

**ENERGY AND UTILITIES BOARD**

**Calgary Alberta**

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**IMPERIAL OIL RESOURCES LIMITED  
INDUSTRIAL SYSTEM DESIGNATION  
COLD LAKE EXPANSION PROJECT**

**Decision D 99-4  
Application 970488**

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**1. APPLICATION AND HEARING**

Imperial Oil Resources Limited by Application 970488 requested the Board to:

- Designate Imperial's new electrical generation, transmission, and distribution systems serving its Cold Lake operations as an "*industrial system*" pursuant to section 2.2 of the *Hydro and Electric Energy Act (H&EEA)*, and
- Make rules exempting from the operation of the *Electric Utilities Act (EUA)* the electric energy produced from and consumed by the proposed "*industrial system*", pursuant to section 73(4) of the *Electric Utilities Act*.

The application was considered at a public hearing in Calgary on 8 July 1998, with Celine Belanger, G. J. Miller, and F.J. Mink, P.Eng. sitting.

**THOSE WHO APPEARED AT THE HEARING**

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**Principals and Representatives  
(Abbreviations Used in Report)**

**Witnesses**

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Imperial Oil Resources Limited (Imperial)  
A. L. McLarty

A. Newell, P.Eng.  
M. Drazen  
R. Ottenbreit, P. Eng.

Alberta Power Limited (APL)  
L. G. Keough

J. Beckett, P.Eng.  
K. Kadis, P.Eng.

ENMAX Corporation (Enmax)  
R. B. Brander

Industrial Power Consumers Association of Alberta  
(IPCAA)  
D. B. MacNamara

TransAlta Energy and TransAlta Utilities (TransAlta)  
C. J. Meagher

Independent Power Producers Society of Alberta  
And Senior Petroleum Producers Association of Alberta  
(IPPSA et al)  
L. L. Manning

NOVA Chemicals Limited (NOVA)  
J. M. Liteplo

ESBI Alberta Limited (EAL)  
C. Carr

Alberta Federation of REAs Limited,  
Alberta Association of Municipal Districts and Counties,  
And Public Institutional Consumers Association  
(Consumer Groups)  
K. L. Sisson

Energy And Utilities Board (EUB)  
T. Y. K. Chan, P.Eng.  
D. A. Larder  
P. Wickel, P.Eng.

Enmax, IPCAA, TransAlta, IPPSA et al, Nova, EAL and the Consumer Groups largely participated to monitor the proceeding and present final argument.

## **2. BACKGROUND**

Section 1(1)(g) of the H&EEA defines an “industrial system” as the whole or any part of an electric system primarily intended to serve one or more industrial operations of which the system forms a part and designated by the Board as an industrial system.

In June 1997, Alberta Energy issued a policy statement to clarify the definition of industrial systems, and the policy objectives and implications of exempting such systems from the EUA.

Objectives of Industrial System exemption were stated as follow:

- The industrial system exemption has an objective (similar to the self-generation exemption stated in section 2(b) of the EUA), to provide the correct economic signals which enable integrated industrial processes to develop their own internal electricity supply that is the most economic source of generation.

- The exemption should support:
  - (a) Development of economic generation to supply the requirement of integrated industrial processes;
  - (b) Efficient exchange, with the Interconnected Electric System (IES), of electric energy that is in excess of the industrial system's own consumption; and
  - (c) Generation and load location decisions which improve the efficiency of the IES (e.g. voltage stability, reduction of line losses and congestion, etc.)
- The exemption is not intended to facilitate development of independent electricity systems driven by avoidance of system costs, therefore administration of the industrial system exemption should avoid uneconomic system by-pass.
- Duplication of the IES should be avoided where it is more economic to use utility-owned transmission or distribution facilities.

In June 1998, the Government amended the EUA by Bill 27. The EUA now permits the EUB to set the rules governing the exemption of industrial systems from the provisions of the Act.

The H&EEA was also amended as follows:

- (i) to reflect all the objectives for industrial system designations as intended in the Policy Statement on industrial system issued earlier by Alberta Energy.
- (ii) to exempt the owner of an industrial system transmitting or proposed to transmit electric power from sections 12 to 14 of the Act which stipulate permitting and licensing requirement for transmission facilities, unless the Board directs otherwise.

As well, pursuant to section 2.2(3) of the H&EEA, the Board may designate the whole or any part of an electric system as an industrial system if the Board is satisfied that all of the following criteria have been met:

- (a) the electric system includes a generating unit located on the property of the one or more industrial operations it is intended to serve, there is a high degree of integration of the electric system with one or more industrial operations the electric system forms part of and serves, and there is a high degree of integration of the components of the industrial operations;
- (b) the industrial operations process a feedstock, produce a primary product or manufacture a product;
- (c) there is a common ownership of all of the components of the industrial operations;
- (d) the whole of the output of each component within the industrial operation is used by that operation and is necessary to constitute its final products;
- (e) there is high degree of integration of the management of the components and processes of the industrial operations;

- (f) the application to the Board for an industrial system designation demonstrate significant investment in both the expansion or extension of the industrial processes and the development of electricity supply;
- (g) where an industrial operation extends beyond contiguous property, the owner of the industrial operation satisfies the Board that the overall cost of providing the owner's own distribution or transmission facilities to interconnect the integral parts of the industrial operation is equal to or less than the tariffs applicable for distribution or transmission in the service area where the industrial operation is located.

In addition if the Board is not satisfied that section 2.2(3) (c) or 2.2(3)(d) has been met, it may make an industrial system designation if the Board is satisfied the all of the separately owned components and all of the industrial operations are components of an integrated industrial process.

Furthermore, if the Board is not satisfied that all of clauses (a) to (g) of section 2.2(3) have been met, the Board may make an industrial system designation provided it is satisfied that:

- (a) all clauses (a) to (g) of section 2.2(3) and section 2.2(4) have been substantially met, and
- (b) there is a significant and sustained increase in efficiency in a process of the industrial operation or in the production and consumption of electric energy by the industrial operation as a result of the integration of the electric system with the industrial operations the electric system forms part of and serves.

In Application 970163, Imperial applied to the Board for approval to expand its bitumen recovery operations at Cold Lake, and approval to construct and operate a 220 MW co-generation facility at its Mahkeses Plant.

Imperial submitted that co-generation would be the most economic source of electric supply. Additionally it would also allow the efficient exchange of surplus electric energy with the IES. Therefore it requested that the Board designate the co-generation facilities and associated transmission and distribution facilities as an industrial system so that it could provide its own internal electricity supply for its processes at Cold Lake.

### **3. ISSUES**

Some intervenors took issues with Imperial's request for the proposed industrial system designation and the granting of the full exemption for an industrial system.

The Board believes the following to be the major issues respecting the Imperial's application:

- Process integration,
- Supplying power to a third party,
- Transmission costs reallocation,
- Exemption from Sections 12 to 14 of the Hydro and Electric Energy Act,
- Boundaries and levels for the industrial system,
- Standard of construction and operation,
- Sharing of transmission facilities, and
- Exemptions from present or future tariffs.

## **4. PROCESS INTERGRATION**

### **4.1 Views of Imperial**

Imperial submitted that its entire operation at Cold Lake is for bitumen production that is managed by a common recovery scheme across the entire reservoir. The four processing plants across the reservoir are located to provide separate steam injection in order that losses could be minimized.

Imperial cited the definition of an industrial system as “the whole or any part of an electric system which is primarily intended to serve one or more industrial operations of which the system forms a part and designated by the Board”. It maintained that its Cold Lake operations draw on a geographically contiguous resource. Therefore it submitted that processes performed by all its bitumen recovery facilities at Cold Lake should be regarded to be highly integrated.

With respect to the Cold Lake pump station and the brackish water wells, Imperial stated that those facilities provide water to the Cold Lake bitumen recovery operations. They would be powered by the proposed co-generation. Therefore, it proposed to include these facilities in the proposed industrial system to enhance the economic attractiveness of the said system.

### **4.2 Views of the Intervenvors**

Enmax noted that Imperial’s proposed new co-generation plant would be supplying four processing plants instead of an integrated plant. It maintained that given that there would be no continuous product flow between the four processing plants, Imperial did not meet the provision of the Act that requires an industrial systems to have a dedicated output.

Therefore, it submitted that the most the Board should consider to be an industrial process would be the proposed co-generation plant and the Mahkeses facility (in the same location as the co-generation plant) and its surrounding well sites. Enmax and APL also questioned whether the Cold Lake pump station and the brackish water wells should be included in the proposed industrial system.

### **4.3 Views of the Board**

Considering the industrial process linkages and having regard for the definition of an industrial system as stated in the legislation, the Board accepts that Imperial's operations at Cold Lake have a high degree of integration. While the Board acknowledges that the facilities within the Cold Lake operation represent a number of processing plants, the product from the plants are commingled as the combined output from a continuous leased area. The Board also believes the Cold Lake pump station and the brackish water wells are integral part of the operation and should be considered part of the proposed industrial system.

## **5. SUPPLYING POWER TO A THIRD PARTY**

### **5.1 Views of Imperial**

Imperial stated that within its Cold Lake leased area, there are AEC pipelines which deliver diluent to its facilities and transport products away from Cold Lake respectively. The electric power consumption of the pumps associated with these AEC pipelines was estimated to be 4 MW. Imperial stated that the AEC pump facilities have been served by Alberta Power, as an Imperial load, right from the beginning of the project without question. Therefore it submitted that the pump load should be considered as part of the industrial system load.

### **5.2 Views of the Intervenors**

Enmax pointed out that about 4 MW of power produced from the co-generation plant, in the proposed industrial system, would supply the AEC pipeline within Imperial's Cold Lake leased area. Therefore, it suggested that the common ownership requirement to qualify an industry system designation could not be satisfied.

### **5.3 Views of the Board**

The Board recognizes the pump station on the Imperial site is owned by AEC. However, the function of the AEC pipeline on the site is to serve the Cold Lake operation exclusively. Given the circumstances the Board is satisfied that the electric components of the AEC pipeline on Imperial site can be treated as components of Imperial's proposed industrial system.

## **6. TRANSMISSION COSTS REALLOCATION**

### **6.1 Views of Imperial**

Imperial argued that the industrial system designation was designed to ensure that it would not result in undue transfer of costs. It maintained that if an operation meets the provisions of the legislation by definition, there would be no undue transfer of costs.

Imperial pointed out that the industrial system designation policy also stated that industrial systems, which have a contract with an electric distribution system or the Transmission Administrator, must either fulfill or pay out such contracts. Imperial stated that it would fulfill its contracts completely.

Imperial argued that just because some costs would be reallocated, that should not in itself create an issue or be considered bad. It further submitted that re-allocation of those transmission costs would have to be part of the regulatory re-structure.

Imperial acknowledged that should Imperial produce its own electric power, some of the existing transmission lines presently serving Imperial's facilities would be redundant. However, it suggested that those wires would then be used for connecting generation plants into the IES. It submitted that, regarding the deregulated electric industry, the Government of Alberta has accepted the reallocation of transmission costs and determined that new generation plants would have to pay in order to gain access to the IES. Imperial advocated that its position would be no different in this sense.

Eventually Imperial expected that the Transmission Administrator would re-evaluate the transmission tariffs in light of the change in circumstances, and the Generation Pool Access Service (GPA) tariff would be designed to reallocate costs for connecting generation plants into the IES.

## **6.2 Views of the Intervenors**

APL submitted that it was important for the Board to address the issue of the reallocation of transmission costs given that the material filed by Imperial in this regard is oversimplified and incomplete. It further submitted that the appropriate economic signal is not sent if there is an undue reallocation of costs. It contested Imperial's prediction that its proposed co-generation plant would, under all operating conditions, cause a reduction in transmission losses and could unilaterally lower the spot market price of electric energy in Alberta. It also suggested that Imperial's assertion, that granting it an industrial system designation and the application would result in lower pool prices, would not be sufficient to lend support to the unconditional granting of this application without an appropriate review of reallocated costs.

Enmax stated that the Government policy on industrial system designation and the EUA did not explicitly mention "undue cost allocation". However, it noted that the H&EEA was amended to reflect the objectives of giving appropriate economic signals and not to avoid costs associated with the IES. Enmax submitted that it would be difficult to imagine how the Board could assess those objectives without looking at factors such as whether there would be undue cost allocation.

The Consumer Groups submitted that the application should not be approved if it might strand some costs, unless other economic benefits would arise from the proposal.

### **6.3 Views of the Board**

The Board believes that the proposed industrial system designation supports the development of power generation to meet Imperial's requirement of its industrial process at Cold Lake. The Board also agrees that the proposed industrial system designation will facilitate development of new power generation and offer cost effective energy in excess of Imperial's requirement to the IES.

The Board recognizes that in granting any industrial system designations, appropriate economic signals could be given to other integrated applications to develop their own internal supply of electricity. Notwithstanding the benefits, the Board recognizes that as new industrial system designations are implemented it will involve some implied reallocation of transmission costs. The Board expects proponents of industrial systems to absorb the appropriate share of these costs in a re-configuration of the transmission network. As noted in its Decision U97065, the Board anticipates the Transmission Administrator will review the aggregate impact of such systems and provide its findings for the Board to consider at the next general rate review.

## **7. EXEMPTION FROM SECTIONS 12 TO 14 OF THE HYDRO AND ELECTRIC ENERGY ACT**

- Sections 12 and 14 of the H&EEA essentially say that no person shall construct or operate a transmission line unless he is the holder of a permit and a licence issued by the Board. In considering the application for a new transmission facility, the Board shall consider whether the facility is needed.
- In September 1994, the Minister of Alberta Environmental Protection directed application for permits to construction transmission lines, pursuant to section 13 of the H&EEA, not to be referred to him for approval.

### **7.1 Views of Imperial**

Imperial submitted that the transmission facilities in its proposed industrial system should be exempted from sections 12 to 14 of the H&EEA in accordance with section 2.2 of the H&EEA unless there were sound reasons for denial. In its view APL did not give good reasons explaining why Imperial should not be exempted.

### **7.2 Views of the Intervenors**

APL suggested that Imperial put forward little justification, if any, to support the request for the unconditional granting of the exemption under sections 12 to 14 of the H&EEA for the Imperial project. It noted that granting this exemption would accord Imperial different treatment than that was recently provided to Syncrude regarding its industrial system designation application. The exemption would also provide Imperial with an advantage in negotiations, regarding an appropriate bypass tariff, by essentially giving



Imperial the unilateral ability to decide if any tariff proposal is competitive. APL suggested that the regulatory process should not automatically create an incentive for Imperial to expand its facilities if commercial negotiations would not immediately lead to a resolution. It submitted that new developments beyond the existing boundaries should be subject to a separate review before they can proceed. APL further submitted that this would maximize the likelihood that redundant facilities would not be built.

Enmax suggested that Imperial aimed to get a “floating or blanket exemption” for whatever load that Imperial would require up to the limit of the plant or perhaps of the process for as long as the plant would last. It submitted that it would be hard to understand how the Board would grant such an exemption, when that the exemption would allow Imperial to alter the system without Board approval.

IPPSA & SPPA also submitted that the exemption was not intended to give any leverage to industrial system applicants, but intended “purely to make their application that much easier to facilitate”. In their view the exemption should be granted unless there is a serious reason not to give it.

### **7.3 Views of the Board**

The Board accepts that some transmission and distribution elements are required to transmit power from the proposed co-generation plant to Imperial’s facilities at the Cold Lake site. However the Board believes other parties could be affected by Imperial’s transmission line development and such developments should be orderly and avoid undue redundancy.

The Board notes that APL has given evidence that the existing transmission system could support Imperial’s load requirement. Therefore, the Board expects Imperial and all the affected parties to discuss the implications and negotiate available options in good faith for Imperial to use APL’s existing transmission facilities. However in the event the negotiations fail and having regard for the need for and potential public concerns on any new transmission element to be built by Imperial, the Board believes an application pursuant to sections 12 to 14 of H&EEA is appropriate.

## **8. BOUNDARIES AND LEVELS FOR THE INDUSTRIAL SYSTEM**

Imperial would accept the way in which the Board has treated level of supply and boundary condition for the Syncrude and the Amoco projects.

APL in turn requested that the Board should establish physical boundaries and levels of development for the site where the industrial system designation approval would be given.

The Board agrees that definite boundaries should be established when granting an industrial system designation. In that context, the Board would accept the industrial

system designation to apply to the regulated lease boundary of the Cold lake project as approved by the Board from time to time and entail all facilities that are for the exclusive production and disposition of bitumen and other products at that site. In addition, the Cold Lake Pump station will also be considered to be within the industrial system. With respect to levels of supply, the Board does not believe it should limit the electric energy produced from the industrial system so designated to a specific level if it meets all other requirements.

## **9. STANDARD OF CONSTRUCTION AND OPERATION**

APL stated that the applicable standards of construction and operation should be imposed on Imperial's bypass facilities.

The Board notes that existing standards, such as safety standards, regulate construction and operation of high voltage facilities to assure public safety. With respect to standards for the interconnection with the IES, the Board notes that the Transmission Administrator has technical requirements for such interconnections. The Board expects Imperial to comply with the Transmission Administrator's requirement when an interconnection order pursuant to section 17 of the H&EEA is issued to Imperial by the Board.

## **10. SHARING OF TRANSMISSION FACILITIES**

Imperial pointed out that there is a provision in the H&EEA, which provides that the Board can require any owner of transmission facilities to share the use of the facilities with other users. Therefore, Imperial submitted that there would be no need for the Board to reserve the right, as suggested by APL, to review the terms and conditions of the industrial system designation approval if Imperial's bypass facilities would be needed to supply other customers.

The Board notes that section 17(2)(e) of the H&EE provides the Board with the authority to direct Imperial "to share and participate or otherwise combine its interest for the transmission or distribution of electric energy with any other owner of a transmission line system", if it would be in the public interest to do so. The Board also notes that transmission facilities within a designated industrial system are not exempted from section 17 of the H&EEA. Therefore, the Board believes there is no need to condition the Industrial System approval to provide access to those facilities by other potential users.

## **11. EXEMPTIONS FROM PRESENT OR FUTURE TARIFFS**

Imperial submitted that exemptions from present and future tariffs would be an issue for a future tariff applications to be determined by the Transmission Administrator and ratified by the Board. With respect to whether or not it would have to rely on the IES for system

support services, Imperial maintained that since it proposed to install 100% backup capacity on site at Cold Lake, it would not require the IES to provide such services.

APL argued that Imperial provided little evidence to support its claim that it would not rely on the IES for system support services. It suggested that an industrial system designation application should not be the basis for any exemptions from present or future tariffs respecting these services.

The Board believes exemptions conferred on industrial systems means that only electric energy that is generated and consumed by the industrial system is exempt from the EUA. Therefore, the Board concurs that industrial systems are not exempted from present or future applicable tariffs.

With respect to system support services from the IES, the Board expects that the Transmission Administrator, who provide system access services to the Alberta system, to deal with this issue when Imperial applies to interconnect with the system.

## **12. DECISION**

The Board is satisfied that Imperial's proposal meets the requirement as set out in section 2.2 of the H&EEA and believes it would be in the public interest to exempt the electric energy produced from and consumed by the applied industrial system from the operation of the EUA. The Board will grant Imperial's request to designate its power plant, transmission and distribution facilities parts of an industrial system.

Notwithstanding this approval, the Board expects Imperial to apply for any new transmission facilities which are to be included in the industrial system pursuant to section 12 to 14 of the H&EEA.

Dated at Calgary, Alberta on March 4<sup>th</sup> 1999.

## **ALBERTA ENERGY AND UTILITIES BOARD**

F.J. Mink, P.Eng.  
Board Member

G.J. Miller  
Board Member