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A
REVIEW OF ELECTRICAL
GENERATION TRANSMISSION & DISTRIBUTION
IN THE
NORTHWEST TERRITORIES

A DESIGN FOR TOMORROW

December 6, 2000

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Executive Summary

Introduction (page 12)

On September 18, 2000 the Cabinet of the Government of the Northwest Territories authorized a Review of Electrical Generation, Distribution, Transmission and Regulation. The Terms of Reference for that review are attached as Appendix A.

Mr. Jim Robertson was appointed Project Manager and assembled a team, consisting of David Morrison, Rick Hyndman and Fred Abbott, to compile this report.

NWT Electricity Sector – Current Status (page 3)

The two main suppliers of electricity in the NWT are Northern Utilities Limited (NUL) and Northwest Territories Power Corporation (NTPC). NUL provides distribution services to the City of Yellowknife, the Town of Hay River and six smaller communities. NTPC distributes electricity to all of the other NWT communities. NTPC operates four hydro plants on the Snare River and another at Twin Gorges on the Taltson River. The Dogrib Power Corporation supplies NTPC with hydro generation which is sold into the Snare-Yellowknife grid. Norman Wells and Inuvik are supplied with gas-generated power, and other communities are supplied by diesel power.

Recent Developments in Other Jurisdictions (page 14) and Regulation (page 27)

In recent years, the electricity industry in Canada has been in a process of substantial change ranging from a streamlined regulatory framework to competition in retail markets. The project team examined simplified regulation in a number of jurisdictions, including; Alberta, British Columbia, Nova Scotia, New Brunswick, and Yukon and concluded that simplified

regulation should be introduced in the NWT. In place of the current Public Utilities Board, it is suggested that rate of return issues be decided by a formula similar to that employed by British Columbia Utilities Commission (BCUC) and the National Energy Board. In addition, arrangements would be made to have the staff at an external regulatory board such as the BCUC, on a fee for service basis, review the methodologies and technical rate framework every five years to ensure that rate setting is current with industry standards.

Potential Future Development in the NWT (page 18)

The NWT is entering an exciting era and according to the GNWT, mining, oil and gas, and tourism are the cornerstones of the NWT economy. Oil and gas exploration is a viable and growing part of the economy and it is probable that the Mackenzie Valley pipeline will become a reality. A study by the Canadian Energy Research Institute indicates that the pipeline would provide the GNWT with direct potential revenues in the range of $500 million. An additional and important aspect of the pipeline is the opportunity for NWT communities to acquire access to an economical source of natural gas, leading to a diversified economy. The message is clear, the NWT is "Open for Business" and the future is promising.

Current Structure – NTPC and Division (page 20)

The Government of Nunavut has decided to establish Nunavut Power Corporation (NPC), and accordingly the assets, liabilities, shareholders equity and operations of NTPC will be divided on March 31, 2001, between NTPC and NPC in accordance with various agreements. This division has a fundamental impact on the size and character of NTPC. The corporation goes from 51 plants to 26 plants, 19,000 customers to 8,000 customers, revenues of $100 million to $50 million and hydro generation increases to 77% of capacity.

Franchises (page 23)

The process of determining franchises is costly. The cost of staff time, legal advisors, travel and PUB applications are all borne by the ratepayers. After due consideration, it is recommended that the GNWT legislate changes that would grant franchises for all communities served by NTPC and grandfather for 20 years, franchises for all the communities served by Northlands Utilities Limited (NUL). The successful bidder for the Hay River Franchise would be included following a decision on this issue.

Security of Supply (page 31)

Making electricity available at competitive rates is essential to the well being of NWT residents and the economy. Residents are interested in cost of power but are also concerned about the security of supply. NTPC uses a PUB approved formula for the provision of back-up generation in each community. While this back-up service increases the cost of providing electrical service, it is necessary to ensure a suitable level of security of supply.

GNWT Borrowing Capacity and NTPC Debt (page 33)

The financial markets usually impose limits on direct government debt and the debt of any Crown Corporation that has been guaranteed by government. Therefore, the debt of NTPC may impact on the GNWT's ability to borrow. As at March 31, 2001 it is estimated that NTPC will have long-term debt in the order of $146 million, of which approximately $40 million relates to the Nunavut Power Corporation (NPC). To ensure that NTPC has an appropriate debt-equity ratio it is imperative that long-term debt relating to NPC be removed from NTPC's books and also be removed from the guarantee of the GNWT. It may be difficult to have the current lenders agree to accept the guarantee of the Government of Nunavut for the $40 million debt in question in place of the guarantee of the GNWT, but all necessary steps should be taken to achieve that

objective. Removing the guarantee will restore the GNWT's borrowing limits. To ensure that the GNWT can maximize its borrowing limits, it is recommended that the GNWT not provide NTPC with a debt guarantee for any new borrowings.

Subsidy Program (page 35)

The rate subsidy program represents a reasonable approach to pricing in a jurisdiction that has a combination of low cost hydro serving a majority of the larger communities and non-hydro with a wide range of costs serving mostly smaller communities isolated from the grid. The current program is effective, seems well received and does not require substantive change.

NTPC Dividend Payment (page 35)

NTPC pays an annual dividend to the GNWT in an amount equal to the funds required for the Territorial Power Support Program (TPSP). Last year NTPC paid dividends to the GNWT of $6.2 million, which represents 59% of net profits. This year it is anticipated that the funds required for the subsidy program will represent 100% of net profits. It will be difficult to maintain a financially sound debt-equity ratio if the GNWT continues to require such high level of dividends.

If NTPC is looking at borrowing funds on the financial markets without the guarantee of the GNWT, NTPC will require an effective commercially based dividend program. If the dividend program continues to be linked to the subsidy program, it will affect the ability of NTPC to borrow at economic rates.

It would be timely to de-link the dividend from the subsidy program and to establish a dividend policy that set the maximum dividend payable at no more than 55% of annual profits based on a three year rolling average.

Excess Capacity and Interruptible Power (page 36)

The Taltson hydro system is currently both underused and underdeveloped. The current peak load is 13 MW and the installed capacity is 20 MW. Interruptible power is generally sold at a price above the marginal cost of generation but below the full cost of producing power including fixed costs. If the excess capacity now available on the Taltson system was sold at 2¢ per kWh, NTPC would increase revenues by $1.8 million and the bottom line by a similar but slightly smaller amount.

Privatization (page 38)

There are a number of factors that have an adverse impact on the value of NTPC:

- The Corporation will be significantly smaller after Division and has no experience as a post-Division operation
- NTPC lacks a track record as a stand-alone Corporation interacting in the financial markets and borrowing on its own merits
- NTPC does not have a debt rating
- Present regulatory requirements are onerous
- NTPC lacks a commercial dividend policy not linked to the subsidy program
- Does not have a history of achieving maximum rate of return
- Requires a strong Board of Directors in place for some time and appointed for their expertise
- NTPC must have continuity of senior management

For these and other factors it is suggested that privatization is not appropriate at this time.

PPD (page 44)

In addition to NTPC, Division has also dramatically impacted the Petroleum Products Division (PPD), with revenues decreasing from $60 pre-Division to $12 million after Division. As NTPC is rationalizing staff

resources to meet the impacts of Division, and PPD is doing the same, the two organizations should be amalgamated in order to realize efficiencies that would benefit both the customers and the shareholder.

Alternate Energy (page 45)

NTPC and other distributors should also be required to purchase excess power from independent suppliers of alternate energy, such as solar, wind and micro-hydro.

Hydro Resource Development (page 45)

A little talked about but valuable asset is the vast hydro reserve available in the NWT including potential future development of the Taltson and the upper Snare in the order of 200MW and 20MW respectively. In addition, there are a number of large run of the river sites on the Bear and Mackenzie Rivers that should be considered for future development. The Taltson system is less than 300 km from major transmission grids. Connecting to the grid in either Alberta or Saskatchewan would provide opportunities to export power. NTPC does not have the financial strength to develop large-scale hydro projects. However, projects of this scale could be financed in conjunction with major industrial users in southern Canada. We suggest that in order to develop the potential of the Taltson and maximize the GNWT's investment, the government should establish a Resource Trust. The Trust would be responsible for managing the Taltson assets and finding a customer that could utilize the current system and develop additional capacity for export.

Mackenzie Valley Gas Pipeline (page 48)

With the possibility of a Mackenzie Valley gas pipeline, it is prudent an timely to consider NTPC's role in the distribution of gas within communities. If NTPC is already providing electrical utility services on a monopoly basis, the addition of gas distribution services would make the

corporation financially stronger and would offer economies of scale and organizational efficiencies that would benefit the customers.

Climate Change (page 50)

Climate change is a significant issue for the NWT: Containing the challenges that a changing climate will present and requiring actions to constrain greenhouse gas emissions. With the post-Division share of diesel declining to 15 per cent of total generation, and further decreases possible through conversion to natural gas, NTPC is less exposed to higher costs under potential greenhouse gas policies and stands to benefit from the effects of such policies on the value of undeveloped hydro generation.

6. **Designing NWT Electricity Sector – Options for the Future (page 51)**

After reviewing the issues raised in the Terms of Reference, a series of realistic options were considered. Four of these options have been presented for discussion as follows:

a) **NTPC Crown Owned, Streamlined Regulatory Process, Distribution Monopoly (page 52)**

- Under this option the structure of NTPC would change very little, but operations would be altered due to Division and the regulatory process would be streamlined and costs reduced
- Franchise issues would be resolved and both utilities (NTPC and NUL) will be in a better position to carry out long-term system planning
- The GNWT would still guarantee NTPC debt
- Dividends tied to subsidy program

The study team does not recommend that the GNWT proceed with this option.

b) Privatize NTPC, Streamlined Regulatory Process, Distribution Monopoly (page 54)

- Value of NTPC reduced due to Division and operating restrictions
- GNWT no longer guarantees NTPC debt
- No dividend payment to fund subsidy
- Utilities see Franchise issues resolved
- Regulatory costs decrease

It would be difficult to privatize NTPC post-Division. The GNWT would not be able to obtain the true economic value for the company and it would not be prudent to proceed with Privatization at this time.

c) Arm's-length Crown Corporation, Streamlined Regulatory Process, Distribution Monopoly, and a New Resource Trust (page 56)

- GNWT retains ownership of NTPC
- NTPC restructured as Canada Business Corporations Act company
- NTPC operates on a commercial basis at arm's-length of government
- NTPC Act repealed
- NTPC submit annual Strategic Plan to Cabinet
- PUB eliminated and Cabinet becomes Regulator
- Franchise issues resolved

d) Establish a Resource Trust (page 62)

- Taltson assets and their future development transferred to a Resource Trust, reporting to Minister of Finance
- Trust mandated to generate resource revenues for government
- Levy of one cent per kWh be assessed for all hydro and export power sales

A key recommendation is the suggestion that a levy of a one cent per kWh be charged on all hydro and export power sales to enhance government revenues and to increase the rate of return on GNWT's investment in NTPC.

Options c) and d) resolve a majority of the issues identified in the report and it is recommended that GNWT proceed with options c) and d).

Recommendations (page 64)

The major recommendations in the report are as follows:

i. That the GNWT restructure NTPC as outlined in Option C above, and establish a resource trust as set out in Option D:

- NTPC and the NWTEC set up at arm's-length from GNWT governed by the Canada Business Corporations Act
- *NTPC Act* repealed
- NTPC be provided with distribution monopoly franchises for all locations currently served
- NUL awarded franchises for areas now served grandfathered for 20 years
- Remove restrictions of FAA and PSA
- GNWT implement a 1¢ levy on all hydro and exported power sales

- NUL/NTPC be required to purchase alternative energy (wind, solar and micro-hydro)

ii. That as a CBCA company, NTPC be permitted to expand its objects to include any and all utility type activities mandated by the Board

iii. That the GNWT implement a new streamlined regulatory system

iv. That the *PUB Act* is repealed

v. That the *Cities, Towns and Villages Act* be amended to deal with franchise and stranded asset issues

vi. That the GNWT require NTPC to file its next GRA for review by the PUB as soon as practical

vii. That the PUB proceed with the NTPC GRA hearing and establish the framework for the new regulatory regime based on the following:

- Terms and Conditions of service
- Rate of return formula based on the BCUC system plus a premium for the NWT
- Establish rate base, revenue requirement and a conservation rate for consumption over 1,000 kwh/month

viii. That the PUB be requested to develop two rate zones (hydro and other) and the appropriate rates for each

ix. That the GNWT implement the formula based rate of return system instituted by BCUC

x. That Cabinet establishes an Office of Utility Ombudsman to deal with customer issues in the electrical sector

xi. That NTPC will be permitted to immediately commence selling interruptible power

xii. That NTPC and NTEC be re-structured to make NWTEC the non-regulated parent company and NTPC the regulated subsidiary

xiii. That the two companies have the same Board of Directors and Executive staff

xiv. That NTEC/NTPC be re-branded and the name change to project its new image

xv. That future and additional electrical generation be open to competition with the provision that all technical requirements established by the operating utilities are met

xvi. That the GNWT indicates clearly that it does not plan to proceed with privatization at this time and this matter will not be reviewed for at least 5 years

xvii. That PPD be transferred to NTPC for a nominal sum and NTPC assume responsibility for the sinking fund

xviii. That NTPC be awarded natural gas distribution franchise rights for all NWT communities not presently serviced by others

ixx. That the GNWT consider taking soft dividend payments from NTPC

xx. That the GNWT should determine whether it would be beneficial to make the new corporation taxable

xxi. That the GNWT and NTPC ensure that any and all debt associated with Nunavut be removed from NTPC's books on or before March 31, 2001

1. Introduction

The GNWT purchased the NWT assets of the Northern Canada Power Commission (NCPC) from the federal government in 1988 and created the Northwest Territories Power Corporation (NTPC). Recent developments in the management and operational mandates of electrical service providers in other jurisdictions, the move toward Division and numerous industrial mega-developments have stimulated the need to re-evaluate the development and provision of electrical services in the NWT.

In order to undertake this review, the Government of the Northwest Territories established a Review Team reporting to the Minister of Finance. The creation of the Review Team was announced on September 18, 2000 and the Review Team was given a reporting target date of November 30, 2000.

The Review Team was requested to conduct a review of the legislative, regulatory and policy framework for electrical generation, transmission and distribution in the NWT. Review Team was also asked to review the mandate and role of the NWT Power Corporation and determine whether it's current structure would optimize the Public's interest in regards to:

- Security of supply
- Quality and reliability of service
- Cost of service
- Responsiveness to client needs
- Adaptability to changing service conditions
- Return on public investment

The work of the Review Team was completed on an independent basis and included consultation with groups and organizations directly relevant to the Terms of Reference. The study is an overview of issues and options associated with electric utility reform in the NWT. This report is a road map it is not meant to provide a detailed analysis of how to proceed in each area covered by the study. The report and its recommendations constitute a framework, which addresses the need for change, achievable options, broad principles involved and a series of implementation guidelines.

The Review Team mandate provided that the study period encompass a 10-week period. While this may seem like a very short period compared to the time devoted to studies in other jurisdictions, the size and isolated nature of the NWT system rule out the complex, competitive market options that required the detailed and lengthy review undertaken by others. Furthermore, the Review Team concluded that it made sense to follow a two-stage approach: first, determine the direction regarding the framework for the electricity sector, the mandate of NTPC, and the form of regulatory oversight. On the basis of decisions at the first stage, complete the details of implementation, regarding, structure, mandate and regulatory oversight. This study deals with the first stage and the structure of the NWT electricity sector after Division. The requirements of the second stage involve the details of implementation that should be developed, reviewed, and implemented once decision options have been agreed upon.

2. NWT Electricity Sector – Current Status

The two main suppliers of electricity in the NWT are Northern Utilities Limited (NUL) and NTPC. NUL delivers distribution services to; the City of Yellowknife, Town of Hay River, K'atlodeeche First Nation, Enterprise, Kakisa, Fort Providence, Trout Lake, and Wekweti. NTPC supplies

distribution service to all of the other NWT communities and sells generation to NUL for its distribution requirements in Yellowknife, Hay River, Hay River Reserve and Enterprise.

NTPC operates 4 hydro plants on the Snare River and another at Twin Gorges on the Taltson River. NTPC provides electrical power to the communities of Yellowknife, where electrical power is distributed by NUL, Rae Lakes, Rae/Edzo and Dettah from the Snare system and the communities of Fort Smith, and Fort Resolution from the Taltson system. The Dogrib Power Corporation supplies NTPC with 4.3 mw of hydro generation, which is sold into the Snare-Yellowknife grid. The Power Corporation also contracts with Esso for gas generated electricity supply in Norman Wells and with Inuvik Gas Ltd., for gas for generation in Inuvik. The remainder of NTPC's generation is diesel with plants located at: Wha Ti, Lutsel k'e, Tuktoyaktuk, Fort McPherson, Aklavik, Deline, Fort Good Hope, Tulita, Paulatuk, Sachs Harbour, Tsiigehtchic, Colville Lake, Holman, Fort Simpson, Fort Liard, Wrigley, Nahanni Butte, and Jean Marie River. Tulita, Deline, Fort Good Hope, Norman Wells, Tuktoyaktuk, Aklavik, Wha Ti, Rae Lakes, and Nahanni Butte have 6 – 10 weeks access via winter roads. Homan, Sachs, Paulatuk, Colville Lake and Lutsel k'e are not connected to any road system. All of the other communities served by NTPC have year round road access.

3. Recent Developments in other Jurisdictions

A. General

Utility companies in Canada have traditionally been regulated. Over the past several years the electricity sector in Canada has been in a process of substantial change. These changes range from a streamlined regulatory process to competition in retail markets.

Historically, the industry has been predictable in its approach to the generation, transmission and distribution of electricity. That is to say, companies produced power in a conventional manner and generally, operated as an integrated utility, controlling all of the functions of providing power under one roof. Technology has brought change to the electrical industry in the form of, an increased cost competitiveness of natural gas generation, co-generation of industrial and commercial process in steam and power. Even before the introduction of competitive wholesale or retail markets, where there continues to be a single utility supplier in a franchise area, utilities generally must run a competitive process and analysis to determine the lowest cost source of new generation.

In jurisdictions and regions that are large enough to support a competitive market structure the industry has seen a shift to competitive markets, with a functional separation of generation, transmission, and distribution, and the development of a competitive generation sector, along with monopoly structures for transmission and distribution.

B. Alberta

Alberta began its examination of electric industry restructuring in 1993 and has initiated the most dramatic changes in Canada. In 1995 Alberta passed the *Electric Utilities Act* (EUA), which provides a framework for the operation of the electrical industry. The EUA includes provision for; open competition on generation, equal access power pool and an independently managed transmission system. Under the EUA transmission and distribution service are still regulated. Retail competition comes into effect on January 1, 2001. Existing generation has been deregulated through a complicated system, under which unregulated marketers buy power from the owners of existing plants under contracts of up to 20 year terms, and resell the power in the Power Pool. Alberta is experiencing very high

market prices for power, due to the rapid growth in demand and the delays in finalizing the market structure.

C. British Columbia

The British Columbia Utilities Commission (BCUC) has initiated a series of regulatory reforms in recent years. These reforms include a negotiated settlement process to replace the traditional General Rate Application (GRA) hearing system and a formula based rate of return calculation. The formula for rate of return is predetermined and based on this formula, BCUC calculates the return on common equity allowed each year and advises the appropriate utilities. This eliminates the need for a rate of return hearing but at the same time provides the utility with a fair rate of return.

A copy of the BCUC rate of return calculation for 2000 is attached as Appendix B.

D. Nova Scotia

The Province privatized Nova Scotia Power in 1992. The new private utility sells generation to 7 smaller utilities that are free to compete for customers. Because all of the small utilities buy from the same source, competition is essentially a non-issue.

E. New Brunswick

New Brunswick began its restructuring process in 1998 with the establishment of the Hay-Savoie Review Team on Electricity in New Brunswick followed by a detailed review carried out by the Select Committee on Electricity Restructuring. The result of these deliberations was the adoption of a policy of managed transition for electricity

restructuring. The managed transition strategy was employed to ensure that the problems encountered by other jurisdictions involved in electricity restructuring did not materialize in New Brunswick.

Essentially the reforms in New Brunswick electricity sector consisted of; opening generation to competition over time, the establishment of 3 separate Crown corporations to deliver electrical service, incentives for improving economic efficiency in transmission and distribution, improved regulatory oversight and assurance that all residents of the province have access to safe, reliable, affordable and uniformly priced electricity.

F. Yukon

The Government of Yukon acquired the Yukon assets of the former NCPC in 1986. At that time the Government established the Yukon Development Corporation (YDC) to hold the shares of the new corporation and the Yukon Energy Corporation (YEC) to oversee development of the utility. YDC then proceeded to contract with Alberta Power (now ATCO) to manage and operate the utility in conjunction with its own facilities in Yukon. Alberta Power managed the utility operations of the YDC & YEC assets until 1998 when YEC cancelled the contract and re-established a fully operational stand alone utility company. Yukon is now in a situation similar to the NWT. There are two small operators one privately owned and one publically owned operating in an area with a customer base of approximately 20,000 accounts.

There has been little structural change in the electricity sector in Yukon in recent years. However, the Yukon Utilities Board has introduced a B.C. style system of negotiated settlements for applicable rate matters, and contracts with the B.C. Utilities Commission to provide the Board staff function for GRA hearings. The new government recently completed a

review of governance options and is now proceeding with decisions in this regard.

4. Potential Future Developments in the NWT

The NWT is entering an exciting era. According to the GNWT, mining, oil and gas, government, and tourism are the cornerstones of the NWT economy. Last year the NWT exploration expenditures were the highest of any jurisdiction in Canada. In 1998 Ekati, Canada's first diamond mine opened at Lac de Gras and another potential mine is in the construction phase.

Oil and gas exploration is a viable and growing part of the NWT economy and there is a considerable expectation that a Mackenzie Valley Pipeline will become a reality. Recent reports estimate that Oil and Gas companies may spend some $1 billion in exploration over the next 5 years. Oil and Gas exploration particularly in the Mackenzie Delta and Sahtu and Fort Liard regions is being pushed by an ever-growing demand across North America for natural gas. The forecast shows no immediate slowing of the demand for natural gas, so exploration is expected to be strong for at least the next decade. The majority of all natural gas exports are expected to be used in the generation of electrical power.

A recently released study by the Canadian Energy Research Institute indicates that a Mackenzie Valley pipeline would provide Canada with the greatest benefit versus other proposed routes. The study points out that the Mackenzie Valley line would provide some $9 billion in revenues to all levels of government and provide the GNWT with direct potential revenues in the range of $500 million.

An additional and important aspect of the proposed pipeline project is the opportunity for NWT communities to acquire access to an economic source of natural gas. Communities could benefit in numerous ways if access to natural gas becomes a reality.

- Gas, is generally cheaper and more efficient as a source of heat for homes and business
- NTPC generating units could be converted to gas and reduce emission levels in communities
- Access to gas may help to initiate new business development within communities
- Infrastructure development will add economic benefits to communities and local businesses
- Switching from oil products to natural gas for heating and power generation would reduce greenhouse gas emissions

In it's publication "Towards a Better Tomorrow" the GNWT has laid out a strategic framework to seize opportunities and achieve a better future. As part of its vision for the future the GNWT has identified a diversified economy that encourages investment and growth is a key priority. An outline of the strategies necessary to implement this economic priority include; promoting a positive investment climate, streamlining the regulatory regime, completing a Northern Accord, increasing revenues to ensure that all governments can meet the needs of the people and reviewing options related to revenue initiatives and privatization. Developing and implementing a renewed electrical sector is part of the framework envisaged by; "Towards a Better Tomorrow".

The message is clear, the NWT is "Open for Business" and the future is promising.

5. Significant Issues

The Review Team has identified a series of issues that impacts significantly the delivery of electrical generation, transmission and distribution. These issues are critical to the long-term development of a prosperous electrical sector in the NWT. Many of the issues have a similar thread that relates them to each other. Discussion of the issues incorporates a three-fold approach. First, the issues are identified on an individual basis, the concerns and impacts of the current situation are discussed, developments in other jurisdictions are reviewed and preferred options are presented in a separate section for consideration.

These issues are not the only ones considered by the Review Team or raised by interested parties. They are, however, the primary issues that affect the questions envisaged by the Terms of Reference and consequently the future of power delivery in the NWT. For discussion purposes the Review Team has limited a long list of issues to those presented below for consideration.

A. **Current Structure - NTPC**

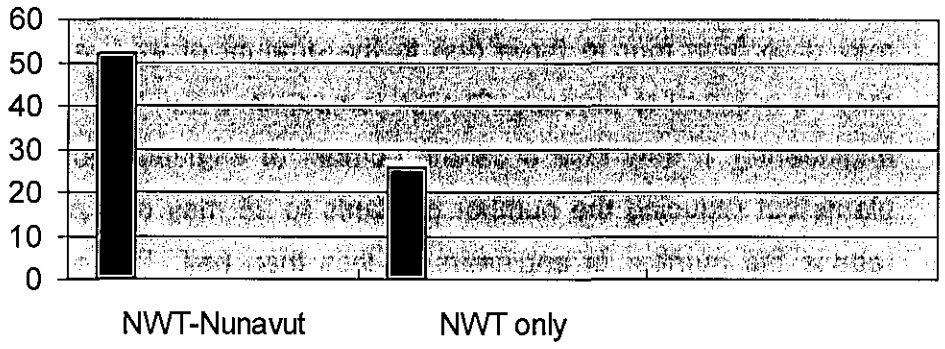
As part of the Nunavut Division planning process the Governments of the NWT and Nunavut agreed to continue NTPC as a shared company for an interim period. After considerable study the government of Nunavut decided to establish a stand-alone Nunavut Power company (NPC). Under the terms of the Transition Agreement, Nunavut appointed 3 members to the NTPC Board of Directors and the company continues to operate as a single entity until March 31, 2001 when the split will become final.

NTPC is in the final stages of discussions with NPC to assign the assets and liabilities associated with each plant to the appropriate utility system. This process involves dealing with a whole range of issues required to

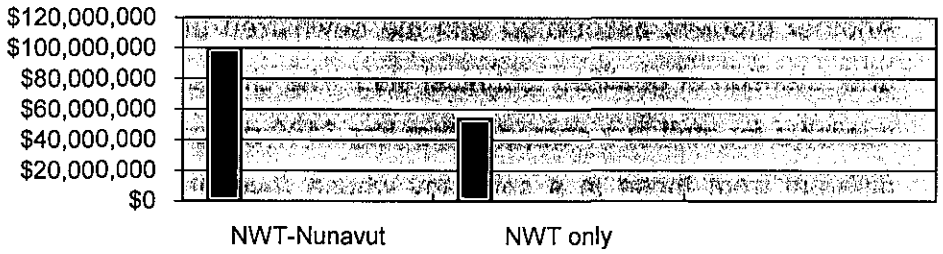
split one company into two separate operating units including; the division of debt and equity positions, as well as the rationalization of Head Office staff. At the present time NTPC is for all intents and purposes still operating as one utility serving both the NWT and Nunavut.

After Division, NTPC will provide service to 26 communities down from 52. The company operates 20 diesel plants, 1 gas fired plant and 2 are hydro plants, Snare and Taltson. In the year ending March 31, 2000, NWT operations accounted for some 50% of NTPC total sales volumes measured in dollars but electric sales in terms of generation were 303 GWh or 73% of total sales. Prior to Division, sales to Yellowknife represented approximately 46% of total generation but after Division, this will jump to 64% of NTPC's generation.

NTPC Generating Plants



NTPC Revenues



In the new post-Division NTPC, generation will be primarily hydro due to a reduction in the number of diesel plants in the system. The generation mix influences operating costs, staffing requirements, and technical skills required internally. On one hand, the new company will have a more cohesive system in terms of generation but the number of communities being served by diesel and other fossil fuels will be a much smaller percentage of overall generation.

In the immediate future Division also means re-structuring Head Office functions and determining the staffing required to operate a scaled down utility. At the outset, you would think Division would allow NTPC to reduce costs substantially and in some instances that is the case but it also creates economic inefficiencies. NTPC must still perform a critical number of standard functions and tasks in order to operate. As an example, the company still requires accounting & billing clerks, and even though the revenues of the company may have dropped by half the number of clerks may drop from four to three due to the amount of work each individual may be required to process. Similar comparisons can be made regarding engineering. It may take a certain number of engineers to look after 50 plants but reducing the number of plants to 26 may only allow NTPC to reduce the number of engineers by less than half. This is a significant issue, the company is no longer as efficient as it once was and the cost is borne by the customers. Additionally, there are fewer customers to bear the new cost structure.

Another problem associated with the downsized utility is the recruitment and retention of qualified technical staff. The challenges and opportunities available for staff in a company that has $100 million in revenue are much different from those in a company whose revenue base has shrunk by 50% and the number of plants in service has dramatically reduced. Attracting and retaining qualified staff is both a priority and an imperative.

The technical requirements of operating a utility company and providing the level of service and security of supply required in the NWT demands a highly qualified staff. The company is already feeling the impact of staff moves in anticipation of Division becoming a reality. Division may also create the loss of a critical mass necessary to sustain current staff levels in some departments.

In general Division impacts overhead costs in both a positive and negative manner. Total overhead is reduced in terms of the number of Head Office employees but on the other side of the coin, fewer customers are paying for a Head Office building that can accommodate a larger number of employees. So while total costs are reduced, these same costs are not reduced by the same 50% ratio that revenues will be reduced as a consequence of Division.

Purchasing fuel and general operating supplies in large quantities gives NTPC the ability to negotiate favourable contracts and helps reduce overall costs. This ability will, certainly be impacted by Division. In short Division has meant the loss of significant economies of scale. The question that now needs to be addressed is how to structure the company to ensure that it operates in the most efficient and cost effective manner.

B. Franchises

Utilities operating in the NWT are required by the *Public Utilities Board* (PUB) *Act* to acquire a Franchise for each community served. Since the establishment of NTPC in 1988, the company has been attempting to conclude Franchise Agreements with communities. To date NTPC has concluded Franchises in all but 3 communities. NUL has either acquired Franchise Agreements in all of its operating areas or documentation is underway to complete these agreements. The problem lies in the fact that

there is no real impetus for a community to reach a Franchise Agreement with NTPC or NUL.

Another problem with Franchise Agreements is the need to renew agreements on a regular basis. The process is so cumbersome that the utilities are still trying to obtain first time Franchises in a number of communities and in others they are going through a renewal process.

Recently, several communities have requested Franchise renewal proposals from interested parties. In some cases the Franchise Agreements were concluded in a timely manner but in others the issue became quite contentious.

There are two problems with the current approach to franchises. The first is the possibility of fragmenting service in the NWT, thereby raising costs through further loss of economies of scale, in both overhead and operations. The second is the cost of franchise applications, the time and staff resources involved and the approval process itself.

The issue of economies of scale is important in relation to the franchise question. A single company providing a wide range of services to a large number of communities achieves economies of scale in regards to purchasing, staffing, and general operational costs. A series of small companies selling electrical service to single communities achieves none of these economies of scale and puts the community at risk if there is no back up service or stand-by generation facilities. Fragmentation of the market would not only raise costs generally, but would also reduce the level of security of supply available to the residents of each community. Allowing fragmentation to exist could also expose the Government to a number of security of supply issues.

Fragmentation of supply could adversely affect NTPC especially if new suppliers are permitted to obtain Franchise Agreements in the selected larger communities and NTPC is left with only the smaller off grid communities. The opportunity for other suppliers to cherry pick the large and profitable service areas could make NTPC uneconomic and boost power rates due to operational inefficiencies.

In the current system local governments are charged with the franchise negotiations, ensuring the successful franchise bidder is both technically capable of providing service and financially sound. It is both possible and probable in this system that numerous suppliers would emerge some of which may not be utility operators with a long history of stable production and service delivery. This approach raises serious concerns about, long-term security of supply, and the ability of companies to provide back-up facilities as well as emergency response capabilities.

The process of determining franchises is costly. The manpower alone dedicated to this task has been enormous. The cost of staff time, legal advisors, travel and PUB applications are all costs that are borne by the ratepayers. Over the years this adds up to a substantial amount of money that both impacts rates and the bottom-line performance of the corporation. Customers pay the cost of doing the work to acquire Franchise Agreements. It is expensive exercise that takes up inordinate amounts of staff time with little tangible results in relation to the substantial costs involved.

Under the present system, if a community chooses to change service providers after a franchise review, the existing utility would be entitled to receive a fair purchase price for the sale of its assets to the new utility. In a forced sale situation, it is generally accepted in Canada that the price formula for the purchase of assets is: replacement cost new less

depreciation, plus some consideration for the remaining life of the assets. This is essentially the value of the remaining life of the assets based on current cost of new equipment. Thus, given inflation over the life of the current assets and book depreciation in excess of physical depreciation, the purchase price would likely be significantly greater than the net book value of the assets.

After due consideration, it is our opinion that the GNWT should legislate changes that would grant Franchises for all of the communities served by NTPC and grandfather 20 year Franchises for all the communities served by NUL. The Hay River Franchise should be dealt with by the Town of Hay River and allowed to reach its natural conclusion.

In considering options for the future of the electricity sector in the NWT, it helps to think separately of generation and distribution. In the absence of retail competition, which would be impractical in a market the size of the NWT, distribution franchises give the utility the exclusive right and obligation to arrange generation to supply their customers, as in the case of NUL, or it could build its own generation, as in the case of NTPC.

The *Cities, Towns and Villages Act* which deals with some of the Franchise related issues is unclear in terms of how stranded assets should be handled when a Franchise changes hands. Minor amendments to this Act will be required in order to properly clarify the question of Franchises and the purchase of stranded assets.

C. Regulation

The NWT Public Utilities Board (PUB) regulates both NTPC and NUL. The PUB maintains a full time office and employs a permanent Chairperson. All utilities are required to file a General Rate Application (GRA) at least every three years or if rate increases are required during the intervening period. The PUB is a quasi-judicial Board that utilizes a rate base rate of return regulatory format. This approach entails detailed rate hearings, complete with interveners and expert witnesses. It is a lengthy and expensive process. It is estimated that the cost of regulation is somewhere in the neighbourhood of $1.1 million annually if the costs of NTPC, NUL and the PUB are included. Just in terms of the NWT alone, this represents 2.2% of sales for 2001.

The last GRA filed by NTPC cost the corporation approximately $1.4 million. These costs are for direct internal expenditures made by the corporation in filing and defending its rate application. NTPC estimates that the upcoming GRA filing will cost another $1.1 million. These costs are part of the cost of running the business and are included in the rate base for the purpose of calculating power rates. In short, the customers pay for the high cost of regulation. In British Columbia, the cost of regulation is approximately $1.50 per capita. In the NWT it is approximately $25 to $28 per capita some 18 times the cost in B.C.

In a recent study for the Yukon Energy Commission, Professor Mark Jaccard of Simon Fraser University and former Chair of the B.C. Utilities Commission indicated that; "there are few examples of jurisdictions the size of Yukon which maintain full time independent utility boards which carry out full scale conventional methods of regulation." He also indicated that many jurisdictions find it unacceptable that the high cost of regulation itself contributes to higher utility rates. In his conclusion he suggested that

the Yukon government should eliminate the Yukon Utilities Board and replace it with some other form of oversight. He further suggested that Yukon use the BCUC formula type system for rate of return regulation that could be reviewed every 4 to 5 years.

For comparison purposes, the utilities in Yukon and the NWT are virtually the same size. The point being made by Professor Jaccard above is that the Yukon system and by direct comparison the NWT system, is too small to warrant a full blown quasi-judicial regulatory process and the same applies in the NWT.

Many jurisdictions carry out full rate of return regulation similar to NWT but many others have found the cost of this type of regulation to be prohibitive. Saskatchewan Power is regulated by Cabinet and is not subject to rate hearings. PEI moved away from full regulation eight years ago to a system whereby rates are set in lock step with the rates set by New Brunswick Power and regulatory oversight is restricted to monitoring legislative compliance by a Regulatory and Appeals Commission. Medicine Hat, Alberta a city with a population of approximately 50,000 has its own integrated electrical and gas utility. Rates are set by City Council. The Alberta Energy and Utilities Board has jurisdiction only over complaints of discrimination among individual customers, which are rare. Similarly, the municipally owned distribution utilities in Lethbridge and Red Deer have their rates set by city council.

Even in jurisdictions where the cost of regulation on a per customer basis is a fraction of that in the NWT, concern over such costs and a desire to promote greater efficiency has led to regulatory and operational reforms in recent years. In terms of regulation, this has included replacing the quasi-judicial hearing process with a negotiated settlement system. In B.C., electricity sector regulatory reforms also include incentive regulation,

which involves mechanisms that share cost savings between the utility and its customers. The negotiated settlement - incentive regulation system reduces the need for in-depth PUB style review and provides the utility with some incentives for cost savings. In B.C. this type of system is employed to regulate companies such as B.C. Gas and West Kootenay Power.

Several years ago, the British Columbia Utilities Commission (BCUC) found that it was dealing with rate of return issues at every GRA hearing and getting the same results. Many other provincial regulatory agencies and the National Energy Board (NEB) also came to the same conclusion. To resolve this issue, the regulatory agencies introduced a formula based system to determine rate of return. The formula for rate of return is essentially the same in each of the jurisdictions where it is applied including the NEB. In summary, rate of return is established as; the rate for Long Canada Bonds, plus a premium for low risk utilities of 3.5% and a differential adjustment for the difference between 10 and 30 year bonds. In B.C. for the year 2000, the general rate of return is set at 9.5%.

This system reduces regulatory costs by eliminating the need to hold rate of return hearings, call expert witnesses, review testimony and determine a fair rate. The formula based system provides predictability to the utilities regarding rate of return and meets the test of customer affordability.

Other jurisdictions have further reduced the costs of PUB style regulation by, reducing the frequency of hearings and thereby, attempting to lower the overall cost of hearings. These initiatives may lower the utilities' and thereby consumer's cost of regulation, but would continue the ongoing cost of the PUB itself. It would likely be an improvement over the status quo, but would not guarantee a dramatic decrease in the cost of regulation.

Many smaller jurisdictions have developed an internal administrative approach to regulation. Under this approach, a single professional, with access to additional economic, accounting, audit and legal consulting assistance would reset rates as warranted by changing circumstances. In the event that the utilities disagreed with the administrative decision, the matter could be subject to binding arbitration. Rate of return issues would be decided by a formula similar to that employed by the NEB or the B.C. Utilities Commission. In addition, arrangements would be made to have the staff at an external regulatory board such as B.C. or Alberta review the methodologies and technical rate framework every five years to ensure that rate setting is current with industry standards.

The shift to a streamlined administrative approach to regulation should also be accompanied by a shift from community-by-community rates based on complex cost of service calculations, to a more simplified rate structure. It may be more applicable if community rates reflect the significant, systematic differences in the cost of generation, rather than the current practice of community rate base accounting. We would suggest that the GNWT consider establishing two rate zones for the purposes of developing utility rates. One rate zone would cover the communities serviced by hydro and the other rate zone would cover the communities served by other types of generation.

As a transition from full PUB regulation to the streamlined, administrative approach, the PUB should be directed to establish the technical basis for the subsequent administrative approach to cost of service, the initial rates under a simplified rate zone type structure, and the Terms and Conditions of service.

NTPC last filed a GRA in 1997. It is currently in the process of preparing to file another GRA this year. The GRA may be filed as soon as the end

of this year. NTPC currently, has both an automatic fuel clause rider and a low water adjustment rider in place as a result of previous PUB decisions. There is no reason to expect any changes to either of these riders.

The current high cost of regulation must be reduced to a level that is affordable and still effective. The *Public Utilities Board Act* should be repealed and formal rate of return regulation replaced by Cabinet based utility regulation using the BCUC rate of return formula plus a premium for the operating in the north.

D. Security of Supply

The Government of the Northwest Territories and the residents of the NWT consider electrical power an essential service. The broad geographic area populated by small and in many cases isolated communities demands a secure supply of electrical energy services. Whether service is provided by a public or private utility it may ultimately be necessary that Government ensure a secure supply of electrical energy is available for the residents of each community.

Supplying electrical service is capital intensive and represents a considerable investment in equipment as well as properly trained and experienced staff. The question is not whether electrical service can only be purchased from a limited number of suppliers but rather if service can be provided in an efficient, cost effective and reliable manner now and into the future.

Making electricity available at competitive rates is essential to the well being of both the residents and the economy of the Northwest Territories. Residents of the NWT like electrical consumers across Canada are vitally

interested in the cost of power but a more important issue in the NWT is whether communities have an assurance that power will be available as required to meet the needs of the residents.

The impact of a power failure in southern Canada where most communities are connected to a grid is not as severe as it can be in the north. If a power failure occurs in the winter NWT communities could experience a great deal of hardship. Buildings can freeze up in a short period of time and it may take only a few hours to cause substantial damage to community systems and facilities.

The NWT Public Utilities Board (PUB) has approved the back-up power supply formula established by NTPC. NTPC recently completed a review of its back-up capacity and in that regard surveyed a series of utility companies with remote diesel locations. NTPC found that the formula adopted by the utility is similar to that employed by other utilities. The NTPC formula provides for 105 to 110% of peak requirement with the largest unit down. This formula ensures a high level of security of supply and is generally thought to be a sound approach to ensuring communities are able to deal with power supply problems. The provision of back-up service increases the cost of providing overall electrical service but it is also a necessary function of operating in remote locations.

In addition to a built in back-up capacity in each community, NTPC maintains a system of stand-by and portable generating equipment that can be utilized in case of an emergency situation. The corporation experienced the need to use this stand-by system as recently as May 1, 2000 when the Sanikiluaq plant was totally destroyed by fire. In 32 hours NTPC had restored full power to the community using staff and equipment flown in from other locations. Without a fully operational emergency

measures system in place the community would not have achieved full power in such a short space of time.

The back up power supply formula currently used by NTPC is adequate to ensure the delivery of safe and reliable power for NWT communities.

E. GNWT Borrowing Capacity and NTPC Debt

The amount of long term debt attributable to NTPC after Division will be approximately $106 million. This debt is borrowed in the capital markets by NTPC but is guaranteed by the GNWT. The guarantee provided by the GNWT helps NTPC acquire a lower interest rate and better terms than it could achieve on its own as a Territorial Crown corporation.

The debt in itself is not an issue for NTPC. The corporation has maintained a financially sound debt to equity ratio and is able to service its current debt load. What is at issue is the continuation of the debt guarantee into the future. There are two reasons for not continuing the GNWT debt guarantee and requiring NTPC to finance its investments on the basis of its own balance sheet.

The financial markets usually impose debt limits on direct government debt and the debt of Crown corporations that have been guaranteed by government. Therefore, the debt of NTPC may impact on GNWT's ability to borrow.

Economic growth as envisaged by the document, "Toward a Better Tomorrow" will require both significant NTPC investment which can be independently financed without the guarantee of the GNWT and investment in other infrastructure, such as schools and roads, which may require either direct government borrowing or perhaps even debt

guarantees. If the GNWT continues to guarantee the borrowings of NTPC, it may be restricting its own borrowing capacity significantly and that affects the level of funding available for other programs. Even more serious is the question of large-scale future development. If any major project is to proceed it will require a substantial capital investment, as an example, adding generating capacity to service one or more diamond mines or a gas pipeline could easily cost $50 to $100 million. A debt guarantee to cover a project of this might seriously impair the GNWT's borrowing position for some time and affect the delivery of other government programs. While the GNWT may be able to negotiate higher borrowing limits it is quite possible that, because guaranteeing NTPC debt would raise the total debt of the GNWT, the lower interest rate benefit to NTPC of the guarantee would come at the expense of a higher cost of borrowing for all GNWT debt. Debt guarantees are not necessarily free.

The second reason for not continuing the guarantee of NTPC debt is that putting NTPC on an independent basis for its financing is part of establishing NTPC as a demonstrably viable, independent utility at arms-length to the government. The Power Corporation does not need the government's guarantee in order to borrow funds. There is an argument that without the guarantee the cost of borrowing funds will increase. However, the increase should be small and, as noted above could be offset by a slightly lower cost of GNWT borrowing in the absence of the NTPC guarantee. Furthermore, independent financing provides a financial market discipline on the utility to make sound investment decisions and operate efficiently to ensure the cost of capital continues to be competitive. Removing the future debt guarantee provision is part of the structural changes required if NTPC is to be put on an independent footing.

The GNWT should not provide NTPC with a debt guarantee for any new borrowings required to finance capital projects.

F. Subsidy Program

The electricity rates paid by consumers result from the combination of community specific, cost-based utility rates and the government's Power Subsidy Contribution Program. The program subsidizes all residential customers for the first 700 kwh per month to the Yellowknife rate. Average residential consumption in the NWT is 950 kwh per month. NTPC estimates that for the NWT portion alone, the subsidy program will cost $4 to $5 million during the coming fiscal year.

The rate subsidy represents a reasonable approach to pricing in a jurisdiction that has a combination of low cost hydro serving a majority of the larger communities and non-hydro with a wide range of costs serving mostly smaller communities that are isolated from the grid. The program is effective in reducing rate disparity across the NWT, seems to be well received and does not appear to require substantive change.

G. NTPC Dividend Payment

By initial design, the subsidy was to be financed by the NTPC dividend paid to the government. Earmarking the revenue from the NTPC dividend to the Power Support program is arbitrary and can adversely affect NTPC.

NTPC made a dividend payment to the GNWT of $6.2 million in 2000 and $6.6 million in 1999. Last year the dividend paid to the GNWT represented nearly 59% of the net profits of the company. Next year it is expected that the dividend payment required to pay the subsidy will equal 100% of corporate profits. NTPC cannot sustain this level of dividend payout and

remain financially sound. For a post-Division NTPC to be established as a viable utility, the level of dividends must be consistent with the need for retained earnings to provide the equity portion of new capital investment. Setting the dividend on the basis of the government's revenue requirement, for whatever purpose, could readily impair the ability of NTPC to raise debt for investment at competitive rates. If the Power Corporation goes to the market to borrow funds without a GNWT guarantee, it will be required to submit its dividend policies for scrutiny. The market will not look positively on the strong linkage between the dividend and a Power subsidy program. Dividends should be based on providing a return on shareholder (government) investment and set on the basis of standard practice for private utilities. Based on this the dividend payment should be de-linked from the subsidy program. The dividends would continue to provide revenue to the government as a return on its investment in NTPC, but would not be driven by the cost of the subsidy. If the government decides to raise more revenue from the electricity sector to cover the subsidy, it should use sources other than dividends.

The GNWT should consider taking its dividend in the form of a soft dividend or a dividend in kind. For a definition of soft dividends please refer to Appendix C.

H. Excess Capacity & Interruptible Power

The Taltson hydro system is currently both underused and underdeveloped. The current installed capacity of 20 mw is a small fraction of the 200 mw plus potential of the river basin, without any additional flooding.

The existing system was constructed to serve the Pine Point Mine and began operation in 1965. Demand on the system has declined steadily

since the closure of Pine Point in the late 1980's. The current peak system peak load in the winter is approximately 13 mw. For most of the year the peak is less than 10 mw.

The excess power at Taltson represents a significant loss in potential revenue for the utility. It is common utility practice to sell excess capacity as interruptible or non-firm power in order to generate revenues. In 1996, with PUB approval, NTPC advertised for proposals for the use of the surplus as interruptible power. The corporation received submissions from several interested parties but in the end none of the prospective projects materialized.

Interruptible power is generally sold at a price above the marginal costs of generation, but below the full, average cost of power, including the fixed capital costs. For otherwise unused hydro the marginal generation costs are almost zero as the water is simply spilled over the dam and the extra maintenance costs for using it for generation are minimal. Thus, any extra revenue received from interruptible sales for new classes of service can contribute to total costs and help lower the cost of power to other consumers. A customer with the ability to switch fuels for heating or industrial process steam is a typical example of an interruptible customer. Where the full cost of electricity is above, and the marginal generations costs are significantly below the cost of heating oil, there is a gain to both the customer and the utility (e.g. all other customers) by selling power to the interruptible customer from existing capacity when it is available.

As an example, the current residential rate charge in Fort Smith is 10.14¢ per kwh. At this price, electric heating would be significantly above the cost of oil heating. However, with interruptible power at say, 2¢ or 3 ¢ per kwh electric heating would be cheaper than oil heating at current oil prices. Dual oil-electric residential and commercial heating systems offer

an economic local use of the current excess capacity. There are other options that could also be examined to utilize the excess capacity.

To put the issue into perspective, the excess capacity now available on the Taltson system is approximately 95,000,000 kwh per year. If all of the available interruptible power is sold for 2¢ per kwh NTPC would realize revenues of $1.8 million. For each additional 1¢ in the price of interruptible power sold, NTPC revenues would increase by some $950,000.00

The GNWT should immediately take steps to ensure that NTPC proceeds with the sale of interruptible power from the Taltson system. NTPC must take steps to develop a clear interruptible power policy and make certain that buyers of interruptible power meet the guidelines and understand the need to have an alternate power source in place.

I. Privatization

The GNWT purchased NCPC from the Federal Government in 1988. The GNWT financed this acquisition with the issue of a 10 year, 11%, $53 million bond that had an annual repayment of $5.3 million. At the same time NTPC issued a promissory note to the GNWT for $53 million under identical terms and conditions as the GNWT bond issue. The net effect was a flow through with no cash impact on the GNWT. NTPC essentially financed its own purchase and it retired the promissory note in 1998.

The Acquisition Agreement for the purchase of NTPC was intended to meet specific GNWT objectives including: maximizing opportunities for northerners to participate in NTPC while operating according to generally accepted business principles. In addition Article 10 of the Acquisition Agreement makes reference to the GNWT's commitment to consider options for private sector participation in NTPC including; equity positions,

and arrangements whereby the private sector would finance develop and own future electrical projects in the NWT.

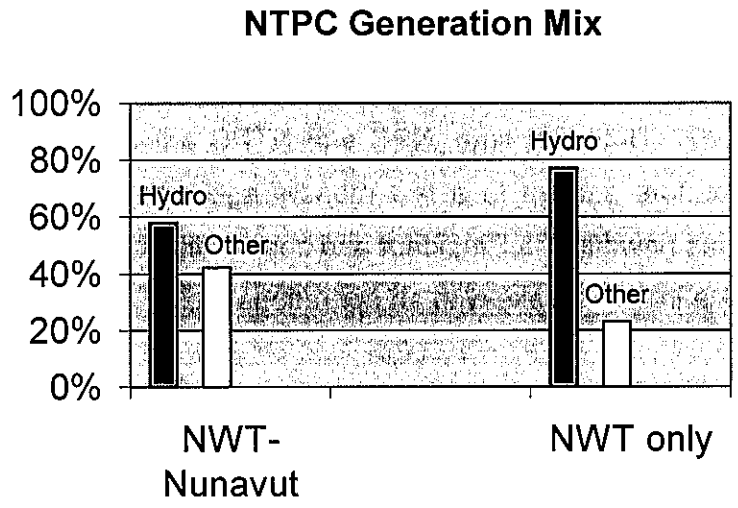
The GNWT last examined the question of privatization in 1993. At that time the Abbott report suggested that the GNWT, proceed with an IPO to sell shares in NTPC. It was estimated that the GNWT would realize approximately $80 million for the sale of the shares. This estimate of proceeds of $80 million was calculated pre-Division. Under the Abbott proposal NWT residents would receive a first right to purchase shares and no individual or group could own more than 10% of the shares. The GNWT did not proceed with the recommendations of the Abbott report and chose to retain full ownership of the utility.

As part of the Division process the GNWT and the Interim Commissioner for Nunavut reached an agreement that NTPC would continue as a single corporation for 2 years in order to access all possible options for the long-term delivery of power within the two Territories. The Government of Nunavut has now decided to proceed with the establishment of its own stand-alone electric utility, Nunavut Power Corporation (NPC). The existing company will become two separate operating entities effective March 31, 2001. Until that time, NPC and NTPC are operating with one Board of Directors and up to a few months ago with one management team. NPC has now hired a President and some utility staff and has set up its Head Office in Baker Lake with an operations facility in Iqaluit.

Division will have a fundamental affect on the size and character of NTPC. The following table illustrates the extent of that change:

NTPC	NWT-Nunavut	NWT only
Customers	19,200	8,200
Plants	51	26
Sales	$100,000,000	$54,000,000
Equity	$110,000,000	$77,000,000
Earnings	$10,600,000	$4,400,000

Generation	NWT-Nunavut	NWT only
Hydro	58%	77%
Gas	5%	6%
Purchased Power (Gas)	1%	2%
Diesel	36%	15%



Capital West Partners in their valuation letter of February 16, 1993 indicated that Division would significantly diminish the value of NTPC and would render both NTPC and NPC difficult to finance. As market conditions and investment parameters change over time, it would be necessary to revisit the Capital West Partners' opinion in light of today's situation.

The structure and continuity of the Board of Directors, will also impact the value of NTPC. In the last year or so NTPC has had three different Chairmen and has seen the addition of several new Board members. On April 1, 2001 the term of the Board members appointed by the Government of Nunavut will expire along with the terms of a number of the NWT appointed members.

Canadian corporations usually appoint persons with name recognition to a Board of Directors along with individuals having specific expertise in; engineering, finance, marketing and other specific skills sets depending on the industry. NTPC should follow the generally accepted system for Board Appointments and make every effort to appoint Board members with specific expertise.

The value of a company is also impacted by whether it achieves its target rate of return on a consistent basis. NTPC is allowed to earn a rate of return on its equity of 11.5% as approved by the PUB in 1997. For some time and for a number of reasons, NTPC has not achieved its maximum rate of return. Achieving the maximum rate of return on a consistent basis adds to the value of the shareholder's equity and it is therefore an important measure of investor value.

It is estimated that on March 31, 2001, NTPC will have long-term debt in the order of $146 million, of which approximately $40 million relates to

NPC. To ensure that NTPC has an appropriate debt-equity ratio after Division, it is imperative that the long-term debt attributable to NPC be removed from the books of the corporation.

If NTPC is to borrow money on its own account, it must have a realistic and commercially viable debt-equity ratio. The financial markets will not be prepared to lend funds to a company with a weak balance sheet and if they are prepared to make a loan it will certainly be more expensive as the risk increases. Having debt associated with Nunavut on the books of NTPC will be detrimental to the financial good health of the company and increase the cost of money borrowed even with the guarantee of the GNWT.

A number of jurisdictions in Canada grant exclusive distribution franchises to local and/or provincial utilities. The value of NTPC would be enhanced, if it held exclusive franchise rights within its service area. Monopoly or exclusive franchise rights would be viewed by the financial markets as providing a secure customer base and decreasing business risk. Financial institutions looking at NTPC from a debt point of view would be more inclined to provide capital at attractive rates if risk is minimized.

Post Division the full replacement cost of the assets currently owned by NTPC is estimated to be in excess of $550 million. Which makes NTPC the largest single asset owned by the GNWT. The depreciated value of these same assets is in excess of $275 million. The book value of assets is $184 million, based on initial cost less depreciation. After Division NTPC will have a debt level of $107 million and equity of $77 million.

If the estimated net proceeds on the sale of NTPC in 1993 was $80 million then that amount would be reduced after Division. If revenues fall by 50%, profits are reduced substantially, and the company has fewer assets, the

value of NTPC would be diminished to a point where it would not be prudent for the GNWT to proceed with privatization at this time.

In addition to the net proceeds of NTPC being low, NTPC does not have the cornerstones of organizational structure in place to proceed with privatization. The major organizational issues that impact the value of NTPC, and its inability to be privatized at this time are:

- The company is a significantly different company after Division and has no operating history as a post Division operation
- A strong Board of Directors appointed on expertise is required
- A qualified management team with long term senior executives must be in place
- NTPC needs to establish a debt rating
- NTPC must meet its rate of return targets
- A commercial dividend policy de-linked from the subsidy program must be developed and implemented
- Clarity of the future regulatory regime needs to be established
- NTPC needs an operating history under the revised regulatory structure

NTPC could sell its assets to another utility that could establish its own management team. While that approach would avoid the current gaps concerning the debt rating, board of directors and management team, potential buyers would likely discount the price they would be willing to pay due to the absence of a track record on post-Division operating costs and the performance of the new regulatory regime.

J. PPD

In addition to NTPC, Division has also dramatically impacted the GNWT's Petroleum Products Division (PPD). The total sales for PPD were 130 million litres per annum before Division and sales in the NWT will now total a mere 14 million litres. The dollar volume impact will see PPD revenues fall from $60 million per year pre-Division to $12 million per year after.

PPD has lost many of its economies of scale. In fact the NWT office was required to add 3 staff after Division to compensate for the fact that all of the purchasing functions of the organization were located in the Rankin Inlet office that is now a Nunavut facility.

The NWT owned PPD has a $4 million deficit in the price stabilization fund and a larger overhead to serve a drastically reduced customer base after Division. PPD has recently contracted with private operators for the provision of service in Tuktoyaktuk and is considering proposals for contract services in other areas. These moves also affect the size and economic viability of maintaining a stand alone PPD.

PPD has indicated fuel rates in the communities have now reached a level where they achieve a breakeven on operational costs. In other words, the price of fuel is moving towards full cost recovery but the price is still being subsidized and the department is not recovering costs applicable to such items as inventory financing and storage, the cost of working capital, and depreciation.

PPD's capital budget is fully funded by the GNWT and will average approximately $2 million per year for the next five years. The funds required for capital are a reflection of growth in the business areas served by PPD but do not provide any return on the investment to the GNWT. At

present time the value of PPD assets in the NWT is set at $27 million for insurance purposes.

In some communities NTPC buys and stores its own fuel required for the diesel plants and in other communities it uses the services of PPD. NTPC has staff dedicated to the purchase and re-supply of fuel as well as personnel that perform fuel tank maintenance. There is some duplication in effort between the two organizations. If NTPC is in the process of rationalizing staff resources to meet the impacts of Division and PPD is doing the same, it would be timely to amalgamate the two organizations.

K. Alternate Energy

NTPC and other distributors should also be required to purchase excess power from independent suppliers of alternate energy such as, solar, wind, and micro-hydro. The purchase price of power from these suppliers is traditionally equal to the foregone cost of diesel. This initiative gives producers of alternate energy an incentive to continue with development and could feed into the appropriate utility system and provide community power supply benefits.

L. Hydro Resource Development

A little talked about but valuable source of economic development potential in the NWT is the vast hydro resource available within the NWT. A number of hydro opportunities have been identified over the years including:

Site	Potential
• Additional development on the Taltson system	200 mw
• Upper Snare	20 mw

In addition, there are a number of large run of the river sites on the Bear and Mackenzie rivers that should be considered for future development.

Recognizing the undeveloped potential of the Taltson River basin, the export of power to Saskatchewan or Alberta is another opportunity. The Taltson system is less than 300 km from major transmission grids in both Alberta and Saskatchewan. The current excess of 10 mw could be combined with the development of significant new capacity and exported. At projected natural gas prices and with potential constraints from greenhouse gas emissions limiting new coal plants, hydro power from Taltson would be competitive with alternative new capacity in Saskatchewan and Alberta and therefore attractive to potential customers.

Connecting to the grid in either Alberta or Saskatchewan, would also provide the opportunity to buy hydro power from the south during the annual Taltson hydro maintenance shutdown. This would save both NTPC and NUL approximately $300,000 annually as a result of lower fuel costs by eliminating the need to run diesel units in Fort Smith, Fort Resolution and Hay River during those periods.

The opportunities are significant. Hydro should be developed and exported to southern markets, utilized as an economic development tool to stimulate growth of new industries, mines and other businesses or it could be used to replace sources of non-renewable energy to provide more economic electrical service to the existing customers.

There is a significant demand in the southern Canada and particularly Alberta for economic sources of power. Alberta currently has a shortage of available power and demand is increasing. In his October 17, 2000, press release the Honourable Mike Cardinal the Alberta Minister of Resource Development indicated that high prices in Alberta are primarily the result

of demand outgrowing supply. Other sources have made the point that Alberta is starved for electrical power and the need for new supply is immense. To help solve this dilemma, Alberta recently opened generation to competition and is hoping that the market will attract new supply in order to meet demand and ensure competitive pricing. The development of mining and resource development in the northern half of B.C., Alberta and Saskatchewan alone would be sufficient to utilize a substantial amount of hydro development. The Province of Alberta estimates that some $30 billion will be invested in the Fort McMurray region in the next ten years. If the GNWT is looking for opportunities that will bring revenues for all levels of government and stimulate economic growth, hydro has the potential to achieve that goal. The capacity of the Taltson system alone can be increased by 10 times with little or no environmental impact.

Over and above the environmental concerns, the major issue with the development of hydro projects is the investment risk associated with very long-lived capital projects. The risk arises primarily from the uncertainty of demand over the life of the assets, especially where economies of scale favour the building of capacity significantly in excess of initial demand. Either demand may fail to materialize, or initial demand from a single large industrial customer could disappear if the customer goes out of business. This latter risk could be reduced by a long-term contract with the industrial customer backed by a debt or equity investment in the hydro project.

NTPC does not currently have the financial strength or the flexibility to develop large-scale hydro projects on its own. Even with a partner, a long-term, large-scale development may be beyond the financial reach of the company. However, projects of this size and scale could be financed in conjunction with major industrial user or other buyer in southern Canada or provincial grid systems and still bring substantive revenues to the NWT.

The Taltson system's proximity to export markets make it an ideal vehicle for economic development in the South slave area. To optimize this potential in a timely manner, allow the GNWT to maintain control of the system, and not be burdened with a large financial commitment, it is suggested that the Taltson hydro system be transferred to a Resource Trust under the direction of the Minister of Finance. Establishing a Resource Trust will help to maximize both the development of the Taltson system and the return on the GNWT's investment.

M. Mackenzie Valley Gas Pipeline

The increase in demand for natural gas for electricity generation in southern Canada and the U.S.A. is a significant factor behind the desire for early development of Arctic natural gas and the possibility of a Mackenzie Valley pipeline. Such a development would allow a switch to lower-cost, lower emission natural gas generation and space heating in the communities near the route of the pipeline and could be a significant part of the NWT contribution to lower Canadian emissions.

It would be prudent and timely, to examine the question of NTPC's role in the distribution of gas within communities. The same issues that NTPC faces in the delivery of electrical service; economies of scale, fragmentation of supply and the cost and structure of regulation also apply to the issue of gas distribution at the community level.

If NTPC is already providing utility distribution services on a monopoly basis to communities, the addition of gas services would not only make the corporation financially stronger, it would also offer economies of scale and organizational efficiencies that would substantially benefit the customers. In contrast, fragmentation of supply would serve to create a whole series of small gas utilities that are not big enough on their own to

provide; economic rates, security of supply, comprehensive technical and back up support and a single focus for consumer contact.

Leaving gas distribution to be handled on an individual community basis makes little economic sense. It is possible that the NWT could have as many as 30 small gas utilities many of them inefficient due to size. If each community can choose its distributor or even set up a locally owned utility to handle gas distribution, there are few opportunities for continuity of service or pricing from community to community.

It may be possible for a larger community such as a Yellowknife to attract an operator that would be interested in establishing a natural gas distribution service. In smaller communities there is no guarantee that a commercial operator would find enough business to make the investment worthwhile and in those cases the GNWT would be left holding the responsibility. If we take out the larger centers and the mid-size operations that make marginal sense, we are left with the small expensive to service communities. The GNWT would be required on its own or under the banner of NTPC to provide service to these communities whether it made economic sense or not. If one organization is going to look after the small less attractive markets they should also be involved in the larger centers in order to make the entire operation profitable. As a whole gas distribution makes sense, as a fragmented system run by a series of individual gas utilities it makes no economic sense. NTPC should be given exclusive gas distribution franchises for all of the communities adjacent to the pipeline, excluding communities that already have gas/propane distribution systems in place.

N. Climate Change

Climate change is a significant issue for the NWT; containing the challenges that a changing climate will present and requiring actions to constrain greenhouse gas emissions. A global treaty on greenhouse gases and Canadian policies implementing it could well change the relative costs of different types of generation. Diesel generation will become less attractive relative to natural gas, and similarly natural gas relative to hydro, wind and solar. This creates both pressures and opportunities for electricity in the NWT.

Canadian greenhouse gas policies could take a variety of forms. One of the prime policy options in the Kyoto Protocol scenario is the pricing of greenhouse gas emissions under a domestic emissions trading system. This would increase the market cost of coal and natural gas-fired generation and raise the price that could be achieved in a contract to export power from the Taltson basin to Alberta or Saskatchewan. Such a policy would also make the switch to natural gas and the expansion of hydro for use within the NWT more attractive. Alternatively, under an emission credit policy, the contract price of hydro exports would be supplemented by the value of emission reduction credits received for switching from coal or natural gas generation to hydro. Such credits would also apply to the switch from diesel to natural gas and hydro.

With the post-Division share of diesel declining to 15% of total generation, and further decreases possible through conversion to natural gas, NTPC is less exposed to higher costs under potential greenhouse gas policies and stands to benefit form the effects of such policies on the value of undeveloped hydro potential.

6. Designing the NWT Electricity Sector - Options for the future

After reviewing the issues in conjunction with the Terms of Reference, a series of realistic, and achievable options were developed for consideration. These options have been constructed in such a manner as to address each of the issues under review.

The range of options the Review Team considered include:

- Continuing the status-quo, NTPC continues as a scaled down operation
- Establishing NTPC as a government department
- Full privatization
- Nationalizing the electrical sector under one crown owned utility
- A co-op process for electrical distribution
- Splitting generation, transmission and distribution into 3 separate companies
- Expanding the mandate of NTPC to include objects outside of the utility sector
- Setting up NTPC as a monitoring agency and contracting for the delivery of electrical services
- Full retail competition for distribution service and generation as a monopoly
- Establishing a Resource Trust
- Establishing a one cent per kWh levy on all hydro an export power sales

Each of the three models presented as options are discussed in general terms. The exact details of how each model can be implemented will need to be worked out once a decision is made regarding the options presented.

A. NTPC Crown-Owned, Streamlined Regulatory Process, Distribution Monopoly

Under this option, the structure of NTPC would change very little. NTPC would be a closely held crown corporation reporting to a Minister just as it does today. The Minister would be responsible for questions in the House, providing policy guidance to the utility, appointing the Board of Directors and the CEO, and obtaining loan guarantee approvals from Cabinet. NTPC would continue to submit budgets and business plans to the GNWT for approval and Ministerial directives would be utilized when required. NTPC would continue to borrow its capital requirements using the guarantee of the GNWT.

The downsized NTPC would not be as cost efficient as it was before Division and staff turnover would be a significant issue. There is some question as the to ability of the corporation over the long term to attract and retain executive level staff for such a small utility.

The GNWT would have a difficult time finding ways to maximize its investment in a post-Division utility unless it was prepared to initiate substantial rate increases and cut back on the subsidy program. If other sources of funding could be found for the subsidy program or if the program was eliminated, the GNWT would then be in a better position to earn a commercial rate of return.

The significant change under this option would be a streamlined regulatory process. The GNWT would implement legislative changes that would see NTPC and NUL file GRA applications, only when rate increases were required. This would eliminate the requirement to file a GRA every three years.

The PUB would be required to initiate structural changes to utilize a formula based system for establishing rate of return and implement a negotiated settlement process instead of full blown quasi-judicial rate of return hearings.

NTPC and NUL would experience a reduction in the cost of regulation as well as a significant reduction in the amount of staff time related to preparing for hearings.

Franchise rights would be awarded to NTPC for all of its current service areas. The same would apply to those areas currently served by NUL. In the case of NUL franchises would be locked in for a period of at least 20 years. NTPC would receive indeterminate franchises for the communities that it currently serves but does not have a Franchise Agreement in place, as well as for those communities for which it now holds a franchise.

Once the franchise issue is resolved, both utilities would have operational certainty in regards to service areas making long-term planning and budgeting a straight -forward process. The two utilities would save time and money by, not being involved in the time consuming system of applying for franchises and franchise renewals.

The main factor to consider when looking at monopoly distribution franchises is the question of security of supply. NTPC and NUL are well run, efficiently managed utility companies. They both have the technical and operational resources to deal with emergency situations. Both NTPC and NUL are financially sound and have systems in place to upgrade plants on a regular basis, carry out high levels of maintenance, and put the back-up capacity in place to ensure that each and every community is afforded the same quality of electrical service.

This option does not solve all of the issues identified but it goes a long way to improving the situation that now exists. It eliminates the need to spend time and money competing for franchises, streamlines the regulatory process and reduces the cost of regulation and maintains the integrity of the both NTPC and NUL. NTPC will still suffer from a loss of economies of scale, staff turnover and limitations on financing. The GNWT will be tied to loan guarantees, experience an inefficient return on its utility investment, and have no real expectation to realize the full potential of both NTPC and a realistic return on equity.

B. Privatize NTPC, Streamlined PUB and Distribution Monopoly

In this model, the GNWT would sell the shares in NTPC on a similar basis as suggested in the 1993 Abbott report. NWT residents would have first option to buy shares and be permitted to purchase those shares on an installment plan. In order to prevent a large southern-based entity from buying up control, shareholders would be limited to voting more than 10% of the shares.

In 1993, the Abbott report suggested that GNWT would receive net proceeds of approximately $80 million on the sales of the shares of NTPC. Given the valuation restrictions discussed previously, it would be difficult for the GNWT to receive anywhere near that amount for its shares at this time. The value of NTPC shares has not been determined by conducting a detailed review of the company as was done with the Abbott report. It would be necessary to complete a proper valuation prior to proceeding with a share sale.

Once privatized, NTPC would be incorporated under the *Canada Business Corporations Act* (CBCA) and could be permitted by its shareholders and articles of incorporation to enter into any business venture that

management and the Board of Directors felt was part of the new company's mandate. Presently, NTPC is restricted to those objects outlined in the *NTPC Act*. In a strictly commercial regime these restrictions would not be applicable. NTPC might expand its operations to; become a distributor for diesel engines, get into the gas distribution business, or even telecommunications.

The scaled down post-Division company needs to expand its horizons if it is to provide a commercial return to its shareholders. Establishing the privatized NTPC as a CBCA company would eliminate any requirement to follow not only the NTPC Act but also the GNWT *Financial Administration Act* (FAA) and the *Public Service Act* (PSA). The new company would operate just like any other private business and would pay taxes just like its competitors.

Under privatization, the GNWT will no longer provide a loan guarantee for NTPC borrowings. The GNWT will not have its investment tied up in NTPC and future government programs will not be impacted by borrowing restrictions. Furthermore the GNWT will have a fund for new initiatives and programs.

Privatization also means that the annual dividend from NTPC disappears along with the funding source for the subsidy program. The need for the subsidy program does not go away but the GNWT will need to find another mechanism to provide funding for this program. Corporate taxes may provide some of the money for the subsidy program but it probably would not cover the entire cost of the program.

It would be necessary to provide the new privatized company with a distribution franchise monopoly for all of the communities served. If the privatized company is required to obtain franchises on a community-by-

community basis, it will experience the same inefficiencies as now experienced by NTPC. The franchise process will be no different whether the company is a government-owned Crown corporation or a private company. It may even be argued that depending on the ownership structure, the new company may have a more difficult time acquiring proper commercial Franchise Agreements because community governments no longer feel a kindred relationship, as may have been the case with the GNWT and NTPC.

If streamlining the PUB process makes sense in this case of a crown owned utility, it also makes sense if the company is privatized. As mentioned, the PUB process is costly, and utilizes a substantial amount of utility company staff resources. Many other jurisdictions have developed new approaches that could be implemented. These innovations have been discussed but in summary, streamlining the PUB process should include:

- Eliminate the quasi-judicial style process
- Implement negotiated settlement system
- Remove requirement to file GRA every three years
- Utilize formula based system for establishing rate of return

The streamlined PUB process would be applied to NTPC and NUL. Both utilities would realize cost savings and the customer should benefit from these new efficiencies.

C. Arm's-length Crown Corporation, Distribution Monopoly

The GNWT maintains ownership of NTPC as a Crown Corporation. Instead of being governed by the *NTPC Act*, NTPC will be restructured as a Canada Business Corporations Act company with a mandate to operate on a commercial basis at an arm's-length to government. This move puts NTPC on a more independent business footing. The new company would

maintain its accountability to government by annually submitting its Strategic Plan to Cabinet through the Minister responsible for the Power Corporation.

As a CBCA company, the *NTPC Act* would be repealed and the requirements for NTPC to comply with the FAA and PSA would be eliminated where possible. The new company would of course follow all of the applicable laws of the NWT but would not be subject to the operating restrictions surrounding the need to follow FAA and PSA requirements.

Getting out from under the FAA would permit NTPC to have more financial flexibility which is required if the corporation is going to compete on its own merits. Specifically, removal of the FAA requirements provides NTPC with the ability to improve the return on its sinking fund investment and possibly utilize other financial instruments such as derivatives and fuel futures to help hedge risks. It also means that NTPC would go to the financial markets to borrow funds without the guarantee of the GNWT. The benefits to the GNWT are significant especially in light of its future financial requirements.

If NTPC is to borrow funds without the guarantee of the GNWT, it will need to take steps to acquire its own financial rating. This will take time but it will also necessitate several changes in the operations of NTPC.

The Board of NTPC should be appointed based on the experience required to oversee the management of a utility business. One half of the Board appointments should recognize specific business and utility expertise such as; accounting, legal, finance, engineering, and operations. The other half could be geographic appointments representing customer interests.

A commercial dividend policy must be implemented and the dividend de-linked from the subsidy program. The new dividend program would also have realistic parameters. The company cannot pay out all of its earnings to the shareholder and still be in a position to finance growth. A reasonable dividend policy would restrict annual dividend payments to no greater than 55% of earnings based on a three year rolling average.

It is assumed that a strong senior management team would be required if the company is to have credibility with lenders. The management team will also need some consistency of service and turnover must be kept to an acceptable level.

The objects of the newly structured company need to be both realistic and achievable. NTPC would structure its Articles of Incorporation and Objects under the CBCA to provide the ability to expand its operations to include any utility type business approved by its Board, including but not limited to: natural gas distribution and pipelines, telecommunications, petroleum products sales and distribution, selling power to diamond mines, exporting power, residual heat sales, engineering design and contract services for utilities, and diesel engine sales and installation. This list is not meant to be comprehensive or restrictive but merely provides an illustration of realistic ventures that would expand NTPC's business reach, make the company more substantial from an operating point of view and provide greater operating efficiencies and economies of scale.

In order to protect the shareholder's investment in NTPC, the Board should be restricted from spending more than 10% of its equity on any single new business ventures without Cabinet approval. This benchmark prevents NTPC from investing in a new business and losing all of the shareholder's equity on a bad investment.

NTPC would be granted distribution franchises for all of its service locations and all of the existing NUL service areas and distribution franchises would be grandfathered to NUL for a period of 20 years. The renewal of the Hay River Franchise Agreement, which was temporarily held in abeyance, should be permitted to proceed in accordance with the wishes of the Town of Hay River. NTPC and NUL would be required to provide the same quality level of service and security of supply to all communities served.

Additional generation would be open to competition in terms of both new generation and replacement generation for an existing plant. If a new hydro plant is required NTPC, NUL, Dogrib Power or a new operator could put forward a competitive bid to build the project and sell power to the distribution operator. If NTPC identifies the need to install new capacity at an existing plant, interested parties could make a proposal and take on the project, selling power back to NTPC at the community level. This scenario is much like the model used by Dogrib Power and NTPC for the Snare Cascades project. Dogrib Power built the dam and sells power to NTPC. The dam is constructed to both utility and NTPC standards and all technical specifications necessary to ensure the delivery of safe and reliable power.

Open generation means meeting the technical standards of the utility as well as being economic. NTPC does not need to maintain a monopoly on generation in order to be efficient but it must control the technical standards and the physical location of the facility. The purchase price of the power then, reflects a business arrangement that is economic for the customer and meets the financial requirements of the project.

The opportunities are varied and too many to discuss in detail. It is important to point out that these opportunities are available to local

business groups, claimant groups and new northern-based joint venture partnerships. There is no reason that NWT residents and businesses could not take advantage of this opportunity. In fact some of these opportunities may be even done as part of a joint venture with NTPC.

As a result of a detailed and lengthy 1990 – 91 Rate Design and Cost of Service Study, the GNWT moved to a community based rate system. This system was introduced at a time when the GNWT was initiating a move away from hidden subsidies and wanted to send a strong price signal and illustrate the level of cross subsidization in a dramatic fashion. There is no other area of the country that uses community-based rates. Jurisdictions like Manitoba and Quebec, which also have a number of small remote diesel locations use postage stamp rates. To further ensure utility regulation is streamlined, the utilities should now move away from the community based rate structure. The small size of the customer base, the reduced number of diesel plants and the geographic rationalization of plant locations provides the opportunity to develop a cohesive approach to rate structures. Working with the PUB, NTPC and NUL should be mandated to establish a two rate zone system, one hydro based and one based on all other generation, with appropriate rates for each. It will be important to ensure that a conservation rate is put in place for all consumption over the limits of the subsidy program. This consolidation of rate zones must also be carried out on the premise that the current subsidy program will remain in place along with the current fuel rate rider and the low water rider.

Full-blown PUB style regulation is not something that is required for such a small customer base nor can the customers afford such a costly process. Under this option, the *PUB Act* would be repealed, and Cabinet, would perform the regulatory function, similar to the Saskatchewan model. In this case the Financial Management Board (FMB) has the financial

expertise and technical staff required to undertake the ongoing regulatory functions and advise Cabinet. In order to ensure that regulation continues to be effective, it may be beneficial to contract with the B.C. Utilities Commission or a similar agency such as the Alberta Energy and Utilities Board to review, rate of return, determination of rate base and terms and conditions of service every 4 to 5 years.

If Cabinet adopts the rate of return formula generally accepted in B.C. and other jurisdictions, the only other items requiring FMB review are; determining the rate base, the cost of capital, and the overall revenue requirement. It would be beneficial to have the current PUB provide a test case base for all of these matters including the Terms and Conditions of Service. The two utilities would then apply to Cabinet the next time a rate increase is required. To ensure the transition from the PUB to Cabinet style regulation, it would be helpful to have the Chairman of the PUB oversee the process.

To provide consumers with a focal point and a vehicle to deal with utility issues, the GNWT should establish a Utility Ombudsman's office. The Commissioner would assist the general public with utility complaints that can't be resolved with the appropriate utility, dealing with such matters as; customer accounts and billing, disconnections, utility power line extensions and utility practices and procedures. The Commissioner would have a citizens advisory committee to provide guidance and review the effectiveness of the process on an annual basis. The Utility Ombudsman's office could be modeled after similar systems already in place in British Columbia.

There is no valid reason to restrict the sale of interruptible power at this time. Sufficient power is available to meet the needs of the local communities. NTPC should be given the immediate mandate to sell

interruptible power from the Taltson system. The loss of potential revenues has already been noted and any new revenues would benefit NTPC and its customers.

D. Resource Trust

The GNWT would create a new Resource Trust (RT) reporting directly to the Minister of Finance. The GNWT would transfer the Taltson hydro assets at a nominal cost and the future development of those assets to the Trust. The RT would be mandated to generate resource revenues as a source of government program funding and to provide government with an expanded return on its non-performing utility assets.

The Trust would enter into a long-term operational contract with NTPC to continue the operation of the hydro system and its future development on behalf of the Trust and would enter into long-term supply contracts to sell power to NTPC at fixed prices.

The Trust would have a small core staff and a Board of Advisors to provide guidance and direction. The advisory Board would include a member of the Legislative Assembly. Ministerial staff from FMB would ensure oversight in terms of financial performance. The Trust would also enter into a long-term, fixed-price supply contract with NTPC for the provision of electrical power sufficient to serve the needs of the South Slave grid.

The resource Trust by request for proposals or auction would lease the Taltson system for a period of 50 years. The Lessor, would find its own markets, finance future development of the Taltson system while complying with all applicable Federal and Territorial laws. After the expiry of the initial period of 50 years, and notwithstanding any renewals the

assets under lease and all associated improvements would revert back to the GNWT. The annual Lease rate payable to the GNWT would be based on the system capacity for the following five years.

The lease contracts would probably be export sales and would be focused on industrial users in southern Canada. As an example, there may be a market to sell hydropower in power starved northern Alberta to replace oil-fired generation in the Tar Sands area. The sale of hydropower would also be attractive to industrial users seeking to earn emission credits under the Clean Development Mechanisms being negotiated as part of the final Kyoto Protocol.

As part of this strategy, it would appear worthwhile for the GNWT to investigate the possibility of issuing Resource Bonds to northern residents and other interested investors. The Government will also need to ensure that the Taltson Water License renewal process provides a lease period that will parallel the Lease contract awarded the by the Resource Trust.

In order to provide additional sources of revenue and to move the GNWT closer to a realistic return on its investment, a 1¢ per kWh levy should be assessed for all hydro, and export power sales. The levy would be fixed for a period of at least five years. Based on current sales the GNWT would generate approximately $3.5 in revenue on an annual basis. This would provide immediate revenues to the GNWT and the funds could be used to fund the subsidy program or as required for other government initiatives.

The GNWT's PPD should be rolled into NTPC as an operating division. NTPC would assume full responsibility for PPD. The assets would be sold to NTPC for a nominal amount and NTPC would assume responsibility for the sinking fund. NTPC and PPD would review and come to an agreement on environmental issues and staffing levels required. All future capital

required for PPD upgrades and expansion would be the responsibility of NTPC not the GNWT. NTPC would be encouraged to contract with joint venture partners where economic for the supply of fuel at the community level.

When gas becomes available for distribution, NTPC would be provided with a distribution monopoly for all communities served by the pipeline, in a manner similar to the electrical distribution franchises. NTPC may choose to carry out gas distribution in conjunction with local entrepreneurs or joint venture partners. The local partner could be the contract operator and NTPC could provide centralized; engineering, billing, rate design, and materials management services.

Under this option, the current corporate structure of NTPC and the NWT Energy Corporation (NWTEC) would require some changes. It would make sense to re-structure the companies to make the NWT Energy Corporation the non-regulated parent and NTPC the regulated subsidiary with a clear mandate to carry out the basic utility operations required to provide electrical service. The two companies would have the same Board of Directors and Executive staff.

7. Recommendations

The recommendations that follow are designed to resolve the issues identified in this report and put the electrical sector in the NWT on strong footing for the future. It is imperative that in order for these recommendations to be effective and implemented in a clear and comprehensive manner, the Nunavut Transition Agreement must be concluded in its entirety.

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- That the GNWT restructure NTPC as outlined in Option C above, and establish a resource trust as set out in Option D:

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- NTPC and the NWTEC set up arm's-length from GNWT governed by the *Canada Business Corporations Act*
- *NTPC Act* repealed
- NTPC be provided with distribution monopoly franchises for all locations currently served
- NUL awarded franchises for areas now served grandfathered for 20 years
- Remove restrictions of FAA and PSA
- GNWT implement a 1¢ levy on all hydro and exported power sales

ii) That as a CBCA company, NTPC be permitted to expand its objects to include any and all utility type activities mandated by the Board

iii) That the GNWT implement a new streamlined regulatory system

iv) That the *PUB Act* is repealed

v) That the *Cities, Towns and Villages Act* be amended to deal with franchise and stranded asset issues

vi) That the GNWT require NTPC to file its next GRA for review by the PUB as soon as practical

vii) That the PUB proceed with the NTPC GRA hearing and establish the framework for the new regulatory regime based on the following:

- Terms and Conditions of service
- Rate of return formula based on the BCUC system plus a premium for the NWT
- Establish rate base, revenue requirement and a conservation rate for consumption over 1,000 kwh/month

viii) That the PUB be requested to develop two rate zones (hydro and other) and the appropriate rates for each

ix) That the GNWT implement the formula based rate of return system instituted by BCUC

x) That Cabinet establish a Utility Ombudsman's office to deal with customer issues in the electrical sector

xi) That NTPC will be permitted to immediately commence selling interruptible power

xii) That the GNWT establish a Resource Trust to manage the Taltson Hydro system assets and provide the GNWT with an economic return on its investment

xiii) That NTPC and NTEC be re-structured to make NWTEC the non-regulated parent company and NTPC the regulated subsidiary

ixv) That the two companies have the same Board of Directors and Executive staff

xv) That NTEC/NTPC be re-branded and the name change to project its new image

xvi) That future and additional electrical generation be open to competition with the provision that all technical requirements established by the operating utilities are met

xvii) That the GNWT indicates clearly that it does not plan to proceed with privatization at this time and this matter will not be reviewed for at least 5 years

xviii) That PPD be transferred to NTPC for a nominal sum and NTPC assume responsibility for the sinking fund

ixx) That NTPC be awarded natural gas distribution franchise rights for all NWT communities

xx) That the GNWT consider taking soft dividend payments from NTPC

xxi) That the GNWT should determine whether it would be beneficial to make the new corporation taxable

xxii) That the GNWT and NTPC ensure that any and all debt associated with Nunavut be removed from NTPC's books on or before March 31, 2001

APPENDIX A

Review of Electrical Power Generation, Distribution and Regulation in the Northwest Territories

Terms of Reference

Review Purpose

Significant change has occurred in the Northwest Territories (Division, multiple industrial mega-developments, etc.) and in approaches to electrical system management in other jurisdictions since the GNWT occupied the field in 1988 with passage of the Northwest Territories Power Corporation Act and the acquisition of the Northern Canada Power Commission. In light of these changes, it is critical to review the legislative, regulatory and policy framework for electrical power generation, distribution, regulation and subsidization in the NWT and the mandate and role of the Northwest Territories Power Corporation to determine whether the current regime still serves to optimize the public interest in:

- security of supply,
- quality and reliability of service,
- cost of service,
- affordability of rates,
- responsiveness to client needs,
- adaptability to changing service conditions, and
- return on public investment.

Background

In 1988 the GNWT acquired the Northern Canada Power Commission (NCPC) from the Government of Canada and passed legislation to establish a new entity, the Northwest Territories Power Corporation (NTPC). The NTPC is also subject to the NWT Financial Administration Act. The NWT Public Utilities Board was given regulatory authority with respect to the NTPC. The headquarters of the new corporation was soon moved from Edmonton to Hay River. The NTPC is the primary provider of electrical power in the NWT, and has an overwelming share of electrical power generation and transmission in the NWT. The NWT has a population of approximately 40,000 spread over 32 communities. The NTPC's services 25 out of these 32 communities and generated total sales volume in 1999 of 412 Gwh yielding 94.2 million dollars in revenue. The NTPC debt/equity ratio at the end of 1998-99 was 55/45 with long term debt of 132 million dollars. The debt of the NTPC is guaranteed by the GNWT who is itself restricted in the level of debt and guarantees it may issue by federal Order-in-Council.

In 1988 the GNWT also introduced, by policy, the Power Subsidy Contribution Program which served to subsidize power rates outside of Yellowknife to the Yellowknife level for specified customer classes and levels of consumption. The NTPC Act provided that the GNWT could require dividends from the NTPC to be applied to the subsidization of rates for energy or water or sewerage services and related administration costs. The GNWT has required these dividends payments every year since 1988.

Northland Utilities Ltd. is also in the electrical power distribution business, serving Hay River and Yellowknife and five other communities. The Cities, Towns and Villages Act, the Hamlet Act and the Charter Communities Act all confer on communities the authority to issue utility franchises in their communities for electric power, water, gas, or public transit. No franchise can be for more than 20 years and no renewal for more than 10 year terms. Where a franchise is not renewed the community may purchase any or all property used in connection with the franchise on terms the parties may agree to, or, failing agreement, terms imposed by a sole arbitrator under the Arbitration Act. 21 out of 32 communities have granted franchises to the NTPC. Four (4) communities have not issued current franchises although NTPC provides electrical power in those communities. Seven communities have granted franchises to other providers. Many of the franchises initially entered into at the time the NTPC was established in 1988 are expiring and communities are requesting proposals for provision of electrical power rather than just renewing the franchise agreements. This is bringing about situations not experienced in the past and giving rise to some of the concerns identified in the Purpose section of this document.

The NTPC is regulated by the NWT Public Utilities Board (PUB) operating under the authority of the NWT Public Utilities Act. The Executive Council of the NWT (Cabinet) may issue directives to the Board respecting the general performance of the duties of the Board, but otherwise the PUB has broad authority and powers including those conferred on a board appointed under the Public Inquiries Act.

A public utility must file a copy of its franchise with the PUB before the public utility starts operating under that franchise. A public utility or a community may request the PUB to review and approve a franchise and that franchise is of no effect until approved by the PUB.

All public utilities must also file all rate schedules with the PUB and cannot collect, charge or enforce rates shown in the schedule until that schedule is approved by the PUB. The Public Utilities Act also prohibits any public utility from making, demanding or receiving any rate that is unreasonable, unjustly discriminatory or unduly preferential, or subjects any person or community to an undue prejudice or disadvantage or extends to any person a form of agreement, facility or privilege unless such is regularly and uniformly extended to all persons for service of the same description in substantially similar circumstances. With a territorial-wide operation such as NTPC this requirement may place a greater obligation on the NTPC than it may on a public utility serving fewer communities.

The NTPC currently operates in both the NWT and Nunavut and has since 1988. With the creation of the new Nunavut Territory on April 1, 1999, the two new territorial governments had to decide whether to divide the NTPC or keep operating it as a single entity under joint ownership. The two governments entered into a two year Transition Agreement that provided for a trial period while this decision was under consideration but also addressed the means by which the NTPC would be divided should that choice be made. Recently, the Government of Nunavut has decided that they wish the corporation to be divided effective March 31, 2001. The two governments are engaged in the process of implementing division of NTPC in accordance with the methodology established in the Transition Agreement.

The NWT PUB is also engaged at this time in a review of its role and operation in light of:

- today's trend towards deregulation of utility functions in which competition does or could exist,
- the potential need for a regulatory process to deal with environmental stewardship related to greenhouse gas issues,
- the potential need for regulation in the area of petroleum products supply and distribution, and
- the potential need for regulation of the sewer and water rates of various NWT communities.

The GNWT is also considering the future direction it may take with the provision of petroleum products (POL) in communities not served by the private sector. With the creation of Nunavut and the resulting 90% reduction in the volume of product handled by the government owned and run POL system, the system overhead has become a much larger component of product price, even after efficiencies have been introduced. This loss of economy of scale has resulted in accumulating deficits in the POL Price Stabilization Fund and is contributing to product price increases at a time when market factors are also driving up prices to consumers. The incorporation of this POL function into NTPC operations is one option being assessed to reduce price impacts on consumers.

With the recent construction and implementation of the Ikhil Gas Pipeline from a Mackenzie Delta gas field to the community of Inuvik, and the renewed interest in development of NWT natural gas reserves, including the potential for a gas pipeline down the Mackenzie Valley, the issue of community access to natural gas supply has also become a significant issue. The potential for a public utility such as NTPC to enter into this service area needs to be assessed. There may also be other service areas in which NTPC may play a role that would serve the public interest.

The advent of industrial mega-developments in the NWT in the form of diamond mines, gas field development and gas pipeline construction, and the potential for even more large scale development in these areas, generates potential supply-side opportunities for the NTPC. How these opportunities can be captured and used to contribute to the public interest is a significant issue for the GNWT and the NTPC.

In several other jurisdictions there have been moves to create competition in the area of public utility services and reduce government regulation. Often this has been coupled with privatization of government owned utility companies. The conditions precedent to this transition being in the public interest need to be identified and determination made of whether they do or could exist in the NWT, or whether there exist other factors that would suggest similar changes in the NWT.

The GNWT, in reviewing or changing major policies must also be cognizant of, and adhere to, the provisions of the various comprehensive agreements with aboriginal groups of the NWT.

Project Scope

The scope of the project is governed by the purpose of the review but also elaborates on the review purpose in light of factors identified in the background section. The review will examine the following issues and assess the optimum manner of addressing them in the legislative, regulatory and policy framework for electrical power generation, distribution, regulation and subsidization in the NWT. The review will also assess the optimum role and mandate of the NTPC in light of these issues.

Security of Supply

Issue definition - the assurance to NWT communities and residents that there will always be a provider of electrical power to them regardless of scale of operations or profit levels, and that operator failure (mechanical or financial) will not result in extended service disruption.

The NWT is a large geographic area with limited transportation infrastructure inter-connecting its 32 communities. Most of these communities are small and relatively isolated. Public utility operations are capital investment intensive with small client bases and high operating costs. With a harsh climate and significant isolation from support services, NWT operators face unique operational challenges. Northern operating experience is important. A totally open market approach may see no public utility interest in servicing some smaller communities due to relatively small returns generated, and/or numerous small public utility operators where the potential for business failure is increased or operators lack the resources to respond to catastrophic system failure.

Quality and Reliability of Service

Issue definition – regardless of supplier, public utility clients require a high level of consistency in electrical power provision, although the size and mix of the community client base and community accessibility may require some differentiation in service levels and the range of services offered. Frequency and duration of outages, voltage fluctuations, and other quality of service indicators must meet acceptable industry norms.

Quality and reliability of service requires that utilities have made adequate investment in current equipment, facilities and distribution/metering systems suitable for conditions and demand in the community. This infrastructure must be well maintained and operated by competent staff and it must be replaced on a timely basis as it nears the end of its useful life. Public utilities must have the financial and human resources to achieve this standard.

Cost of Service

Issue definition – Costs to provide service directly flow through to rates charged in an environment of regulated community by community cost based rates as exists currently in the NWT. Cost of service is impacted by such factors as regulatory compliance costs, economies of scale, investment in preventive maintenance, administrative efficiencies, etc. It generally holds that the larger the client base the lower the cost per unit of service, and there are thresholds of consumption below which it is difficult to operate an independent utility and keep overhead costs per unit of service reasonable.

Affordability of Rates

Regardless of the cost efficiency of a utility, there will be some environments in which the cost of service and the resulting rates simply exceed vulnerable client's ability to pay. In these cases there is a role for government and subsidy programs (either cross subsidies or direct subsidies). Currently, the GNWT provides direct subsidies in these circumstances to residential and small business consumers up to specified consumption levels. However, the GNWT largely finances these subsidies from profits generated from NTPC operations. These profits are the result of the return on rate base allowed by the PUB and are generated across the entire NTPC client base. This dividend/subsidy linkage is similar to a cross subsidy within the system. If the NTPC role is diminished in provision of electrical power in the NWT, the source of funding for these subsidies will also decline. In this case either subsidy levels will have to drop, or:

- other government revenue sources will have to be accessed to the detriment of those government services relying on these revenues (the GNWT is currently running a deficit), or
- other revenues must be generated through alternate taxation methods.

An alternative to direct subsidies as currently provided is to build cross subsidies directly into the regulated rate structure. This type of "postage stamp" rate approach is practiced in a number of jurisdictions.

Responsiveness to Client Needs

Issue definition - The economic and social environment in the NWT and its individual communities is constantly changing. There can also exist unique local community needs. Demographic changes, job market ebbs and flows, housing needs and conditions, industrial developments, technological advancements, building code changes, and a host of other factors all impact the nature of, and level of, service demand. Client needs will require changes in levels of service, type of service, conditions of service and quality of service. The utility and regulatory regime must be capable of working with communities to respond to their unique needs and also be able to anticipate and react to the changing needs of the broader client base, both on a timely bases.

Related to the issue of responsiveness to client needs, is the issue of ability to react to changing operational demands. These can range from being able to add generation capacity in advance of actual demand growth or being able to cope with the implications of permanent excess capacity, to being able to improve service by adoption of new technology within reasonable timeframes of it becoming available.

This issue may also encompass the utilities' ability to service new industrial developments or to expand its service offering to tap new emerging markets and spread corporate overhead over a larger revenue base.

Adaptability to Changing Service Conditions

Issue definition – Climate change, alternate power generation technology, development of alternate energy sources, new utility markets and change to societal standards (e.g. greenhouse gas emissions) are examples of some of the service conditions that can change over time. Both utilities and regulators must be able to anticipate and respond to these factors in a manner that best serves client and public interest.

Return on Public Investment

Issue definition – the NTPC is currently government (public) owned. It represents an investment of some $80 million (west only) of public equity. This investment must yield a fair and reasonable return to the public in consideration of alternate investments available for this public equity. These yields will be a combination of financial (e.g. retained earnings growth and dividends) and other public benefit (e.g. use of the NTPC to lever other social and economic goals). If the NTPC is not used as an instrument of public policy, then the only return to the public is financial. It must also be noted that the GNWT must guarantee the NTPC debt.

The level of debt guaranteed impacts the federal Order-in-Council borrowing limit imposed on the GNWT, albeit this limit was set with NTPC debt in mind. If the level of NTPC debt that is guaranteed by the GNWT increases, then the GNWT's own ability to borrow may be impacted.

This then raises the question of whether the government should continue to hold its public equity in the NTPC or whether it should remove this equity and place it in other investments yielding a higher return in terms of financial and public benefit. Removal of the public equity would also mean removal of the GNWT debt guarantees.

Scope Summary

The above issues have been identified to provide a focus for this review. During the conduct of the review other significant issues may be identified and require incorporation into the scope of the review project. To illustrate some of the policy questions these issues may give rise to we offer the following examples:

Should the GNWT segregate the legislative and regulatory treatment of electrical power generation, distribution and retail?

Should the GNWT open the NWT market up to full competition in lieu of a regulated environment? Alternatively should the GNWT legislate a public utility monopoly? If so, with what scope?

Should the GNWT retain the current PUB regulatory role or a more simplified approach? Would this change depending on whether the NTPC is government or privately owned?

Should the NTPC role and mandate be expanded to allow it to become involved in other related fields such as gas distribution, telecommunications, POL, sale of water etc.?

Should communities retain the authority to issue franchise agreements or should this be modified/eliminated?

Should current subsidy programs be maintained/expanded/eliminated? If retained or expanded how should they be financed?

Should the public equity in the NTPC be removed? If so, how best to maximize the value of this equity? How best to implement such direction? How best to deal with any taxation issues this would raise?

Should community based rate zones be maintained or should an alternate rate zone approach be used?

Should all communities have access to the identical service offerings and levels? If not, what criteria should be used to establish what service levels?

If the NTPC remains a crown corporation, what, if any, public policy role could it be used for or assigned? How would this interact with the regulatory regime?

There may be many more questions that the reader of these terms of reference will have. The above simply provides a few examples.

The task of the review will be to ensure a thorough assessment of the issues and resulting questions in the context of establishing the optimum legislative, regulatory and policy framework for electrical power generation, distribution, regulation and subsidization in the NWT as well as for the future role, mandate and structure of the NTPC. The result will be a comprehensive yet concise discussion paper which will contain conclusions and identification of the actions that would be necessary to implement any specific recommendations arrived at, and issues to be further examined.

Project Timeframe

The review and final report are to be completed by November 30, 2000.

Project Approach

A task team of experienced experts in relevant fields will be retained under the general direction of a team leader. Government agencies and the NTPC will provide relevant research support and access to records and studies available. The task team will operate under the direction of a Ministerial Committee chaired by the Minister of Finance, and including the Minister of MACA and the PUB, and Minister Responsible for the NTPC. The Ministerial Committee will be supported by the Secretary of the FMB. The task team will undertake independent research and analysis as required.

Project Consultation

Due to the condensed timeframe for the review and the intent of the review to result in a discussion paper, consultation will be limited during the review to that necessary to ensure a full analysis and assessment of issues and options.

APPENDIX B

ROBERT J. PELLATT
COMMISSION SECRETARY
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BRITISH COLUMBIA UTILITIES COMMISSION

LETTER NO. L-62-99

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VIA FACSIMILE

November 29, 1999

Mr. C.P. Donohue
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Dear Sirs:

Re: Return on Common Equity for a
Low Risk Benchmark Utility for the Year 2000

Pursuant to Order No. G-80-99, the Commission has determined that 9.5 per cent is the appropriate return on common equity for a low risk benchmark utility in the year 2000. The calculation and other documentation in support of this finding are attached.

The appropriate ROEs in 2000 for individual utilities will incorporate the risk premium for each utility relative to the low-risk benchmark.

Each utility is required to submit an application for approval to the Commission to vary its rates in line with the determinations made in this letter.

Yours truly,

Original signed by:

Robert J. Pellatt

CBL/cms
Attachments

cc: Mr. R. Brian Wallace
Bull, Housser & Tupper
Mr. Richard Gathercole
Executive Director
The British Columbia Public Interest Advocacy Centre
Mr. Ray Aldeguer
Senior Vice President
Legal and Regulatory Affairs and General Counsel
British Columbia Hydro and Power Authority
Mr. J.D.V. Newlands
President
Pacific Western Energy Products & Services Inc.

MiscCor/ROE 2000

CALCULATION OF ALLOWED 2000 RATE OF RETURN ON COMMON EQUITY
LOW-RISK BENCHMARK UTILITY (AS PER COMMISSION ORDER NO. G-80-99)

A forecast of long-term Canada bonds is developed based on the Consensus Economics forecast of 10-year bonds (step 1) and the observed spread between 10- and 30-year bonds over a defined period (step 2). This establishes a forecast yield for long Canada bonds (step 3).

1.	Ten Year Canada Bond Yield – end of February, 2000 (Consensus Economics, November 1999 Consensus Forecast)	6.100%
	Ten Year Canada Bond Yield – end of November, 2000 (Consensus Economics, November 1999 Consensus Forecast)	5.900%
	Average of 3 and 12 Month Forecasts	6.000%
2.	Add Yield Spread Between 10-Year (June 1, 2009; 5.5%) and 30-Year (June 1, 2029; 5.75%) for all Trading Days in October, 1999.	0.037%
3.	Equals Forecast Yield on Long-Term Canada Bonds	6.037%

Where the forecast yield is greater than 6.0 per cent, the sliding scale applies to the difference between 6.0 per cent and the forecast yield, and this amount (step 4) is added to 9.5 per cent (step 5). This product (step 6) is rounded to the nearest 25 basis point (step 7).

4.	Sliding Scale Adjustment is Applied to Amount by which Forecast Yield is in Excess of 6.0% (0.037% x 0.80)	0.027%
5.	Low Risk Benchmark when Forecast Rates are in Excess of 6.0%, as Defined in Commission Order No. G-80-99	9.500%
6.	Unrounded Allowed ROE	9.527%
7.	Rounded Allowed ROE	9.500%

2000 ROE Determination -- 10 to 30 Year Spreads

Trading Days in October	10 yr. Yield	30 yr. Yield	Spread (bp)
1	5.85	5.88	3
4	5.81	5.85	4
5	5.90	5.92	2
6	5.92	5.97	5
7	5.95	6.00	5
8	5.96	6.01	5
12	6.01	6.06	5
13	6.08	6.14	6
14	6.15	6.19	4
15	6.06	6.12	6
18	6.18	6.21	3
19	6.25	6.28	3
20	6.22	6.27	5
21	6.21	6.25	4
22	6.22	6.25	3
25	6.26	6.28	2
26	6.34	6.36	2
27	6.27	6.28	1
28	6.19	6.21	2
29	6.05	6.09	4
Avg. Spread			3.7

Note:
10 yr. Bond is Canada June 1, 2009; 5.50%
30 yr. Bond is Canada June 1, 2029; 5.75%

Source:
Globe and Mail, Report on Business
October 2, 1999 - October 30, 1999

	Average % Change on Previous Calendar Year												Annual Total		Year Avg		Annual Total		Fiscal Years (Apr-Mar)		Rates on Survey Date			
	Gross Domestic Product		Personal Expenditure		Machinery & Equipment Investment		Pre - Tax Profits		Industrial Production		Consumer Prices		Industrial Product Prices		Housing Starts (thousand units)		Unemploy - ment Rate (%)		Current Account (C$ bn)		Federal Govt Budget Balance (C$ bn)		4.25% 3 month Treasury Bill Rate (%)		6.1% 10 Year Government Bond Yield (%)	
	Produit Intérieur Brut		*Dépenses de Consommation des Ménages*		*Investissement Productif*		*Bénéfices des Sociétés avant Impôts*		*Production Industrielle*		*Prix à la Consommation*		*Prix des Produits Industriels*		*Construction de Logements mises en chantier, milliers*		*Taux de Chômage (%)*		*Balance Courante (C$ md)*		*Balance Budgétaire (C$ md)*		*Rendement sur les Bons du Trésor de 3 mois %*		*Rendement des Obligations d'État de 10 ans %*	
Economic Forecasters	1999	2000	1999	2000	1999	2000	1999	2000	1999	2000	1999	2000	1999	2000	1999	2000	1999	2000	1999	2000	FY 99-00	FY 00-01	End Feb'00	End Nov'00	End Feb'00	End Nov'00
Bank of Montreal	3.8	3.4	2.5	2.7	16.3	5.8	12.6	6.7	na	na	1.7	1.8	na	na	148	149	7.8	7.4	-0.8	-2.7	3.0	3.0	5.0	5.0	6.2	5.8
Caisse de Depot	3.8	2.6	2.8	2.5	15.3	4.5	8.0	16.0	na	na	1.4	1.9	na	na	147	150	7.7	7.5	-3.0	-5.0	6.5	6.0	5.0	5.4	5.9	5.8
Canadian Imperial Bank	3.8	3.0	2.6	2.4	16.0	7.7	15.0	5.0	na	na	1.8	2.4	na	na	147	150	7.8	7.0	-3.0	-4.3	na	na	4.9	4.9	6.2	5.8
Nesbitt Burns	2.8	3.2	2.9	3.2	16.2	10.5	13.1	6.0	4.0	2.8	1.7	2.3	1.8	2.5	147	148	7.7	7.1	-1.5	5.0	3.0	5.0	5.2	5.5	6.2	5.8
Scotia Economics	3.8	3.4	2.8	3.3	15.8	7.7	13.5	15.0	na	na	1.8	2.4	na	na	147	152	7.7	7.4	1.0	7.0	3.5	3.5	5.3	5.8	6.4	6.3
University of Toronto	3.8	2.9	2.7	2.5	15.8	7.4	18.9	10.8	na	na	1.7	1.8	na	na	147	151	7.7	7.4	-1.8	3.3	4.8	4.5	5.2	5.8	6.0	5.9
Economap	3.7	2.9	3.0	2.7	15.0	6.0	17.0	10.0	3.4	2.7	1.5	2.0	1.0	1.5	147	150	7.6	6.9	-4.0	4.0	8.0	11.0	4.8	5.0	5.8	5.8
Informetrica	3.7	2.6	2.6	2.3	14.0	4.0	17.0	9.3	4.4	2.4	1.7	2.2	1.0	1.3	148	151	7.8	7.5	-6.0	-2.0	5.0	8.5	5.0	5.1	6.0	6.0
Conf Board of Canada	3.6	3.1	2.7	2.7	14.7	4.7	13.8	2.1	na	na	1.7	1.8	1.1	1.3	147	151	7.9	7.9	-6.4	-7.4	3.1	2.9	4.9	4.9	5.9	6.3
National Bank Financial	3.8	3.7	2.8	3.4	15.8	11.4	14.0	12.0	4.2	3.0	1.4	2.0	na	na	147	149	7.8	7.4	-5.0	-8.0	8.0	8.0	5.2	5.5	5.9	5.6
National Bank of Canada	3.6	3.5	2.6	2.6	17.5	11.8	15.0	10.0	3.8	3.0	1.7	1.9	1.4	2.0	148	150	7.7	7.4	-4.6	2.5	8.0	9.0	4.8	5.9	6.2	6.2
Royal Bank of Canada	3.8	2.8	2.4	2.6	17.4	8.0	18.4	5.8	na	na	1.8	2.2	1.1	3.0	148	151	7.9	7.8	-2.9	5.2	2.0	5.1	5.2	4.8	6.2	5.8
Consensus (Mean)	3.7	3.1	2.7	2.8	15.8	7.4	14.7	9.1	4.0	3.0	1.7	2.1	1.2	1.9	147	150	7.7	7.4	-3.1	-0.2	5.0	6.1	5.0	5.2	6.1	5.9
Last Month's Mean	3.8	2.8	2.7	2.7	18.1	6.6	13.0	8.3	3.7	2.8	1.8	2.0	1.2	1.9	146	150	7.8	7.6	-4.1	-1.5	4.8	5.1				
3 Months Ago	3.5	2.6	2.8	2.5	8.8	5.0	11.3	7.0	3.0	2.4	1.5	1.7	0.8	1.8	145	149	7.8	7.7	-6.1	-3.5	6.6	7.3				
High	3.8	3.7	3.0	3.4	17.5	11.8	18.9	15.0	4.4	3.9	1.8	2.4	1.8	3.0	147	152	7.9	7.9	1.0	7.0	8.0	11.0	5.3	5.8	6.4	6.3
Low	3.6	2.6	2.4	2.3	14.0	4.0	8.0	2.1	3.4	2.4	1.4	1.8	1.0	1.3	146	148	7.6	6.9	-6.4	-8.0	2.0	2.9	4.8	4.8	5.8	5.8
Standard Deviation	0.1	0.3	0.2	0.4	1.0	2.7	3.0	4.1	0.4	0.6	0.1	0.2	0.3	0.7	0	1	0.1	0.3	2.1	5.3	2.3	2.8	0.2	0.3	0.2	0.2
Comparison Forecasts																										
IMF (Sep. '99)	3.8	2.8									1.8	1.7					8.0	8.1								
OECD (May '99)	2.9	2.8	2.2	2.3					3.0	3.5							7.8	7.7								

APPENDIX C

Appendix C

Soft Dividends

A soft dividend means paying a dividend in kind rather than the payment of actual money.

As an example, in light of the amount of excess power available in the Taltson system, the GNWT may prefer to take its dividend in form of electric heat for Government buildings in the South Slave area. NTPC would track consumption at current rates and determine the equivalent level plus a premium of 35% of power required to equal the payment of a cash dividend. Other similar examples may include using Band width on the internal NTPC communications, and/or utilizing waste heat services for Government offices in a similar manner.

a). Example

If the cash dividend due is $5 million, the soft or in-kind dividend will be equal to the GNWT saving of $6.75 million

APPENDIX D

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November 28, 2000

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APPENDIX E

GNWT Electrical Review

Interviews

1. Mr. Jack Walker, President, Arctic Energy Investors Group
2. Mr. Dwight Norn, Denendeh Development Corporation
3. Mr. John Hill, Chairman, NWT Public Utilities Board
4. Mr. Dick Frey, President, ATCO Electric Ltd.
5. Mr. Paul Goguen, General Manager, Northland Utilities Ltd.
6. Mr. George Paicu, ATCO Ltd.
7. Mr. Alex Nitsiza, President, Dogrib Group of Companies
8. Mr. Dan Marion, General Manager, Dogrib Group of Companies
9. Mr. Bruce Ratray, Deputy Minister, GNWT Department of Public Works and Services
10. Ms. Bev Chamberlin, GNWT, Petroleum Products Division
11. Mr. Bill Grant, British Columbia Utilities Commission
12. Mr. Mark Jaccard, Professor, School of Resource and Environmental Management, Simon Fraser University
13. Mr. Gordon Stewart, Chairman, NWT Power Corporation
14. Mr. Leon Courneya, President, NWT Power Corporation
15. Ms. Pat Duncan, Premier, Government of Yukon
16. Mr. Rob McWilliam, President, Yukon Development Corporation
17. Mr. Jack Cable, Commissioner of Yukon
18. Mr. Brendan Bell, MLA, Yellowknife South
19. Mr. Bill Braden, MLA, Great Slave

20. Mr. Paul Delorey, MLA , Hay River North

21. Mr. Charles Dent, MLA, Frame Lake

22. Ms. Sandy Lee, MLA, Range Lake

23. Mr. Michael Miltenberger, MLA, Thebaca

24. Mr. Tony Whitford, MLA, Kam Lake

25. Mr. Bob McLeod, Deputy Minister, Department of Renewable Resources and Economic Development, GNWT

26. Mr. Lloyd Henderson, Department of Renewable Resources and Economic Development

27. Mr. Pierre Alvarez, President, Canadian Association of Petroleum Producers and past President and Chairman, NWT Power Corporation