PUBLIC UTILITIES COMMISSION DOCKET NUMBER: E002/M-99-888

COMMENT SUBMITTED BY PIMICIKAMAK CREE NATION

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Pursuant to the Commission's Notice of Comment Period dated February 4, 2000 Submitted March 1, 2000

Introduction

This Comment addresses what is asserted to be an unfair and significantly erroneous bid selection process, pursuant to the Notice of Comment Period dated February 4, 2000 in Docket E-002/M-99-888. (The February 23, 2000 deadline for comments in this Comment Period was extended by seven (7) days by the Public Utilities Commission (PUC) at the request of Pimicikamak Cree Nation (PCN). PCN acknowledges the consideration of the PUC in this regard.)

The criteria for the present Comment Period are unfair exclusion of bidders and significant errors in the selection process:

"Under the modified bidding process there is a 15 day comment period to demonstrate that a bidder was excluded from the short-list due to unfair treatment or because of significant errors in the selection process." (PUC Notice dated February 4, 2000)

PCN respectfully submits that the present selection process is both unfair and significantly erroneous. The unfairness and errors relate both to "procedural" and substantive aspects of the selection process. As a result it is necessary in this comment for PCN to place before the Commission sufficient substantive information in order to substantiate its concerns pursuant to the dual criteria of the present Comment Period. These concerns are thus dealt with in greater detail below.

In particular, PCN is concerned about questions of bias towards a particular bidder and unfair exclusion of other bidder(s). [TRADE SECRET DATA BEGINS:

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It is respectfully submitted that the bid selection process cannot and should not be considered in a vacuum, but that it is and must be understood as part of (and relational to) an integrated energy planning and management scheme wherein substantive criteria have been developed for evaluating, prioritizing and selecting resource options and plans (eg: PUC Rule 7843.0500 Subp. 3), through which bids are in turn evaluated, prioritized and

selected. The integrity and merit of the bid selection process and its results are dependent upon decisions made and inputs from other parts of this integrated scheme, and will in turn fundamentally affect the decisions made in the remaining links in this chain of assessment and judgment.

These comments address the twin issues of unfair treatment and significant errors in the selection process. **[TRADE SECTRET DATA BEGINS**

TRADE SECRET DATA ENDS] Any process that disregards the first of the mandated criteria (reliability) is clearly suspect. Finally, any process that appears to favor an option that is the most environmentally and socioeconomically damaging and at the same time is at best marginally competitive, must be considered to be seriously affected by significant errors.

As to unfair bias, a necessary corollary of unfair exclusion is unfair inclusion. The criteria that led to the inclusion of one bidder necessarily affects assessment of and judgment about the viability (or lack thereof) of all actual and potential bidders. This necessarily affects the determination of which bidders are excluded (eg: not even considered), *ex ante* or *ex post*. Therefore, unfair inclusion must be considered contemporaneously with unfair exclusion. Moreover, if the inclusion of a particular bidder is based on erroneous information and conclusions, this may well have the effect of rendering other inclusions and exclusions erroneous.

While the PUC administrative and comment process in this instance is "usual", the actions taken by Northern States Power are "unusual" and novel, and we submit that the process should adapt accordingly. In a more typical process, (many) more bidders would have been excluded at this stage.

We are submitting these Comments now so as to inform the Commission, at the earliest possible stage, of fundamental interdependent procedural and substantive issues, that we believe will and should affect the adaptation of this entire process and the results there

from. We hope to help facilitate an open forum, and to ensure that this process may be as fairly and as efficiently constructed (for all parties) from this point forward.

We therefore respectfully request the Commission to consider these Comments as a fundamental and integral aspect of the criteria "unfair exclusion of bidders" and "significant error", and as valuable input toward the development of a fair, efficient and inclusive process.

Organization of Comments

These comments will address four major topic areas regarding Northern States Power's (NSP) consideration of the power supply bids from Manitoba Hydro and other potential suppliers.

- A. NSP Evaluation of Bid Costs
- B. Reliability
- C. Environmental and Socioeconomic Impacts.
- D. Summary and Conclusions

A. NSP Evaluation of Bid Costs

The current RFP process is unusual in that Northern States Power has modified the process to include consideration of short-term power. As noted in the title, the RFP issued on August 2, 1999 was the "1999 Request for Proposals For Supply Resources Needed Starting 2003-2005". NSP subsequently informed bidders that its short-term need for power had grown, and that it was interested in options for earlier in-service dates (prior to 2003). NSP later sought additional information from all bidders regarding their ability to advance in-service dates and how this would affect price.

On November 23, 1999, NSP informed the Commission that all bidders were being short listed, so that NSP could use the bid clarification meetings to obtain information about the bidders' ability to provide short term energy. On December 14, 1999, NSP publicly announced that its refined short list included Manitoba Hydro and six other bidders. NSP eliminated only two bidders (NSP Generation and Foster Wheeler) with its refined shortlist notice. Thus, this RFP process has also been unusual, in that the refined shortlist includes virtually all of the bidders.

The unusual manner in which the RFP process has been conducted gives rise to concerns about the fairness of the process, and specifically whether it has been unduly favorable to

¹ Correspondence from Christopher Clark (NSP General Attorney) to Burl Haar (Minnesota PUC Executive Secretary), dated November 23, 1999.

Manitoba Hydro. Relative to other bidders, Manitoba Hydro has major advantages in terms of its ability to provide NSP with short-term energy. Notably, Manitoba Hydro is a large utility (with 5000 MW of generation) that has a long-standing relationship with NSP, including on-going contracts for both the purchase and sale of power from Manitoba Hydro to NSP. By contrast, Manitoba Hydro's competitors in the bidding process may be offering power supply from new generation sources (such as wind) such that they have limited potential for delivering energy prior to 2003. Thus, to the extent that NSP has linked its decisions regarding long-term power to its decisions regarding short-term energy, it has conferred on Manitoba Hydro a major advantage over competing bidders.

The unfair advantage that NSP has given to Manitoba Hydro is further compounded by the manner in which NSP has modified the All Source RFP process. This process began as one designed for long-term energy supplies; presumably, bidders made determinations regarding whether to bid and what to bid, based on NSP's announced needs.² NSP then modified the process to include short-term energy, giving Manitoba Hydro's (American) competitors even less time and ability to effectively respond to NSP's requests.

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² The RFP (page 1) specified supply proposals beginning in 2003-2005; earlier start dates were welcome, but there was information provided indicating that NSP had a resource need prior to 2003.

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At this time, all of the fairness issues described above could be characterized as procedural shortcomings. In and of themselves, these procedural issues are problematic in that they weaken the RFP process and render it vulnerable to the perception, and the possible reality, that the process is flawed and will not result in the implementation of the best resource options. It might be argued that it is too early to evaluate whether the fairness issues discussed above will actually influence NSP's choice of bidders. After all, NSP has not yet made its final choices, and to date it has eliminated only two bidders from contention.

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In light of the above discussion, it is respectfully submitted that the present selection process in relation to NSP's evaluation of bid costs has been both demonstrably unfair and significantly erroneous.

B. Reliability

A principal part of any purchase decision must involve the reliability of the proposed supply. The first of the costs and factors that must be considered by the Commission, is "A. maintain or improve the adequacy and reliability of utility service."

NSP Request For Proposals mirrors the same concerns:

"NSP is committed to providing a reliable supply of electric power to its customers. Therefore, the Company seeks to acquire capacity and energy supplies that, at a minimum, meet established industry-wide NERC and MAPP reliability and performance criteria. Bidders are encouraged to offer proposals that exceed these criteria and thereby provide additional value to the Company. NSP desires terms, including pricing, that align the seller's interests with the high reliability interests of NSP."

Neither NSP's RFP nor the Independent Auditor's Report show a deep understanding of

r o C Kule 7843.0300 Subp. 3.

⁸PUC Rule 7843.0500 Subp. 3.

⁹1999 Request For Proposals For Supply Resources Needed Starting 2003-2005, pages 11-12.

these issues. [TRADE SECRET DATA BEGINS:

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While these lapses are significant errors, there is an important mitigating factor. Notably, international transactions between hydroelectric and thermal based systems are not well understood in the U.S. electric community. There are good reasons why this part of the business is so poorly understood. First, hydroelectric systems are fundamentally different than thermal systems in terms of reliability. MAPP and NERC standards apply primarily to thermal systems. They provide assurances to the ultimate consumer that their needs can be met at system peak. The relatively few standards that apply to hydro apply on a plant by plant basis to assure that the limited hydro integrated into most U.S. systems meets minimum standards. While these standards are useful, they do not apply to the reliability problems of greatest concern for hydroelectric systems like Manitoba Hydro's.

These concerns are central to such transactions elsewhere on the continent. Currently, two important reviews have been taking place concerning hydroelectric reliability. These are the Regional Power Supply Adequacy/Reliability Study of the Pacific Northwest Power Planning Council and the Assessment of Hydro-Québec's Security of Supply In Accordance of their Energy Reliability Criteria of the Régie de l'Energie of Quebec. It is not a coincidence that these reviews have been ongoing in the two largest hydroelectric systems on the continent. Increased interregional and international transactions as well as concern for environmental issues have put increasing stress on hydroelectric systems.

The results of these two studies show a real concern for reliability in the Pacific Northwest and Quebec. The Regional Planning Council fears a significant reliability problem in February in spite of an overall capacity surplus. In Quebec, the Regie recommended

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additional studies by a hydrologist with an expertise in prolonged drought. These reports have been included herein as Attachments II and III.

PCN submits that the same concerns directly apply to Manitoba Hydro.

Manitoba Hydro's reliability concerns revolve around the dependability of energy as opposed to capacity:

"For the current Manitoba Hydro system, the energy capability as opposed to peak capacity is the determining factor for new resource requirements. Because streamflows are highly variable from year to year, the Manitoba Hydro system is planned using the criterion that sufficient energy supply (dependable energy) must be available if the lowest flow on record were to occur. Hydraulic energy is supplemented by energy from Manitoba coal plants and from imports associated with firm contracts. In the year 2001, it is expected that hydraulic energy will provide 75% of the dependable energy requirement, import contracts will provide 17%, Manitoba coal plants will provide 6%, and Demand-Side Management will provide the remaining 2%. Variations in all of these energy resources are possible. Some of the variations may offset each other, but as described below, it is judged that in the overall balance, there is a greater risk of a lower future energy supply than a higher supply. Lower energy availability on the supply-side would advance the timing of resource requirements." ¹¹

This is not a question as to whether Manitoba Hydro meets the capacity standards as set out at NERC and MAPP. This is a far more fundamental question – can Manitoba Hydro meet its energy commitments to its customers if river flows in Manitoba are lower than average. If they cannot, it is Manitoba Hydro's plan to purchase energy from the U.S. to meet the shortfall.

"Manitoba Hydro has undertaken a study to assess the security of energy imports. Preliminary conclusions are that even if sufficient surplus energy from the MAPP system were available over the time period of a year, the timing of this energy may limit its usefulness to Manitoba Hydro. Import energy and tie-line capability may not be available over the on-peak hours during system peak conditions. The on-peak tie-line capability is severely limited for imports to Manitoba during prime hours. With limited off-peak tie-line capability, import energy will have to be imported during shoulder on-peak hours. A net scheduling of firm export contracts during these hours would also be required to free up the tie-line.

¹¹1996 Manitoba Hydro Power Resource Plan, Section 2.3.

Clarification of the export/import contracts is required in future work to determine NSP/MAPP interpretation of the contract. The likely monthly, weekly and hourly availability of import energy must be determined before Manitoba Hydro can assess whether such patterns are fully utilizable. For example, winter import energy is much more valuable than summer energy. Current studies assume a uniform monthly distribution for energy guarantees.

The availability of import energy during a low flow period and a two week cold snap in Manitoba must be assessed to determine system capability. If flows are low in Manitoba and the weather is extremely cold for an extended time period, import energy may not be available because it is likely that similar conditions exist in the MAPP area, the North-Eastern U.S. and Ontario.

In conclusion, there is a high degree of uncertaintly in the dependable capability of

energy imports to be used in determining timing of new resources because they are not firm and have no specified distribution pattern within a year. Even a small change in assumptions can alter the in-service date of new resources by a number of years. Further work on the security of import energy study is required to obtain a better assessment of the risk inherent in energy imports. It is judged that there is a higher probability that the utilizable import energy will be lower rather than higher compared to that utilized in current resource plans."¹²

All evidence indicates that Manitoba Hydro is seriously concerned about the reliability of its hydroelectric generation:

"The present criterion states that the system must be planned for a recurrence of the lowest flow on record which corresponds to the 1939-41 period. This criterion is not based on an economic justification and the frequency of occurrences of such a drought is not known. Manitoba Hydro has studies underway to attempt to assess the probability that the design drought may be exceeded. Studies include the analysis of tree rings and anecdotal reports from the last several hundred years, as well as statistical techniques of generating synthetic sequences of streamflows. The adequacy of the criterion will be assessed in the future using customer value of reliability information. The results of such an assessment may indicate that

¹²1996 Manitoba Hydro Power Resource Plan, Section 2.3.3.

either a more severe drought or a less severe drought should be used as the planning criterion.

Another energy supply adequacy issue that is being reviewed is the ability to provide sufficient energy over a shorter time period such as two weeks during a severe cold snap in winter. A new criterion may be necessary to ensure dependable energy supply during such a period."¹³

Our contacts with Manitoba Hydro lead us to conclude that these studies have not taken place and, if they had, would be secret. Interestingly, Manitoba Hydro appears to have now classified this once public document and expressed surprise that outsiders would have access to this information.

Placed in this context, the insufficiency of the preliminary review looks very serious indeed. **[TRADE SECRET DATA BEGINS:**

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ENDS] As is clear from the materials quoted above, Manitoba Hydro is concerned about its own reliability and plans to shortstop reliability problems with imports from NSP and others. This leads to an interesting reliability chicken-and egg-problem: *Is NSP guaranteeing Manitoba's reliability or is Manitoba ensuring NSP's?*

Manitoba Hydro's Chairman's comments to Manitoba's Standing Committee on Public Utilities and Natural Resources tends to put this problem in context:

"We in Manitoba tend to take reliability of our electrical supply for granted. I believe that the occurrence brought home very clearly what an indispensable part electricity plays in our daily lives and how, quite frankly, vulnerable any utility can be to accidents. Just for the information of members of the committee, I think we went in the space of a millisecond from exporting 1,500 megawatts to importing about 200 megawatts immediately and shortly thereafter up to 600 to 800 megawatts.

What is truly remarkable about the incident, and it speaks to not only the system that we have designed but our interconnections with other utilities, particularly into the United States, is that in that millisecond in which our lines went down, and we went from exporting that huge amount of power to importing 200 megawatts

¹³1996 Manitoba Hydro Power Resource Plan, page 2.6.

instantly, I do not think that there was one light, clock or electrical appliance in this province that was affected by that change.

Just for a moment, what impressed me about the whole system was the fact that we went from exporting such a huge amount of power to importing the power in a millisecond, and, yet, the next morning I do not think there was a digital clock in the province that was blinking because it had had an interruption of electricity. So that speaks very highly to the way our system is designed and, I think, very importantly, to the huge interconnect that exists across North America, part of the grid of which we are an integral part, that we in North America are very fortunate compared to many areas of the world, and it is a tremendous advantage to have that kind of interconnection of electrical utilities. We certainly saw its advantage when we were in these straits."¹⁴

As a practical matter, failing to address these questions simply does not meet the standards set out in the Commission rules. Moreover, eliminating other bidders while moving ahead in the process with questionable suppliers may seriously restrict NSP's options when it chooses a finalist.

We have aggressively attempted to pursue additional information on Manitoba Hydro's reliability, but we appear to be hampered by the fact that Manitoba Hydro is primarily an arm of the Manitoba provincial government. As a practical matter, the corporation operates under standards of non-disclosure that are simply not allowed in the U.S. Manitoba Hydro has no public documents concerning reliability. It has no filings or regulatory responsibilities to make such filings that address such issues. "Sheltered", as Americans are in the U.S., by filing requirements at state commissions, the Federal Energy Regulatory Commission, and the Energy Information Administration, it is difficult to understand the level of secrecy under which Manitoba Hydro appears to operate.

We have requested certain essential information from Manitoba Hydro pursuant to the Manitoba Freedom of Information Act and PCN's treaty relationship with the utility. While the initial statutory deadline for meeting this request expired at the end of February 2000, no material or information has been received. ¹⁵

¹⁵ In the last few days, Manitoba Hydro has indicated that compliance with this Freedom of Information Act (FOIA) request will involve the sorting, copying and transfer of hundreds of boxes and linear feet of material, and that this will necessitate further delay in order to avoid any interference with the normal operation of the Crown Corporation.

¹⁴ Legislative Assembly Of Manitoba, The Standing Committee On Public Utilities And Natural Resources, Friday, October 25, 1996.

This response to PCN's FOIA request appears to represent the familiar "bury them in paper" approach. We interpret this delay in response to an official FOIA request as a "constructive refusal" for

In spite of our difficulties in Manitoba, we have been able to review the available hydrological data on Manitoba in some detail. Even though Manitoba Hydro does not publicly discuss its hydroelectric reliability, it is nevertheless possible to get a good sense of why Manitoba Hydro is concerned over its reliability.

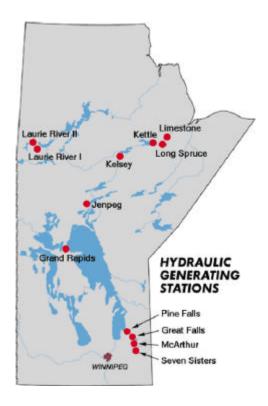
Manitoba's system is simple by the standards of most North American hydro systems. The major generation stations are arranged in series along the Nelson River from Jenpeg (at Cross Lake) down to Limestone at the Hudson's Bay end of the Nelson River.

the time being by Manitoba Hydro to supply the requested information (which may enable Pimicikamak Cree Nation, a most-affected party by Manitoba Hydro's electric generation activities, to better understand and critique the economic and social aspects of those activities and intervene effectively in the present process.)

PCN believes that Manitoba Hydro knows what information would permit PCN's experts to reproduce their hydroelectric generation operations, forecasting, modeling and other relevant activities, but like other Canadian utilities (such as Hydro-Québec) which do not have disclosure requirements as in the U.S., may prefer that indigenous peoples and other parties do not obtain the information required to do so (or only do so after the present PUC comment process is completed).

Manitoba Hydro's response to our FOIA stands in contrast to that of NSP, which entered into a confidentiality agreement with Pimicikamak Cree Nation's consultants and appears to be willing to supply them with proprietary and other information. Manitoba Hydro's response stands in even more stark contrast to U.S. hydroelectric utilities who routinely make such information available over the internet to any interested party.

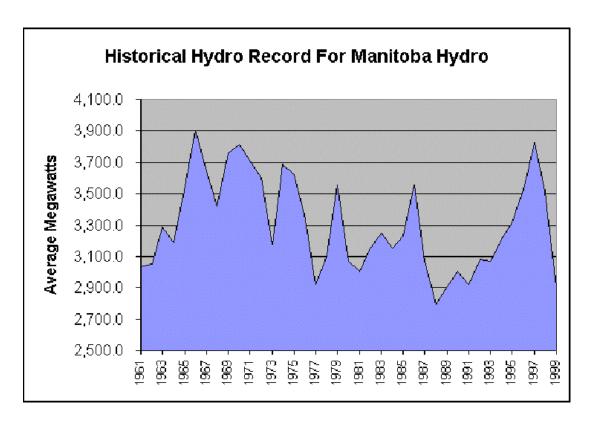
The Pimicikamak Cree Nation will make every continuing effort possible to obtain the information it requires in order to be able to analyze and adequately understand Manitoba Hydro's operations and their economic and other consequences in Manitoba and Minnesota.



Approximately 80 percent of Manitoba's hydroelectric generation occurs along the Nelson River. Actual hydrologic data about the Nelson is very thin. As a rule, only data from the 1960s and later are available. Certain data are available at Cross Lake, but reliable data collection coincided with the development of the Nelson River.

In Manitoba Hydro's defense, data or records regarding one river, the Winnipeg River, are quite comprehensive – in one case a series exists from 1892 to the present. Unfortunately, this solid data set simply doesn't apply to the project 750 kilometers to the north.

The northern data sets do not provide a very comforting base for estimating hydroelectric reliability. The following chart shows the hydroelectric record for calendar years 1961 through 1999. As can be readily seen, Manitoba Hydro has experienced one of the best years and one of the worst in just the past two years. This volatility reflects the difficulty in assuring dependable generation from hydroelectricity. The 1996 Manitoba Hydro plan indicates that Manitoba Hydro continues to use a relatively unsophisticated standard for dependable hydroelectric generation. Manitoba Hydro's approach is to use the worst years of the historical record as a proxy for dependable hydroelectric generation. This standard has effectively been abandoned by the industry because it entails some very clear problems when the historical record is thin.



An old joke goes that a man was bragging to his neighbor on how his new dog kept elephants away. When the neighbor asks why he thinks his dog could drive away elephants, the man points out that "there weren't any elephants around, were there?" In this case, using the worst historical year as a guaranteed level of hydroelectric generation fails to meet even the most elementary statistical standards. For the historical record summarized in the chart above there is a 4.6 percent chance that 2000 will have a lower level of hydroelectric generation than the lowest year in the historical record. Manitoba Hydro's standard is similar to the man in the joke – after all, we haven't seen any lower generation have we?

What this means operationally is that Manitoba Hydro has a very unreliable standard for dependable hydroelectric generation. From their 1996 plan, it is clear that the utility, as well, is concerned about the quality of its standard. Certainly, more technically adept utilities in the U.S. and Canada have moved to more sophisticated approaches in the

¹⁶This is an exercise in freshman statistics. The minimum calendar year generation from 1961 through 1999 was 2,792 average megawatts. This is a mere 1.68 standard deviations from the mean. The probability of having generation lower than the observed minimum is the probability associated with 1.68. Assuming a normal distribution, this value is 4.6%.

¹⁷ This criterion is not based on an economic justification and the frequency of occurrences of such a drought is not known." 1996 Manitoba Hydro Power Resource Plan, page 2.6.

estimation of hydroelectric reliability.

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DATA ENDS] The correct question would have been "does your definition mean serving NSP with the same reliability as NSP serves NSP's customers?" This question might well have received a very different answer.

This shortfall of review and information is important to the current RFP evaluation because NSP may well choose Manitoba Hydro as its finalist without a careful review of these complex issues. If so, it may find itself defending a poor choice after the fact, as opposed to asking the necessary questions before fundamental commitments are made. For these reasons, discussed summarily above on the basis of a very thin informational foundation, PCN believes and respectfully submits that the present selection process with respect to all-important reliability issues is demonstrably unfair and significantly erroneous.

C. Environmental and Socioeconomic Impacts

Minnesota Statute § 216B.2422 subd. 3(a) requires utilities to use environmental and socioeconomic costs when evaluating and selecting resource options. Given the very limited information that has been provided, it is difficult to undertake any detailed review of NSP's treatment of environmental and socioeconomic issues within the current RFP process. However, based on the available information, it appears that NSP has assumed that there are no environmental and socioeconomic costs associated with Manitoba Hydro's bids in the current RFP process. In fact, as will be discussed below, importing electricity from Manitoba entails very substantial environmental and socioeconomic impacts and costs. Thus, to the extent that NSP has not properly accounted for such costs within the RFP process, it has given undue advantage to Manitoba Hydro.

While we have not currently been given access to detailed information regarding the provisions of the proposed power purchases from Manitoba Hydro, past experience indicates that the contract would be for purchase of system power, rather than the output of specific generating units. However, to evaluate the environmental and socioeconomic impacts of electricity purchases from Manitoba Hydro, it is necessary to consider how Manitoba Hydro would obtain the electricity that would be sold.

Part (1) of this section deals with the environmental and directly associated socioeconomic impacts related to each of the principal means by which Manitoba Hydro can supply NSP with electricity, which are as follows:

- a. Manitoba Hydro hydroelectric projects
 - i) Existing projects
 - ii) New projects
- b. Manitoba Hydro thermal generation
- c. Purchases.

Part (2) of this section outlines the impacts upon Minnesota economic development associated with power imports from Manitoba Hydro.

Part (3) of this section provides some recommendations as to how NSP should evaluate bids from Manitoba Hydro.

1. Means By Which Manitoba Hydro Can Supply NSP

a. Manitoba Hydro Hydroelectric Projects

Hydroelectric generation has attributes that can be very valuable in terms of electric system operation, but which can also result in substantial adverse environmental and associated socioeconomic impacts. Notably, hydro units can be readily used for load following.¹⁸ Unfortunately, load following with hydro units imposes a pattern of water releases that is aligned with electric system requirements and which may vary radically from the natural (pre-hydro development) pattern.¹⁹

The extent to which a hydro project can alter natural water flows can be amplified by the development of large reservoirs for storing water. Hydro projects with large storage capacities, such as those in Manitoba, can result in major alterations to the natural pattern of seasonal (and annual) water flows. For example, natural flows are typically highest in spring, but water flows downstream of a hydro reservoir may be quite low in spring, since this is a low value period for electricity production. Moreover, the development of hydro reservoirs can have major environmental and associated socioeconomic impacts (e.g., flooding of terrestrial habitat and destruction of economies that are dependent on that

¹⁸ One of the major challenges in electric system operation is that generation must be closely and rapidly matched with demand. There is substantial variation in electricity demand hourly, daily, weekly, and seasonally. Moreover, power plants and transmission lines are subject to unexpected outages. To respond to these fluctuations in demand and supply, electric systems must have power plants whose output can be rapidly ramped up or down. In contrast with other generation technologies, hydro units can more easily provide this type of load following.

¹⁹ Hydro unit electrical output is a function of the amount of water being passed through the turbines. Thus, fluctuations in electricity output result in fluctuations in water flows. Absent other constraints, a load following regime could result in very high water flows during periods of peak electricity demand and no water being released at other times.

²⁰ In effect, hydro projects with reservoirs can be used to store electricity. This can be very valuable, since there are no commercially viable large-scale technologies for electricity storage.

habitat), in addition to those relating to changes in downstream water flows.

As will be detailed below, the development of reservoirs and the altering of natural water flows associated with Manitoba's hydro projects and electricity purchases by NSP has had (and will have) profound environmental and associated socioeconomic impacts. To place these impacts in their proper context, it is useful to briefly describe the existing hydro developments in Manitoba.

Since the 1960s, Manitoba Hydro has constructed a number of dams on the Nelson River system in Northern Manitoba, and it has undertaken two major projects to regulate and enhance the flow into the Nelson. First, Lake Winnipeg, an enormous natural water-body, has been transformed into a hydroelectric reservoir via the addition of control structures and diversion channels that regulate flows into the Nelson. Second, Manitoba Hydro has installed another set of control structures and diversion channels, allowing it to transfer water from the Churchill River into the Nelson. In short, the hydrology of vast areas of boreal northern Manitoba has been radically rearranged for the benefit of hydroelectric generation.

It is important to note that no comprehensive baseline environmental or socioeconomic assessments were undertaken by Manitoba Hydro, Manitoba or Canada prior to the onset of construction of the Lake Winnipeg Regulation/Churchill River Diversion Project in the 1970s. Thus, it is difficult to quantify all of the changes due to impoundments, diversions, road building, transmission corridors, influx of workers from outside the area, and other aspects of the project.

This massive re-engineering of the Manitoba hydraulic environment has resulted in massive socioeconomic, as well as environmental, impacts. For PCN (like other aboriginal or indigenous socioeconomic entities or societies), culture, economy, and virtually everything else that describes and defines it as a people are tied to the land that they and its neighboring indigenous societies of the Nelson-Churchill Rivers watershed have inhabited, stewarded, benefited from and thrived in for thousands of years. The literature on indigenous economies demonstrates and establishes this link as profound; when aboriginal peoples' traditional lands suffer environmental damage affecting their productiveness as animal and human habitat and travellability, for example, the socioeconomic impacts on the indigenous peoples that are part of that environment is direct and profound.

Thus, socioeconomic factors are inextricably interrelated with the environment. PCN understands that NSP and the Minnesota Public Utilities Commmision adhere to a "200 mile limit" for "environmental" externalities, but it is apparent that there is no such geographic limitation for socioeconomic issues. However, the environment and its degradation for the purpose of hydro-electric mega-development, clearly functions as a "driver" for the serious associated socioeconomic impacts. It is thus essential that the Commission gain an appreciation of the environmental factors (which might otherwise be restricted from consideration owing to the 200 mile limit), since they are associated with, and indeed the primary cause of, socioeconomic impacts.

i. Existing Hydro Projects

In Docket No. E-002/RP-98-32, Order Issued February 17, 1999 at 19, the Commission ruled that NSP should assign environmental costs to existing resources submitting competitive bids or vendors submitting competitive bids who are not certain which plant will provide the capacity. In this context, it is also appropriate for NSP to consider the socioeconomic impacts associated with electricity supplied by existing resources.

A summary description of the existing Manitoba Hydro projects and their environmental and associated socioeconomic impacts on PCN is included herein as Attachment IV. This document has been prepared by PCN in order to assist the PUC and others with their understanding of the physical and other aspects of this hydro-electric undertaking on PCN and its citizens, and makes reference to numerous authoritative sources including the reports of a number of official commissions of inquiry.

A vast reengineering of the northern Manitoba boreal environment has taken place since the 1960's, in order to turn this environment into a hydroelectric mega-project. PCN, which occupies and uses its traditional lands reaching from the northern end of Lake Winnipeg, has seen its environment transformed in less than 20 years, from one that supported a viable economy and culture based on the water and the land, to one that is unable to provide for itself. PCN's traditional lands are part of the greater northern Manitoba environment, much of which has also been conscripted to this hydroelectric project.

Manitoba Hydro's Lake Winnipeg, Churchill and Nelson Rivers project was one of the largest in the world when it was built in the 1970s, involving diversion of entire river systems and conscription of vast Lake Winnipeg as a reservoir. There are now 5 dams and generating stations along the Nelson River in Northern Manitoba, with proposals to build

Chapter 356, Section 3, Docket No. E-999/CI-93-583, Order Establishing Environmental Cost Values (January 3, 1997), and Order Affirming In Part and Modifying In Part Order Establishing Environmental Cost Values (July 2, 1997).

²¹ In the Matter of the Quantification of Environmental Costs Pursuant to Laws of Minnesota 1993, Chapter 356, Section 3, Docket No. E-999/CI-93-583, Order Establishing Environmental Cost Values

many more to meet the goal of doubling the capacity of the project (which currently exceeds 4000 MW). The impoundment, and seasonally-inverted controlled release of water through the system has flooded millions of acres of boreal forest habitat and caused serious damage to thousands of miles of productive shoreline. Affected indigenous peoples have suffered losses of their traditional lands and ways of life, resulting in social crises of mass poverty, ill health and severe and ongoing epidemics of suicide.

As a result of Manitoba Hydro's projects, over 3 million acres of PCN traditional lands were flooded, contaminated, or rendered inaccessible to PCN citizens, whose "traplines" or family hunting territories were or are situated in the Cross Lake / Nelson River / northernmost Lake Winnipeg areas.

Given this context, it is important to evaluate whether NSP's proposed power purchase would exacerbate the already severe environmental and associated socioeconomic impacts related to Manitoba Hydro's existing hydro projects. Unfortunately, NSP and Manitoba Hydro have failed to conduct or make public the detailed analyses (e.g., hydro system simulations) that would be required to fully address these issues.

Nonetheless, there is ample reason to believe that NSP's proposed purchase will result in some changes to existing hydro system operations that will effectively make a bad situation worse. First, the NSP purchase could result in existing Manitoba Hydro projects being operated in a manner that will exacerbate existing environmental, and thus socioeconomic, impacts. While we have not currently been given access to detailed information regarding the scheduling of the proposed power sales, it is reasonable to expect that the contract would permit NSP some ability to schedule deliveries when power is most valuable. By superimposing NSP's need for load following upon that associated with Manitoba's native load, power sales to NSP could well result in an even more damaging pattern of water releases, with greater fluctuations and greater divergence from natural patterns.

Second, the NSP purchase could be an impediment to possible future efforts to mitigate adverse impacts. At various existing hydro projects elsewhere in North America, operations are being significantly modified so as to mitigate impacts. Typically, these operational changes involve adoption of a water release regime that is more similar to the naturally occurring (pre-hydro development) patterns. These operational changes result in some reduction in the overall value of the electricity produced (e.g., by shifting electricity production from high value to low value periods), but this loss of value associated with electricity generation has been judged to be acceptable given the benefits in terms of mitigation of environmental and socioeconomic damages. To the extent that Manitoba Hydro has entered into long-term commitments to NSP that require Manitoba

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²² For example, springtime water flows have been increased at dams on the Columbia River system to assist with salmon migration. To reduce adverse impacts on the Colorado River and the Grand Canyon, fluctuations in water releases by Arizona's Glen Canyon dam have been greatly restricted.

Hydro to schedule power deliveries to maximize the value of the electricity, Manitoba Hydro will have less flexibility and face greater costs in connection with adopting water flow patterns that are more similar to those naturally occurring.

In summary, if the existing Manitoba Hydro hydroelectric projects are used to supply the NSP purchases, this will probably exacerbate the already substantial environmental and socioeconomic costs associated with the existing projects. These adverse impacts must be weighed against any environmental and socioeconomic benefits that NSP attributes to its reduced need for other forms of generation, notably new gas-fired plants. Given the severity of the environmental and socioeconomic impacts associated with the existing Manitoba Hydro projects, there is no basis for the NSP bidding process giving preference to such projects in comparison to other resource alternatives.

ii. New Hydro Projects

Manitoba Hydro has indicated that with new export sales, it could require additional generation as early as 2008; absent new exports, new supply will not be needed until 2016.²³ Manitoba Hydro has identified hydro projects at Wuskwatim, Gull Rapids and Notigi as leading options for new supply, but has also stated that "[G]as turbine continue to be a competitive alternative to water power (hydraulic) generators".²⁴

Thus, based on the limited information that Manitoba Hydro has made public, it appears that the proposed NSP purchase (and other new export sales) could greatly accelerate the construction of new hydro projects in Manitoba. For example, if the in-service date for new hydro is advanced from 2016 to 2008, it would be appropriate to identify this new hydro as the source of the power being bought by NSP from 2008 through the end of the contract.

Absent more detailed information from Manitoba Hydro, it is difficult to evaluate the environmental and

socioeconomic impacts associated with these new hydro projects and to determine how much of these impacts should be attributed to the proposed NSP purchase. Nonetheless, the available information does demonstrate the need for a detailed evaluation of the environmental and associated socioeconomic impacts related to purchases by NSP, and it is apparent that that neither NSP or Manitoba Hydro has undertaken or made public such an analysis.²⁵

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²³ MH Sustainable Development Report: Third Edition 1996 & 1997, p. 38.

²⁴ <u>Id</u>.

²⁵ As stated earlier, PCN and its traditional lands lie at the "epicentre" of the hydro mega-project hydraulic environment. All water impounded during the spring or summer in Lake Winnipeg upstream of Cross Lake rather than flowing freely down the Nelson River to Hudson Bay contributes to drought, mud, shoreline erosion and destruction conditions in PCN's immediate community environment and its

b. Manitoba Hydro Thermal Generation

Manitoba Hydro currently operates two coal-fired stations: Brandon and Selkirk. Manitoba Hydro is assuming that the life of the 139 MW Selkirk station will be extended until 2019. Manitoba Hydro currently projects that it will retire the 97 MW Brandon station in 2005, but it will consider life extension for this station as part of its future resource planning.²⁶

In meeting its power supply requirements, Manitoba Hydro principally relies upon its hydro system. Historically, the Brandon and Selkirk plants have been primarily used during seasonal peak periods and in periods of drought (when hydro output was reduced). Thus, it is unclear to what extent NSP's proposed purchase would result in increased operation of the Brandon and Selkirk plants.

Nonetheless, this is an issue that should be addressed as part of a comprehensive evaluation of the impacts associated with the proposed NSP purchase. The Brandon and Selkirk plants are both within 200 miles of Minnesota. They are also relatively old coal-fired plants that produce a variety of air emissions, including all of those for which the Commission has currently assigned externality values.²⁷

Also, as noted above, the proposed purchase by NSP could greatly advance the date when Manitoba Hydro adds new supply, and this new supply could be gas fired. While Manitoba Hydro has not identified where new gas generation would be located, it would almost certainly be in southern Manitoba (within 200 miles of Minnesota) so as to be close to gas pipelines and Manitoba Hydro domestic and export markets.

traditional lands, with severe social, recreation, economic, spiritual and cultural repercussions. All water that is then forcibly released on a seasonally inverted (and often intra-seasonally pulsed basis, according to electricity needs) is one that floods PCN lands, causing significant and apparently ongoing emissions of persistent greenhouse gases, and also causing methyl-mercury contamination of water and the foodchain; destabilizes and undercuts lake and river ice that are an essential part of PCN citizens' ability to travel on their lands (with often fatal results); erodes and slumps thousands of miles of terrestrial and island shoreline; and uproots and stacks vegetation and tree debris on those shorelines rendering them impassable to man and animals in both directions. Each additional river that is diverted and dam or control structure that is built to enhance the capacity of the mega-project exacerbates the hydraulic and thus the environmental and associated socioeconomic impacts on PCN, its traditional lands or the greater boreal environment of which they are part.

²⁶ As indicated in the Manitoba Hydro Sustainable Development Report: Third Edition 1996 & 1997 (p. 38), it is likely that Brandon will be refurbished and kept in service until 2019.

²⁷ Beginning in year 2000, SO₂ emissions are assigned a zero value. However, since the Brandon and Selkirk plants are outside of the United States (and thus are not covered by the SO₂ trading and cap provisions of the US Clean Air Act Amendments), it may be appropriate that the pre-2000 externality values be assigned to SO₂ emissions from Canadian sources.

Thus, there is the possibility that much of the proposed NSP purchase could be supplied by thermal generation, and that the emissions associated with this gas and coal-fired generation would be as high as, or higher than, the emissions from NSP's proxy resource (new gas fired generation that would be subject to stringent pollution control requirements). Once again, this underlines the need for a thorough analysis of the proposed NSP purchase from Manitoba Hydro.

c. Purchases by Manitoba Hydro

Manitoba Hydro is typically a large net exporter, but it does import substantial amounts of electricity, especially in drought years. Moreover, Manitoba Hydro's large storage reservoirs give it great flexibility in scheduling imports (and exports). Manitoba Hydro can purchase electricity off-peak (when prices are low), and sell electricity on-peak (when prices are high). With the advent of open access to transmission and more vibrant wholesale power markets, Manitoba Hydro has strong economic incentives to use its hydro system to benefit from these peak/off-peak price differentials. Unfortunately, such transactions will exacerbate the already large fluctuations in water flows and the associated environmental and socioeconomic impacts.

Moreover, Manitoba Hydro's participation in the evolving wholesale electricity markets as both a buyer and a seller underlines again the need for a thorough examination of the impacts associated with the proposed NSP purchase. It appears that NSP attributes no externality costs to Manitoba Hydro imports, both because these imports are assumed to be from hydro plants that produce no air emissions, and because Manitoba Hydro generation is assumed to be more than 200 miles from Minnesota.

Given NSP's simplistic analysis, Manitoba Hydro could even engage in a version of electricity "laundering". For example, Manitoba Hydro could buy cheap dirty coal-fired power (that is generated within 200 miles of Minnesota and would be assigned high externality values if it were sold directly to NSP); Manitoba Hydro could then resell this electricity to NSP at a premium price given that NSP assigns no negative externalities to Manitoba Hydro power (which is assumed to be from hydro generation more than 200 miles from Minnesota).

The lesson to be drawn from the above example is not that Manitoba Hydro will necessarily engage in such overt actions to take advantage of NSP's favorable assumptions about Manitoba Hydro power. Rather, this example again illustrates that NSP's current approach to evaluating power purchases from Manitoba Hydro is woefully inadequate given the complex and evolving nature of the wholesale electricity markets.

²⁸ In the fiscal year ending March 31, 1999, Manitoba Hydro imported 1.2 billion kWh.

2. Impacts Upon Minnesota Economic Development

In addition to the socioeconomic impacts discussed above, electricity purchases from Manitoba Hydro would have implications for Minnesota economic development. From a Minnesota perspective, buying power from Manitoba Hydro would have two major effects.

- a. Displacement: power purchased from Manitoba Hydro would displace some other means of meeting the state's energy needs. These alternatives may include demand side management, renewables, natural gas- and coal-fired generation. Relative to buying power from Manitoba, implementing these other alternatives will generally have a more positive impact on the state's economy. However, the results will vary depending upon the types of alternatives and where they are located. Per dollar spent, demand-side management programs and in-state renewables tend to have large benefits for the local economy. Coal and especially gas plants have lesser benefits because their fuel comes from outside the state, and the plants themselves are often situated in neighboring states.
- **b. Re-spending**: power imports can be more or less expensive than alternatives. To the extent that imports are cheaper, this will benefit the Minnesota economy by helping to reduce the cost of electricity. ³⁰

The overall impact of power imports upon the Minnesota economy stems from their combined effects upon **displacement** and **re-spending**. If the alternatives to Manitoba Hydro are in-state and less expensive, they will be clearly superior in terms of Minnesota economic development. If the alternatives are in-state and more expensive, alternatives may be better or worse than Manitoba Hydro depending upon the relative size of the displacement and re-spending effects.

To sound what is by now a familiar refrain, the information made available by NSP does not facilitate a detailed analysis of the economic development impacts associated with the

²⁹ To the extent that the electricity being purchased from Manitoba Hydro would originate from existing or new generation within Manitoba, these expenditures would contribute little, if anything, to the Minnesota economy. To the extent that Manitoba Hydro relies upon purchases from generation within Minnesota or relatively nearby, the money flowing to Manitoba Hydro could potentially have some contribution to economic activity in Minnesota.

³⁰ As has been recognized by Minnesota Statute § 216B.2422 subd. 3(a) and subsequent Commission orders, the provision of electricity can give rise to significant externalities. Thus, re-spending is best viewed in the context of overall societal costs, rather than just the direct costs of electricity. In particular, the overall Minnesota economy will benefit if Minnesota selects the energy resources with lowest societal costs, rather than merely focusing on the resources with the lowest direct costs.

proposed purchase from Manitoba Hydro. However, it is possible to make some informed judgments. In its 1998 Resource Plan, ³¹ NSP assumed that imports from Manitoba Hydro would be priced equivalent to NSP's avoided costs; in other words, buying power from Manitoba Hydro would have no effect on re-spending, since it would have the same cost as the avoided resources. Meanwhile, it is likely that the resources that would be displaced by Manitoba Hydro purchases would have some positive contribution to Minnesota economic development. Thus, it is reasonable to assume that the Minnesota economy would be better off without the proposed power purchase from Manitoba Hydro. To the extent that the purchase could be replaced by increased cost-effective demand-side management and renewables within (and near) Minnesota, the benefits to the Minnesota economy could be maximized.³²

3. Recommended Approach for NSP Evaluation of Manitoba Hydro Bids

Based on the very limited materials that have been provided, it is impossible to be certain how NSP has accounted for the environmental and socioeconomic impacts associated with purchases from Manitoba Hydro. However, it appears that NSP has attributed no adverse impacts to these purchases and has thus give them an advantage relative to other bidders which were assigned environmental costs.

It might be argued that such an approach is consistent with the Commission's previous determinations that environmental costs should be assigned to certain air emissions produced by generators within 200 miles of the Minnesota border. However, even if consideration is limited in that fashion, it should not be assumed that electricity purchased from Manitoba Hydro is not being produced by fossil-fired generation in and near Minnesota. As described above, thermal generation could account for a significant portion of the energy that NSP might buy from Manitoba Hydro.

In Docket No. E-002/RP-98-32, Order Issued February 17, 1999, the Commission determined that environmental costs should be assigned to an unidentified resource based upon the low and high environmental cost values of the competing bid with the highest environmental costs. Absent more information from Manitoba Hydro regarding the sources of its energy, its bids to NSP should be treated in the manner specified for an

³² In this context, cost-effective means that the alternative resources are available at or below the cost of purchases from Manitoba Hydro.

³¹ Application for Resource Plan Approval: 1998-2012, Docket E-002/RP, pp. 86-89.

In the Matter of the Quantification of Environmental Costs Pursuant to Laws of Minnesota 1993, Chapter 356, Section 3, Docket No. E-999/CI-93-583, Order Establishing Environmental Cost Values (January 3, 1997), and Order Affirming In Part and Modifying In Part Order Establishing Environmental Cost Values (July 2, 1997).

unidentified resource.³⁴

More broadly, NSP's evaluation of all bids should include consideration of their socioeconomic impacts. Given, the severity of the socioeconomic impacts associated with purchases from Manitoba Hydro, it is clearly inappropriate for the NSP bidding process to ignore these impacts. In effect, NSP is giving undue preference to Manitoba Hydro by considering only the environmental costs associated with competing bids, while ignoring the environmental and socioeconomic costs associated with Manitoba Hydro. [TRADE SECRET DATA BEGINS:

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the preference that NSP is giving Manitoba Hydro in regards to environmental and socioeconomic impacts may be a decisive factor resulting in NSP selecting Manitoba Hydro instead of competing suppliers. On this basis, it is respectfully submitted that the RFP process in relation to NSP's treatment of environmental and socioeconomic impacts has been both demonstrably unfair and significantly erroneous.

D. Summary and Conclusions

Given the limited information that has currently been made available by NSP and Manitoba Hydro, it is somewhat difficult to make fully definitive judgments regarding the NSP RFP process. But based on what has been revealed, major components of the process have been both unfair and significantly erroneous. In particular, NSP has in several ways given undue advantage to one bidder (Manitoba Hydro). First, NSP has introduced a new element - short term purchases - into an RFP process that was intended for long term resources. This has favored bidders that can supply short term power, especially Manitoba Hydro which is a large utility with existing resources and an on-going relationship with NSP. Second, NSP has disregarded the clear reliability problems relating to purchases from Manitoba Hydro. Third, NSP has also disregarded the severe environmental and socioeconomic impacts associated with Manitoba Hydro's hydroelectric projects, as well as the possible impacts if Manitoba Hydro relies upon thermal generation. This has given Manitoba Hydro an undue advantage over competing bidders that are assigned environmental costs for air emissions from generating resources within 200 miles of Minnesota.

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³⁴ The Commission's order also indicated that a bid with an unidentified resource should be evaluated using no environmental costs if the bidder guarantees in its bid and in the final written contract that it will not use a resource located within 200 miles of the Minnesota border. It is possible (and perhaps likely) that Manitoba Hydro has included this type of guarantee for its bids to NSP. Nonetheless, it is incumbent upon NSP to ensure that any such guarantee is fully supported by reliable information. It does not appear that Manitoba Hydro has provided any such information.

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undue advantage being given to Manitoba Hydro could play a key role in this bidder being selected as a finalist in the RFP process.

PCN thus respectfully submits the following conclusions with respect to both of the Comment criteria (unfairness and significant error). In consideration of the current stage of Comment, evaluation and decision-making:

(a) The bid selection process was "procedurally" unfair and erroneous, in respect of a number of issues, including apparent procedural bias in favor of Manitoba Hydro as a bidder (especially in regard to short-term supply and its impact on how NSP evaluates long-term supply bids), and thus against other bidders, both those excluded and included. [TRADE SECRET DATA BEGINS:

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- (b) The bid selection process was "substantively" unfair and erroneous, in respect of a greater number of issues, including:
- substantive bias in favor of particular bidder(s) including Manitoba Hydro;
- apparent inattention to or failure to adequately consider critically important reliability concerns; and
- apparent inattention to critically important socioeconomic issues related to Manitoba Hydro's bid.

It is respectfully submitted that these issues, when considered together, have introduced unacceptable levels of unfairness and significant error into the present process.

PCN respectfully submits that this creates a very weak foundation on which to proceed to select among the energy choices facing Northern States Power and Minnesotans (who will be directly affected by the present process). If not accounted for and adjusted, the procedural and substantive unfairness and significant errors discussed above so distort the selection process that incorrect, and economically and socioeconomically unacceptable, choices may be the result.

PCN requests the Commission to order or otherwise act to ensure, now or at some timely and appropriate stage in this selection process, that all bids (those excluded and included)

be evaluated on a "level playing field" of adequate, coherent and forthright information and sound analytical methodology. As we believe we have shown above, this level playing field clearly does not currently exist, with the result that the selection process presently stands impugned.

We request that the Commission ensure that particular scrutiny be paid to NSP bid structure approaches, reliability issues, and the serious and costly socioeconomic issues related to Manitoba Hydro's bid, so that the integrity of the Minnesotan energy choice resulting from this selection process is assured in accordance with the rules that govern it.

Respectfully submitted:		
Pimicikamak Cree Nation		

This material is prepared, edited, issued or circulated by Ann Stewart, 121 West Grant Street, Suite 116, Minneapolis MN, who is registered with the Department of Justice, Washington DC, under the Foreign Agents Registration Act as an agent (#5313) of Pimicikamak Cree Nation in Cross Lake, Manitoba, Canada. This material is filed with the Department of Justice where the required registration statement is available for public inspection. Registration does not indicate approval of the contents by the United States Government.