Thus, the Report recommended construction of a radial terminal at the foot of Yonge Street and the construction of high speed radial access routes from both the east and west. The Report pictured a scenario in which passengers from the north would transfer from the Metropolitan to a Yonge Street subway. Passengers entering from the east and west would transfer to the street railway system at the radial terminal. The Scarborough and Mimico Divisions of The Toronto and York Radial would become part of the street railway system.(61) Thus, if the Report's recommendations were accepted, Toronto would become the centre around which Hydro's proposed Ontario radial system would evolve.

The eastern entrance was to begin at Coxwell and Danforth and run south to Cherry Beach. The route would then travel westerly to the terminal. The structure was to be an elevated railway. The western entrance was to begin at Lake Shore Road near the Humber River, travel through the CNE grounds as a subway, and then join the Harbour Commission

property as an elevated railway to the terminal. The Yonge Street rapid transit was to be constructed as a conventional radial railway to Ramsden Park. It would cross the park as an elevated structure and then go downtown as a two track subway. The access scheme was to cost $18,817,000.(62)

Under the plan, the radials could not expand inside the city limits beyond the designs drawn up in the Report until 1921. Essentially, this restricted the radial operators, in this case Hydro, from competing with the TTC. However, the Civic Report did not forecast what role Hydro and the TTC should follow after 1921. In recommending the high speed radial entrances, the Report concluded

> . . .the radial electric line enables the wage-earner, and others of limited means, to possess in the suburban and outlying districts, more commodius homes, and greater opportunities for outdoor recreation. It also enables dwellers in the congested city districts, to travel to the country with convenience, speed and at low rates. . .The rapid and more frequent service, encourages travel, from rural and suburban districts to the cities, for business and amusement. (63)

Hydro's influence in the preparation of the Report can be deduced by two factors. First, the conclusions repeated a familiar Hydro theme, the welfare of Ontario's working class. Second, the Report also contained a detailed examination of Hydro's Ontario radial plans, complete with maps and diagrams to show the progress of the project at the publication date. Although it was not directly stated, the leather-bound, colour supplemented report suggested that Hydro access to downtown Toronto was an integral part of Toronto's transportation future, one which could not be eliminated without the threat of collapse for the entire concept.

By the end of 1915, Hydro had the London and Port Stanley renovation completed and had the approval of the City of Toronto for its radial access proposals. Hydro engineers had surveyed nearly 1,600 miles of potential routes. In spite of the First World War, more and more Ontario municipalities announced their intentions to join the radial scheme.(64)

Early in 1916, Hydro revealed its plans for the next major link in the radial scheme, a Toronto to London connection. The plan proposed the use of the high speed radial access from Toronto to Port Credit. The line would be constructed across country from Port Credit to Milton, through to Guelph, Berlin-Waterloo, on to Beck's birthplace at Baden, then to Stratford and St. Mary's before turning south through Lucan after which it would connect with the London and Port Stanley at London. The total estimated cost of the venture was $13,734,155 of which Toronto was scheduled to contribute $4,420,196 and London $1,109,303.(65)

The Toronto to London route re-kindled the animosities of two old Beck adversaries, Sir William Mackenzie and the Grand Trunk Railway. The line ran parallel to Mackenzie's Toronto and York Radial Mimico Division and next to the GTR service from Guelph to London. In spite of opposition, Hydro won by-law votes in twenty of the twenty-four municipalities along the proposed route. Municipalities rejecting the scheme were the townships of Waterloo (as distinct from the City of Waterloo), Blanshard, North Easthope and East Zorra. The total "no" vote amounted to only 199 ratepayers.(66)

In March 1916, Hydro won the second vote in Blanshard. It also announced the opening of negotiations with the Mackenzie-Mann interests to buy the Toronto Suburban Railway and the Toronto and York Radial.

It had also completed radial surveys on lines from Port Credit to Hamilton, Hamilton to Niagara Falls and St. Catharines, Hamilton to Elmira and from Owen Sound to Kirkton which was a connecting point on the proposed Toronto to London route.(67)

In June 1916, radial activity came to an abrupt halt when the Government suspended the provisions of the Hydro-Electric Radial Railway Act of 1914. The Government announced, due to the cost of the war, it felt it could not afford to construct the Hydro radials. Hydro was forbidden under the order to spend any public money on construction or surveys. The action met with an immediate protest by the Hydro-Electric Radial Railway Association. After three months of pressure by the organization, the Government compromised its position. In August, T.J. Hannigan, secretary of the association, announced that members would be able to use Hydro offices to conduct surveys, make plans, assemble lands and conduct by-law votes.(68)

By autumn of 1916, Hydro had settled three major points in its radial railway plans. It had acquired its high speed access to Toronto and had a sympathetic council at city hall. Plans and votes for the Toronto to London connection had been completed. It had opened negotiations for the purchase of the Mackenzie-Mann electric lines. The next task was to complete plans to reach the American border through Hamilton and the Niagara peninsula.

On September 1, 1916, The Hydro-Electric Radial Railway Association held a meeting in Hamilton. Present was Fred Gaby who outlined the Hamilton-Niagara proposals to the membership. Hydro planned a line which would join the Toronto to London Railway at Port Credit, pass through

Hamilton and terminate at St. Catharines. The plan proposed renting the GTR right of way through Hamilton, a fact which had been part of the Canadian Northern plans some years earlier.(69)

Gaby told the delegates that the line would meet the standards used on the London and Port Stanley including track, technical apparatus and rolling stock. He announced it would cost $11,360,363 to construct the route but the expected federal subsidy of $6,400 per mile would reduce the cost of the 59.57 miles to $10,979,115.

The plan brought Hydro into conflict with the Dominion Power and Transmission Company. The route ran along side two of the company's radials, The Hamilton-Oakville Radial and the Hamilton, Grimsby and Beamsville Railway. The proposed route also ran parallel with the GTR tracks from Hamilton to St. Catharines. Hydro was faced with renting a Hmailton right of way from one of its oldest opponents.(69) The Provincial Government ordered Money by-laws to be included on municipal ballots for municipalities on the proposed route for January 1, 1917 voting.(70)

Once Hydro had approval for its Port-Credit to St. Catharines by-laws, it proposed extending the system another forty miles in order to include Welland and Bridgeburg in the Niagara system. However, with the vote, Hydro received its first major set-back in the radial plans. In spite of the fact that thirteen of the sixteen municipalities along the Port Credit-St. Catharines route approved the radial by-laws, the City of Hamilton and its two major suburban townships rejected the plan.(71) As a result of the balloting, St. Catharines asked Hydro to exclude Hamilton from the proposals and to consider as an alternative, a route which would by-pass the city by going through Burlington Beach.(72) Hydro rejected this option.

It chose to wage a propaganda war in favour of the radials through the pages of the Hamilton Spectator.

Adam Beck resorted to contacts in the Toronto media to assist Hydro in having the vote re-taken in Hamilton. Writing to Beck concerning the Hamilton situation, W.V. MacCallum of the Toronto World said

> . . .what I would suggest that you do in connection with the vote in Hamilton is, first of all, get an advertising agency, like the J.J. Gibbons Company which is used to whirlwind campaigns, to put up a four day advertising campaign in every paper in Hamilton. A fresh add, occupying a page every day for the four days remaining, devoted mainly to the merits of your scheme and the unfair statements of the opposition. Next, I would have a short circular prepared signed by yourself in the facsimile, pointing out to each voter in Hamilton the merits of the hydro-radial proposition and what it will do for the city of Hamilton, and especially for the surrounding country, and also how much money it will put in active circulation in Hamilton at once if the radial line is started. The circular must be mailed to every voter on Thursday. There are 17,000 voters. . .
>
> And finally, I would secure and pay, if necessary, which is perfectly legal, a trustworthy scrutineer, labor man preferred, in every division, to see that no crooked votes are put in, and it has been done before in Hamilton by a certain crowd there. (73)

The by-laws were passed in March, 1919 against a background of difficulty involving rights of way, costs, terminal facilities and the opposition of two major steam lines, the GTR and the Toronto-Hamilton and Buffalo Railway. The Hydro plans were further complicated by a citizen's group, calling themselves The Property Owner's Protective Association. This group objected to the cost of the Hamilton contribution, $5,689,386.

In December 1917, Canadian Railway and Marine World published an account of the activities of the Hamilton property owners. The group had

hired five engineers from the Canadian Society of Civil Engineers to perpare a report on the Port Credit to St. Catharines Railway and the Hamilton role in the scheme.

The engineers experienced many of the same problems that J. Clancy had in the Hydro audit. The engineers said

> . . .the estimates of capital cost, as given by the Hydro-Electric Power Commission have been used by the board in accordance with the letter of instructions, but the board does not endorse the estimates of capital cost in any way, as the Hydro-Electric Power Commission declined to give the information necessary whereby they could be checked. (74)

The engineers suggested that the line would show an annual deficit of $404,664 after ten years of operation. They pointed out that they could not arrive at an estimate for terminal facilities or revenues derived from them because Hydro had exclusive rights to the terminal. Their report stated that the City was being asked to contribute nearly six million dollars to the radial plan which in turn would make the City liable for operating costs over which it had no control and from which it could not withdraw in the future. Hamilton would also be bound by its agreement with Hydro to acquire Hydro approval for any future transportation schemes in which it wished to become involved. The engineers also reported that Hamilton could be forced to surrender free rights of way in the future on lands owned by the City. The proposed contract between Hydro and Hamilton contained no audit clause. As well, the contract was designed to operate in perpetuity.

The board was not sympathetic to the Hydro plans. It stated

> . . .your board finds that no public necessity exists for the construction of the proposed line, because the particular district is thoroughly

> well provided with steam, electric and water transportation facilities, and because the number of transportation companies already operating in the district makes it quite unnecessary to inaugurate a new and distinct system. (75)
>
> The engineers further concluded "your board finds that it would be much, more in the interest of Hamilton if good roads were taken up seriously rather than the proposed Port Credit-St. Catharines line. The amount proposed to be expended on the proposed line would build at least 800 miles of good roads in the Hamilton district. (76)

One of the five engineers who signed the report was William F. Tye, a consulting engineer with Canadian Pacific. Tye, three years later, would emerge as one of the central figures in the radial hearings in Toronto.

In spite of the opposition, Hydro continued to plan radial construction in the Hamilton area. Hamilton council's railway committee, chaired by lawyer T.B. McQueensten, commissioned Hydro to design and construct a railway terminal in Hamilton. The proposed terminal was to be used by all railways, steam and electric, for passengers and freight.

In a letter to Beck, McQueensten told the Hydro Chairman that the existing railways could be expected to oppose a common terminal facility. He noted they were disturbed by the fact that Hydro had been given a free hand to plan and construct the building. Of more concern was that, when constructed, Hydro would retain exclusive management rights. In payment for the terminal plan, Hydro was given exclusive rights for all future industrial sidings in Hamilton.(77)

It is a tribute to Adam Beck's ingenuity as a politically conscious civil servant that the HEPC succeeded in convincing the City of Hamilton to join the radial plans. The Hydro Chairman had superceded over the

joint opposition of the Dominion Power and Transmission Company, the Grand Trunk and the CP owned TH&B and a group of Hamilton ratepayers. By July 1919, all municipalities on the proposed route had held votes on radial by-laws and had signed agreements with Hydro. The only remaining detail was an order-in-council from the Premier of Ontario before construction could commence.

Beck began to pressure Hearst on July 18th, 1919. For the first time in the history of the radial proposals, only the order-in-council stood between a plan on paper and construction. However, the Premier was reluctant to give clearance to the Toronto to St. Catharines radial. Eleven days after Hydro requested the order-in-council, Hearst advised Beck he felt there were still a number of obstacles to overcome before he could give the government's approval. He noted that Hydro planned to begin construction on the Toronto to Port Credit line as part of the overall system to St. Catharines. The Premier felt that this would not be legally possible since the Toronto-Port Credit line was part of the Toronto to London proposal. Hydro still had not obtained affirmative votes in three communities on that line. The Premier felt that Hydro was trying to separate the Toronto-Port Credit line from the London proposals to become part of the St. Catharines scheme. He told Beck that existing legislation would prevent Hydro from doing this.

However, the Premier stated that he felt Hydro could begin construction on the Port Credit to St. Catharines section of the Toronto to Niagara line. In turn, Hearst asked Beck to give him the necessary time to resolve the legal implications of the Toronto to Port Credit section. (78)

Hydro had always seen the high speed access routes into Toronto as a

necessity for the development of suburban, rapid transit business. Without these access routes, the radial proposals would differ little from existing inter-urban lines. Hydro was reluctant to proceed with the Port Credit-St. Catharines radial without a guarantee that the Toronto to Port Credit link would be part of the railway.

Adam Beck responded to Hearst's letter by asking Hydro solicitor C.S. MacInnes to investigate the legal implications of the Premier's concerns. MacInnes assured the Premier that under the existing legislation, the HEPC was legally entitled to demand orders-in-council permitting construction of the railway from downtown Toronto to St. Catharines. Hearst responded to the MacInnes correspondence by repeating the same concerns that he had to Adam Beck. MacInnes acknowledged receipt of the letter on September 15, 1919. The next stage in the drama would be the defeat of William Hearst and the Conservative Party in October, 1919 and the coming to power of the UFO-ILP coalition under Ernest C. Drury.(79)

Although William Hearst had never publicly supported or rejected Adam Beck's radial plans, his government's hesitation to begin construction of the approved Toronto St. Catharines line would suggest that the proposals did not enjoy the confidence of the Tory government. Just prior to his defeat, all municipalities had approved the railway. All but three had voted for the Toronto to London line. Hydro felt clause nine of the Hydro-Electric Radial Railway Act would prevent the non-approving municipalities from halting construction of the Toronto-London railway. The Toronto-Port Credit high speed access was necessary for the success of both the London and St. Catharines railways. Hearst, by linking the high speed access to the London proposal, could legally

question approval of the London line while denying Hydro its access on the St. Catharines line. Hydro could not construct the St. Catharines railway without the Port Credit to Toronto access. Hearst's questioning of the legality of the London link delayed commencement of construction until after his defeat.(80)

While the Conservative Government used legal technicalities to delay the beginning of construction of the radials, they also gave Hydro a very important concession in an amendment to the Act in 1919. From that time, municipalities who contracted to join the radial scheme could not renew existing electric or street railway franchises within their borders without the written consent of Adam Beck.(81) Although the legislation was not retroactive, the destiny of many private operators in Ontario rested in the hands of the Province's largest publicly owned institution.

Under the Conservative administration, Hydro did not build one mile of electric railway. With Hearst's defeat, Adam Beck was removed from Ontario's inner circle of power. Yet, in October 1919, the Hydro Chairman began to initiate the final phase in the radial proposals.

In November 1919, Beck announced that he had begun negotiations to purchase the bankrupt Canadian Northern electric railways from the Canadian National.(82) This move forced Hydro to modify some of its earlier proposals. By purchasing the yet to be completed Toronto Eastern, Hydro could amend its Toronto North Eastern plans. The purchase of the Niagara, St. Catharines and Toronto railway, which connected to Niagara Falls, New York, would allow the HEPC to drop the Welland to Bridgeport proposal. With the addition of the Toronto Suburban, Hydro planned to modernize the line and include it in the Toronto to London railway.

On November 6, 1919 in Galt, Fred Gaby announced that Hydro planned to construct a radial from Hamilton to Elmira to join the Toronto Suburban at Guelph. Seventeen municipalities would be asked to submit money by-laws on the proposed route. Hydro estimated the cost of the line and the purchase of rolling stock at $6,530,659. The Commission declared that the annual profit of the proposed railway would be $76,344. Ratepayers would be voting on the proposal on January 1, 1920.(83) In addition in 1920 Beck enacted the Hydro veto and prevented the City of London from renewing its street railway franchise.(84)

With the proposed purchase of the Canadian Northern electric lines, Hydro was faced with solving a structural inefficiency. Canadian Northern planners did not envisage the lines as independent operators. They were designed to act as feeder services for transcontinental Canadian Northern steam trains. Consequently when the federal government purchased the railways from the Mackenzie-Mann interests, the lines were described in a report issued in September 1918 as essential to the future development of the CNR.(85)

However, by 1920, the Canadian National felt negotiations with Hydro for purchase of the railways could be successful if Hydro would meet certain CN concerns. The national railway had received Hydro's offer on June 23, 1920. Hydro proposed buying the incomplete Toronto Eastern for $706,000. The Commission agreed to assume $2,628,000 worth of Toronto Suburban bonds at 4 1/2% due in 1961. Hydro offered $3,544,374.10 for the Niagara, St. Catharines and Toronto Railway. Of this amount, Hydro agreed to assume $1,098,000 worth of 5% bonds due in 1929. The difference would consist of provincially guaranteed bonds at 4 1/2%.(86)

The Hydro offer was attractive since it would relieve the federal government of the financial obligations of three bankrupt railways. However, CN still wanted the electric connections as feeder service. As a result, Dr. Jack Reid, Federal Minister of Railways and Canals asked Hydro to agree to an exclusive traffic contract upon approval of the sale. In essence, this clause would allow any Hydro radial to contract for freight at any point on its lines for destinations beyond the radial perimeters. At that point the goods could only be transferred to Canadian National trains. Beck agreed to the exclusivity clause in correspondence to D.B. Hanna, Canadian National president on October 14, 1921.(87)

Although Hydro and Canadian National never signed an agreement, both sides made verbal commitments to each other. In a letter dated December 15, 1921, J.A. Stewart, Clerk of the Privy Council informed Beck that

> . . .your communication above set out, dated June 23rd, 1920, and your letter to Mr. Hanna above referred to, dated October 14th, 1921, were read in Council yesterday. They were approved in principle and referred to the Directors of the C.N.R. (88)

With the dawn of the twenties in Ontario, Hydro had emerged as a major economic factor in transportation and energy production. Its first railway enterprise, the management of the London and Port Stanley, had been operating for five years. It had inherited the Peterborough Street Railway with the purchase of the Seymour Power interests in 1916. In Windsor, it owned the Sandwich, Windsor and Amherstburg Railway and The Windsor and Techumseh Railway. It was scheduled to purchase the Windsor, Essex and Lake Shore Rapid Railway in June, 1920. Under negotiation was the purchase of the Dominion Power and Transmission Company, The Sarnia Street Railway and The Guelph Radial Railway.(89)

Combined with the radial railway proposals was the construction of the Queenston-Chippawa power development, which when completed, would make Hydro the largest producer of electricity in the world.

The plan to harness Niagara water was first discussed in 1914 when Hydro was buying private power exclusively. The initial Chippawa plan was estimated at $10,500,00 for a minimum output of 100,000 horsepower annually to a maximum of 180,000 horespower.(90)

Work began on the Chippawa project in 1917. Like so many of Adam Beck's proposals, the scheme had grown in both size and cost. When the first switch was pulled at 1:14 p.m. on December 28, 1921, the project had cost an additional $30,000,000. The projected capacity had increased. From its initial estimate of 100,000 horsepower, Chippawa was expected to produce 650,000 horsepower, making it the largest hydro-electric generating station in the world. Adam Beck gave the keynote address at the opening to two thousand municipal politicians. He blamed the war for the inflated cost of the project. Beck asked the assembled guests to return any surpluses realized on the sale of hydro power to municipal customers back to the Commission. Beck felt that if the municipalities co-operated with the HEPC, the Commission could avoid rate increases and could maintain its service-at-cost principle.(91)

At the ceremony Beck re-iterated some of his favourite themes. He announced that, although the municipalities owned Hydro, they could not expect to manage the system. He felt that, since political opinion was diversified among the various municipalities, attempts to control Hydro from the grass roots would only lead to political bickering which would in turn make the Commission vulnerable to enemies of public ownership.

He pointed to the massive Chippawa installation as evidence of Hydro's efficiency.(92)

The project was grandiose by virtually any measurement standard. The canal which fed the generators ran twelve and a half miles from Lake Erie to Lake Ontario. It was one hundred and forty-five feet below ground level. Eighty-five feet of the excavation was cut through sheer rock. It took 8,100 workers to remove the 17,000,000 cubic yards of earth and rock. The canal was lined by 450,000 cubic yards of concrete, of which the last 62,000 was poured in twenty-five days in June, 1921. Construction of the canal took four years.(93)

The canal was paralleled by an electric construction railway which was used to haul earth and rock. The line employed seven 40-ton steam locomotives, twelve 50-ton electric locomotives and one hundred and fifty 20-yard dump cars, each with 80,000 pound capacity. Excavation work was done by three forty ton and two fifteen ton cranes. When the railway was built, four existing railways had to be diverted. These included the Wabash, Grand Trunk, Michigan Central, and Niagara, St. Catharines and Toronto Railway. The rolling stock, all of which was built in Canada, was intended for later use on the radials.(94)

With the completion of Chippawa, Hydro controlled all but two generating companies. The Commission was seeking to purchase both of these interests. With the purchase of the Mackenzie-Mann interests in the "clean-up" deal, only Dominion Power remained outside Hydro control. Added of course to these expansion endeavours were the radial plans.

The growth of "empire" Hydro paralleled the move to urbanization and industrialization in Ontario. By 1920, Hydro was on an irreversible

road to monopoly in the production and transmission of electricity. As we have also demonstrated, Hydro attempted to permeate much of the same attitudes in transportation development. Yet, its accountability to the government was limited. In Adam Beck, the government faced a powerful and political civil servant who had conducted periodic raids on provincial funds. Other than answering to the provincially appointed comptroller, Hydro operated within itself for itself and the public ownership cause in Ontario.

It was left to the United Farmers and Ernest Drury to decide on the future of the radial proposals. The UFO under president J.J. Morrison had publicly denounced the radial scheme before the candidates entered the October 1919 election. With electoral success, Ernest Drury was presented with the task of ameliorating Morrison and Adam Beck. A clear decision was impossible. Morrison had orchestrated the victory of the Farmers at the polls. Adam Beck was the most popular and the most powerful figure in Ontario politics in 1920.

The change of government brought no change in Hydro's radial plans. In December 1919, Drury began to feel pressure from Hydro. Amidst rumours that Beck and Drury were feuding on the issue, the Premier received a pro-Hydro delegation at Queen's Park. The group consisting of municipal politicians demanded that the Premier commit the government to the extension of the hydro-electric system and construction of the radials. The Premier told the delegates that he was not opposed to Sir Adam.

> . . .there is absolutely no friction between Sir Adam Beck and myself. It might not be wise at present to appoint him permanently as chairman of the commission. An arrangement will be made to suit Sir Adam. The development has been the

> work of one man and we want it to be so that when that one man is taken from us the great work can go on. (95)

However, Drury refused to act on the radials. He told the delegates he was concerned by the fact that Hydro's plans closely paralleled existing railway lines.(96)

Six days after Drury received the Queen's Park delegation, he faced a convention of the UFO in Toronto. Heading the agenda was a debate on the radial question. The meeting drafted the following resolution.

> . . .we view with alarm the proposed policy of hydro radials, involving expenditures of millions of dollars and intending in many instances the duplication of present railways and be it resolved that the legislature be requested to move slowly in this matter. (97)

Drury was faced with the task of finding a middle ground between the party and Hydro. His only option was to persuade Ontario municipalities that the radial scheme was not in their best interests. The feasibility of the Hydro plans presented both advocate and opponent with a difficult chore. The success or failure of the proposals could depend on a number of factors, in particular, types of technology, past histories of Canadian and American electric railways and management by Hydro.

One of the more difficult assignments that pro-radial advocates had to face was the problem in the United States. By 1920, the majority of electric railways were in serious financial difficulty, a situation which resulted in the appointment of the federal investigation commission in 1919. (see chapter one). Canadian electric lines were beginning to demonstrate some of the problems of their American counterparts when Ernest Drury came to power.

The economic decline of the industry began during the First World

War. When Hydro began drafting its radial proposals, the industry was relatively healthy. The year after Hydro was founded, The Railway and Marine World printed financial statements from forty-nine inter-urban and street railways in Canada. Only five showed deficit positions. In 1907, the industry reported gross revenues of $12,635, 905.35 with a net profit of $4,898,653.58, or a return of nearly 39%.(98) In 1908, revenues increased to $14,007,049.48 with net profits of $5,311,169.57 for a return of 38%.(99) The decline of the industry was first noticed in 1917. Although gross earnings had increased to $30,237,663, net profits were only $5,528,763 for a return of 18%.(100) Deficits were reported on eighteen lines.(101)

By 1919 the situation was becoming critical on both sides of the border. The July issue of Canadian Railway and Marine World published an article by Professor L.A. Herdt, Vice-Chairman of the Montreal Tramways Commission in which he discussed the state of the industry. Herdt had conducted a survey of 388 electric railways which represented sixty-three percent of electric railway mileage in Canada and the United States. He reported that net revenue had declined eighty-two percent from 1917 to 1918. In spite of the drop in revenue, the majority of the lines had reported a corresponding increase in ridership and gross revenues. Herdt blamed inflation and fixed fares for creating this dilemma.(102)

Ontario investors attempted to protect their interests by forming The Association of Holders of Public Utilities Securities. The group advocated a service at cost plan, and encouraged Ontario municipalities to purchase their assets. In this fashion, investors hoped to prevent further losses. The group succeeded in generating interest in public ownership in Ottawa, Toronto, London and Montreal. Their concept of public transit closely resembled the idea being promoted by Hydro with

its radial proposals.(103)

The state of the industry was a weakness for which Hydro could not easily compensate. Although Hydro's plans were designed to eliminate those structures which it felt had contributed to the eclipse of the electric railway industry, the Commission was still faced with convincing the provincial government that its scheme was functional. Hydro had further weakened its case by its inability to control costs on the London and Port Stanley modernization and the Chippawa project.

With Hydro contemplating expenditures nearing fifty million dollars for the radial project, the Drury Government ordered an audit of Hydro accounts early in 1920. The auditor G.T. Clarkson of Toronto, was asked specifically to examine the feasibility of the radial plans. Clarkson refused to commit himself.

> . . .as the costs of construction or purchase and operation of the above mentioned electric railway lines are matters which engineers alone can estimate at this time, I am unable to make any further statement to you with reference to them. (104)

Unsuccessful in his attempt to convince Hydro to drop the project and unable to secure evidence from neutral observers which would condemn the project, Drury decided to appoint a Royal Commission to investigate the Hydro radial question. On July 6, 1920, the Premier wrote to Adam Beck

> . . .that the Government has given this matter its very full and careful consideration and have decided, for the reasons set forth in the accompanying memorandum to defer action in regard to the acquisition of these roads until such time as we have satisfied ourselves by means of a thorough enquiry as to the advisability of going on with this project. Meanwhile, we would request that pending the result

> of such enquiries further expenditure on these roads be not gone on with. (105)

The memorandum to which Drury referred was a twelve page printed document which declared the concern of the Government. The Premier noted that in 1908, the direct provincial debt was $17,250,000. At the time of the memorandum, it had increased to $104,000,000 to which was added indirect debts of $21,000,000. Of the $125,000,000, fifty-two percent were Hydro obligations. Drury questioned whether or not the Province could absorb a further $51,000,000 for radials.(106)

Drury also felt that the Government would have to commit itself to future expenditures of $40,000,000 in order to complete the Chippawa installation. He speculated that Hydro's debt would increase to $104,000,000 by the end of 1920.(107)

The Premier stated that in order to be fair, he would not consider the feasibility of the radial project by comparing it to the general conditions existent in North America. He advised Beck that he would consider it under conditions experienced in large, urban, rapid transit systems in American metropolitan areas. However, he questioned the idea of two publicly-owned railway systems. He noted that the Canadian National was actively attempting to buy the Grand Trunk. He did not differentiate between the fact that one railway system was nationally owned and the other was provincially operated. He also told Beck that the Government would be forced to consider its highways programme and how it would affect the possibility of radial construction.(108)

Drury also questioned Hydro's estimating techniques which he felt made checking by accountants virtually impossible. He pointed out that the data collected on the radial proposals had been assembled over a

seven year period. He insisted that all radial estimates would have to be updated to reflect 1920 conditions. The Premier pointed to the fact that W.S. Murray, a New York engineer, had stated that Hydro had underestimated the cost of the Toronto-St. Catharines railway by $5,000,000. Murray also reported that future radial construction beyond the original proposals would likely cost the Province a further fifty million dollars.(109)

The Premier outlined six major objections to the radial proposals. He stated that in areas served by Hydro, there was a shortage of power, not a surplus as Hydro claimed. He stated that future supplies were uncertain until Chippawa was completed. In 1920, that date was speculative. He also noted that existing electric railways were constructed when costs were lower than 1920 prices and many were in deficit position. Drury stated that he was unable to comprehend how the Hydro radials would pay for themselves when they planned to use high technology and would thus build in high initial costs.

The Premier dismissed the concept of municipal subsidization for the lines. He pointed out that where this had occurred, the financial positions of municipalities had been weakened to the point that raising money on the bond market became difficult. In Ontario this would force the province into a position where it had to guarantee municipal bonds, thus placing itself into a situation where provincial debts could be dramatically increased.

Drury also told Beck that he felt that good roads would serve the future transportation needs of Ontario better than radial railways. Trucks had two advantages. They were not restricted to running on tracks and maintenance costs were lower. He felt that the Province would have

to issue additional future bonds to meet electric railway maintenance costs.

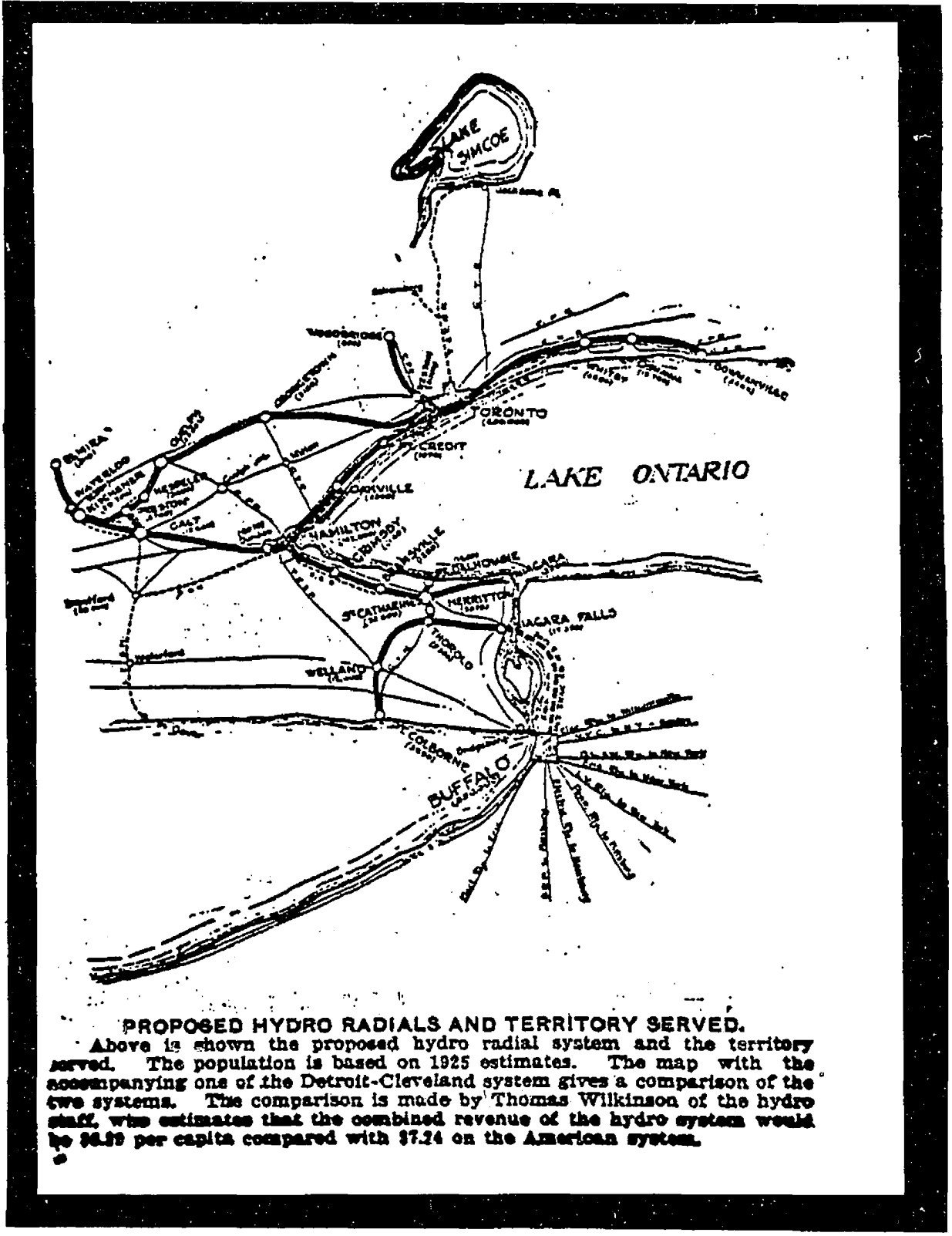
The Premier questioned Hydro's involvement in railways. He speculated that he felt Hydro could best serve Ontario's needs by restricting itself to the production and distribution of electricity and leave its consumption to others. He felt entry into the electric railway industry would not allow the Commission to properly attend to either duty.(110)

Dealing with the radial proposals specifically, Drury outlined seven objections. Municipalities along the Toronto Suburban, the Niagara St. Catharines and Toronto railways had yet to approve the purchase. He noted that Hydro had estimated bond costs at five percent while the market rate was six percent. The one percent difference would create deficits on all five radial divisions. The Premier noted that Hydro estimates had failed to allow for depreciation, renewals or sinking fund costs with the exception of the Toronto-London proposal. Failure to include these sums, Drury stated, would inflate possible deficits. He also accused Hydro of underestimating its operating costs. He pointed to the fact that the London and Port Stanley had a higher operating ratio than any line in the proposals. This was coupled with the fact that two of the proposed lines were to show higher revenues than any existing electric railway. Drury was also concerned that Hydro had presented its estimates in one lump figure. He felt this defied audit procedures. As well, he felt Hydro had not presented enough detail in the estimates to allow for minute examination. Finally, the Premier suggested that an independent body examine the proposed purchase of the CNR electric lines to attempt to determine if these acquisitions were in the best interests of Hydro

and the government.[111]

In spite of the apathetic attitude of the government, Hydro felt it was prepared to present its case to the Royal Commission. By the time hearings were to begin, Hydro had dropped the Toronto to London line. The proposals included the Toronto to Port Credit to St. Catharines line, The Toronto Eastern, The Hamilton and Elmira line and the purchase of the Toronto Suburban and the Niagara, St. Catharines and Toronto Railways. The cost of construction and modernization was estimated at $51,870,231.

Twenty-two days after Drury corresponded with Adam Beck, the Sutherland Royal Commission was announced by the Ontario Government. By the time it would finish hearings, a total of 13,376 pages of evidence would have been transcribed over 102 days of sittings. Its first scheduled witness was Hydro's Chief Engineer Frederick Gaby. Sir Adam Beck was never summoned to appear.



PROPOSED HYDRO RADIALS AND TERRITORY SERVED.

Above is shown the proposed hydro radial system and the territory served. The population is based on 1925 estimates. The map with the accompanying one of the Detroit-Cleveland system gives a comparison of the two systems. The comparison is made by Thomas Wilkinson of the hydro staff, who estimates that the combined revenue of the hydro system would be $6.89 per capita compared with $7.24 on the American system.

SOURCE: Adam Beck, Statement, Respecting Findings and other Statements Contained in the Majority Report of the Commission, Ontario Session Paper 24, 1922

PUBLICALLY-OWNED STREET RAILWAYS

Railway and Incorporation Date	Date of Municipal Control
Berlin & Waterloo Street Ry., 1886	1907
Berlin and Bridgeport Street Ry. (see Waterloo-Wellington)	
Brantford & Hamilton Electric Ry., 1904	1930 (Ontario Hydro)
Brantford Street Ry., 1879	1914
City & Suburban Electric Ry. (see Toronto Suburban)	
Davenport Street Ry. (see Toronto Suburban)	
Fort William Street Ry., 1908	1908
Grand Valley Ry., 1902	1914-1916
Guelph Ry. Co., 1894	1903
Hamilton Street Railway, 1873	1930-45 (Ontario Hydro)
Hamilton, Grimsby, Beamsville 1892	1930 (Ontario Hydro)
Kitchener & Waterloo, 1919 (see Berlin and Waterloo)	
London and Port Stanley, 1853	1914
London Street Railway, 1873	1951
Metropolitan Street Railway (see Toronto & York)	
Ottawa Electric Railway, 1866	1950
Peterborough Radial Railway, 1902	1916-1927 (Ontario Hydro)
Port Arthur Street Railway, 1891	1891
Sandwich, Windsor & Amherstburg Ry., 1871	1920 (Ontario Hydro)

Schomberg & Aurora	
(see Toronto & York)	
St. Thomas Street Ry., 1878	1903
Toronto & York Radial, 1898	1922
Metropolitan Street Railway, 1877	1922
Toronto-Mimico Electric Light & Power, 1890	1922
Toronto-Scarborough Light and Power, 1892	1922
Schomberg & Aurora, 1896	1922
Toronto Railway Company, 1891	1922
Toronto Street Railway, 1861 —	1891 (only)
Toronto Suburban Railway Co., 1894	1918 (CNR)
City and Suburban Electric Ry., 1891	
Weston, High Park and Toronto, 1890	
Davenport Street Railway, 1890	
Waterloo-Wellington, 1919	1924
Woodstock, Thames Valley and Ingersoll, 1900	
(see Grand Valley)	
Windsor, Essex, and Lakeshore Rapid Ry., 1901	1929 (Ontario Hydro)
Windsor and Sandwich St. Ry., 1856	
(see Sandwich, Windsor & Amhertsburg)	

ONTARIO ELECTRIC RAILWAYS THAT WERE NEVER MUNICIPALLY OWNED

Belleville Street Railway

Chatham, Wallaceburg and Lake Erie Railway Company

Cornwall Street Railway

Grand River Railway

Kingston, Portsmouth and Cataraqui (Kingston Street Ry.)

Lake Erie and Northern Railway

London and Lake Erie Railway

The McKay and Kakabeka Falls Railway (freight)

Niagara Falls Park River Railway

Niagara, St. Catharines and Toronto Railway (CNR, 1919)

Niagara Falls, Wesley Park and Clifton Tramway Co. (NS&T)

Niagara, Welland and Lake Erie Railway (NS&T)

Niagara and St. Catharines Street Railway (NS&T)

Oshawa Electric Railway Co. (CNR, 1920)

Dalhousie, St. Catharines and Thorold Electric St. R. (NS&T)

Sarnia Street Railway

Northwestern Traction Company

Sudbury, Copper Cliff Suburban Electric Railway

Woodstock, Thames Valley and Ingersoll

1. The accounts of Mackenzie and Mann and their dealings with the electric railways in and around Toronto are contained in summary files of the Ontario Hydro Archives. Ontario Hydro has summaries of the histories of each of the lines which eventually became part of the Hydro's railway department. The Mackenzie-Mann history is in a document entitled Toronto's Electric Transportation. The summary is seven pages, but the author is not identified.

2. Like the above mentioned article, this history, entitled Toronto and York Radial Railways, is a summary of the history of the lines from Ontario Hydro Archives. The author is not identified.

3. The Toronto Suburban Railway, summary document, author unidentified, 10 pages, Ontario Hydro Archives.

4. The Toronto Daily Star, January 4, 1921.

5. Electrical World, Vol. 76, No. 24, 1920, p. 1184

6. Draft Agreement, Purchase of Metropolitan Division, Toronto and York Radial, December 1, 1921, between The Hydro-Electric Power Commission of Ontario and The Corporation of the City of Toronto. In particular, see Schedule A, pages 6 and 7. Ontario Hydro Archives.

7. Hamilton Electric Railway Systems, a summary document, author unidentified, 32 pages total. Ontario Hydro Archives. This document deals with only three of the lines, The Brantford and Hamilton; The Hamilton, Grimsby and Beamsville and The Hamilton Street Railway.

8. Canadian Railway and Marine World, June, 1913, pp. 281-284.

9. Hamilton Electric Railway Systems, p. 16, Ontario Hydro Archives.

10. John M. Mills, Cataract Traction, The Railways of Hamilton, Canadian Traction Series, Volume 2, Upper Canada Railway Society and Ontario Electric Railway Historical Association, Toronto, 1971, pp. 106-107.

11. Mills, pp. 108-109.

12. Mills, p. 110.

13. Canadian Transportation, May, 1929, p. 318.

14. John F. Due, The Inter-City Electric Railway Industry in Canada, Toronto, University of Toronto Press, 1965, pp. 68-72.

15. Due, pp. 72-74.

16. Due, pp. 78-80.

17. Due, p. 82.

18. Due, pp. 87-92.

19. Due, pp. 92-94.

20. The information comes from a document prepared for Hydro under two titles, Publically-Owned Street Railways and Ontario Electric Railways that Were Never Municipally Owned. The pages give a list of the lines, dates of incorporation and dates of municipal control

with Hydro management indicated. Copies are included at the end of Chapter Two. Ontario Hydro Archives.

21. H.L. Kirker, "Railway Electrification", in The Railway and Marine World, May, 1908, pp. 306-311.

22. H.L. Kirker, pp. 230-235.

23. Canadian Car Builders, No. 1, The Ottawa Car Company, Ontario Electric Railway Historical Association, courtesy The Halton County Radial Railway Museum.

24. Canadian Car Builders, No. 2, The Preston Car and Coach Company, Ontario Electric Railway Historical Association, courtesy The Halton County Radial Railway Museum.

25. Canadian Car Builders, No. 3, Miscellaneous Builders, Ontario Electric Railway Historical Association, courtesy Halton County Radial Railway Museum.

26. The Railway and Marine World, April, 1910, p. 309.

27. The Hydro-Electric Railway Act, 1913, 3 Geo. V., Chap. 38, pp. 1-4, May 6th, 1913, Ontario Hydro Archives. A detailed summary of the sixteen relevant sections of the Act were printed in Canadian Railway and Marine World, May, 1913, p. 234.

28. Memorial, The Great Waterways Union and The Hydro-Electric Radials, March 5, 1914, Appendix. The writer was J.W. Lyon, Mayor of Guelph, a Beck ally and President of the Great Waterways Union.

Ontario Hydro Archives.

29. Canadian Railway and Marine World, December 1912. p. 619.

30. The London and Port Stanley Railroad, Ontario Hydro Archives, pp. 1-25. This report is similar to others contained in the Archives on electric roads which had involvement with Hydro. The author is not identified.

31. Canadian Railway and Marine World, December 1912, p. 620. Also see, S.B. Storer, Report and Study Preparatory to Electrification of the L&PS, Storer to Beck, pp. 13-14, 1912, Ontario Hydro Archives.

32. Canadian Railway and Marine World, August 1913, p. 394.

33. The Globe,Toronto, Thursday June 3, 1915.

34. The Globe, Toronto, Friday July 23, 1915.

35. Letter to Hon. T.W. McGarry, KC, MPP, Provincial Treasurer, from J. Clancy, Provincial Auditor, Toronto, February 21, 1916, p.3, Ontario Hydro Archives.

36. Canadian Railway and Marine World, February 1913, p. 90.

37. Canadian Railway and Marine World, April 1913, p. 189.

38. Canadian Railway and Marine World, July 1913, p. 344. Also see the November 1913 edition of the same journal. It carried a more detailed account of the Toronto North Eastern proposals on pages 539 to 541 inclusive.

39. Memorandum, General Joint Municipal Committee, Toronto and North Eastern District, July 21, 1914, Ontario Hydro Archives, p. 2.

40. Memorandum, p. 2.

41. Memorandum, p. 2.

42. Canadian Railway and Marine World, November 1915, p. 444.

43. Canadian Railway and Marine World, November 1915, p. 444.

44. Canadian Railway and Marine World, March 1915, p. 108; June, 1915, p. 227; August, 1915, p. 318; September, 1915, p. 359 and December, 1915, p. 481. These brief summaries are noted only so that potential investigators can take account of the type and number of potential participants Hydro had at this time in 1915.

45. The Globe, Saturday March 27, 1915.

46. The Globe, Friday March 26, 1915.

47. E.C. Drury, Farmer Premier, Toronto/Montreal: McClelland and Stewart, 1966, p. 113.

48. The Globe, Tuesday, March 23, 1915

49. The Globe, Saturday June 12, 1915. Also see The Globe, Wednesday June 2, 1915.

50. Report to the Civic Transportation Committee on Radial Railway Entrances and Rapid Transit, Vol. w, 1915, (hereafter Civic Report),

Diagram, 18.

51. Civic Report, Volume 1, Toronto., Ontario Hydro Archives, p. 1.

52. Civic Report, Vol, 1, p. 5.

53. Civic Report, Vol, 1, p. 7.

54. The Railway and Marine World, January 1908, p. 47.

55. The Railway and Marine World, December, 1909, p. 929.

56. The Railway and Marine World, October, 1910, p. 871.

57. The Railway and Marine World, October, 1910, p. 872.

58. The Railway and Marine World, October, 1910, p. 873.

59. The Railway and Marine World, October, 1910, p. 872.

60. The Railway and Marine World, December 1911, p. 1165.

61. Civic Report, Vol, 1, p.8.

62. Civic Report, Vol, 1, pp. 83, 15

63. Civic Report, Vol, 1, p. 86.

64. Civic Report, Vol, 1, p. 84.

65. Canadian Railway and Marine World, January 1916, pp. 27-28. Another report was published on the Toronto to London proposal the following month by the same journal, p. 76.

66. Canadian Railway and Marine World, February, 1916, p. 76.

67. Canadian Railway and Marine World, April 1916, p. 151.

68. Canadian Railway and Marine World, June 1916, p. 243. Also see the same journal, August 1916, p. 337.

69. Canadian Railway and Marine World, October 1916, p. 424.

70. Canadian Railway and Marine World, November 1916, p. 459.

71. Canadian Railway and Marine World, February 1917, p. 73.

72. Canadian Railway and Marine World,February 1917, p. 73.

73. Letter to Sir Adam Beck from W.V. MacCallum of the Toronto World, dated Toronto, March 10th, 1919. Ontario Hydro Archives.

74. Canadian Railway and Marine World, December 1917, p. 483.

75. Canadian Railway and Marine World, December 1917, p. 483.

76. Canadian Railway and Marine World, December 1917, p. 483. What appears to be a set of Beck's speech notes, dated March 15, 1919 makes reference to the group in Hamilton trying to block the radial proposals there. Although authenticity would be difficult to confirm, the language style is typical of Beck and from the issues noted in the text, there is reason to believe that the group referred to in the journal and the speech notes are one in the same. Ontario Hydro Archives.

77. Letter to Sir Adam Beck from T.B. McQueensten, dated Hamilton, September 18th, 1919. Ontario Hydro Archives.

78. Letter to Sir William Hearst, from W.W. Pope, dated Toronto, July 18, 1919. Ontario Hydro Archives.

79. Letter to Sir William Hearst from C.S. MacInnes, dated Toronto, September 11, 1919. The second Hearst-MacInnes correspondence was dated four days later, September 15, 1919. Ontario Hydro Archives.

80. Canadian Railway and Marine World, June 1919, p. 325.

81. Canadian Railway and Marine World, June 1919, p. 325. Also see the August issue of the journal. The article discussed Hydro activities in the railway field on page 445.

82. Canadian Railway and Marine World, December 1919, p. 669.

83. Canadian Railway and Marine World, December 1919, p. 669.

84. Canadian Railway and Marine World, December 1919, p. 669.

85. Certified copy of a Report of the Committee of the Privy Council approved by his Excellency the Governor-General on September 23, 1918, signed by Rudolph Boudreau, Clerk of the Privy Council, PC 2331. Ontario Hydro Archives.

86. Letter to The Honourable J.D. Reid from Sir Adam Beck, dated Ottawa, June 23, 1920.

87. Letter to Sir Adam Beck from J.A. Stewart, dated Ottawa, December

15, 1921, p. 1. A second letter from Beck to Hanna is included as page 2 and makes reference to the same issue. The Canadian Railway and Marine World carried two separate reports on the proposed purchase. The first appeared in April, 1920, p. 201 when Beck made reference to the fact that negotiations would begin. The second, August, 1920, p. 443, gave more details on the Hydro plan to buy the CN lines.

89. Canadian Railway and Marine World, August 1920, p. 443. Further references to the extent of Hydro's involvement in street car systems can be found in the same journal, March 1920, p. 143 and June 1920, p. 319.

90. The Bulletin, January, 1922, Vol. IX, No. 1, p. 4.

91. The Bulletin, January, 1922, Vol. IX, No. 1, p. 4.

92. The Bulletin, January, 1922, Vol. IX, No. 1, p. 4.

93. The Bulletin, January, 1922, Vol. IX, No. 1, p. 15.

94. Canadian Railway and Marine World, December 1918, pp. 530-532. In August 1919, the journal published a lengthy article on the railway itself, pp. 448-448.

95. Canadian Railway and Marine World, January 1920, p. 29.

96. Canadian Railway and Marine World, January 1920, p. 29

97. Canadian Railway and Marine World, January 1920, p. 29.

98. The Railway and Marine World, February 1908, pp. 125-126.

99. The Railway and Marine World, April 1909, pp. 285-286.

100. The Canadian Railway and Marine World, July 1918, p. 300.

101. The Canadian Railway and Marine World, July 1918, p. 300.

102. The Canadian Railway and Marine World, July 1919, pp. 387-388.

103. Electric Railway Journal, Vol. 53, No. 2, January 11, 1919, pp. 91-92.

104. The Canadian Railway and Marine World, May 1920, p. 254.

105. Letter to Sir Adam Beck from E.C. Drury, Toronto, July 6, 1920. Ontario Hydro Archives.

106. Statement Issued by the Government of Ontario in Connection with certain proposed Hydro Radial Railways, Toronto, July 6, 1920, A.T. Wilgress, Printer to the King's Most Excellent Majesty, 1920, p. 7. Ontario Hydro Archives.

107. Statement, p. 7.

108. Statement, p. 8.

109. Statement, p. 9.

110. Statement, p. 10.

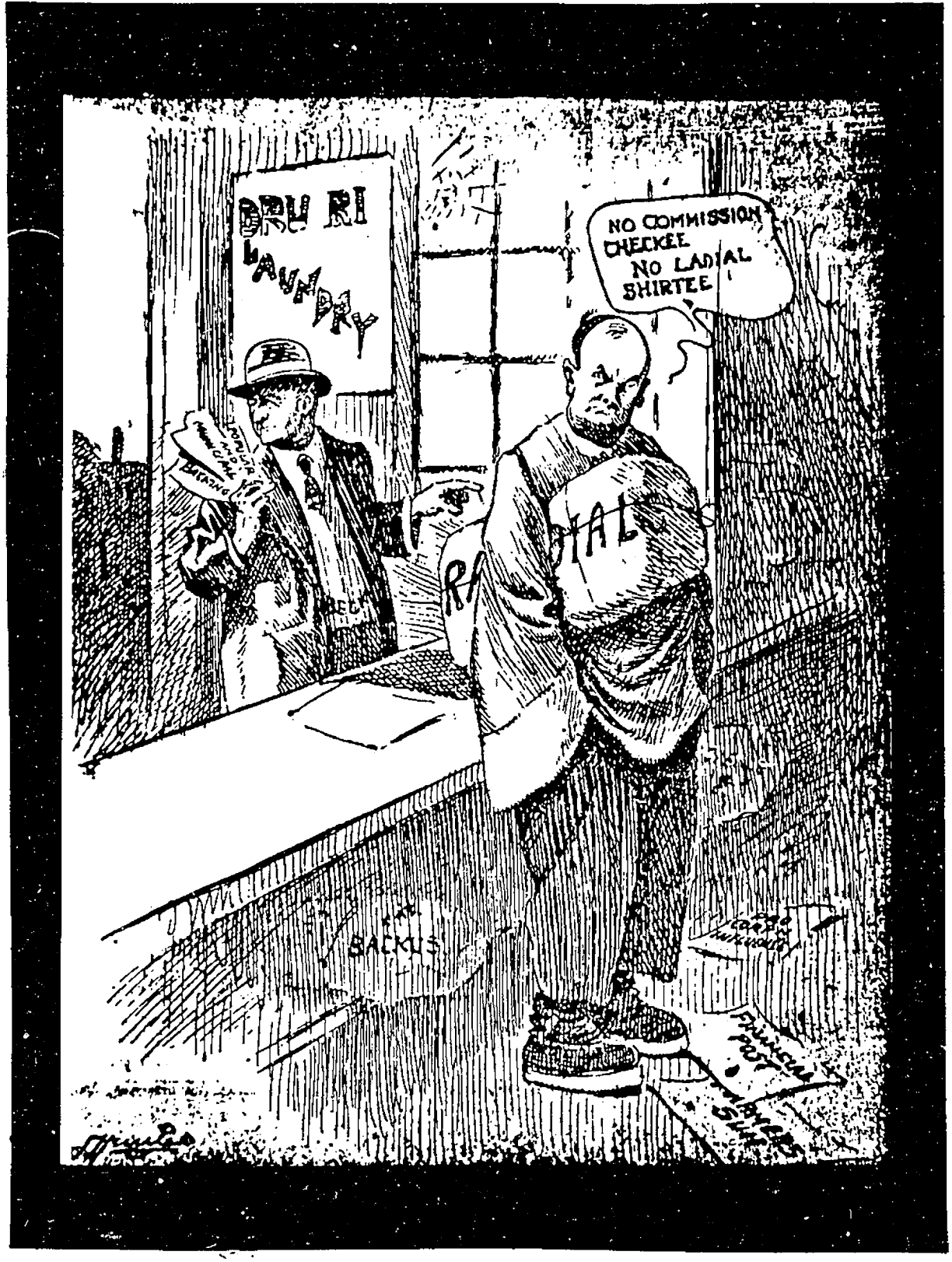
111. Statement, p. 11.

112. Statement, p. 4. The revised radial proposals which were reviewed by the Sutherland Commission are contained in a General History,

issued as an Ontario Hydro correspondence from I.B. Lucas to C.A. McGrath, dated Toronto, January 11, 1926, pp. 1-7. Highlights of the Beck proposals were also outlined in Sir Adam Beck and the Hydro Radial Proposals, by John F. Due, Upper Canada Railway Society Bulletin 50, 1965. Due's account is fun reading for historical or railway buffs who are interested in the time period. However, it fails to explore the relationship of Hydro, the municipalities and the Government which this author believes to be the main issue in the cancelling of the radial plans by the Drury administration.

HYDRO AND THE SUTHERLAND COMMISSION

The death of the radials



The Globe, September 20, 1920

The five man Sutherland Commission began sittings in Osgoode Hall in Toronto on July 28, 1920. It was charged with the obligation

> . . .to inquire into and report upon the whole question of Hydro-Electric Railways, and all matters which in the opinion of the Commissioners are relevant thereto, with particular reference to the matters that are raised by and discussed in the statement of the Government issued on the 6th day of July, instant. . .(and) to make such suggestions and recommendations in connection with or arising out of any of the subjects thus indicated as in the opinion of the said Commission may be desirable.(1)

The members were Mr. Justice Robert Franklin Sutherland, the chairman from the Ontario Supreme Court's High Court Division; William Andrew Amos of Palmerston, Vice-President of the United Farmers of Ontario; Frederick Bancroft of Toronto, a reporter for the Toronto Daily Star and a member of the Pattern Makers Union; Andrew Fullerton McCallum, of Ottawa, a civil engineer who was City Commissioner of Works in Ottawa and Brigadier-General Charles Hamilton Mitchell, C.B., C.M.G., D.S.O., L.L.D., C.E., Dean of the University of Toronto's Applied Science Faculty.(2)

The lawyers representing the various parties were I.F. Hellmuth, K.C., counsel to the Sutherland Commission; Robert McKay, K.C., counsel to the Municipal Hydro-Electric Railway Association and Lieutenant-Colonel C.S. MacInnes, counsel for the Hydro-Electric Power Commission of Ontario. R.S. Robertson acted for Ontario municipalities who were not interested in, or opposed to the Hydro plans.(3)

Hellmuth demamded that Hydro produce seventeen types of itemized documents for examination. He wanted a general map to show the districts to be served by the radials. He asked that this map include any lines

already purchased by Hydro and the CN electrics which were to be included.

The counsellor requested detailed accounts of the proposals. On the route maps he demanded descriptions of structures such as bridges, culverts and intersections. He wanted Hydro to detail the type of structure, for example concrete or steel bridges on both the lines to be built and the ones to be purchased. Hydro was asked to submit preliminary engineering and miscellaneous overhead costs, including the acquisition of rights of way and roadbed construction on both the new and purchased lines. These items were to be presented district by district.

Each division was to be analysed by cost of construction for both new lines and upgrading old tracks. Hellmuth needed such items as rail size and design and style of overhead wire construction. He asked for both the price and quantity of material to be used. All supplementary cost factors were to be shown, such as railway line transmission, telegraph and telephone service, signal systems and all other accessories needed to operate the railways.

Hydro had to show its station plans and building designs for car shops and substations. Hellmuth was interested specifically in the production and generation of electric power for the railways and the methods and costs of it.

Rolling stock generated a fair amount of interest. Hydro was asked to supply detailed summaries of the types and costs for items such as passenger cars, locomotives, baggage and express cars, work cars and snowplows.

In the area of operating costs, Hydro was asked to submit cost

analysis based on projections at year one of operation, year five and year ten. As well as maintenance and operation, these were to include interest costs, depreciation, sinking fund, taxes, car rental and miscellaneous accounts. They were to be documented division by division.

Power estimates based on division by division summaries were to be included. These were to be projected to year one, year five and year ten for both new lines and purchased lines. Hellmuth allowed Hydro to calculate power consumption on a horsepower per year basis.

The most critical set of statistics concerned revenue projections. Hellmuth asked Hydro to supply revenue projections from all potential areas including freight and passenger, express and baggage and miscellaneous. The figures were to be projected at year one, year five and year ten. He also wanted a series of maps showing population density and industrial density in areas tributary to both proposed and existing Hydro radials.(4)

In his opening statement, Hellmuth declared his neutrality on the issue.

> . . .may I just say a word in regard to my own position. I am not here in any shape or form in hostility towards the Hydro-Electrical Radial Railway System or systems in anyway. I am not here in any partisan spirit; my retainer is to assist in bringing out all the facts, no matter which way those facts may tend, and I shall be glad if my learned friends see fit to trust me to bring out or to have called if they cannot be got hold of, any witnesses, to have them called so that their evidence may be available; and if it should be that any one appears opposed to the Hydro radials I am also prepared to place myself to that extent at his disposal. My instructions are not to--and I would have

> declined I may say to have accepted any retainer had it been thought I was to be here to use any small ability I may possess in hostility to the Hydro-Electric Commission or Hydro-Electric System--my instructions are merely to bring out all the facts. (5)

During its one hundred and two day tenure, the Sutherland Commission called 141 witnesses. The Sutherland witnesses totalled twenty-four of whom four were called from the Hydro-Electric Power Commission. These included Frederick Gaby, Chief Engineer; T.U. Fairlie, Departmental Head in charge of Railway Engineering; W.G. Hewson, General Railway Engineer and W.R. Robertson, General Superintendent of Hydro Railways. Eleven of the twenty-four were active railway men, C.E. Friend, Comptroller of the Canadian National; G.C. Royce, Manager of the Toronto Suburban; E.P. Coleman, General Manager of the Dominion Power and Transmission Company of Hamilton; W.M. Neal, Assistant General Superintendent of the Canadian Pacific's Ontario District; M.W. Kirkwood, General Manager of CP's electric lines, the Grand River Railway and the Lake Erie and Northern; G.C. Martin, General Traffic Manager of the Toronto Hamilton and Buffalo Railway and C. Bowker, General Superintendent of the Canadian National's eastern lines in Ontario.

Four witnesses from American electric railways were called. They were F.P. Gutelius, Vice-President of the Delaware and Hudson Railway; F.W. Coen, Vice-President, Treasurer and General Manager of the Lake Shore Electric Railway of Cleveland; Robert I. Todd, President and General Manager of the Indianapolis Street Railway and Terre Haute and Indianapolis Traction Company; and Robert Rifenberick, a consulting engineer who had been a senior manager with the Detroit United Railway.

Expert consultants included W.S. Murray of New York and William F. Tye of Montreal, a former Canadian Pacific Engineer. To them were added W.A. McLean, Deputy-Minister of Highways for Ontario; George Parker, Superintendent of the Dominion Express Company; Dr. Jack Reid, Federal Minister of Railways and Canals; Toronto stock broker and bond dealer J.H. Gundy; C.A. Mathews, Deputy Treasurer of Ontario; Henry Couzens, General Manager of the Toronto Civic Transportation Commission and E.L. Cousins, Manager of the Toronto Harbour Commission and its chief engineer.

The Radial Railway Union called seventy-one witnesses, of whom fifty-four were local officials from across the province who were interested in promoting the radial scheme. Other than the local politicians, nine of the remainder had active experience in railway operations in particular electric railways. The two most notable Union witnesses were Bion J. Arnold and Frederick Sager of the Arnold Engineering Company of Chicago. Other railway experts were C.R. Thompson, Assistant to the President of the Chicago and North Shore and Milwaukee Railway; C.D. Cass, General Manager of the Waterloo, Cedar Falls and Northern Railway; C.E. Lee, an operating railway man; C.A. Cheval, Auditor of the International Railway Company of Buffalo; C.L. Wilson, Assistant Manager, Toronto and York Radial Railway; J.E. Richards, Manager of the London and Port Stanley and W.S. Rodger, General Traffic Manager of the Detroit United Railways.

In addition to Arnold and Sager, the Union called engineering experts B.F. Wood of New York and Hydro Engineers Oswald Stanley, A.E.K. Bunnell and T.A. Wilkinson. Other Union witnesses were Walter Jackson, a motor truck specialist; G.A. Cullen, Vice-President of the

North American Fruit Exchange in New York; A. Ellis, an export traffic expert from Carr, Ellis and Company of New York; T.H. Stoffel, Freight Transportation Engineer of the Westinghouse Company as well as Commission witnesses Robertson and Fairlie from Hydro.

R.S. Robertson, representing the anti-radial groups called forty-six witnesses, of whom forty-two were interested local parties from Ontario. His four major witnesses were L.A. Herdt, Consulting Engineer and Vice-Chairman of the Montreal Tramways Commission; R.M. Fuestel, consulting engineer and President of the Indiana Service Corporation; engineer C.E. Bailey of the J.G. White Engineering Company of New York and D.R. Cowan, a University of Toronto professor and a motor truck specialist.

In its report, the Sutherland Commission decided to give weight to the evidence of fourteen of the witnesses. These were Tye, Friend, Royce, Coleman, Neal, Bowker, Kirkwood, Martin, Gutelius, Coen, Herdt, Fuestel, Bailey and Rifenberick. Of these, none had been called by the Radial Railway Union. Only five were experienced electric railway men, and only two, Royce and Coleman, operated lines which served large urban areas. Four represented large steam railways with affiliated electric lines and three others operated American lines, none with high speed urban access.(6)

While the final commission conclusions placed a great deal of emphasis on American electric railway experience, Hydro and Radial Railway Union witnesses from New York, Chicago, Philadelphia and Atlantic City were dismissed as useful because they worked in population centres larger than the population base in Ontario which was to be served by the Hydro railways. Arnold and Sager, the two major Hydro-Union witnesses were declared incredible by the Sutherland Majority Report.

In examining the recommendations of the Royal Commission, this section will place special emphasis on the railway experts called by all three parties in the dispute. The principal Hydro expert, Frederick Gaby will have his testimony examined in detail. Although the Sutherland Royal Commission was a judicial injuiry, it must be remembered that rules of evidence used in court proceedings did not apply. Heresay evidence was admitted into evidence.

Along with Gaby, we will place emphasis on W.S. Murray, W.F. Tye, Frederick Sager, Bion H. Arnold, F.P. Gutelius and Robert Rifenberick. Their respective experiences will also be discussed.

William Francis Tye set the tone for the anti-radial group. He was a railroad engineer who learned by experience. Although he began engineering degrees at the Ottawa College and the University of Toronto, he did not graduate from either. After leaving school, he began his first railway engineering with the Canadian Pacific in what was to become the provinces of Manitoba, Saskatchewan and Alberta. He assisted in construction engineering on the CP's main line. After leaving CP, Tye worked for the Great Northern Railway for two years. His next position took him to Mexico where he spent two years in railway construction in the central provinces. He returned to Montana in 1889 to assist in the construction of the Great Falls and Canada Railroad, a coal route from Canada to the United States.

He re-joined the Great Northern in the State of Washington, building the line's Pacific extension. In 1894, he was in Alberta converting a road to standard guage. The following year he was in British Columbia building a mining railway. He stayed in British Columbia to build more

A CUTE LITTLE CUSS

HON. E. C. DRURY.—"I'm only tryin' to find out what there is in it."

The Evening Telegram, September 21, 1920

mine roads between 1896 and 1897. Then, he re-joined Canadian Pacific for two years in their western extension programme. By 1906 he was chief engineer for construction for CP.

In 1906 he left CP to open his own commercial and consulting firm. By the time he appeared before the Sutherland Commission, he was retired, taking only work that he became interested in. He was also past president of the Canadian Engineering Institute, a member of the Institute of Civil Engineers in Great Britain, the American Institute of Consulting Engineers, the American Railway Engineering Association and the Mining Institute of Canada.(7)

Tye told the commissioners that he was opposed to Hydro's radial plans because he felt the area to be served was already adequately equipped with railroads. He pointed to the fact that railway mileage per head of population was greater in Ontario than in any state in the United States with the exception of the districts around Chicago. His figures showed that for every one thousand Ontarians there were four miles of track. In the United States there were two miles of track.(8)

Tye stated that the radials would not be competitive because they would be constructed during a period of high costs for both labour and materials. He said that roads which would be competing against the Hydro radials were constructed when costs were considerably lower. As well, he felt the standards of construction demanded by Hydro would prevent the lines from earning even their bond interest.(9)

Tye testified that with the advance of motor trucking, the railways in general were suffering from the competition. Trucks, he claimed, did not have to maintain expensive tracks and roadbeds. As a result, the

cost of shipping goods was less than by rail. Buses had the same advantages as trucks. A truck could offer the convenience of door to door service, something a freight train could not. The only cost impediment, other than energy which affected trucks and buses, was a relatively inexpensive license fee. Although Tye offered comparisons between motor transport and rail to the hearings, he admitted that he had never studied the two modes himself. He confessed that he was not an expert in the subject.(10)

In his report to the Royal Commission, he wrote "the cost of good roads is small compared with radial railways."(11) Commissioner Bancroft took issue with Tye on the good roads question. Tye admitted that a good road constructed to support heavy truck traffic would cost more to construct and maintan than a radial railway. However, Tye stated that he could not accurately support his contentions since he had no idea of the costs involved in either.(12)

Tye told the hearing that the steam roads in Canada were not interested in suburban service. When asked to tell the Commissioners of a steam railway with a suburban service, Tye could not recall one line which had the service. He said

> . . .whenever there is an electric road alongside a steam road for short suburban business, if it is properly conducted, the electric road certainly gets the business. (13)

The concept of a frequent suburban service was vital to the Hydro proposals.

The question of energy costs also entered the debate. Tye testified that if the Grand Trunk system in Ontario were to convert to exclusive electric use, it would reduce the cost of operation by ten percent. Tye stated that the price of coal used in the United Stated for both

locomotive power and electric generation was unstable in 1920. He admitted that Hydro could guarantee a constant price per horsepower since it was hydraulically generated. When Tye presented his report on energy costs he used the actual consumption figures of existing railways. However, he omitted variables such as the amount of traffic and train schedules. Counsellor Hellmuth felt this omission made Tye's evidence unacceptable.(14)

Railway men use a concept known as operating ratio to determine the success or failure of performance of their respective lines. Every railway witness was questioned about this formula. It was a percentage figure obtained by dividing cost of operation by total revenue. Tye said

> . . .an operating ratio is just a short way of expressing an idea and instead of saying for every $100 of traffic we have it cost us $75 to earn, we say our operation ratio is 75. That's all it means.(15)

McKay questioned Tye on the value of the figure in comparing one railway to another.

> . . .I suppose you would agree to commence with that an operating ratio, a man operating a railway in the southern states would be of no assistance to a man in the northwest or the northeast of Canada in judging what the operation ratio would be. Answer. "Quite true." (16)

One concept which frequently came before the Royal Commission was the idea of adding a third track to the existing steam lines especially between Toronto and Port Credit for suburban rapid transit. Tye discredited the proposal by saying

> . . .while I've repeatedly disclaimed any idea of being an expert, it does not seem to me to be a proper solution anymore than yours is. (17)

Tye's reference to 'yours' is to the Hydro proposals.

When Tye offered evidence on passenger revenues on the proposed Toronto- Hamilton-St. Catharines line, confusion emerged when Gaby interjected to claim Tye's figures were incorrect. Gaby told the commissioners that Tye had based his figures on a 15% fare increase granted to railways in August 1918. Gaby stated that a further 15% increase had been granted the following March. Further increases granted in the spring of 1920 made fares 40% higher than the figures issued by Tye. Under questioning, Tye admitted that he had based his estimates on figures published in September 1917. Thus, when projected to 1920, Tye's figures were 25% lower than fares in existence at the time of the hearings.(18)

Tye's evidence was heard over two days, November 29 and 30, 1920. During his tenure on the stand, he did not read his report to the Royal Commission into evidence in contrast with Arnold and Gaby. It can be assumed that its contents were known to both counsel and the commissioners, yet for a witness who ranked highly in the commission's weightings, Tye did not reveal any specifics. His evidence was of a very wide ranging general nature. Although he supported the contention that the electric railways were superior to steam service in the suburban, short haul fields, he denied the need for a line such as the Toronto Eastern since, in his words, it duplicated service offered by steam railways in the area between Toronto and Bowmanville. Yet, he confessed to Hellmuth that he had not examined the proposed route in any detail.(19)

The confusion which resulted over Tye's revenue estimates was never resolved during his time on the stand. Twice during his testimony, he

claimed that he was not an expert witness in the electric railway field, yet he expressed strong opinions as to why he felt the radial scheme would be unsuccessful. When he was asked to compare operating costs on steam and electric railways, he confessed that his evidence was more of a guess than an estimate because he hadn't spent the necessary time preparing the documents.(20)

F.P. Gutelius agreed with Tye that the hydro radials were an unnecessary undertaking. He had some experience with electric operations in the United States. He was a civil engineer who graduated from LaFayette College in Pennsylvania in 1887. After working on the East Orange, New Jersey sewer system in 1887, he joined the engineering department of the Pennsylvania Railroad. When he left the railroad, he worked on a variety of electric-hydraulic projects in Montana. In 1895, he travelled to British Columbia to construct a mining railroad in Trail. When the CP purchased the road, he joined the company as a superintendent. In 1902, he re-joined the CP engineering staff at the headquarters in Montreal. Later, he was promoted to general superintendent of the CP's Lake Superior Division.

At the bequest of the Minister of Railways, Gutelius left CP to become head of the eastern division of the Inter-Colonial Railway in 1912. In 1917, he re-joined the Pennsylvania Railroad. In 1920 when he appeared before the radial enquiry, he was vice-president of the Delaware and Hudson Railway. This company owned and operated a number of electric railways including the Hudson Valley Railroad, the United Traction Railway, the Schenectady Railway, all lines serving medium sized communities in the northeastern United States.

TO THE RESCUE

HON. E. C. DRURY—"Stop, Sir Adam, till I investigate and see if your picking the fruit will give my friends the stomachache."

The Evening Telegram, July 31, 1920

Gutelius was of the opinion that hydro-electric radials would duplicate existing steam service. He claimed that the Toronto Eastern Railway was unnecessary because the Grand Trunk was already serving the Toronto to Bowmanville area. Canadian National and Canadian Pacific also ran both freight and passenger trains in the same area. Canadian National also had spur service into Oshawa and Whitby. Gutelius also felt that the relatively small population base between Oshawa and Bowmanville would mitigate against the Hydro lines.(21)

Gutelius also stated that he felt service between Toronto and Hamilton was adequate. Since the Toronto and York's Mimico Division and the Dominion Power Company's Hamilton and Burlington line could serve their respective cities quite well, he felt they needed to join each other from Oakville to Port Credit to give a through service. Should this adventure be completed, he felt Hydro radials in this corridor would only weaken the financial position of existing lines.

Gutelius also questioned the Hydro proposal for every half-hour service between Hamilton and Toronto. He told the Commission that if a demand existed for this service, existing railways would have provided it. He also stated that existing steam service could cover the route in one hour and thirteen minutes and he didn't feel any electric railway could improve on the time.

Gutelius could not envisage a need for a Hamilton to St. Catharines radial. He felt that the existing Grand Trunk service between the two cities was adequate to handle all existing freight and passenger traffic. He also stated that construction of a Hydro radial would financially impair the Hamilton, Grimsby and Beamsville line. Since this electric

had a freight connection with the Toronto, Hamilton and Buffalo railway, the TH&B would suffer losses. He was of the opinion that the Hydro lines, would have to take business from existing railways in order to survive.(22)

Gutelius challenged Hydro's freight revenue projections. He told the Commission that freight business depended on the successful acquisition of industrial sidings. He pointed out that most industrial sidings in the proposed radial regions had long been committed to existing railways. He felt that attempts by Hydro to break into existing business would lead to economic retaliation by steam railways. The only solution to the problem was a negotiated sharing of sidings, a situation which was not proposed by Hydro engineers.(23)

The most damaging evidence offered by Gutelius concerned the financial ramifications of the Hydro Radials. He stated that Canada was already equipped with 22,000 miles of public road which carried an existing debt of $38,000,000. Ontario's share was $10,000,000. He questioned whether the Ontario Government could afford to add a further $50,000,000 burden on the taxpayers of the Province. Gutelius felt that acceptance of the Hydro proposals would give Ontario two publicly owned railways which would have to compete with each other for existing business. This, he stated would weaken the financial position of the Canadian National and endanger the future of the Hydro radials. Neither would enjoy success and the debt burden of Ontario would increase with no solution in the future.(24)

Although Gutelius felt that rail service in and around Toronto and Hamilton was adequate, he admitted on the afternoon of December 10, 1920

that only one railway, the Toronto and York's Metropolitan could get a suburbanite to work on time. In 1920, most industries began work between seven and seven-thirty in the morning and only the T&YR, Metropolitan operated passenger trains this early in the day. However, he felt, in contrast to Tye, that steam roads would provide suburban service if demand and public pressure were brought to bear on the lines.(25) Thus, only adjustments on existing services, as opposed to construction of Hydro radials were needed to meet local demand.

Gutelius agreed with Tye that operating ratio was an invalid method of comparing the performance of one railway to another.

> . . .I have noticed much store has been placed on operating ratio in connection with various properties. These reports have been discussed and one thought occurred to me, that the operating ratio may vary from 50% to 80% and the net earnings be the same. That is, the gross earnings of a certain property are $20,000 and the operating ratio is 50%, the net earnings would be $10,000. If the gross earnings happened to be $25,000 and the operating ratio is 60% the net earnings would still be $10,000 and if we get into one of these terrible propositions and run what we are all doing now, run up to 80% and the earnings were $50,000 we would still make our $10,000 and just there, what I read into the evidence occurred to me that probably that had not occurred. So, it is of no value. Operating ratio is of no value in net earning comparisons. Maybe that statement is a little too strong. It is of value, but you must use it understandingly. (26)

The Gutelius appearance was marked with controversy on two different occasions. The first hinted at collusion between anti-radial witnesses and Mr. Justice Sutherland. Gutelius told Hellmuth that he was co-erced into appearing before the Commission by Sutherland. Hellmuth told the Chairman "your lordship has something to answer for."(27) Attempts to pursue the issue proved fruitless. Sutherland insisted his approach to

Gutelius was based on the fact that the witness was totally impartial. Gutelius, according to Sutherland, had been recommended by a railway authority. However, the judge refused to divulge his name to the hearings. When pursued by Hellmuth, Sutherland refused to answer any more questions and directed Gutelius to continue his evidence.(28)

The second incident occurred on June 22, 1921. Gutelius was recalled to the stand to pass judgement on evidence offered by Arnold and Sager. The Chicago engineers had presented a long and detailed study of the Hydro proposals to the Commission which will be discussed later in this chapter. Gutelius suggested that the Commissioners not be led astray by the size of the Arnold-Sager report. He suggested that the quality of the report might be clouded by its length. McKay objected both to the insinuation and the fact that Gutelius had been recalled by Sutherland. He told the hearings that he had not been allowed to recall witnesses unless they had additional evidence to offer. He felt the same criteria should apply to Gutelius. Sutherland refused to consider McKay's objection. He re-iterated his stand that the hearings were being conducted to arrive at facts. He then directed Gutelius to continue his critique.(29)

Gutelius was an experienced railroad executive although like Tye his knowledge of electric lines was limited . On the stand he failed to distinguish between the special characteristics of the Hydro proposals and existing electric and steam services. He treated all railroads as one item. It is doubtful that steam railways wanted to get into the short haul freight and passenger business. They hadn't shown any interest in the service in either Canada or the United States, preferring

to leave that field of endeavour to the electrics. Thus, it would appear that Gutelius' contention that the supply of such service would respond to a demand for it was erroneous. Gutelius' evidence on the issue conflicted with that of Tye.

On June 14, 1921, Robert Rifenberick took the stand to address two issues, the costs of construction and operation and the effect of population on railway traffic. Rifenberick was a consulting engineer in Detroit experienced mainly in steam railroading. He had graduated from the Miami University Scientific School in 1885. He spent a year teaching at Miami before starting a railroad career in 1886. He worked on the construction of the Louisville, Cincinatti and Dayton Railway before going to northern Michigan in 1888 to work on the Duluth, Southshore and Atlantic line. From there, he moved to Ohio as assistant division engineer on the Pittsburgh, Akron and Western Railway. In 1892, he journeyed to New Orleans to design the conversion of the street railways to electricity.

In 1899 he joined the Cleveland Street Railway system after a short tenure as a track engineer for the New Orleans and Northeastern Railway. He stayed in Cleveland only eighteen months before he joined a consortium called Widmer and Elkins. This organization was purchasing shares of street railway and inter-urban systems across the United States. In 1903, he re-joined the Cleveland street railway system. In 1909 he moved to Detroit as a consulting engineer for the Detroit United Railway a large inter-urban system operating out of Detroit. In January 1921, he left the Detroit United to enter private practise as a consulting engineer.(30)

Rifenberick told the Commission that Hydro's construction figures were accurate, but he felt that the proposed revenues were inflated. He based his judgement on the fact that no inter-urban system in the United States was producing the revenues projected by Hydro.(31) However, on examination by Hydro counsel McKay, Rifenberick stated that comparison of railways with different characteristics was impossible. He said that a railway with a high suburban traffic would produce an entirely different revenue structure than a railway without it, even though all other characteristics were similar. He also stated that an urban rapid transit service would produce different results than a suburban service even if the trains operated on the same tracks.(32)

Although he offered no reasons, Rifenberick believed that if steam and electric railways operated with the same fare structure, steam lines would have an advantage. One can only speculate at his reasons, although the high speed urban access enjoyed by steam lines made inter-city travel where available quicker than electric service.(33) Rifenberick was convinced that electric railways had to operate in areas of high population density to compensate for their lack of high speed urban access. Since most of these services in the United States were short haul, they depended on high density traffic which only large cities could supply. Rifenberick offered evidence to show urban growth patterns in the United States. Large towns and cities had grown from fifteen percent in 1880 to fifty-two percent by 1920. This growth had been attributed to both industrialization which began at the turn of the century and de-mobilization in 1919. Rifenberick foresaw two-thirds of the American population in urban areas in the near future after 1920.

The question of urban growth and rural de-population was a critical part of the Hydro estimates. The United States was losing farm population at a rapid rate in 1920, yet Hydro predicted modest growth in both rural and urban regions. The HEPC was showing a pattern in direct contrast to American experience. Central to Hydro's plan was the belief that population would tend to gather close to railway lines in both urban and rural areas. Thus, although the farms would lose population, Ontario's small towns would increase, developing a more rational plan of urbanization than in the United States.

Hydro had based its population estimates on a land belt which varied from two and a half up to five miles on either side of its proposed tracks. When questioned by Hellmuth, Rifenberick stated

> . . .we accepted the figures given in the Hydro estimates of present population in most cases.(34)

Rifenberick refused to comment on Hydro's population projections which carried to 1935. Instead, he spoke to a projection formula used in American situations by his firm. He suggested that if American trends were comparable to Canadian trends, Hydro's ten year projections would be incorrect.(35)

In his capacity as General Manager of the Detroit United Railway, Rifenberick had frequent contact with the Arnold Company of Chicago, in particular with Bion Arnold and Frederick Sager. Arnold who was to appear late in the hearings as a Hydro witness was complimented by Rifenberick as the most competent expert in the electric railway field.(36)

Rifenberick had little experience with Canadian electric lines with the exception of DUR holdings in and around the Windsor area. In his testimony, he examined figures supplied by Hydro and compared the results

with known conditions on American lines. In spite of the fact that Rifenberick's railway, the DUR, had no access to downtown Detroit, the witness refused to concede that Hydro's high speed access plans would affect revenues on the radials. Rifenberick treated the Hydro radial proposals as a purely inter-urban concept.

Other than Hydro engineers, W.S. Murray of New York was the first witness to advocate construction of the lines. Murray had acquired extensive experience in the engineering phase of electric railways by acting as a consultant to steam roads who converted to electric power. His conversion projects were carried out in the New York area when he was an engineer with the Westinghouse Electrical Manufacturing Company. His seven year association with the Company resulted in his promotion to district engineer for the New England district. He left Westinghouse to open a private consulting firm in New York City.

In April 1905, Murray was hired to design and supervise construction of the electrification of the New Haven Railroad. His association with the railway led to his appointment as the line's electrical engineer. In the New Haven project, Murray was confronted with the problem of developing an electrical system which would be adequate to service one of the most heavily used roads in the United States. The railway carried both heavy freight and passengers into the heart of New York City. The railway operated six main line tracks. The first electric train travelled the New Haven tracks in 1907 between New York and Stamford,Connecticut.

Murray's position with the railway lasted thriteen years. When he appeared before the Sutherland Royal Commission, he was chairman of a congressional committee in the United States which was considering the

best type of energy source for sixty-seven railways operating in the region between Boston and Washington. Murray's commission was also charged with the responsibility of studying energy requirements for four-hundred industries in the Boston-Washington corridor as well as the production capacity for four-hundred and seventy central power stations. Murray testified that his commission was studying the construction of electrical capacity which would produce approximately seventeen million horsepower. In the Royal Commission hearings, Murray addressed the question of the feasibility of the Hydro proposals.(37)

Murray began his testimony on November 22, 1920. The evening edition of the Toronto Star reported that Murray viewed Hydro's proposals favourably.(38) Although Murray commented on all five radial divisions, he placed most of his emphasis on the Toronto-St. Catharines line.(39)

Murray addressed the duplication queston by stating

> . . .I do not consider the act of their construction as one against which a charge of duplication can be made.(40)

He felt that none of the five Hydro divisions would be involved in activity which would threaten the steam railways.

Murray claimed that steam and electic railways were constructed and operated to accommodate different needs. He told the Commission that Dr. Reid, Minister of Railways and Canals, and D.B. Hanna, President of the Canadian National would welcome the construction of Hydro radials. Murray claimed that Reid and Hanna had stated that CN wanted to concentrate on long-haul, heavy traffic and that they foresaw the day when Hydro radials could absorb CN's short-haul and light freight business.(41)

Murray was vague in his statements to the point that Counsellor

Hellmuth asked

> . . .what form of transportation the steam roads have said they are not equipped to handle?(42)

Murray clarified his remarks.

> . . .they are not ready to give you an hour service. They are not willing to run cars, single cars out on their lines to accomodate the people. . . They are not desirous of handling a traffic that may offer both in freight and in passenger, a quicker headway to go into a zone of that character of business. That was the real birth that the electric railroad was made for.(43)

Murray claimed that the characteristics of existing Ontario electric railways could not substantiate a charge of duplication vis a vis steam roads. He noted that most electric railways in and around Toronto shared at least part of their rights of way with highway traffic, much in the same fashion as street railways shared rights of way with city traffic. This prevented high speed travel. As well, the existing lines were impeded by sharp curves and very few grade separations.(44) Murray told the hearings that the Hydro proposals were designed to capture business traditionally associated with electric roads but would be capable to delivering goods and people much in the same fashion as high-technology steam lines. He felt that the Hydro radials would incorporate features which would accent the best characteristics of both type of railway.

According to Murray, the primary advantage of the Hydro plans lay in the high speed urban access designs.

> . . .now, one of the prime advantages it seems to me with this system of radials is that the cars be brought in as I have said in other parts of the report to their centres in the cities at undiminished schedule speed.(45)

Murray claimed that this would bring about a complete separation of Hydro's radial lines and city street railways. Thus, the radial would not be impeded by the necessity to use the street car tracks and would not compete with street railways for passengers.(46)

Hellmuth told Murray that he felt a high speed radial access would prove to be disadvantageous. He said

> . . .people who come in by the high speed would have to take the torturous slow city car to get anywhere.(47)

Murray responded by stating that as the city progressed in size, it should seriously consider subway connections or elevated urban lines to connect the city system with the radial terminal proposed for the foot of Bay Street in Toronto.(48)

Murray also stated that publicly-owned hydraulically produced power would give the Hydro radials an advantage in cost of operation when compared to American systems. He demonstrated that power costs in Ontario were about half those of the United States. Thus, an American railway which spent fifteen percent of its cost of operation for electricity could operate in Ontario for seven and a half percent.(49)

Murray also noted another major difference in cost between steam roads and electric railways. The cost of maintaining a steam locomotive hauling passenger trains was twice as high as electric engines performing the same service under equal conditions. For freight train locomotives the ratio was two and a half to one. Murray told the hearings that only one ton of every five tons of coal burned by a steam locomotive was used to generate energy because of the thermal inefficiency of a steam locomotive.(50)

Murray suggested that the steam locomotive was not equipped to handle the kind of business that Hydro planned for the radials. This was attributed to the slower acceleration of the steam locomotive which made it inefficient for frequent stops. Yet, since steam had preceded electricity as motive power for railways, it was in wider use than electricity. Railways close to urban centres where electricity was plentiful could consider conversion from steam, but, since large parts of rural Canada were without electricity in 1920, wholesale electric conversion was impossible.

Murray claimed that the Grand Trunk should consider electrifying its double track between Toronto and Niagara Falls. Murray noted that the power required for the project was plentiful, and unlike the American situation, it would not have to be generated by coal-fired plants. Electrification of the GTR would not change the line's basic characteristic as a long-haul, heavy freight railway. Even with the construction of the Hydro radials, competition between the lines in Murray's view would be minimal since they would each attract different kinds of business.(51)

Murray ran into difficulty when he reported projected gross revenues for the Hydro lines. Orally, he stated that the radials should produce a gross revenue of $43,400 per mile. His written report stated that the revenue per mile would be $34,400. Hellmuth pointed out the conflict but did not pursue the issue specifically. However, Murray continued to insist that the revenue projection was conservative although Hellmuth advised him that some Connecticut lines were producing revenues in the $20,000 per mile range. Hellmuth attempted to get Murray to admit that

passenger revenues in the United States averaged between $6,000 and $10,000 per mile. Murray refused to consider the averages to be correct.

Murray replied by stating that both passenger and freight revenue had to be determined by the characteristics of the railway and the territory that it proposed to serve. He stated that American lines producing small revenues were constructed as small revenue railways. He also claimed that few, if any of the American lines carried freight in the same way as planned by Hydro. He felt that any comparisons between American electrics and the Hydro proposals would prove futile.(52)

Murray felt that operating ratio was a faulty method of comparing railway performance.

> . . .I am not much of a believer in the operating ratio regime. Conditions change so widely in the overhead of one company as in the overhead of another, but the real relation of operating ratio to me does not mean a great deal. I think you have to get down to a detail for each road. If one road operates for 51 and the other for 65, it is very hard to compare what the two are unless you know what the real overhead is.(53)

Like the projected revenues, Murray felt that the Hydro construction costs were realistic. He said that the cost per mile in Ontario compared favourably with construction costs incurred in the United States where wages and prices in 1920 were similar. Murray felt that a period of deflation would follow inflation incurred in the First World War. As a result, he speculated that construction of the radials should not take place until the deflation was in full effect. Murray could not state a specific date that construction should begin.(54)

Murray based his analysis on the bulk of Hydro data. He did not include equipment costs. Hydro's case was weakened when the revenue

projections conflicted with each other. He also altered some of Frederick Gaby's estimates without advising the Hydro engineer. This omission was presented into evidence.(55) Murray's report was also based on his study of only one of the Hydro divisions, although Hydro engineers considered the radial proposals as one unified concept. As a result, the success or failure of one of the divisions was difficult to project to the performance of any one of the other four. Murray's errors cost Hydro credibility in the final Sutherland Majority Report.

The man who was instrumental in planning and developing the technology which came under scrutiny at the hearings was Frederick Arthur Gaby. At the time he appeared as the principal Hydro witness, he had been the HEPC's chief engineer for eight years. His evidence, scrutinized minutely by the Royal Commission and the respective counsel accounted for approximately 1,000 pages of evidence.(56)

Gaby was born and raised in Richmond Hill, Ontario. He graduated from the University of Toronto School of Science in 1903. From a modest background, Gaby financed his education with a series of part time jobs. He worked for the Bell Telephone Company, the Polson Iron Works and the Bertram Iron Works. He acquired some general engineering experience while working in the Maritimes.

He studied both mechanical and electrical engineering at the University of Toronto but decided to pursue a career in the electrical field alone. He began his professional career installing transformers for the Toronto Power Company at Niagara Falls. After a brief tenure at Niagara Falls, Gaby went to Winnipeg. He had been hired by a municipal body which was attempting to begin a municipally owned Hydro system. Gaby's responsibility

was the planning of a high voltage transmission system.

Gaby's career in Winnipeg never materialized. Winnipeg Mayor Ashdown, who was not sympathetic to the concept of public power succeeded in getting the project stalled in city council. Gaby began job searching and he was recommended to the HEPC by a friend, Cecil Smith who was an Ontario Hydro commissioner. Gaby contacted Hydro and was hired by Adam Beck, a man to whom he became devoted for the remainder of Beck's life.(57) Although Gaby supervised the construction of the massive Chippawa installation, up until the time he appeared before the Sutherland Commission, he had acquired little practical experience in the operation of electric railways. In spite of this fact, Beck appointed him to supervise the engineering aspect of the radial plans.

As has been discussed in previous chapters, Gaby's role with the radials began with passing of the Hydro-Electric Railway Act in 1913 and continued uninterrupted up until and through the Sutherland Commission hearings on July 28, 1920, the commissioners told the Hydro engineer that no further hearings would be held until September 28, 1920 in order to give Hydro an opportunity to update its proposals to 1920 prices and wages. During the recess Gaby, Murray and the Hydro engineering staff were faced with revising estimates, some of which were eight years old.

When Gaby took the stand, Hydro had managed updates for two of the five divisions, The Toronto Eastern and the Hamilton-Guelph-Elmira. Counsellor Robertson asked Gaby to submit estimates for the other three divisions as they stood. Gaby protested to the Commission that revealing this data could potentially mislead the Commission since they lacked consistency in dates and prices. Gaby was given until October 13, 1920

to revise estimates for the three remaining divisions.(58)

Throughout the hearings Gaby continued to complain that the Royal Commission was imposing unrealistic deadlines on Hydro for the revision project. He told Hellmuth on October 15, 1920 that the Provincial Government had not demanded the work as rigidly as the Royal Commission.

> . . .I do not think we would have asked our (Hydro) Commission to carry on the way we have for the last few months; we have practically worked night and day, up to two o'clock in the morning, to get up those estimates for this (Royal) Commission. In other word, we have done work in the last two or three months that we would ordinarily take a year to do.(59)

Gaby told the hearings that the only revision demanded by the Province was the Toronto-St. Catharines proposal. The Government was committed legally to build this line. Thus, with updates offered to the Royal Commission, Gaby admitted that the Province and the Royal Commission possessed two different sets of figures with the one exception.(60)

Gaby and his staff got little sleep on the night of October 19, 1920. When the sittings resumed on the morning of the 20th, Gaby telephoned Hellmuth to advise him that he would be unable to submit revised estimates for the two CN lines that Hydro wanted to purchase. He pleaded for more time. Sutherland refused to grant the request and Gaby appeared at Osgoode Hall that morning.(61)

Gaby's lack of preparation was evident frequently during his month on the stand. On October 14, 1920 he had difficulty explaining two sets of cost estimates for the Toronto-St. Catharines line, one prepared by Murray, the other by Hydro. Murray estimated the cost at $22,298,635. The Hydro figure was $16,494,518. Gaby explained that his price was estimated in 1916 while the Murray report contained a new Hamilton access

route not planned in 1916. Gaby's figures did not include double track from Toronto to Port Credit and double track for the six mile Hamilton access while Murray's did. Gaby's estimates presumed the line would use rolling stock already owned by Hydro for use on the Chippawa construction. Murray estimated nearly $5,000,000 for new rolling stock. When Gaby prepared the 1916 estimates, arrangements were made to have the line feed the Toronto to London line which had been abandoned prior to the hearings. Murray's estimates did not include a potential London connection. He upgraded the Toronto-St. Catharines technology in order that the line could assume heavier traffic loads which Gaby planned to divert to London.(62)

By the time the Royal Commission began hearings, Hydro had settled the Hamilton access problem. Hydro's failure to get approval from Hamilton voters early in the radial plans forced Hydro to consider by-passing the city or renting the Grand Trunk access as an alternative. However, when the HEPC won its second vote, it obtained permission to construct its own radial access. Gaby's submissions did not include this cost. Murray's did. The discrepancy was revealed by Robertson and Gaby admitted to "some difference in cost of right of way."(63) Robertson responded by stating that Gaby's difference was $1,147,467.48 and said "some of us have respect for that amount of money you know."(64)

Gaby was faced with the double challenge of defending his set of estimates and Murray's revisions. In the hearings, he reduced Murray's estimates by $1,500,000 although Hellmuth insisted the reduction should not exceed $200,000. Gaby defended the reduction by claiming the Toronto access would not have as many grade separations as originally

planned. He told the commissioners that they would be added later as revenues permitted. However Hellmuth forced Gaby to admit that ratepayers had voted on a railway scheme from St. Catharines to Toronto that had been estimated at $16,000,000 and the Gaby-Murray estimates had shown the costs to be $4,000,000 higher. Gaby confessed that the new estimates had not been submitted to taxpayers along the proposed route.(65)

Discrepancies also existed in proposed operating expenses. Hydro had estimated an annual operating cost for the Port Credit to St. Catharines section as $722,482. The Murray report had inflated this sum to $1,438,000. Gaby responded to this revelation by stating that revenue expectations had risen to $3,152,926, twice the amount expected in the 1916 figures. Gaby blamed the increase in operating costs to a 100% increase in labour costs and materials which took place between 1916 and 1920. He also noted that in the same time period freight rates had increased 45% and potential passenger revenues had increased 50%, although the general rate of 2.875¢ per mile of passenger revenue remained constant. Gaby felt increasing populations along the proposed routes would justify Hydro's claim to larger revenue projections.

Commissioner McCallum questioned Gaby's revenue estimates. He told the hearings that the Toronto-St. Catharines line showed a revenue projection of $3,152,000 in the Gaby estimates and only $2,500,000 in the Murray report. Gaby explained that Murray had projected the estimates to a 1920 deadline and Hydro projected the estimates to the first year of operation in 1925.(66) In spite of the fact that Gaby explained the various sets of figures, the Royal Commission was faced with dealing with estimates that had been taken over a nine year period from 1916 to 1925

on the one Hydro division.

Gaby placed a great deal of emphasis on his view that natural population increases along the lines would account for projected increases in revenues up to 1935. As a demonstration, Gaby pointed to the three Toronto suburban communities of New Toronto, Mimico and Long Branch. Hydro figures showed a combined population of 5,750 in 1918. The 1920 population was 9,152, a figure which Hellmuth claimed was inflated by 33%. Gaby responded to Hellmuth's charge by stating that Hydro had counted the 1920 population and it was 9,152.(67) Hellmuth did not pursue the issue.

Hellmuth then re-opened the issue concerning discrepancies in the estimated construction costs presented to the Royal Commission and the Government. Gaby reiterated that the Commission and the Government were dealing with the same figures on the Toronto Eastern and the Hamilton-Guelph and Elmira lines. However, he admitted that these estimates had been revised in 1919, a year before the Royal Commission began its hearings. Gaby admitted publicly that the Government and the Royal Commission were dealing with different sets of estimates for the other three divisions.(68) Although Gaby had offered an explanation for this problem earlier in the hearings, Hellmuth did not allow him to offer it a second time.

Hydro did not offer the Government or its voting municipal participants detailed estimates. Adam Beck and Gaby decided that only gross revenues and costs would be presented for analysis. By this action, Hydro effectively blocked either party from conducting accurate feasibility studies on the proposals. Along with this admission, Gaby told the hearings that the estimates submitted to the Government and those

given to the participating municipalities were different with the exception of the figures presented for the Toronto-St. Catharines railway.(69)

A small discrepancy also appeared in the estimates for the Hamilton-Elmira-Guelph proposal. Hydro had presented a cost factor of $6,530,659 to the municipalities which passed the money by-laws. Evidence before the Commission placed the estimate at $7,447,364, a difference of $416,515. None of the participants had been advised of the change.(70)

Gaby felt the difference would be absorbed by increased freight and passenger revenues which he felt would be generated by a larger population in 1925 than had previously been predicted. However, the Government was unaware that the estimates for construction had been increased in May 1920. Hellmuth asked

> . . .but you did not in any way suggest to the Government, in any correspondence that took place between you that you were giving them figures that would not be at all such figures as they could place any reliance upon in regard to revenue one way or the other, either as to their lowness or as to their highness?
>
> Gaby responded "no, I don't believe any reference was made, anything in writing that I know of.(71)

Since Gaby placed high value on the Hydro population estimates, he was questioned at length as to how the HEPC determined them. He stated that Hydro had examined normal population increases for the participating municipalities from 1910 to 1918, and had applied this percentage increase into the future. Then, he added a further one and one half percent increase for the years 1925-1930 and a further one half of one percent for the period 1930 to 1935. Gaby explained the additional

ALL IN THE SAME BOAT

MR. SAMUEL J. McBRIDE—"Brother Drury has put us all in the same boat."

CONTROLLER J. G. RAMSDEN—"Yes, and we are all going over the Falls."

The Evening Telegram, July 14, 1920

increases would result from populations attracted by better transportation facilities.

Counsellor Robertson expressed scepticism over the Hydro population estimates. He told Gaby that he felt the chief engineer's population projections were projected solely on better transportation facilities. Gaby denied this. Robertson then turned to specific cases. He noted that Hydro stated the population of Whitby would increase forty percent between 1925 and 1935 and Bowmanville would increase one hundred percent in the same time period. He asked Gaby to justify these projections and Gaby refused. Chairman Sutherland asked Robertson to stop this line of questioning and proceed to other issues.(72)

Although most of Gaby's experience as a witness can be described as negative, he was very clear in demonstrating the unique characteristics of the Hydro system and how his estimates were calculated. As noted previously in the Murray testimony, Gaby predicted a revenue on the Toronto-St. Catharines railway of $43,000 per mile in 1925. This was divided almost equally into passenger and freight income. The passenger estimates were subdivided into inter-urban and rapid transit figures.

Hellmuth responded to this estimate by telling the hearings that the only American road which produced a revenue this high was the Washington and Baltimore Railway. It had total revenues of $46,000 per mile, but only $1,000 was derived from freight. Gaby told Hellmuth that the railway was not equipped to carry large amounts of freight. He claimed that the terminal facilities proposed for Toronto would justify the Hydro proposals.

> . . .this has been designed and the estimate prepared for the construction of a line so located and with terminals so provided that we will handle a large proportion of freight along with the passenger business, and I know of no railway in the United States that has such terminal facilities.(73)

Gaby also stressed the point that Hydro studies had shown that there were no similar lines in Canada operating to the standards proposed by Hydro. Hellmuth asked

> . . .what Canadian electric lines could you use at all in any shape?

Gaby replied

> . . .there are none I know of that you could use as a direct similarity of terminal facilities and freight facilities in Canada.(74)

Gaby also addressed the duplication question. He told the hearings that existing railways operated about four hundred and twenty-five miles of track in the area to be served by Hydro.(75) He recalled the Murray study which had compared the Washington and Baltimore corridor to the Toronto and Hamilton region. Murray stated that the American area served a population of one million with eight and a half tracks, or 118,000 persons per track. In the Canadian situation, the figure was 305,000 persons per track for a ratio of 1 to 3.(76)

Gaby testified that the Hydro rapid transit concept was based on two American systems, the Philadelphia Rapid Transit and the Chicago Rapid Transit. The study of the two lines was supplemented by a civic transportation survey carried out by Hydro in 1919. Hydro engineers were convinced that a rapid transit system could be successful in the Toronto area if connected to the radial proposals.(77)

The Philadelphia System had a number of characteristics that were appealing to Hydro management. It was operated by a co-operative of shareholders, union labour and professional managers. The co-operative was launched in 1911 when the railway showed a deficit of $318,006 in 1910. By 1918, it had produced a surplus of $4,482,119. Dividends at 5% per annum were returned to stockholders beginning in 1916. Rides had increased from 188 to 400 per capita during the eight year co-operative system and fares had been reduced from 4.13 cents per passenger to 3.98 cents. Simultaneously, wages had increased 154% per annum. Top labour received an annual wage of $1,589. The company returned 22% of its gross earnings back into a wage fund for its employees.(78)

The formula for success in Philadelphia was based on peace with labour. Collective bargaining had been successful and the system developed a consistency of operation. This let the railway concentrate on other matters, such as maintaining track and rolling stock. The line's public image was one of reliability.

The operating ratio question emerged on October 1, 1920. Robertson told Gaby that operating ratios for all railroads in New York State had increased from 64.9 in 1915 to 81.7 in 1918. Gaby responded by telling Robertson that he ignored the fact that fares were fixed during the war but costs were not controlled.(79)

Hellmuth introduced the question later in the hearings when he attempted to compare operating ratio on the Toronto-St. Catharines railway with that of the system around Detroit. The population bases of the two areas was similar. Gaby felt any comparisons should be made to the Baltimore-Washington service. He cautioned Hellmuth on the use of

operating ratio to compare one line to another.

> . . .you cannot take operating ratios from one railway and apply them to another railway. Operating ratio is simply a means of the management knowing whether the condition of the operating is a paying proposal of not. They have a ratio on one railway and a ratio on one railway cannot be applied to a ratio on another railway. It all depends on the condition of management and the service they get.(80)

The issue refused to disappear. Gaby had difficulty explaining why the Hydro-operated London and Port Stanley had an operating ratio of 75 while the radial proposals submitted estimates for 49. Gaby explained that the figures for the L&PS were based on two sets of data taken two years apart. Costs were estimated on 1920 figures and revenues were based on 1918 populations.(81)

Commissioner Bancroft attempted to assist Gaby in his evidence on operating ratios on October 21, 1920. He suggested to Gaby that the operating ratios proposed by Hydro could be explained by superior terminal facilities, especially the one in Toronto. Gaby responded by saying the terminal could reduce operating ratios by at least 25% across the system. The Toronto terminal would allow Hydro radials to carry more freight and passenger cars per train than was customary on American systems with no terminal facilities. This would result in higher revenues for the Hydro lines than for existing electrics.(82)

Hellmuth refused to drop the issue. Using the L&PS example, he showed Gaby that the line had experienced an increase in operating ratio from 66 in 1916 to 75 in 1920. Gaby told Hellmuth the railway had received only a fifteen percent fare increase during those years but that labour and materials had increased one hundred percent at the same

time.(83)

For Gaby, the question of power costs was important. He felt that since American electricity was generated for the most part by coal-fired thermal plants, American rates were tied to the price of coal which had increased 250% since 1902. Generation of electricity by water power would allow Hydro to reduce railway operating ratios by a further two and one half percent. Gaby offered evidence to show that power costs were a significant determinant in calculating operating ratios. He noted that the Detroit United Railway paid $42 per horsepower for electricity while the Ontario rate ranged from $10 to $12. Gaby felt that this factor alone should eliminate the desire of commission counsel to use operating ratio as a comparison figure for different railways.(84)

Gaby admitted that the Hydro radial proposals depended on the completion of the Queenston-Chippawa hydro-electric development, anticipated sometime in 1921. When the final phase was opened in 1923, the plant was to have a capacity of 650,000 horsepower. Only the Toronto-Eastern would not use Chippawa power. The maximum consumption per year for the other four divisions was estimated at 15,000 horsepower.(85)

Gaby was of the opinion that the Grand Trunk and the Canadian Pacific was supplying less than adequate service in the Toronto, Hamilton and St. Catharines corridor. The lines operated on a freight first and passenger second attitude. Passengers were forced to use the existing slow electric lines or a bus which took one hour longer to travel the Toronto-Hamilton route than the proposed radials.(86)

As the first wintess called by the Sutherland Commission Frederick Gaby was charged with the heavy responsibility of insuring Hydro's case

was well stated and presented in a professional forthright manner. His success or failure on the stand set the tone for the image Hydro was to present. Gaby suffered from two major disadvantages. He had virtually no electric railway experience with the exception of his involvement with the London and Port Stanley. More important, he was faced with the monumental task of updating information that had been acquired by Hydro since the inception of the railway plans in 1913.

In the first area, Gaby spoke with some authority. He had learned the pitfalls of railway language such as operating ratio, and under questioning from Hellmuth and Robertson, he refused to sway in his view that it was an invalid barometer of measurement when comparing railways. On the electric generation and cost proposals, he was in his element. He spoke with authority about cost per horsepower for one example and demonstrated his expertise in the field. Counsel seldom attempted to to trap him in this part of the debate.

On the question of Hydro estimates, he was less fortunate. As we have seen, he was often grilled for using outdated figures on which he could only speculate as to results. Often, as was the case in the L&PS issue, Gaby was forced to respond to information that had no co-relation, yet he attempted to project it. His lack of time for updates became visible and slowly, Gaby's testimony was impugned by Robertson and Hellmuth.

The most glaring problem in Gaby's testimony came when he admitted that the Government and the Royal Commission received two different sets of data. Gaby and Hydro had not bothered to update the Government's figures, and could, for reasons explained, only partially update the Commission's figures. On the surface at least, it appeared that Gaby

was not well prepared to meet the challenge that was facing him and his employers on the witness stand. Since Murray, a respected railway expert had based his analysis on Gaby's data, it was natural that his conclusions should have been brought into question.

The pressure on Hydro and its municipal allies became apparent in a letter sent to Premier Drury by Justice Sutherland on February 12, 1921. This was about the midway point of the Royal Commission's hearings. Sutherland told Drury that Hydro had been granted a week's leave from the date of the letter for preparations. Sutherland told the Premier that he had attempted to keep the oral evidence moving as quickly as possible but he felt Hydro and the Radial Railway Union had deliberately impeded the progress of the sittings by requests for continuing delays. He suggested to Drury that Hydro had not properly prepared its case.(87)

The letter came to the attention of Hydro Secretary Major Pope. On February 18, 1921, he wrote to Hydro counsel C.S. MacInnes about Sutherland's letter. Pope had shown a copy of the letter to Beck and Lucas. All three felt that Sutherland was trying to damage Hydro's case. Pope intimated that he knew Drury opposed the radials and that Sutherland was trying to give the Premier further ammunition to justify halting the project. Pope suggested that MacInnes direct Hydro counsel Robinson to prepare a complete resume of adjournments requested by Hydro and to detail the reasons for them. He felt a copy should be sent to the Premier to attempt to offset Sutherland's views in Cabinet.(88)

After the confusion which became apparent during the Gaby and Murray appearances, the task of justifying the radial scheme was given to the Arnold Engineering Company of Chicago. The company's two top executives,

Bion J. Arnold and Frederick Sager appeared on Hydro's behalf. Arnold began his testimony on April 26, 1921 by reading his complete report into evidence. The task consumed the entire day and it took seventy-five pages of transcript to record it. On April 27, 1921, Arnold faced questions from McKay and Hellmuth.

Arnold presented impeccable credentials to the Royal Commission. He was an electrical engineer who had developed an expertise in electric engines, specifically the type used by electric railways. He began his professional life as a draftsman and salesperson for the Allis-Chalmers Company. He left the farm equipment dealer to take a position as chief engineer for the Iowa Iron Works. His first railway job was a mechanical engineering position with the Chicago Great Western Railway. When he left that appointment, he became an electrical engineer with the Thomson-Houson Electric Company of St. Louis. From St. Louis, he went to Chicago as consulting engineer for the General Electric Company. He designed and built the intramural railway for the Chicago World's Fair in 1899.

Arnold was a member of a number of professional associations. He was president of the American Institute of Electrical Engineers. He was spokesman for the group at the International Electrical Congress in Paris in 1901. In 1904, he assumed the vice-presidency and chairmanship of the executive committee of the International Electrical Congress with headquarters in St. Louis. When he appeared before the Sutherland Commission, he was president of the Western Society of Engineers and vice-president of the American Association for the Advancement of Science. He was also chairman of the American Commission on Electrolysis. This

organization had been given the responsibility of studying electrical standards in the United States with a view to setting standards. The body represented the interests of the American Water Works Association, the American Electric Railway Association, the American Railway Engineering Association (steam lines), the Bell Telephone Company, the American Gas Association and the American Institute of Electrical Engineers.

Through the Arnold Company, he had been commissioned by a number of Canadian and American cities as a consultant for traffic problems, transit plans, railway terminal development, grade separation projects and electric generation and transmission projects. By 1920, his company had consulted on eighty-six case studies in North America. Of these, forty-six were power and utility development studies.

In railway matters, Arnold was a member of the Chicago Traction and Subway Commission. He became chairman of the board of supervising engineers. Just prior to his Toronto appearance, he had retired from the Chicago Terminal Commission. This organization had re-designed and restructured all of the electric transporation systems in and around Chicago. He was also a member of the electrification commission of the Illinois Central Railway.

Arnold acted as a transportation consultant for the New York, New Haven and Hartford Railroad. He had also acted as a transportation consultant for electric lines in Baltimore, San Francisco, Pittsburgh, Rochester, Cleveland, New Orleans, Jersey City, Los Angeles, Winnipeg, Sacramento, Flint, Cincinnati, Chicago, St. Paul, Seattle, Sacramento and Kansas City. The Civic Transportation Committee in Toronto was one of his clients.

Arnold was responsible for introducing Alternating Current (AC) to electric railways. He was the engineer who designed the electrification of the Port Huron tunnel for the Grand Trunk. This project allowed trains to pass under the Detroit River from Sarnia to Port Huron. Prior to Arnold's design, steam trains were unable to move over the steep grades in the tunnel which had resulted from burrowing under the river. Arnold also designed and built the electrical system for the New York Central at Grand Central Station in New York. He developed and designed an automatic substation for electric railways which eliminated the need for manned stations. Arnold conducted most of his experiments on a short forty-mile electric railway which he owned near Chicago.

Arnold had an impressive academic background. He earned a Bachelor of Science degree from the University of Nebraska and a Master's degree from Hillsdale College in Michigan. He held two honourary doctorates, one a Doctor of Science degree from the Armour Institute and the other a Doctor of Engineering degree from the University of Nebraska. He was a colonel in the United States Army and was chairman of the Board of Inventions for the army and navy during the First World War. He also studied at Cornell but did not take a degree programme.(89)

For his report Arnold worked with data supplied to his company by Hydro. He amended a number of points in the proposals. He was questioned on his changes by McKay and Hellmuth. McKay saw the changes as improvements in the plans. Hellmuth regarded the changes as major and told the hearings that he regarded Arnold's concept as a plan essentially different than the one forwarded by Hydro.(90)

All counsellors examined the Arnold report in detail. Arnold spent

much of his time on the stand explaining how he and Sager had arrived at their estimates.

The first topic he dealt with was population estimates. Arnold based his estimates in rural areas on a strip one and one-half miles wide on each side of the proposed right of way. There were some modifications to the formula when competitive and topographical conditions varied. For example, when a township had evenly distributed population bases, Arnold founded his estimates on the total population incorporating the tributary area. When population was not evenly distributed, the population of the tributary area was based on house counts on militia maps. Arnold developed his estimates on data collected by Hydro.(91)

The population estimates in Arnold's report were critical since they were used to determine rural and urban riding habits. The cities were easier to calculate, but Arnold took several different factors into consideration. He not only examined what competitive conditions existed in other railways, but the effect of one city on another. He noted in one example a trip from Burlington to Toronto, a distance of 32 miles could be projected into 24 rides per capita. However, this was reduced to 7 to 10 rides per capita because Burlington was only eight miles from Hamilton and passenger traffic would be affected by that city's draw. Thus these estimates were included in the Hamilton statistics, not Toronto's. He felt the same projections would need to be adjusted for the Toronto to Oshawa section. Since Toronto stood alone as the centre of the plan, results were calculated from traffic going into the city and not out of it.(92)

Arnold felt that several factors would determine whether an area

would experience growth or decline. Central to the Hydro's ideology was the fact that rural depopulation would cease if the lines serviced rural areas. However, a serious debate ensued regarding the issue. McCallum believed that people were leaving the farms for the more attractive urban areas. Arnold claimed that the phenomenon needed to be examined on a wider area, for example townships. He conceded that farms were losing population. In particular farmer's sons were moving to the cities because mechanization and electrification were eliminating the need for large amounts of manpower.

Arnold told the Royal Commission that these people gravitated to two areas, the city with its promise of industrial jobs and the smaller towns in rural townships which were growing by offering ancillary services to the agricultural community. Arnold felt the move to urbanization was not necessarily negative. However, the engineer felt that construction of the radials would prevent the concentration of urbanization in large cities alone. There would be an attraction to smaller towns as well. As a result Arnold argued rural depopulation on the farms coupled with smaller urban growth in the townships would lead to larger population bases in the townships. The debate then became defining a rural area.(93)

Arnold also argued the point that advancing technology could lead to growth which would be determined by the type and characteristic of the technology. As an example, he demonstrated the effect that cheap power had on the Niagara peninsula. The growth of steel mills, pulp and paper mills, chemical and smelting plants, grain elevators and flour mills were all connected with the impending opening of Queenston-Chippawa. Arnold claimed that the future of the CN electric lines in the

Niagara region would not be determined by rural growth but by urban expansion in Hamilton, St. Catharines and Niagara Falls. He noted that the region had a static population between 1890 and 1912. When Hydro conceived the plan for cheap public power in 1912, the population increased nearly twenty-five percent from 1912 to 1913.(94)

Arnold was of the opinion that the power system gave Ontario an industrial advantage that no other region of North America possessed with the exception of Niagara Falls, New York. He reiterated that American electrical production depended on coal. As noted previously, coal prices in 1920 were unstable. Arnold told the hearings that this factor would give the Hydro radials a competitive advantage that no American electrics had.(95)

Arnold was questioned on several occasions about his population projections. Counsellor Robertson suggested that Arnold was dismissing potential growth in the large Ontario cities in order to show inflated populations in areas to be served by Hydro radials. Arnold attempted to vindicate his mathematics by stating he had used rural models solely in the discussion. He noted, that based on previous trends, the formula had proved correct. He rejected Robertson's claim that he had deliberately distorted his projections.(96)

Arnold introduced two examples of how his methods worked. He had completed a study for the Toronto and York Radial, Metropolitan Division in which he linked population trends to revenues. His revenue projections for the railway were $97,400 less than actual revenues. In Chicago, he had conducted a similar study for the street railway system. He had started the study in 1902 and had projected the potential earnings for

the years 1907 and 1911. His predictions were slightly less than actual revenues produced.(97)

Throughout his testimony he was emphatic that the Hydro proposals had to be examined on their own merits. Arnold told the commissioners that any comparison of the proposals and conditions on existing electric railways would be impossible because of the uniqueness of the Hydro plans. Arnold told the hearings that the proposals would be impeded by their high initial construction costs but he felt that the concept of public ownership would eventually compensate for this rigidity. He was of the opinion that the public would be more sympathetic to the concept of this type of road than a privately operated system.(98)

Robertson insisted that Arnold compare the proposals with conditions existing on American lines. Arnold conceded that a rapid transit comparison could be made with the Brooklyn to Coney Island section of the Brooklyn Rapid Transit. Then he told Robertson that it would be impossible to separate the performance of this section of the railway from the total system. As a result, he said that the efficiency of the New York Interborough system and the Chicago elevated railways would provide operating models for comparison. He demonstrated that in New York for the year ended June 30, 1920, the elevated service cost 18.2¢ per car mile to operate (one car over one mile of track), subway service was 19.4¢, providing an average of 18.8¢. Chicago's elevated system operated at 20.5¢ per car mile in 1920. Wages in New York averaged 85¢ an hour and it was 82¢ in Chicago. Hydro proposed top wages at 50¢ per hour with an operating cost of 23¢ a mile. Robertson felt this figure was too low. Arnold concluded that the rapid transit part of the Hydro proposals was

based on realistic estimates.(99)

When Robertson finished questioning Arnold, Hellmuth covered the same ground in his examination. He asked Arnold to explain why the Hydro proposals were unique. He asked Arnold to compare the Hydro system to existing lines and suggested that Hydro's estimates of operating costs and revenues were unrealistic. Arnold retorted that no American system of 300 miles existed under the conditions described by Hydro. He told Hellmuth that comparisons were a waste of time. Hellmuth then asked Arnold to state that no American system existed which was producing the kind of revenue forseen by Hydro. Arnold responded "yes" but then stated that no comparison was possible to American services.(100)

Arnold traced the history of American railroading to demonstrate his point. He noted that steam railways had been chartered long before electric railways and had high speed urban access. They had also applied pressure to many city councils in large cities to deny electric lines the same rights. In nearly every case, the pressure had been successful.(101)

Arnold told the Royal Commission that Americans detested large private corporations and public-ownership almost equally. Since public ownership was actively being discussed as a potential solution to American electric railway problems, it had actively been resisted by a coalition of citizens and American bankers who had large investments in electric lines. Arnold felt that Canadian attitudes were more progressive. He felt that the idea of a publically owned system of electric railways would be acceptable to the Canadian public. He did not foresee any potential resistance to the use of public funds for the system. Because public ownership was accepted

THE CAMPAIGN HYMN

HON. W. E. RANEY—"Me and Brother Drury will open the campaign to drive Tom Church and every friend of the Hydro-Radials out of the City Hall by singing our candidates' favorite hymn.

The Evening Telegram, August 18, 1920

in Canada, Arnold felt that steam railways would not be as successful as their American counterparts in denying electrics high speed urban access. As well, the Hydro lines would not be faced with having to return dividends to private investors.(102) The electric railway under the Hydro scheme would be put on the same footing as a steam railway. While it would have no particular competitive advantages written into its charter, the system wouldn't be saddled with the competitive rigidities apparent in existing lines.

Since a large portion of Hydro's revenues were to be derived from rapid transit service, Robertson attempted to demonstrate that Arnold had been opposed to the concept for Toronto in 1912. Arnold's report, commissioned by City Council stated

> . . .with modern equipment, there should be no cause for unreasonable conjestion in Toronto for many years to come. The business district is well supplied with desirable loops both east and west of Yonge Street and south of King Street and the crosstown trunk line has no interference to contend with. The system of loops along Front Street amply provide terminals for southbound cars beyond the business centre. The down-town terminal facilities are not only considered sufficient for the service but quite ample to accomodate the traffic of the future transportation system outlined in this report, provided re-routing and terminal regulations are instituted so as to use these terminal facilities to the best advantage. On the right use of these terminals, rests the problem of conjestion, and as the flow of travel is constantly changing so the problem should be constantly studied. It is not owing to the lack of terminals in Toronto that conjestion takes place, so much as it is owing to failure to make proper use of present terminals.(103)

Arnold responded that he agreed with the proposition at the time but the situation in 1920 was not familiar to him. He confessed that he felt congestion in Toronto was not an existing problem but that did not necessitate ignoring a potential problem in years ahead. As a general

ORIGINAL DRAWINGS: Radial Proposals, 1913, by Adam Beck
Ontario Hydro Archives

rule he stated that cities should consider rapid transit only when street railway and vehicular traffic had come close to the saturation point. He attempted to persuade Robertson that the concept was a generalization and should not be applied to cities where it was generally conceived that rapid growth would occur. To eliminate rapid transit under these circumstances would only postpone the inevitable need in the future. Arnold surmised that cities faced with this reality would be well advised to begin construction to meet future needs in the present when costs of labour and material would be lower. He felt Toronto was just one example of this exception to his guideline.(104)

In the rapid transit debate, Arnold was at a disadvantage on two counts. He had not read the Civic Transportation Committee Study of 1915. The report had recommended against construction of a rapid transit system so long as the street railway system could reach city limits in 35 minutes. It could in 1920. In 1912 Arnold had recommended a solution to Toronto's transportation problems which excluded the construction of a rapid transit system. He was in favour of integrating the Toronto and York Radial with the street railway system. Arnold confessed that both ideas were valid alternatives but he felt that they would only meet existing needs not future ones.(105)

Arnold had revised part of the original Hydro proposals for his report to the Royal Commission. From the time Gaby opened the hearings until the time Arnold appeared, one major revision had been introduced, the construction of a short subway entrance for the radials in downtown Toronto. Arnold wanted a 3600 foot subway as a prelude to a Yonge Street or Bay Street underground. This would enhance the Hydro concept by allowing

trains to enter the terminal and proceed a short distance northward for better interconnection with the street railway system.

The proposal included a two track subway from the vicinity of Union Station to Richmond Street, then four tracks from Richmond to Queen Street with a three track line for the remainder of the subway north of Queen Street. Not only would the proposed subway connect with the radial terminal, it would have stations at King and Queen Streets, with the area north of Queen designated for storage and train layover until extension. Arnold proposed underground stations so that no more expensive real estate need be purchased. He felt that the cost should be shared by the three Hydro radials using the high speed access. The cost was estimated at $3,600,000. Arnold stated it would provide for the beginnings of a future subway system and would reduce passenger space requirements at the main Toronto terminal.(106)

Arnold foresaw capital savings with the use of a subway terminal because a smaller terminal could be built which would require less real estate. He also thought that it could increase potential surpluses on the three lines entering the city. He predicted the 1925 projected surplus would increase from $213,000 to $252,000. In 1930 it would increase from $698,000 to $796,000 and in 1935 it would jump from $905,000 to $1,037,000.(107)

Arnold produced a map which showed how the subway system would integrate with the street car service. As opposed to dropping passengers at the Bay Street terminal, radial riders would save about five minutes of travelling time coming into the city. When questioned as to who would own the rights of the subway since it was under city property, McKay

responded that Hydro would.(108)

Arnold stated that the soundness of the Hydro plan depended on two factors, first, the cost of labour and material and second, the accuracy of the population projections in his estimates. The cost of new construction was based on May 1920 prices. Arnold felt that these prices put Hydro at a disadvantage since prices between that date and the time he appeared at the hearings had de-escalated substantially. On the wholesale market, prices had fallen 45% with railway materials declining at 17%. He felt that this would result in a saving of $6,468,000 in construction costs. The purchase price of the CN lines would not be affected.(109)

Labour costs were a determinant. The original Hydro plans had set this cost at 48¢ per hour for common labour. By April 1921, common labour wages in Toronto had fallen to 35¢ an hour or 27%. This combined reduction in labour and materials would affect grading, balast, track and roadway labour, tunnels, concrete work, poles and fixtures, the distribution system and buildings. Since rails, fastenings and joints as well as rolling stock had shown little price flexibility, Arnold left these items at the Hydro May 1920 price schedule. With all factors considered, he predicted the cost would be 15% less than Hydro had estimated.(110)

Arnold and Hellmuth disagreed on a number of occasions as to the interpretation of cost and population analysis. During his tenure as a witness, Arnold was not questioned, other than routinely about the concept of operating ratio. Instead, Hellmuth pursued the question of car mile cost. Arnold, in a model which eliminated for the sake of a demonstration, all other factors but platform costs, showed how deceptive this model was. He placed a mythical train on route from Toronto to

Hamilton over a two hour run. A one car train would have a platform expense of $1.00 per hour. Since the route was forty miles, the car mile expense would be 5¢. The same car travelling the distance in one hour would have a car mile expense of 2 1/2¢. The addition of one car with the same manpower would reduce the cost to 1 and 1/4¢. If one were to add the cost of power, maintenance, track, and cars with a price of 30¢ per car mile in the two hour trip, the cost could vary from 27 1/2¢ to 26 1/4¢.(111)

On the population question, Hellmuth attempted to place an air of uncertainty in Arnold's estimates. He stated that if the population on the Toronto-St. Catharines lines remained stagnant from 1920 to 1925, the line would show a deficit instead of a profit. Hellmuth proceeded to take each of the five Hydro divisions and he produced deficits on each, based on the fact that the districts served must increase in population to at least the figures shown by Arnold. He told Arnold that the 970,000 people to be served by the system would not show very much increase in population but would show a shift in population based on growing urbanization. Arnold, after listening to the argument, referred to Hellmuth's concept of stagnation as "absurd".(112)

Arnold pointed out once again that he had not proposed increases in population in the countryside, only in those areas immediately surrounding the location of the tracks. Hellmuth continued to press the issue, stating that any increase in urban population must be compensated for by a corresponding decrease in rural areas. Defending his position, Arnold replied,

> . . .I would hate to think you were not going to have an increase.(113)

Hellmuth suggested that a simpler system than the one proposed by Hydro could be constructed at a fraction of the cost. He suggested utilizing the tracks of the Canadian National from Bowmanville to Toronto, the Toronto and York to Port Credit, the Dominion Power's line from Oakville to Hamilton and the Hamilton, Grimsy and Beamsville line. The only new construction that would be needed was a link from Oakville to Port Credit and from Beamsville to St. Catharines. Arnold challenged Hellmuth on this idea. He noted that the counsellor's plan would bear little difference from the existing inter-urbans in the United States.(114)

Arnold discounted his modifications to the Hydro plans as major. He admitted that he was skeptical when he first examined the Hydro proposals. However, after close scrutiny, he felt they were close to being right as opposed to wrong. He noted that his investigations uncovered more freight potential than planned by Hydro. But, like Gaby before him, he complained that the time limit under which he was forced to work was very restricting. He suggested that no railway expert, including Tye and Gutelius could have made a more accurate study of the situation than his company without having three years for investigation. Arnold felt that having more time would further prove that Hydro's plans were accurate.(115)

Near the end of his testimony, the atmosphere between Arnold and Hellmuth disintegrated. Arnold accused Hellmuth of attempting to give reporters and the commissioners false impressions of his evidence. He suggested that Hellmuth wanted to calculate maintenance figures on the entire cost of the road and its operations, while he (Arnold) suggested that maintenance could only properly be figured on those things which required maintaining such as rails, ties and rolling stock. If one were

to follow Hellmuth's suggestions, maintenance would have to be computed on a percentage of the whole cost of operation with factors such as construction and real estate included. Arnold implied that Hellmuth was trying to use this idea to show unusually high maintenance costs because of high initial construction standards. Arnold felt that high construction costs would reduce maintenance in the long run. As an example, he drew Hellmuth's attention to rolling stock. He said that if a railway were to buy high quality material initially, subsequent cost would be reduced. Thus costs on a road constructed to low standards would not be comparable to one built with high standards.(116)

On the final day of his evidence, Arnold accused Hellmuth of ignoring his answers. He said, "when I try to answer him, he dodges the answer."(117) Hellmuth retorted by accusing Arnold of not having read his report until he submitted it into evidence. He also said

> . . .I can be exceedingly severe with you if I choose. I can treat you as a hostile witness and I am not going to stand the slightest impudence from you at any time and I may say I am neither dodging your question nor answering your questions. (118)

At that point, both Arnold and Hellmuth retreated from any further confrontation and the hearings continued.

The Arnold evidence was voluminous and like Gaby, he was subjected to close scrutiny. Yet, issues dealt with by other witnesses, such as the question of duplication of service and operating ratio were hardly touched in the time he was on the stand. Arnold spent the majority of the examination explaining how he arrived at revenues and population projections. Since both factors were in the future, he could not validate their accuracy, although his examples of past experience noted his

ability as a railway engineer.

He was impeded by the fact that he appeared late in the hearings and by the fact that he had used Hydro estimates which he found necessary to modify. In spite of Gaby's uncertainty and the hostile evidence of other electric and steam operators, Arnold stated that the modified Hydro plan he submitted was workable. Arnold and his staff had meticulously examined each division in the plans and had reported on each factor found in cost and revenue to the Royal Commission.

Arnold's evidence was supplemented by his assistant Frederick Sager who joined the Arnold Company as an engineer in July 1903. Sager had taken his Bachelor of Science degree in electrical engineering from the University of Michigan. He studied mathematics and electrical engineering in the University of Illinois' graduate school. On graduation, he became an assistant professor of physics and electrical engineering at U of I.

With the Arnold Company, Sager was responsible for designing and supervising the construction of power plants and electrical systems. He worked with Arnold when the company's president worked on electric railways. Sager was the designer for Chicago's elevated railway system.(119) Sager made two appearances before the Royal Commission. He preceded Arnold and followed him. The first session began on May 5, 1921, the second was on May 17, 1921. The commissioners were particularly interested in the mathematics that Sager developed to project cost and revenue estimates He told the hearings that although he and Arnold had read the Murray report, they disregarded the majority of it. They preferred to develop their own ideas on the radial proposals. Sager's evidence covered much of the same ground as Arnold's although he emphasized the relationship of the Hydro

proposals to existing electric systems and the value of the high speed access into Toronto.

Sager told Bancroft that he had arrived at an average cost per car mile for the proposed Hydro system of 28.7¢ per car mile. The Toronto-St. Catharines division was 23.4¢, the Toronto Eastern was 22.5¢, the Toronto Suburban was 30.4¢, the Hamilton and Elmira was 36.9¢, and the Niagara-St. Catharines was 49¢. However, the composite cost per car mile was not an average of all five divisions. Sager told the hearings that each division had to be weighted in order to calculate its efficiency before a final average could be arrived at. Thus, the final figure took into account that each division would have different characteristics. For example, the Toronto connections would have a high rapid transit sector while the lines in the Niagara area would experience high freight volume in the fruit season.

Sager's weighted average did not compare with existing costs experienced by American railroads. Earlier in the hearings, commission witness Bailey had testified to the fact that car mile averages varied considerably. He offered examples of fourteen American electric railways. The highest cost per car mile was the Albany and Southern which was 60 1/2¢. The lowest was the Northern Ohio Traction Inter-urban Company with 33.8¢. When presented with this information Sager said

> . . .so far as we can see, or as is quite evident in these comparisons, we have put up for these roads themselves, the comparative statistics do not mean anything at all. Of course, this question might be asked. Why is it none of these roads are as low as 28¢? You might expect that for some reason or other some of these roads would be as low as this combined system. One I see here is 32.4 and another is 33.8, and those are the ones that get down somewhat

> near this average for the whole system. But the significant reason I presume for the thing is the fact that we have got quite a large number of high speed rapid transit service operation which in itself operates at a lower figure per car mile than the heavy interurban service. We have a large number of freight trains that is car load freight business. Car miles which are operating have a lower figure per car mile. There is no one reason. It is simply the result of the whole thing. You cannot look at one road or a dozen roads and say that is what this is. Unless you look at that part of the road which is like this part and there are these different kinds of service. The rapid transit service, the straight interurban service, including passenger and express freight, and the heavy freight interurban service. Three distinct kinds of transportation service here, all of which have their different characteristics and I do not know of any system of 300 miles of length in the United States which had all those things combined. (120)

Sager testified that the freight traffic and the suburban rapid transit traffic on the Hydro system was the main ingredient leading to a lower cost per mile than could be achieved by other railways in Canada and the United States. Although the cost per car mile was 22.5¢ for the Toronto Eastern, suburban traffic was estimated at 18.6¢ which left a higher estimate for interurban traffic which would be comparable to American lines. Bancroft noted that Bailey's testimony was based solely on inter-urban traffic and did not include fares received within the city limits of the railways he studied.(121)

Sager felt that the modifications to the Toronto terminal proposed in the Arnold report would have an effect on car mile cost. Sager told the hearings that the concept would lead to speedy disposition of both passengers and freight in the centre of the city and would eliminate the common American practise of transferring passengers and freight at city limits. The American situation in his opinion was costly and inefficient.(122)

When Sager appeared the second time, he was confronted by Hellmuth who attempted to argue that Ontario did not need a publicly owned road since the taxpayers already owned the Canadian National. Hellmuth perceived that the two public railways would compete with each other which would result in a weak financial position for both. Sager did not envisage the kind of competition seen by Hellmuth. Sager stated that the Canadian National was a transcontinental railway system biased to moving people and freight over long distances. The Hydro radials were biased to moving people and light freight over short distances. He saw a railway system where each type of road would concentrate on the kind of business best suited for it. Sager predicted that Canadian National and Hydro radials could join together to compete against the privately-owned Canadian Pacific system.(123)

Hellmuth asked Sager to comment on Tye's proposal which stated that results predicted by Hydro could be achieved by electrifying the CN system in and around Toronto and instituting short haul service. Sager told counsel that the proposal was a simplified solution to a complex question. He asked Hellmuth if he had examined the potential effect of increased use on existing tracks and terminals. Sager felt that even with the construction of Union Station in Toronto, the terminal would be unable to handle the freight and passenger volume that Hydro could carry on its radial system combined with CN-CP traffic. He also stated that CN would be forced to add an additional track to its system for electric traffic. This would require additional rights of way and would result in increased debt for the already heavily burdened federal railway.

Sager accused Hellmuth of distorting the debt position of Canadian

National by comparing it to Hydro radials. He pointed out that the CN debt was being shouldered by all Canadian taxpayers while the cost of the Hydro system would be absorbed by Ontario ratepayers. He noted that the Canadian National's financial problems were developed from national conditions. He cautioned Hellmuth that if he wished to compare CN to Hydro, he should compare the Ontario branch of the national road and eliminate its performance in the other nine provinces. Sager told Hellmuth that if he had been hired by CN to comment on the Hydro proposals that his opinion would not be changed.(124)

Hellmuth and Robertson continued to question Sager on the feasibility of the project on May 26, 1921. Hellmuth told Sager that Arnold had stated that he would not invest in the project if it were being proposed by private investors. Sager did not have a chance to respond to Hellmuth's remarks. Bancroft interjected to remind counsel that Arnold had qualified his statement. He had stipulated that he wouldn't invest money in the project unless the investors left him free to manage the system without restrictions. Given a free hand, the Chicago engineer would have no hesitation to invest his own capital in the Hydro proposals.(125)

Robertson asked Sager to comment on the effect the Hydro radials would have on the overall economic performance of the Province. Sager responded that the Arnold Company had been hired to conduct an engineering study. Robertson refused to drop the point. He asked Sager if he thought it were a good idea that the municipalities were accepting liability for the scheme. Sager agreed to comment if he were allowed to qualify his answer.

> . . .when the proposition is figured out on the basis of this high estimated construction cost which we believe and which everybody realizes is high and which for rough conversational purposes I have called 170% of the pre-war costs, if the proposition will come anywhere near the figuring out on that basis or will show a small surplus on that basis, it will certainly figure out very well indeed with lower construction costs and then again, I did make the rough comparison on which I have the figures here. If the revenues were scaled down from the basis of 2.7¢ to 2¢ per passenger and if the freight were brought back from the 1919 freight, and the revenue scaled in proportion and the wages scaled now and the operating expense scaled down to pre-war prices and the cost cut down from 170% to 100%, it showed a large surplus and it seems to me it was a surplus in the neighbourhood of $1,000,000. That is very rough and I do not claim anything more than that for it. But the other thing with regard to that matter is the fact that when you check up each of these inter-urban roads and assign to it its own business you have a very modest inter-urban road as was shown in the segregation by divisions. The table I submitted and then you add to that the carload business which is a large amount for an inter-urban road but a small amount for a steam road and then you consider the fact that the inter-urban revenue around this territory seems to be larger than that shown by our reference. All of these things lead us to believe that if this project is constructed at a reasonable cost, that is a lower cost than we have estimated, at a reasonable cost, it is very sound as a project.(126)

Sager's most damaging admission was the statement that he did not see how the radial system would benefit the entire province. When Commissioner McCallum suggested that the plan had a Toronto region bias, Sager stated that it did. He countered by claiming that the lines would directly benefit the territories that they served and the only advantage that other regions would get was a little pride in knowing the Province had a first class electric railway system.(127)

In spite of the fact that questions directed by Hellmuth and Robertson appeared to get Sager to admit the project was not feasible, Arnold's

engineer refused to be moved from his conviction that the Hydro radials were workable in spite of high initial construction costs. Sager kept referring to the fact that the Hydro plan was unique. He was of the opinion that this concept prevented any accurate comparisons to existing conditions in the United States and Canada. Sager continually cautioned the commissioners on this point. He stated on a number of occasions that just because a railway chose to move itself by electric power, it did not necessarily share common features with other railways that chose the same method. As an example, he chose the Chicago street railway system and the Chicago inter-urban system. He pointed out that the only factor they held in common was the use of electricity.

Sager responded to questions in a clear, precise manner. He continually referred to the analysis drawn up by himself, Arnold and other members of the company's staff. And, he did not hesitate to remind the Royal Commission of the considerable experience the firm had acquired in electric railway operation and development. Like others, he complained of deadlines imposed by the commission. In his final statement, he stated that the Arnold Company had yet to complete its analysis of the Hydro proposals to its total satisfaction.

Testimony given by other railway experts tended to suggest that the Hydro plan was feasible if given a chance. In many cases, some quite unintended, witnesses spoke to issues which became major factors in the hearings which suggested some of Hydro's claims were valid. C.E. Friend, comptroller of the Canadian National Railways testified that his company's operating ratio had increased 10% in the year prior to the hearings. However, Friend also mentioned that the largest portion of the increase was

due to wages which were going through a catch up period resulting from the war-time freeze. During the same time period, Friend said the railway had shown considerable increases in capital expenses as well as large increases in passenger and freight revenue. He said that both 1919 and 1920 were out of the ordinary years for CN operations.(128)

Friend was followed to the witness box by George C. Royce, manager of the Toronto Suburban Railway, a position he had held since 1901. Royce explained that one of the largest problems he experienced was his outdated equipment. He felt that the railway was handicapped by needing $150,000 to modernize its rolling stock. The railway was disadvantaged by not having proper terminal facilities in Toronto and Guelph. In Toronto, the line unloaded at Keele and Dundas Streets and in Guelph it shared facilities with the GTR.

In spite of these handicaps, the railway had been operating at a profit until it decided to extend its service from Brampton to Guelph. Royce was of the opinion that the Toronto Suburban could be profitable again if it extended its tracks to Kitchener-Waterloo and built a high speed access from Keele and Dundas to downtown Toronto. He testified that the access would allow the line to increase from five to eight trips a day.

> . . .a line you know at the present time is up in the air as it were at both flanks and would do only a certain amount of business until that situation is altered.(129)

The Toronto Suburban was taking nearly all the short haul business on the Guelph to Toronto run from the Canadian Pacific. Royce stated

> . . .it consists of almost all manner of products that are manufactured in that district from motor car tires to caskets.(130)

The company operated a fleet of trucks which was used to move local freight from terminal points to customers in both Guelph and Toronto. The railway did not consider trucking as an efficient form of transportation. Royce claimed that motor truck technology had not reached a point where it could be reliable. Because of the Toronto access problem, freight customers were faced with an additional charge of 6¢ per hundredweight for truck service. Royce said that a Toronto access would allow the line to eliminate its Toronto truck service and subsequent savings would be passed on to customers.(131)

Edward P. Coleman, General Manager of the Dominion Power and Transmission Company of Hamilton followed Royce to the stand. In his role as chief executive officer of Ontario's largest private power empire, he supervised the operation of the company's electric railways. Coleman felt the biggest advantage that a radial system could offer was the prevention of overcrowding by people and industry in urban cores. He noted that his four lines had led to suburban development around Hamilton in Grimsby, Oakville, Dundas, Burlington and Brantford.(132)

Coleman spoke to the contentious duplication issue. As his model, he chose the Hamilton, Grimsby and Beamsville road. Dominion Power had wanted to construct a high speed radial from Hamilton to St. Catharines on its own right of way, but had abandoned the plan because of high land costs. However, Coleman told the hearings that if the line had been built, his company would have continued to operate the Hamilton, Grimsby and Beamsville. Dominion Power felt that enough local business could be sustained on the railway to justify its existence. He claimed that the two lines would complement as opposed to compete with each other.(133)

UNPOPULAR

CONTROLLER R. H. CAMERON—"This hand-out Drury's giving us don't have any popular smell."

MR. SAM'L J. McBRIDE—"It don't keep even as well as Joseph's Buffalo bologna."

The Evening Telegram, July 20, 1920

Quite indirectly, the three operating railway men supported the Hydro concept. Friend pointed to the fallacy of using operating ratio as a measuring tool in rail finances. Royce supported the contention that suburban business with high speed access was profitable. Coleman demonstrated the different characteristics of high speed and low speed roads and debunked the duplication concept.

The radial plans were only one concept of future transportation needs being proposed in Ontario. The other was a good roads system. Both the Hearst and Drury administrations had committed themselves to extensive highway improvement programmes which were announced in 1915. At that time, a promise was made to pave the Toronto to Hamilton highway. It was to be the first link in a plan to make highways the primary form of Ontario's communications network. As a result, the Sutherland Royal Commission decided to examine the potential impact of the Province's roads proposals. They called William Arthur McLean, Ontario's first Deputy Minister of Highways.(134)

McLean told the commissioners that the completed highway system would cover 1800 miles. The Province committed itself to the Toronto to Hamilton road and in 1920 promised to extend the highway to Niagara Falls through St. Catharines. In 1921, the government planned to construct a road from Galt through Preston to Kitchener. Simultaneously, the Department of Highways was planning to build a Hamilton to Guelph connection. A proposal had been designed to link Toronto and Bowmanville with a high speed highway. In essence, the Province was planning good roads in the same essential areas as Hydro planned to build its radials.(135)

McLean reported that the Province planned to carry the entire cost

of construction, but he expected that forty percent could be re-couped in federal subsidies. He also thought that the municipalities would contribute twenty percent. Thus, the final provincial bill would represent only forty percent of total costs. The Province planned to share the cost of maintenence with the municipalities on an eighty percent-twenty percent basis.(136)

McLean testified that Ontario had budgeted five million dollars per year for a five year period beginning in 1920. The total highway expenditure was estimated at twenty-five million dollars. He admitted that 1920 costs had exceeded the five million mark, but would not divulge the difference.(137)

Commissioner McKay attempted to get McLean to reveal the exact cost of constructing a mile of top grade highway measuring eighteen feet in width. The Deputy Minister stated that concrete work cost about $32,000 per mile but preparation of the roadbed could push the cost to $40,000. When culverts, bridges and other road incidentals were added, the cost of a "good road" could exceed $150,000 per mile. Thus, if all roads in the province were to meet this standard, the final cost could be ninety million dollars.(138)

McLean stated that the province was interested in building major routes to these standards, but it was prepared to accept a lower standard macadam surface at $18,000 a mile. McLean was asked to identify major routes. He did not specify which ones would meet this standard but did say that the choice of surface used would depend on availability of supplies at reasonable costs. He disclosed that his department was unable to obtain concrete for the Toronto-Hamilton construction in 1920

at competitive prices. Thus, asphalt was purchased.(139) When questioned on costs by McKay, McLean stated that his department had under-estimated the cost of construction and maintenance on both its existing and proposed routes.(140)

McLean introduced new trucking regulation that the Department was planning to impose to lower wear on the roads. It was based on the principle that the heavier the truck, the slower the highest speed. Yet, McLean felt that short haul truck service was superior to a radial because the truck could make door to door deliveries and eliminate terminal problems. Under further questioning, he admitted that the only potential advantage a truck had was speed. The electric railway still had the advantage in cost efficiency and heavy haul situations.(141)

McLean felt that electric railways had a role that motor traffic could not fulfill. Only a railway could move high volume passenger traffic from the suburbs to the core in morning and evening rush hours. However, he qualified his remarks. A railway would only be efficient if it could transport at least 100,000 people each way per day.(142)

McLean testified that the government foresaw greater fiscal possibilities in motor traffic. In 1919, it had earned one million five hundred and eighty thousand dollars in license fees. In 1921, McLean's department forecast a one third increase in the number of vehicles licensed in Ontario. This was to be coupled with a forty percent increase in fees. He did not state that the expected revenue increase would be tied directly to the construction of new highways. But, he did tell the commissioners that the government planned to construct the entire 1,800 miles, and that, if the budget were insufficient, the money would be

found, no matter what the source.(143)

McLean's evidence suggested that the Province was committed to a highways programme which would cost anywhere from twenty-five to ninety million dollars. McLean's department which was headed by Ontario's first Minister of Highways, F.C. Biggs was proposing a plan which was capable of providing the same basic service as the Hydro radials. Like many other witnesses called by Counsel Hellmuth, McLean spoke more in general terms than specifics. He related a report to the hearings as to how the Province could build a highways system and gain large revenues from it. This, combined with low overhead, made the proposal appealing. From American experience, the Provincial Government had a fairly good idea how a roads system would affect the Province. On the other hand, it was faced with the doubtful performance of existing electric railways and a Hydro proposal which was untested.

The second motor expert who appeared was Donald Cowan. Cowan, an agricultural specialist and professor at the University of Toronto had been hired to study trucking conditions by the Hearst Administration. His appointment continued into the Drury government. Cowan told the hearings that profits in trucking were so low that if a truck could not make a round trip full from both ends, the operator would not make a profit.(144)

Cowan suggested that the industry's future was dependent on the Province's ability to meet its needs with a good roads system. He felt that trucking had an advantage over rail when shipping perishable goods because trucks could deliver same day service. Trucking eliminated the need for platform handling from freight car to truck which was common in

railway operations in the first half of this century. Cowan stated that good roads would enable the industry to meet even narrower deadlines and offer a smoother, more consistent transportation system.(145)

Cowan was vague in his explanations of how he arrived at his conclusions. He told the commissioners that he had ridden trucks all over the province and had sent questionnaires to trucking companies. When McKay asked him about details of the study, the witness was not clear in his responses. He refused to tell McKay how many questionnaires had been sent and how many were returned. When pressed, he admitted that he didn't know the answer.

Cowan expressed general opinions about the superiority of truck service over radials. Yet, he had never worked for a radial railway and he confessed that his study did not include any comparisons between truck and rail.(146)

A second trucking expert, Wolfe Wilder, who operated a fleet between Toronto and Hamilton was called by Sutherland counsel Hellmuth. When Wilder appeared, he owned twenty trucks, down ten from the previous year when a fire destroyed his Toronto warehouse. Wilder testified to the value of his firm. A $7,000 truck cost $1 per day for insurance. He calculated depreciation at twenty-five percent per year. Licenses and business tax cost thirty cents a day; garage rental, fifty cents per day, office overhead, seventy-five cents per day. Tires were estimated at $1 per day, drivers at $3.50; gasoline was six dollars, oil and grease, 30 cents; and supervision, thirty cents. Based on a ten hour day, a round trip between Hamilton and Toronto cost $19.75 per day.(147)

Wilder stated that if the trucks were in use on a daily basis, they

would produce a gross revenue between $65 and $80. He felt that a good road between Toronto and Hamilton would allow him to operate at fifty percent of the cost of a railway if both were shipping the same goods. Wilder felt that it was only just that the expense of good roads be absorbed by taxpayers since the direct benefit would be reduced shipping costs. Counsel Robertson agreed with the witness.(148) It should be noted that Wilder admitted that if the trucking industry had to pay for construction and maintenance of the highways in the same manner as railways paid for constructing and maintaining rights of way, trucks would have no advantage over rail.(149)

Financial testimony was introduced by calling Charles Albert Mathews, Deputy Treasurer of Ontario. He appeared on February 4, 1921. Mr. Justice Sutherland had asked the Provincial Treasurer Peter White to prepare a statement for the enquiry indicating the Province's financial situation. White, through Mathews reported, at the end of the fiscal year, October 31, 1920, the Province had direct debts of $128,191,754.16 and indirect debts of $31,560,299.57 for a total of $159,752,053.73.(150)

When questioned about the Hydro portion of the provincial debt, Mathews stated a further $7,000,000 had to be added to provincial indebtedness by Hydro between October 31, 1920 and January 31, 1921. Thus, the total provincial debt when Mathews testified was $166,000,000. At January 31, 1921, Hydro was in debt to the Province for $73,312,501.10. Thus, Hydro accounted for forty-four percent of the Province's debt. As of October 31, 1920, $27,550,000 had been advanced for the Chippawa scheme.(151)

The testimony of James Henry Gundy of the Wood, Gundy brokerage firm

dealt with two sensitive issues, provincial debt and public ownership. From an investors point of view, Gundy felt the province had accumulated about as much debt as it should. He felt the issuing of railway construction securities would increase the supply of bonds to the point that they would deflate the market and raise interest rates.

Gundy complimented the Province on its handling of the debt and he was curious why the Government would consider a programme which would destabilize it monetarily. He suggested that prospective investors would be exceedingly nervous about bonds issued for electric railways because of negative American experience. However, Gundy confessed that he had not conducted a feasibility study on the Hydro plans. He felt that an Ontario investment in this area would compound financial problems faced by Ontario taxpayers who were already carrying the largest share of Canada's war debt and the costs of nationalizing the CNR.(152)

When questioned by McKay, Gundy supported Arnold's view that the country would soon experience post-war deflation. This would affect both prices and Canadian currency. Gundy was of the opinion that if Ontario were to issue $50,000,000 in bonds for the radials, inflation would persist.(153)

In Gundy's most revealing testimony, he admitted that financiers in New York and Philadelphia were opposed to the public sector, particularly Hydro In response, Commissioner Bancroft told Gundy that New York money markets had given Hydro an A-1 rating in the bond market. Gundy did not respond. He re-iterated his point about public ownership. He stated that fear of public projects emanated from the suspicion that in the long term, they would prove unsuccessful. He refused to confirm Bancroft's contention

that in spite of its large debt, Ontario was experiencing little difficulty financing Hydro projects.(154)

The evidence offered by Mathews and Gundy undermined one of the essential factors in the Hydro proposals, that being provincial guarantees for municipal bonds. Ontario, as the largest and most industrialized Province, carried the largest share of national expenditures. Hydro appeared to be a financial monster which was out of control. It was creating the largest amount of pressure on the Provincial Treasury, and there appeared to be no end in sight.

The Saturday July 2, 1921 edition of the Toronto Star reported that the Sutherland Royal Commission had held its final meeting the day previous. The Commission took 102 days of sittings and entered 13,376 pages of transcript into evidence. In his final summation to the commissioners, Counsel Hellmuth called the Hydro proposals a folly and revealed his personal opposition. From a neutral position on opening day, Hellmuth had joined Robertson and the anti-radial forces at the conclusion.(155)

The Friday August 5 edition of the Star speculated that the Royal Commission would issue an anti-Hydro report within the month. It was announced publicly on Saturday August 13, 1921, slightly over a month after the last sitting. When questioned about the results by Star reporters, Sir Adam Beck refused to comment until he had read Sutherland's report.(156)

The commissioners were not unanimous. Bancroft issued a minority report recommending the acceptance of the radial plans. His colleagues made seven recommendations.

1) The financial condition of electric railways in Ontario and the United States in and prior to 1920 had been so precarious and unsatisfactory, and the outlook for improvement so dubious and discouraging, that the construction of the proposed system of electric railways should not, in our judgement, be entered upon unless the evidence of competent operating experts fully justifies the conclusion that they will be self-supporting.

2) Upon full consideration of the evidence, and the proper weight to be given to the witnesses, we are of the opinion that the proposed electric railways would not be self-supporting.

3) We are of the opinion that the construction of the proposed electric railways, paralleling and competing as they would with the Canadian National Rys. System, would be unwise and economically unsound, and would strike a serious blow at the success of Government ownership.

4) We are of the opinion that, until the Chippawa power scheme, now estimated to cost $60,000,000 or upward, is completed, and has been in operation for sufficient length of time to be self-supporting, the province would not be justified in endorsing for the construction of an electric railway system at an initial estimated cost of $45,000,000.

5) We are of the opinion that the endorsement by the province of bonds of the Hydro Electric Power Commission for systems of electric railways in various parts of the province, at the instance of the municipalities concerned, is highly dangerous, and may lead the province into great financial difficulties. The endorsement for one locality would give rise to demands for the like accomodation for other localities, which it will be hard for any government to refuse, and might result in the province being drawn into serious financial liabilities, and we would therefore suggest that government endorsement of such bonds should be discontinued. To the risk involved in accomodation endorsements, it is no answer to say that they are mere matters of form involving no real liability. Individual and corporate experience is to the contrary.

> 6) We are of the opinion that the expenditure of $25,000,000 on improvement of public highways in the province having been begun, it would be unwise to commence the construction of the electric railways in question until the effect in the improvement of these highways has been ascertained, and the use of them by motor cars and motor trucks, whose competition with electric railways has been found so keen and difficult to meet elsewhere, is made clearly apparent.
>
> 7) We are of the opinion that the rapidly increasing debts and financial commitments of the Dominion, province and municipalities have aroused well founded apprehension in the minds of thoughtful citizens, and are a cogent reason against the embarkation at this time in the construction of the contemplated electric railways.(157)

The Commission questioned the competence of the Hydro staff to undertake and manage an enterprise the size of the radial railway project. It outlined the fact that Gaby's experience with electric railways was limited to the London and Port Stanley construction project. W.G. Hewson, who had prepared the estimates for operating expenses and revenues was complimented for his expertise in electrical engineering and chastised for his lack of experience in railroading. Only T.U. Fairlie who prepared the construction estimates was complimented by the majority report.

> . . .his estimates were prepared with care and detail, and have not been very seriously called in question.(158)

The commissioners were only critical of the fact that initial construction costs were high.(159)

The Commission felt that the Hydro estimates of cost and revenue would be reliable only if actual operating costs and revenues of existing lines in the territory to be served by the Hydro radials were examined. The report criticized Hydro, the Municipal Radial Railway Union and the

Arnold Company for ignoring this undertaking. The commissioners complained that too much leeway was given to persons making the studies.(160)

W.S. Murray was severely criticized. The reporters commented

> . . .one cannot read it (Murray's Report) without coming to the conclusion that, on its very face, it shows him to have been too eager to endorse and to have made too little investigation to warrent him in doing so.(161)

The report noted that Murray had little or no operating experience. It accused him of offering an incomplete report, which was essentially a review of Gaby's Hydro documents.(162)

The Royal Commission felt that conditions which had existed when the project was formulated in 1913 had changed to the point that the need for radial railways had to be questioned. No public roads existed in 1913 but with the purchase of the Canadian Northern and the formation of CN, financial impediments of private ownership were overcome, such as dividend payments. Although the majority report did not state specifically how public ownership would change the operating philosophy of the GTR and CNR, it contained suggestions that imminent change was on the way. In particular, the commissioners found it "curious" that the national steam lines did not offer suburban service in and around Toronto. They felt that Hydro had been successful in exploiting public sympathy in this area.

The writers of the majority report were of the opinion that steam railways had provided adequate service in the rest of the province. In the area which Hydro proposed to serve, steam roads had 800 miles of track, of which one-quarter was double tracked. This network was supplemented by 250 miles of electric lines. As a result, the Royal Commission questioned the need for a further 325 miles of Hydro line.(163)

Ownership and administration of the railways were to be modelled along the same lines as the Hydro-municipality co-operative system. The Royal Commission was not impressed by this factor. Although the co-operative had been successful in building and promoting Hydro in its early years, the commissioners questioned whether such success would be likely in the radial scheme. They pointed to the fact that the HEPC was guaranteed a monopoly in its electric service areas. It did not have the same guarantee for rail service. Hydro was faced with competition from existing railways and bus and truck service. The Majority Report's authors stated that determinants for success or failure of the scheme would be service and cost no matter who owned the lines.(164)

The Commission also questioned the high construction standards proposed by Hydro. It felt that high initial costs would result in decreased profits or deficits at a later date. As an example, it noted the case of the Grand Trunk Pacific line which had failed due to what the commissioners called "over constructed for the times and the prospective business."(165)

The Commission was also critical of the proposed suburban revenues and service schedules. Although it conceded the electric railway was best suited for this type of operation, it did not feel that Toronto was large enough to support it. The report criticized Arnold for using New York and Chicago as models. The Commission suggested that suburban service could only be successful when conducted from a distance of forty to fifty miles from a large population centre. They did not feel that Toronto would experience enough rapid growth in both population and business to support the class of service being proposed by Hydro's consultants.(166)

The commissioners stated that by offering three classes of service on one track, Hydro would create difficulties for itself attempting to be proficient in all three. The majority report rejected Hydro's claim that the radial service could deliver small freight and express traffic more efficiently than steam service. The writers claimed that Hydro could not build an efficient terminal system which would allow it to process its three service idea. Thus, in the long term, Hydro radials would suffer from the same slow service as steam lines.(167)

The commission rejected the concept that cheap electric power would significantly affect operating costs. The report noted that costs would only be reduced by seven percent. The report also rejected one of Hydro's essential inducements to municipalities to accept the radial scheme. Hydro was offering low rate electric power along the radial routes to communities near the tracks. The Sutherland majority report claimed all municipalities along the routes were adequately served by 1920.(168)

The report also attacked Arnold's predictions for revenues and operating costs. The report noted that predicted passenger revenues for the Bowmanville-Niagara corridor equalled the existing totals for operating steam and electric lines in the area. However, the majority report revealed that suburban revenuse had not been included in their critique. The commissioners could not accept Arnold's 1925 freight projections which were only $170,000 less than 1920 actual billings in the same region for steam and electric roads.(169)

At the heart of the matter in both operating costs and revenues was the population projection made by Arnold. The commissioners reported

> . . .considering all the features of the expected passenger revenue in combination, we are of the opinion that these revenues are too optimistic and not likely to be realized. They are based on populations which do not yet exist and hence at least uncertain. They are higher than most roads of general similar passenger type now in operation, and are second only to those operating out of very large cities where the riding habit is higher.(170)

In spite of warnings by expert witnesses against the use of comparative operating ratio, the majority report made this statement

> . . .from the foregoing table of roads already described and discussed herein, it is obvious that the hydro radial expectations of operating ratio are entirely out of line with existing roads in practical experience.(171)

Although the Commission recognized the fact that the radials were to be publicly owned and operated at cost, it persisted in criticizing the margin of cost and revenue in the proposals. It felt that ordinary rules of business should be applicable even though the lines were not required to pay dividends. The margin of error, calculated at five per-cent, the commissioners claimed was too small to ensure success.(172)

The Royal Commission examined all five divisions of the Hydro radials and concluded that even the Toronto-St. Catharines lines should not be built since it depended on feeder service from the other four divisions. The report recommended that the City of Toronto commence to explore the possible upgrading of the existing radial and street railway service which was about to be acquired by the TTC. The report recommended that Hydro be excluded from the project.(173)

The commissioners felt that the Toronto and York Radial, Metropolitan Division should be given downtown access rights. It suggested that the Toronto-Eastern be purchased and operated by the TTC with a view to

connecting it to the CNR at Bowmanville. The Toronto-Suburban should remain under federal ownership but be allowed to meet the Toronto and York Radial, Mimico Division. It suggested that the TYR, Mimico line be transferred to TTC ownership and should search for a right of way which would remove its tracks from the highway and allow it downtown access.(174)

The Commission also wanted municipalities between Port Credit and Oakville to explore the possibility of joining the Toronto and York with the Dominion Power service from Oakville and Hamilton. This would provide needed through service from downtown Hamilton to downtown Toronto. The commissioners recommended against terminals in both cities.(175)

The Sutherland Majority Report was accompanied by a Minority Report written by Commissioner Bancroft who supported construction of the lines. In his preamble, Bancroft stated that he felt the Province had a necessary role to play in construction of the lines. He stated that it would be impossible to back such a publicly owned project unless the Province could guarantee railway bonds.(176)

He wrote seven recommendations

> 1) That the Government adopt the principle of publicly-owned and operated electric radial railways for the province.
>
> 2) That the government instruct the Hydro-Electric Power Commission to proceed at once with negotiation to complete contracts or agreements for the following: the purchase of certain electric railways now owned by the Dominion Government and the traffic arrangements which may enter into the agreements; the purchase of a section of the Grand Trunk Ry. owned by the Dominion Government, to acquire running rights over certain sections of the G.T.R., entrance into and through Hamilton on the G.T.R. right of way, and other arrangements and agreements which I propose to outline in this report.

Hydro Commission to Drury: "Just leave it to Sir Adam. He's an experienced horseman."

The Toronto World, May 21, 1920

3) Upon the completion of such agreements or contracts, or the choice of alternate plans where a satisfactory agreement or contract is not arrived at, the Hydro-Electric Power Commission shall at once place before the Government the result as completed, showing clearly where their expectations were realized and where alternate plans had to be chosen.

4) Following the action indicated above, the Government shall request the Hydro-Electric Power Commission to recommend to the Government the most advantageous and economical time to commence construction of the radial railways, and on which division or divisions construction shall begin first. The amount of money already expended on the Toronto & St. Catharines Division with the desire of the municipalities so clearly expressed, would suggest that this division ought to be commenced first and hurried to completion, so that the revenues may be earned as speedily as possible. This division is admittedly the best and most favorable in the whole project.

5) I strongly recommend to the Government and the Hydro-Electric Power Commission that when they are deciding the date for commencement of construction of radial railways very great weight should be given to the present state of unemployment. The Government could help a great deal by commencing work on such a public utility as radial railways, whereby many men could earn wages and the Government obtain in return labor for the money expended.

6) The Hydro-Electric Power Commission should have as a member one of the best and most experienced railway men in operating and traffic who can be found. Such a railway expert would be of great assistance to Chief Engineer Gaby, whose duties in connection with the power projects are onerous now, and upon whom much of the work connected with radials is likely to fall. Legislation may have to be passed to increase the number of members on the commission, but such an experienced railway authority should be obtained without delay and placed in a position where he could be of greatest assistance to the Hydro-Electric Power Commission. This is no reflection upon any of the engineers of the Hydro Commission, but a recommendation to assist the Government and the Commission in a great public project of magnitude.

> 7) The utmost co-operation and frankness should govern the relations of the Hydro-Electric Power Commission with the Government, and the Government with the Hydro-Electric Power Commission, in this great public enterprise of a publicly-owned and operated radial railways. There can be only one purpose, and that is the progress and welfare of this great province. The scheme of radial railways outlined before the Royal Commission by the Hydro-Electric Power Commission, amplified and improved by experts in evidence before the Royal Commission, will be of immense benefit to the territory involved and the province as a whole, and there is every reason to believe confidently that the radials will be self-supporting, providing service at cost to the citizens, and ensuring a healthy development, and progress for Ontario, which lack of such transportation facilities will seriously obstruct.(177)

With the issuing of the Majority and Minority Reports, the radial issue was sidelined permanently. Sir Adam Beck lost the first major battle in his long career in Hydro. Although the recommendations were announced on August 13, 1921, the final printed copies of the reports were not issued until December. On February 10th, 1922, Beck issued his last radial statement in the form of a forty-three page critique of the Sutherland Commission findings. Although Beck specifically highlighted what he thought were deficiencies in the Sutherland Majority Report, the document was replete with many of the usual Beck invectives and emotional stances.

In the preamble, the Hydro Chairman said

> . . .in order, however, to avoid any misunderstanding it is sufficient to state that there is no controversy with the general method pursued by Mr. Bancroft either with respect to his use of essential facts or his intelligent appraisment of their respective values. Whether right or wrong in his conclusions, Mr. Bancroft's presentation is entitled to fullest respect. The extent to which the Majority Report has failed to merit similar consideration may safely be left to the decision of

> the Reader. I have dealt with the Majority Report because, I, for one, regard it as permeated by misunderstanding or by the misinterpretation of evidence and by the omission of essential data, to an extent which nullifies its usefulness as a judicial document and as a criterion by which either to approve or to condemn the Hydro-Radial Project under consideration.(178)

In the text, Beck began by stating

> . . .obviously, it is quite out of the question for the general public to make any detailed study of the evidence in order to determine the merits or demerits of the Hydro-Radial proposition. As a matter of fact, the findings of the majority of the Commissioners of the radial enquiry show that even these gentlemen were apparently unable rightly to weigh the great assemblage of material which they brought together, or rightly to interpret its import.(179)

After writing five pages on the history of the radial scheme, Beck dealt with each one of the Royal Commission's reservations. Speaking to the duplication question, the Hydro Chairman stated that railway lines can be placed in close proximity to each other physically without duplicating service. Only when two lines offered the same service to the same territory could they be considered in duplication. He amplified the point by claiming that Hydro radials could run parallel to Canadian National steam trains and Toronto Street Railway lines without actively interfering with each other since each would offer its respective class of service.(180)

Beck criticized the report for noting that the Royal Commission insisted that the Chippawa development be completed and proved successful before the HEPC could begin its radials. Even though four of the five radial divisions were to be dependent on Chippawa power, Beck saw the radials and the power developments as two distinct entities. He

admonished the Royal Commission for ignoring the Government radial statement of July 6, 1920 which advised the Sutherland Royal Commission to treat them separately.(181)

Beck questioned the competence of witnesses called by the Commission. He pointed out that Commission experts from Tye to Gutelius were essentially steam railway men with little or no experience in electric railways. On the other hand, Beck's expert Bion J. Arnold was fully qualified to comment on construction, design and operation of all types of electric lines. He reiterated the fact that the Arnold Company had spent ten months preparing the report which supported Beck. Beck dismissed as immaterial the differences in Arnold's report and Gaby's initial proposals.

Beck pointed out that the Sutherland Commission had defined its witnesses as operating experts. He revealed that although Bailey and Herdt had contact with the electric railway industry, neither had actually been in a management position with their respective organizations. He levelled the same charge against Rifenberick. He demonstrated, by quoting from the transcripts, that three other Commission witnesses, Coen, Fuestel and Todd who were operators, had never read the Hydro proposals. The most extensive examination had been conducted by Todd who looked at the maps of towns to be served by the radials.(182)

The Hydro Chairman then examined the three ingredients which the Royal Commission said would prevent the success of radials, high construction costs, operating estimates which were too low and revenue estimates which were too high. Beck felt that the woes of the electric railway industry could be traced to the fact that construction standards and equipment standards were too low to meet contemporary needs. He wrote

about the Chicago, North Shore and Milwaukee Railway which had been constructed to standards close to those of Hydro. Its 1920 annual report showed a net surplus of $433,000, representing a fifty-two percent increase over the previous year when the line was extended to Milwaukee. He also claimed that the International Railway which operated from Buffalo to Niagara Falls, New York had just spent $225,000 per mile to double track its line to meet expected increases in passenger traffic.(183)

Beck criticized the Commission for not calling witnesses who would confirm Arnold's contention about operating costs. He felt that Commission witnesses were not specific enough in their analysis, and were not precise in analysis work done on the Arnold Report. He felt that the Commission made a serious error in using existing railway operations in contrast to Arnold. He was particularly vexed by the fact, that although every witness cautioned against the use of operating ratio, the Commission report emphasized it as a method of comparison.

Beck re-printed the table which appeared in the Majority Report which showed operating ratios on Canadian and American lines ranging from 60.0 to 79.3. Since the operating ratio proposed by Hydro was 55.7, Beck chose six American lines of differing sizes and characteristics which performed from 47.35 to 55.47. On two of his examples the operating ratio declined over a four year period.(184)

The Hydro Chairman stated that the Royal Commission did not question the Hydro estimates for revenues in three areas, miscellaneous, local passenger service and suburban service since they were consistent with known conditions in the United States. However, the Majority Report did question the concept of interurban passenger revenues. Beck claimed that

the Hydro estimates were determined by actual operating conditions on a number of American railways which operated on principles close to the Hydro proposals. This involved six railways serving the Detroit-Cleveland region. He said that the rural to urban ratio in this area was basically the same as the territory to be served by the Hydro radials. Yet, the American lines had more water competition than the Ontario one could expect.

Beck noted that only the inter-urban factors of these lines were examined since none had high speed urban access. He said Hydro had received the co-operation of these companies to review their books and the population bases they served. In no case did Hydro calculate any revenues received by the six railways inside metropolitan boundaries.(185)

Beck then discussed Arnold's proposition that passenger revenues were completely dependent on the accuracy of population projections. In this area, he was particularly bitter

> . . .probably no other feature of the Majority Report more fully discloses the inconsistent, inaccurate and inadequate character of the reasons given by the Sutherland Commission in support of its conclusions than the manner in which this subject of passenger revenues is dealt with.(186)

He claimed that the Royal Commission erred when it stated that local assessment figures are usually in excess of census returns making data unreliable when predicting population growth. Beck had used 1911 census figures and assessment rolls to show the opposite was true for areas included in the radial proposals. He felt that population trends for 1925, 1930 and 1935 would actually be higher than figures submitted by Hydro and its consultants.(187)

Beck questioned the Commission's view that passenger revenues projected by Hydro were only possible if the system operated out of very large cities. He felt that Toronto, with a projected population of 650,000 in 1925 would compare favourably with existing cities mentioned by the Commission where successful electric lines were operating. These were Washington with a population of 438,000; Baltimore at 735,000; Cleveland with 797,000 and Detroit at 1,089,000. The only other city in the report, Chicago, was too large to be compared with Toronto.(188)

The Commission also stated that successful electric lines such as the Detroit-Toledo connection were nearly all doubled tracked, as opposed to the Hydro plans which were anticipating sixteen miles of double track in and around Toronto. Beck showed his estimates which demonstrated an earning of $15,287 per mile on the double track Toronto connection, leaving $11,900 per mile of earning for the remaining 307 miles of single track. This compared favourably with the Detroit, Jackson and Chicago line which earned $12,512 per mile on single track and the $13,000 earned on the Flint Division of the Detroit United Railways single track line. Beck also noted that the Toronto and York Radial, Mimico Division earned $22,818 per mile on a single track. The suburban portion of the line earned $75,209 per mile.

Beck also felt the Royal Commission distorted the facts when they compared the per capita earnings on the Detroit-Cleveland system with the proposed Hydro lines. In his reports, Arnold felt the entire Hydro system would produce a revenue of $8.36 per capita as compared to the commissioners' model which produced $8.12 per capita. The Hydro Chairman said this figure for the Detroit-Cleveland systems was only based on

inter-urban revenue and did not include revenues obtained inside city limits. He claimed that if Hydro eliminated its Toronto terminal revenues, the income per capita would decrease to $7.40. He contended that in the original Gaby plans, the figure was estimated at $7.04. Arnold reported that it was too low.(190) Beck also wrote that another fundamental error had been committed by the Royal Commission when it compared the per capita revenues on the Toronto-St. Catharines line with the Detroit, Monroe and Toledo Railway. He claimed that the fare of 2 cents per mile was not equal to the proposed Hydro fare of 2 and 3/4 cents. As well, he noted that eighty-five percent of the line's business emanated from Toledo and only fifteen percent from Detroit. Monroe, the intermediate city on the line had a population of 11,500 while Hamilton, the intermediate point on the Hydro line had a population ten times larger.(191)

Beck claimed the Toronto-St. Catharines line should have been compared to the Cleveland and Canton Railway which had branch lines in and around Akron, Ohio. It was closer in design and population served to the Hydro plans than the Detroit, Monroe and Toledo. The inter-urban portion of this line produced a revenue of $5.88 per capita which compared favourably with the $5.69 projected for the Toronto-St. Catharines railway.(192)

Beck was critical of the alternative scheme suggested for Toronto in the Majority Report. He felt the proposal was too narrow, focused on Toronto as opposed to the southern portion of the province. He was particularly critical of the fact that the Sutherland alternative was not subjected to the same scrutiny as his proposals, namely a Royal Commission. He pointed out that no estimates had been submitted, no experts were asked to comment on the plan and no projection of potential revenues was offered.

The Hydro Chairman was of the opinion that the Royal Commission was determined to cheapen the radial scheme and was careful to write nothing on paper which could be criticized.(193)

In conclusion, Beck was disturbed by the fact that the Sutherland Royal Commission had ignored the unique characteristics of the Hydro concept.

> . . .the Sutherland Commission has treated it in certain important respects as though it were one of the cheaply constructed electric railway systems, over-capitalized, operating more or less on the highways and street, and depending upon expensive power. This statement is warranted because even though clearly recognizing that the Hydro-Radial project was unique, the Sutherland Commission, nevertheless, employed data relating to cost, operation, revenue and other features, of inferior railways as the criterion by which to judge the merits of the Hydro-Electric Power Commission's proposed radials.(194)

In 1922, the Drury Government passed Bill 100, An Act respecting the construction and operation of Municipal electric railways. It received Royal Assent on June 13. The Act was virtually the same as its many predecessors, excepting one clause which sealed the fate of the radial dream.

> . . .the power conferred by the said Act on the Lieutenant-Governor in Council to authorize the Treasurer of Ontario for and on behalf of the Province to guarantee the payment of bonds issued by the Commission (HEPC) shall not apply.(195)

The Drury Government did not cancel the radial scheme. It placed an impossible roadblock in the way. It returned the financial responsibility for the scheme back to Hydro and its participating municipalities. Since Hydro owed the Provincial Treasury $124,000,000, it was placed in a position where attempts to raise money through bond issues could have damaged its credit rating. It could also not support municipal bond issues. Still, Adam Beck continued to press for the radials, and

construction started on the Toronto-Port Credit section in 1923. However, municipalities along the line began to lose their enthusiasm for the scheme. When Beck died on August 15, 1925, the line had not been completed. It never was.

The Toronto World, July 9, 1920

NOTES

1. Transcript, In The Matter of Inquiry Into the Hydro-Electric Radial Railways, afterwards known as Sutherland Commission, Ontario Hydro Archives, p.3.

2. Canadian Railway and Marine World, September 1921, p. 490. The same information is also reported in the transcripts, p.2 and The Toronto Star, July 12, 1921, p.6.

3. Sutherland Commission Transcripts, p. 3.

4. Canadian Railway and Marine World, September 1920, p. 501.

5. Sutherland Commission Transcripts, p. 5. Hellmuth's remarks were also reported in detail by the Toronto Star, Thursday July 29, 1920, p.3.

6. Reports of Commission Appointed to Inquire into Hydro-Electric Railways (afterwards known as Sutherland Majority Report), Toronto: Clarkson W. James, King's Printer, pp. 57-58.

7. Sutherland Commission Transcripts, pp. 1749-1751.

8. Sutherland Commission Transcripts, pp. 1753, 1789, 1818-1817.

9. Sutherland Commission Transcripts, pp. 1754, 1890-1891.

10. Sutherland Commission Transcripts, pp. 1805-1806.

11. Sutherland Commission Transcripts, pp. 1868-1869, 1867, 1877,1880-1881.

12. Sutherland Commission Transcripts, pp. 1831-1832.

13. Sutherland Commission Transcripts, pp. 1899, 1953.

14. Sutherland Commission Transcripts, pp. 1779, 1971.

15. Sutherland Commission Transcripts, p. 1956.

16. Sutherland Commission Transcripts, p. 1956.

17. Sutherland Commission Transcripts, p. 1953.

18. Sutherland Commission Transcripts, pp. 1786-1787.

19. Sutherland Commission Transcripts, pp. 1754-1755.

20. Sutherland Commission Transcripts, p. 1972.

21. Sutherland Commission Transcripts, p. 2340.

22. Sutherland Commission Transcripts, pp. 2341-2345.

23. Sutherland Commission Transcripts, pp. 2393-2394.

24. Sutherland Commission Transcripts, p. 2356.

25. Sutherland Commission Transcripts, p. 2363.

26. Sutherland Commission Transcripts, pp. 2397-2398.

27. Sutherland Commission Transcripts, p. 2336.

28. Sutherland Commission Transcripts, p. 2336.

29. Sutherland Commission Transcripts, pp. 12,452-12,456.

The Saturday, December 11, 1920 edition of The Star identified Gutelius as one of the anti-radial camp. In a fairly straight forward report on page 1, it accounted his evidence under the banner "Gloomy View of Radials."

30. Sutherland Commission Transcripts, pp. 11,521-11,524.

31. Sutherland Commission Transcripts, pp. 11,712-11,713.

32. Sutherland Commission Transcripts, pp. 12,254, 12,262.

33. Sutherland Commission Transcripts, pp. 11,562.

34. Sutherland Commission Transcripts, pp. 11,640-11,643.

35. Sutherland Commission Transcripts, pp. 11,640-11,643.

36. Sutherland Commission Transcripts, p. 11,715.

37. Sutherland Commission Transcripts, pp. 1248, 1249, 1257-1259.

38. The Toronto Star, Monday November 22, 1920, pp. 1-2.

39. Sutherland Commission Transcripts, p. 1259.

40. Sutherland Commission Transcripts, p. 1283.

41. Sutherland Commission Transcripts, p. 1283.

42. Sutherland Commission Transcripts, pp. 1336-1337.

43. Sutherland Commission Transcripts, pp. 1336-1337.

44. Sutherland Commission Transcripts, pp. 1336-1337 (also see pp. 1307-1308)

45. Sutherland Commission Transcripts, p. 1342.

46. Sutherland Commission Transcripts, p. 1342.

47. Sutherland Commission Transcripts, p. 1343.

48. Sutherland Commission Transcripts, p. 1343.

49. Sutherland Commission Transcripts, p. 1396.

50. Sutherland Commission Transcripts, pp. 1388-1398, 1424-1425.

51. Sutherland Commission Transcripts, pp. 1291-1292.

52. Sutherland Commission Transcripts, pp. 1263, 1278.

53. Sutherland Commission Transcripts, pp. 1281-1282, 1317.

54. Sutherland Commission Transcripts, pp. 1261-1262.

55. Sutherland Commission Transcripts, pp. 1398-1400.

56. Sutherland Commission Transcripts, pp. 61-62.

57. W.R. Plewman, Adam Beck and The Ontario Hydro, Toronto: The Ryerson Press, 1947, p. 60.

58. Sutherland Commission Transcripts, p. 356.

59. Sutherland Commission Transcripts, pp. 527-528.

60. Sutherland Commission Transcripts, pp. 527-528.

61. Sutherland Commission Transcripts, pp. 527-528.

62. Sutherland Commission Transcripts, pp. 372-374, 376-377.

63. Sutherland Commission Transcripts, p. 290.

64. Sutherland Commission Transcripts, p. 290.

65. Sutherland Commission Transcripts, pp. 380-381, 383.

66. Sutherland Commission Transcripts, pp. 385-388.

67. Sutherland Commission Transcripts, p. 471.

68. Sutherland Commission Transcripts, p. 487.

69. Sutherland Commission Transcripts, p. 494.

70. Sutherland Commission Transcripts, pp. 518-519.

71. Sutherland Commission Transcripts, pp. 525-526.

72. Sutherland Commission Transcripts, pp. 903-904, 121-122, 436-437, 439.

73. Sutherland Commission Transcripts, pp. 410-412, 803.

74. Sutherland Commission Transcripts, pp. 565-566.

75. Sutherland Commission Transcripts, pp. 805, 807.

76. Sutherland Commission Transcripts, pp. 412-413.

77. Sutherland Commission Transcripts, pp. 940-941.

78. Electric Railway Journal, September 30 - October 4, 1919, pp. 114-115.

79. Sutherland Commission Transcripts, pp. 330-331.

80. Sutherland Commission Transcripts, p. 403.

81. Sutherland Commission Transcripts, p. 491.

82. Sutherland Commission Transcripts, pp. 739-740.

83. Sutherland Commission Transcripts, pp. 780-782.

84. Sutherland Commission Transcripts, pp. 540-542, 577-579.

85. Sutherland Commission Transcripts, p. 585.

86. Sutherland Commission Transcripts, pp. 694-695, 700-702.

87. Letter to E.C. Drury from Mr. Justice Sutherland, Toronto, February 12, 1921, Ontario Hydro Archives.

88. Letter to Col. C.S. MacInnes from W.W. Pope, Toronto, February 18, 1921, Ontario Hydro Archives.

89. Sutherland Commission Transcripts, pp. 8352-8361.

90. Sutherland Commission Transcripts, pp. 8466-8468.

91. Sutherland Commission Transcripts, pp. 8475-8476.

92. Sutherland Commission Transcripts, p. 8484.

93. Sutherland Commission Transcripts, pp. 8713-8714.

94. Sutherland Commission Transcripts, pp. 8751-8753, 9445, 9872-9873.

95. Sutherland Commission Transcripts, pp. 8758-8759.

96. Sutherland Commission Transcripts, p. 9677.

97. Sutherland Commission Transcripts, pp. 9553-9554, 9701-9702.

98. Sutherland Commission Transcripts, p. 9418.

99. Sutherland Commission Transcripts, pp. 9551-9552.

100. Sutherland Commission Transcripts, pp. 9788-9693, 9998-9999.

101. Sutherland Commission Transcripts, pp. 9703-9704.

102. Sutherland Commission Transcripts, pp. 9703-9704.

103. Sutherland Commission Transcripts, p. 9447.

104. Sutherland Commission Transcripts, pp. 9445, 9449.

105. Sutherland Commission Transcripts, pp. 9447-9452.

106. Sutherland Commission Transcripts, pp. 8553-8557.

107. Sutherland Commission Transcripts, pp. 9351-9352.

108. Sutherland Commission Transcripts, pp. 9365, 9367-9368.

109. Sutherland Commission Transcripts, pp. 8455-8457.

110. Sutherland Commission Transcripts, pp. 8559-8562.

111. Sutherland Commission Transcripts, pp. 9549-9550.

112. Sutherland Commission Transcripts, pp. 9840-9845.

113. Sutherland Commission Transcripts, pp. 9859-9860.

114. Sutherland Commission Transcripts, pp. 9720-9721.

115. Sutherland Commission Transcripts, pp. 8515, 9667-9670.

116. Sutherland Commission Transcripts, pp. 9809-9810.

117. Sutherland Commission Transcripts, p. 10,010.

118. Sutherland Commission Transcripts, p. 10,010.

119. Sutherland Commission Transcripts, pp. 8876-8877.

120. Sutherland Commission Transcripts, pp. 9110-9114.

121. Sutherland Commission Transcripts, p. 9115.

122. Sutherland Commission Transcripts, pp. 9041, 9111.

123. Sutherland Commission Transcripts, pp. 10,546-10,547.

124. Sutherland Commission Transcripts, pp. 10,641-10,644.

125. Sutherland Commission Transcripts, pp. 10,764-10,765.

126. Sutherland Commission Transcripts, pp. 11,084-11,086.

127. Sutherland Commission Transcripts, pp. 10,447-10,448.

128. Sutherland Commission Transcripts, pp. 1490, 1518.

129. Sutherland Commission Transcripts, pp. 1545, 1555, 1556, 1561.

130. Sutherland Commission Transcripts, p. 1564.

131. Sutherland Commission Transcripts, p. 1564, 1571, 1572-1573, 1593-1594.

132. Sutherland Commission Transcripts, pp. 1649-1650.

133. Sutherland Commission Transcripts, p. 1667.

134. Sutherland Commission Transcripts, p. 1683.

135. Sutherland Commission Transcripts. pp. 1684-1689.

136. Sutherland Commission Transcripts, pp. 1687-1689.

137. Sutherland Commission Transcripts, p. 1689.

138. Sutherland Commission Transcripts, pp. 1695-1697.

139. Sutherland Commission Transcripts, p. 1713.

140. Sutherland Commission Transcripts, p. 1714, 1720.

141. Sutherland Commission Transcripts, pp 1719-1720.

142. Sutherland Commission Transcripts, pp 1719-1720.

143. Sutherland Commission Transcripts, pp. 1739-1740.

144. Sutherland Commission Transcripts, p. 4262.

145. Sutherland Commission Transcripts, pp. 4387, 4390-4391.

146. Sutherland Commission Transcripts, p. 4390.

147. Sutherland Commission Transcripts, p. 4297.

148. Sutherland Commission Transcripts, pp. 4202-4203, 4309-4310.

149. Sutherland Commission Transcripts, p. 4312.

150. Sutherland Commission Transcripts, pp. 4635-4636.

151. Sutherland Commission Transcripts, pp. 4646-4639.

152. Sutherland Commission Transcripts, pp. 12,364, 12,366-12,369.

153. Sutherland Commission Transcripts, pp. 12,375-12,376.

154. Sutherland Commission Transcripts, pp. 12,395-12,398.

155. The Toronto Star, Saturday July 2, 1921, pp. 2-3.

156. The Toronto Star, Friday August 5, 1921, p. 1. The Saturday August 13, 1921 edition of The Star published the highlights of the Royal Commission report and Adam Beck's refusal to respond to it.

157. Sutherland Majority Report, pp. 3-4. The recommendation and highlights of the report were also published in Canadian Railway and Marine World, September 1921, p. 490.

158. Sutherland Majority Report, pp. 6-7; Canadian Railway and Marine

World, p. 491.

159. Sutherland Majority Report, p. 7; Canadian Railway and Marine World, p. 491.

160. Sutherland Majority Report, p. 7; Canadian Railway and Marine World, p. 491.

161. Sutherland Majority Report, p. 7; Canadian Railway and Marine World, p. 491.

162. Sutherland Majority Report, p. 7; Canadian Railway and Marine World, p. 491.

163. Sutherland Majority Report, p. 16; Canadian Railway and Marine World, p. 492.

164. Sutherland Majority Report, p. 17; Canadian Railway and Marine World, p. 492.

165. Sutherland Majority Report, p. 18; Canadian Railway and Marine World, p. 492.

166. Sutherland Majority Report, p. 19; Canadian Railway and Marine World, p. 493.

167. Sutherland Majority Report, p. 21; Canadian Railway and Marine World, p. 493.

168. Sutherland Majority Report, pp. 21-22; Canadian Railway and Marine World, p. 493.

169. Sutherland Majority Report, pp. 22-37; Canadian Railway and Marine World, p. 493.

170. Sutherland Majority Report, p. 38; Canadian Railway and Marine World, p. 493.

171. Sutherland Majority Report, pp. 45-47; Canadian Railway and Marine World, p. 493.

172. Sutherland Majority Report, p. 50; Canadian Railway and Marine World, p. 494.

173. Sutherland Majority Report, pp. 60-63; Canadian Railway and Marine World, p. 494. The Commission seemed adamant that Hydro be restricted to a role which clearly defined it as a producer and transmitter of electric energy. On page 14 of the Majority Report, the commissioners stated their case.

> . . .there is another matter which we have raised in our minds with reference to the position of the Hydro-Electric Power Commission, and its relation to the municipalities under the Electric Railway Legislation and agreements already referred to. It is the many different positions, duties and obligations which the Commission may be called upon to perform and discharge. It is, as a public Commission of the Province, a trustee thereof for the development and sale of power, and in connection with the expenditures for construction and operation incidental thereto, and the moneys received and expended in connection therewith. It is, in the case for example of the Sandwich, Windsor and Amherstburg Railway (and it will be for the municipalities interested, if this system of electric railways is constructed and operated) the trustee for these municipalities in connection with construction and operation. It will be the vendor of power for the Power Commission, and

> the purchaser from itself in that capacity, of power as the agent and manager of the Electric Railway System for the municipalities concerned. It will be the trustee of the municipalities for the physical property constituting the electric railway system. It will be the artiber between the municipalities in case of differences between them and without appeal to any other tribunal in case of difference. It is the investigator and advisor of the municipalities in conncetion with the proposed system of electric railways and the framer of estimates connected therewith. It is on its report and endorsation that it approaches the Government or is requested to do so by the municipalities concerned, with a view to obtaining endorsation by the Province of its bonds.
>
> It does not seem to us that for the members of any Commission to play all these important, differing and possibly conflicting parts is difficult, if not impossible adequately to perform. It would appear to us that it tends to divert the full attention and consideration of the Commission from the great work of developing and selling power. It is prone, as matters have thus far gone, to lead the members of the Commission or other officials, to be drawn into municipal difficulties and differences. We suggest that these questions may well be deemed matters for consideration by the Government and Legislature.

174. Sutherland Majority Report, pp. 62-65; Canadian Railway and Marine World, pp. 494-495.

175. Sutherland Majority Report, pp. 62-65; Canadian Railway and Marine World, p. 495.

176. Sutherland Minority Report, p. 169; Canadian Railway and Marine World, p. 496.

177. Sutherland Minority Report, pp. 170-171; Canadian Railway and Marine World, p. 496.

178. Adam Beck, Statement, Respecting Findings and Other Statements Contained in Majority Report of the Commission (known as the Sutherland Commission), appointed to inquire into the Subject of Hydro-Electric Railways, Ontario Session Paper 24, 1922. Beck's comments are contained in the first two pages of the report and are known as Foreward, with no page numbers indicated. The response also included a map of the proposed Hydro system and the lines in and around Cleveland, Detroit, Buffalo and Niagara Falls, New York.

179. Beck, p. 2.

180. Beck, pp. 9-11.

181. Beck, pp. 11-12.

182. Beck, pp. 12-14, 16,

183. Beck, pp 18-20.

184. Beck, pp. 20-24.

185. Beck, pp. 24-28.

186. Beck, p. 28.

187. Beck, p. 30.

188. Beck, pp. 30-32.

189. Beck, p. 32.

190. Beck, pp. 34-35.

191. Beck, p. 36.

192. Beck, pp. 36-39.

193. Beck, p. 40.

194. Beck, pp. 41-43.

195. Municipal Electric Railway Act, 1922, 4 Geo. V, c. 31, s.1 amended, Section 29, Paragraph 4, Clause 3, page 17.

CONCLUSIONS

Unless one is present at those events which make history, the task of interpreting events is charged to the historian and social scientist. Such is the case with the radial railway debate between Sir Adam Beck and Ernest Drury. The central characters have departed, and even if they had not, the erosion of memory by time could leave in doubt concrete conclusions.

From the evidence discussed in this study comes a number of historical realities. The first is the fact that with the Hydro-Electric Power Commission in Ontario, Sir Adam Beck controlled a significant segment of Ontario political life. He faced a political system which had been weakened by a number of years of inept Conservative Party rule. The Liberal Party offered no alternative to the Province's voters.

The UFO-ILP coalition represented the politics of discontent. Its disappearance in 1923 after four years of relatively progressive administration is proof that the alliance was only a temporary aberration. The political force which remained intact following the First World War was the Hydro-Electric Power Commission of Ontario and its two ancillary organizations, the Ontario Municipal Electric Association and the Municipal Railway Union. Through the formation of these two organizations, Adam Beck had successfully circumvented the party system in the Province.

With his defeat in the 1919 provincial election, Adam Beck was left to concentrate on Hydro. Throughout his career as Chairman of the Commission, Beck had been a staunch advocate of public ownership of Ontario's resources and the ancillary organizations related to them. The development of a system of electric railways was a natural outcome of the

movement for public power. Had the Hydro Knight been successful in the development of the radials, he would have been in a position to influence the economic and political development of Ontario's most highly industrialized counties in the Golden Horseshoe. Nelles has suggested that Adam Beck was the most powerful and popular political personality in Ontario at the conclusion of the war.(1) There is no evidence to suggest that the conclusion is faulty.

Thus what we have with the radial railway story is a political event of significance. The Sutherland Royal Commission was the first attempt by any Ontario Government since the founding of the HEPC to define the role of Hydro and in particular its chairman in the future political life of the province. The issue of whether or not the radials would have been successful is a secondary matter.

Evidence before the hearings suggests that if Hydro had been allowed to build the lines at least some portions of them would remain today, particularly the Toronto-based rapid transit sector. Rapid transit systems in the United States which were constructed after the turn of the century still exist. If one accepts this proposition, one must deal with the question of why the Drury Government opposed Adam Beck on the radial issue.

The issue was clarified by Drury himself in a statement which regrettably never appeared in his memoirs in the chapter dealing with his relationships with Sir Adam. Speaking the day following the issuing of the Sutherland Commission recommendations, Drury said

> . . .when we came into power, we found varied and extensive hydro electric enterprises under way. We found, too, a radial policy had been outlined, covering in its proposals a large part of the province, voted on in some instances by

> the people, and found in connection with this and other hydro electric enterprises a great deal of indefiniteness and misinformation. The Government was not in a position to know definitely what had been going on. The old Government, apparently afraid of the pro-hydro forces, and at the same time reluctantly supporting the movement, had on the one hand endeavored to impede Sir Adam Beck, and in the other had yielded weakly to demands they should not have considered, and so the matter was more or less in a state of chaos.(2)

It is likely that Drury and his cabinet feared the same forces as the previous Hearst administration. It is doubtful that Drury could have won a head on battle with Beck's political machine. Thus, a neutral body, a Royal Commission was used to implement the policy of the Government.

A number of events suggest that the Sutherland Royal Commission was charged to reflect the feelings of pre-determined Government policy. A comparison of the Report's recommendations with the Government statement issued before the Commission began hearings provides the student with a remarkable similarity in outlook. The dismissal of Arnold and Sager and the acceptance of Tye and Gutelius suggests the commissioners, excepting Bancroft, were not interested in the feasibility of the project. The fact that Hydro witnesses were subjected to rigid time frames and specific information, while Commission witnesses were allowed to speculate, suggests that the results were pre-determined. The mere fact that recommendations resulting from 102 days of hearings totalling 13,376 pages of evidence came less than one month from the final day leads to the same conclusion.

Hydro's conduct in the radial railway issue made it vulnerable to attack. It had not bothered to update old estimates and when faced with the task was unable to deliver results. Beck and his Commission which

had never lost a battle with any Provincial Government was ill-prepared to meet Drury's challenge. The indiscriminate use of power by Beck had created a feeling of security and arrogance and a sense of insulation from defeat.

Hydro was proposing to construct an untried system at a very high price tag at the wrong time in history. There is reason to believe that if the First World War had not intervened, the radial scheme would have been completed. Postponement to 1920 allowed the Drury cabinet to present a scheme which was understandable only to the promoters up for public scrutiny. The post war Depression coupled with Chippawa provided a convenient tool to draw doubt about the project's possible success.

The issuing of the Sutherland Royal Commission recommendations marked the zenith in Adam Beck's political influence in Ontario. During the Drury administration, the Hydro Chairman was on the defensive for virtually the entire four years. Following Sutherland, Drury appointed the Gregory Commission to investigate Hydro management. The inquiry lost its impetus with the defeat of the UFO-ILP in 1923. By the time Adam Beck returned to the Ontario cabinet, he was an old man dying of pernicious anaemia. He never regained the stature he enjoyed prior to the radial railway debate.

The story circulated around the City that when the Royal Commission was appointed, the Government claimed that within two days Fred Gaby would be a broken man. It was suggested that the commissioners would subpoena Beck. They never did and wisely denied him a public platform with his adversaries.(3) However, the Sutherland Royal Commission was a first attempt at making Ontario Hydro responsible to Ontario's elected representatives. The process continues to this day.

NOTES

1. H.V. Nelles, The Politics of Development, Toronto: MacMillan of Canada, 1974, pp. 409-410.

2. Canadian Railway and Marine World, September, 1921, p. 496.

3. W.R. Plewman, Sir Adam Beck and The Ontario Hydro, Toronto: The Ryerson Press, 1947, p. 494.

EPILOGUE

Sir Adam Beck died at his estate, Headley, in London, on August 15, 1925 of pernicious anaemia at the age of 68. After a private family service on Sunday August 16, the body of Sir Adam Beck was transported to St. Paul's Cathedral in London at ten o'clock in the morning to lie in state until the public service at 12:30 p.m. Along with grieving members of the family and the general public, a collection of Who's Who of Canadian politics showed up to pay their last respects to the Hydro Knight. When the service commenced, it was broadcast on London radio station CJGC. During the one hour ceremony, the City of London came to a virtual halt. All transportation stopped moving. Shops closed. School children held their heads in quiet respect to the late founder of Ontario Hydro.

At two o'clock in the afternoon, Sir Adam Beck made his final journey from London to Hamilton to be laid to rest in the Hamilton Cemetery beside his wife Lillian Ottaway. His body was placed aboard a chartered Canadian National Railways train with four hundred mourners aboard. On arriving in Hamilton at four o'clock, the funeral cortege proceeded along Jackson and Caroline Streets to the Hamilton Cemetery on York Street. The City of Hamilton closed both the streets and cemetery to the public out of respect to Sir Adam Beck. After a brief, ten minute ceremony in the cemetery, the mortal remains of Adam Beck were interred in section N, plot 233 beneath a twelve foot granite cross which simply bore the names, birth dates and death dates of Lillian Ottaway and Adam Beck.(1)

All that remains of Adam Beck's dream of a radial railway system are a few, rusted tracks running between London and Port Stanley. Electric transportation succumbed to the automobile, motor truck and the ravages

of the Great Depression. Street car and inter-urban systems fell by the wayside in all Ontario cities, excepting Toronto. When the Toronto Transportation Commission took over the Toronto and York Radial in 1921, Hydro was left to operate the system beyond city boundaries. Eventually, the TTC converted the Mimico Division to the Lakeshore street car line, the Scarborough Division became the Kingston Road street car line which was pulled back to Victoria Park Avenue. The Metropolitan Division was curtailed in 1930, but revived two years later as a short haul to Richmond Hill. This line was eventually replaced by buses in 1948.(2)

In 1967, not far from where Sir Adam Beck lies buried, the first green and white cars of the Ontario Government's GO Transit system began operating. This rapid transit service now provides commuters with high speed, relatively inexpensive service between downtown Toronto and downtown Hamilton, as well as downtown Toronto to the bedroom suburb of Pickering. The route of the Pickering-Hamilton connection is within a few miles of Beck's proposed Toronto-Eastern and Toronto-St. Catharines lines.

Other current GO systems operate in districts parallel to the original radial plans. The Georgetown-Brampton-Toronto connection is virtually the same route that would have been travelled by the Toronto Suburban. The new Guelph Junction-Milton-Toronto route operates in a corridor between the Lakeshore line and the Georgetown line. GO trains operate north out of Union Station in downtown Toronto to Newmarket, in places less than one mile from the old Toronto and York Radial, Metropolitan Division right of way. At the time of this writing, the Ontario Government announced its intention to assume responsibility for the Stouffville to

Toronto route abandoned by Via Rail in 1982. Thus, three of the five divisions of the Hydro radial plans are now being served by publicly owned rapid transit rail service.

The Ontario Government has been penalized in its efforts to develop a low cost commuter service in the areas described above by the need to rent both tracks and expertise from the two national railways. The Ontario Task Force studying rail policy for the Province complained about GO-CN relationships in the following statement. "In the current ten-year contract, the provincial government was treated, literally, as a captive shipper in negotiating for the use of CN's lines. Although this may allow CN to show better profit margins, it has done so at the expense of another publicly-operated rail service."(3)

Faced with mounting energy costs in commuter service, the Task Force recommended both the Provincial and Federal Governments pay close heed to a study commissioned by the federal department of Transport in 1976. The study, prepared by the Canadian Institute of Guided Ground Transport at Queen's University, recommended serious consideration be given to electrifying railway lines in Northern and Southern Ontario, with particular emphasis on the Montreal to Windsor corridor.(4) The Task Force felt this plan would be particularly applicable to the GO commuter main line from Pickering to Hamilton.(5)

It is one of the ironies of human nature that gifted foresight is often greeted with suspicion and doubt. Although sixty years after the Sutherland Commission rejected the radial railway proposals, Beck's dream at least seems partly vindicated by the fact that railway issues prominent in the first two decades of this century have returned to haunt

us in the final two decades. It is also ironic, that should railway electrification come to Ontario, one of its major actors will be, out of necessity, Ontario Hydro. Maybe, just maybe the founding father of Ontario Hydro did live partially in the right place at the wrong time.

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5. Ontario Task Force, p. 85.

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