

ITEM 4  
MANAGER'S REPORT NO. 77  
COUNCIL MEETING 88/12/12

RE: B.C. HYDRO - BURRARD THERMAL GENERATING PLANT, IOCO, B.C.  
AIR EMISSIONS PERMIT VA-330 RENEWAL

MUNICIPAL MANAGER'S RECOMMENDATION:

1. THAT the recommendation of the Director Finance be adopted.

\* \* \* \* \*

TO: MUNICIPAL MANAGER 1988 DECEMBER 07  
FROM: CHIEF PUBLIC HEALTH INSPECTOR  
SUBJECT: B.C. HYDRO - BURRARD THERMAL GENERATING PLANT, IOCO, B.C.  
AIR EMISSIONS PERMIT VA-330 RENEWAL  
PURPOSE: TO INFORM COUNCIL OF THE AIR EMISSIONS PERMIT RENEWAL  
FOR THE BURRARD THERMAL GENERATING PLANT

RECOMMENDATION:

1. THAT Council advise the Greater Vancouver Regional District that our Municipality would have no objections to an Air Emissions Permit renewal for the Burrard Thermal Plant subject to any permit renewal including a curtailment condition of 50 on the air quality index and current authorized stack emissions for nitrogen oxides are reduced by 40% as outlined in this report.

REPORT

1.0 BACKGROUND:

Burrard Thermal Generating Plant opened in 1962 and has operated at various levels and frequencies since that time for the principal purposes of providing:

- a) Emergency and maintenance power generation during transmission outages caused by storms, etc., or the loss of major equipment for maintenance purposes,
- b) A back-up source of electricity to meet normal system demands when additional hydroelectric facilities are required and the completion of these projects is delayed, and

- c) General back-up of the hydroelectric generating resources during low water years.

Although the plant has been in operation since 1962, the related air emissions have only been regulated through a G.V.R.D. Air Emission Permit since 1985. This permit was issued for an initial three year term and is due to expire on 1988 December 31.

122

#### 1.1 Plant Emissions

Burrard Thermal Generating Plant is a natural, gas fired, hydroelectric generating station, thus oxides of nitrogen, primarily as nitric oxide, are the principal contaminants discharged from these sources. The emission of the subject contaminant is one of the factors in the formation of ozone in the ambient air.

An inventory of Lower Mainland emissions for all major sources was completed by G.V.R.D. in 1988. This inventory provides a basis for assessing the relative contribution of the Plant emissions to the Lower Mainland total. From the emission inventory, it was noted that the Burrard Thermal Generating Plant oxides of nitrogen emissions contribute 5.9% of the Lower Mainland total (attachment #1).

#### 2.0 EXISTING AIR EMISSION PERMIT VA-330:

Permit VA-330 issued to B.C. Hydro by the Pollution Control, G.V.R.D. in December, 1985, provides specific emission restrictions from six power boilers and other auxiliary equipment at the Burrard Thermal Generating Plant. Furthermore, it includes plant monitoring requirements, production capacity limits, and supplementary curtailments of the plant's operation during poor ambient air quality conditions.

However, the permit was appealed by various parties. The Provincial Environmental Appeal Board heard the appeals at a public hearing in Port Moody during March, 1986. Acting on direction from Municipal Council, the Environmental Health Division presented concerns regarding emission curtailment during periods of poor air quality. The Appeal Board dismissed all of the appeals but ordered a number of amendments to be made to the permit.

Copies of the subject permit and the Environmental Appeal Boards' Judgements dated 1986, June 25th, are available at the Environmental Health Department.

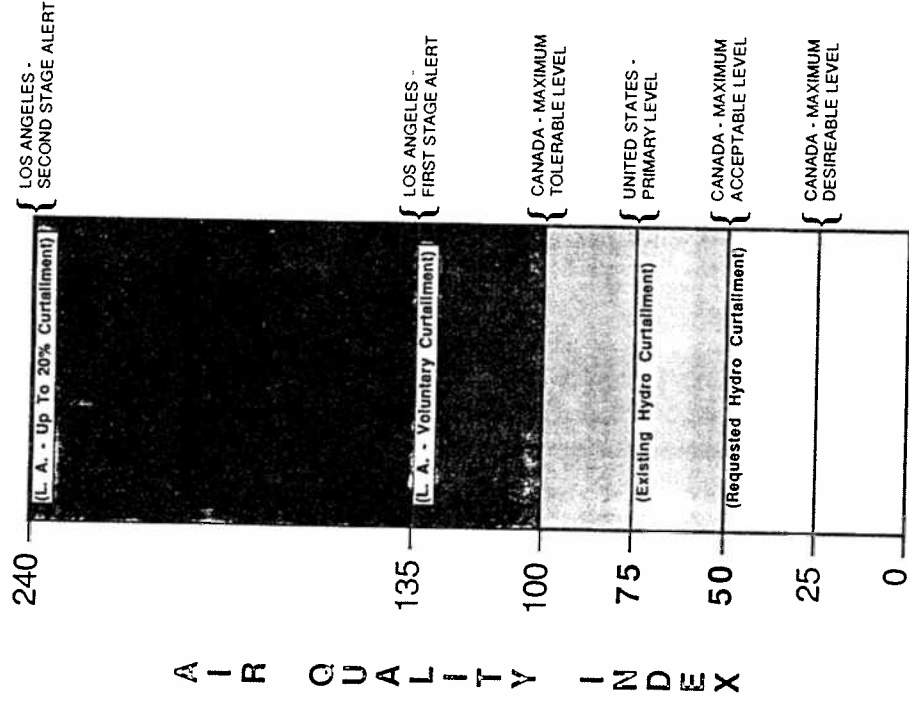
#### 3.0 APPLICANT'S PROPOSED RENEWAL PERMIT AMENDMENTS:

The original Permit Renewal Application submitted by B.C. Hydro requested that the same criteria stated in their existing permit be applied to their renewed permit. However, B.C. Hydro has subsequently submitted a request that their permit now be amended to provide for much more stringent regulation of their facility. Two specific amendments are requested.

### 3.1 Plant Curtailment During Episodes of Poor Air Quality

The first amendment relates to the conditions for curtailment of emissions, with the request that they be based on an index of 50, instead of the present level of 75. A graph which compares the existing and proposed curtailment criteria for B.C. Hydro to that presently existing in California, U.S.A., is indicated below:

#### B.C. HYDRO - CURTAILMENT CRITERIA



It is B.C. Hydro's position that this amendment be in place for a two year period to allow for the proposed G.V.R.D. Air Management Plan to be developed within this time period. Once the plan is developed and implemented, B.C. Hydro requests that the emission restrictions placed on Burrard Thermal Generating Plant be modified to be consistent with other industrial emitters.

This Division is currently participating in the development of G.V.R.D.'s Air Management Plan which is assessing existing program policies and procedures, and implementing new program management criteria to deal with future air quality issues in a growing urban area.

### 3.2 Reduction in Emissions of Nitrogen Oxides

The second amendment relates to the B.C. Hydro's preliminary results of the recent boiler tests which indicate that the stack emissions of nitrogen oxides can be reduced by forty (40) percent using combustion modifications techniques.

B.C. Hydro has accordingly stated to the G.V.R.D. Pollution Control that reductions of this order in stack emission restrictions would now be appropriate in the permit.

The forty (40) percent reduction in nitrogen oxides emissions would reduce the current maximum discharge of nitrogen oxides from each of the six power boilers as follows:

	<u>Current Authorized Level</u>	<u>B.C. Hydro Proposed Amendment Level</u>
By Concentration Values Parts per million	146 p.p.m.	88 p.p.m
By Weight Values Kilogram	3,200 kilogram	1,920 kilogram

124

#### 4.0 POWER GENERATION FOR EXPORT:

For the information of Council, the jurisdiction to regulate the export of electricity from the B.C. Hydro facilities lies with the Provincial Government, through the issuance of an Energy Removal Certificate, and the Federal Government, through the issuance of an Export Licence. The subject Permit VA-330 has no jurisdiction to regulate the export of power.

It is the understanding of this Department at present that currently there are no contracts that obligate B.C. Hydro to export power from Burrard Thermal Generating Plant. Staff will monitor and report on any development with respect to this issue.

#### 5.0 CONCLUSION:

During the 1986 Provincial Environmental Appeal Board Hearing regarding the G.V.R.D. Air Emission Permit for the Burrard Thermal Plant, the Burnaby Environmental Health Division voiced concerns over the curtailment standard of 75 on the air quality index and the permitted levels of discharge for oxides of nitrogen. The B.C. Hydro proposed amendments serve to alleviate our concerns regarding the existing permit requirements.

The Environmental Health Division would have no objections to the issuance of an Air Emissions Permit renewal for the Burrard Thermal Plant providing the curtailment level is reduced to 50 on the air quality index and the emissions of nitrogen oxides are reduced by 40%.

*George J. Harvie*

G.V. Harvie, C.P.H.I.(C)  
CHIEF PUBLIC HEALTH INSPECTOR

DD/GVH/g1

Attachment

cc: Medical Health Officer  
Director Administrative &  
Community Services

ITEM 4  
 MANAGER'S REPORT NO. 77  
 COUNCIL MEETING 88/12/12

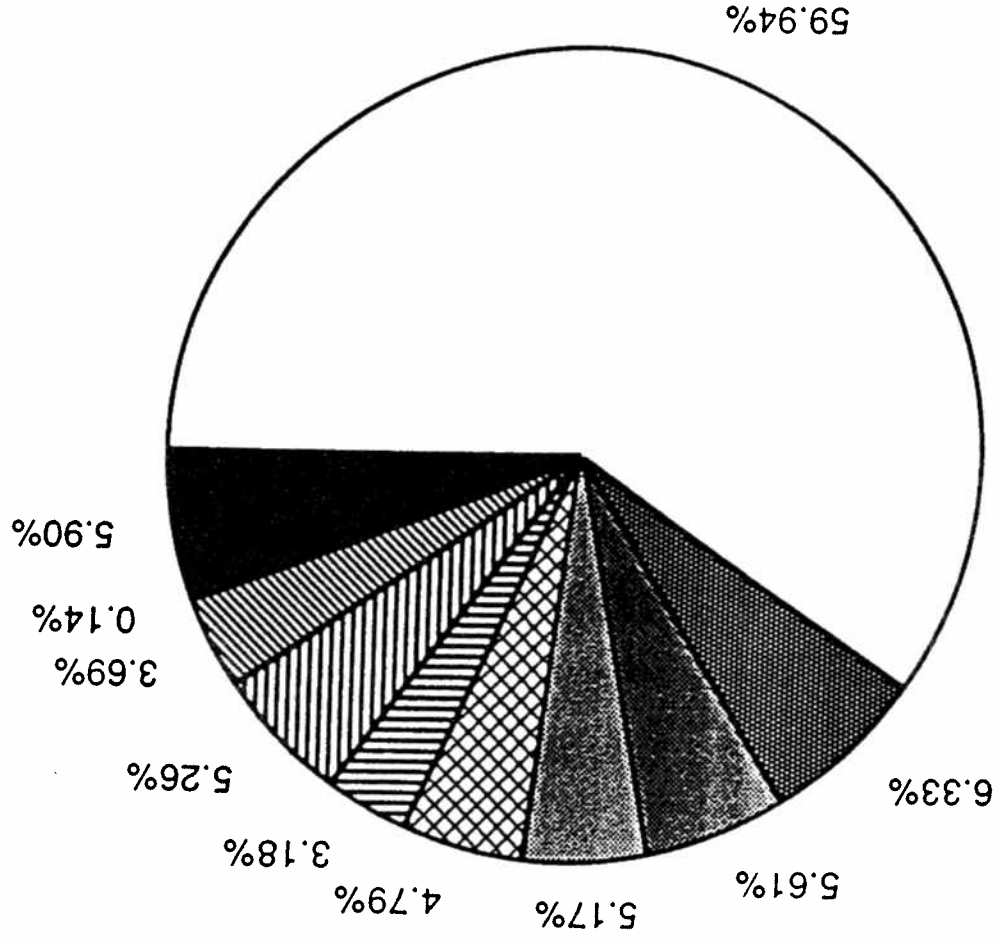
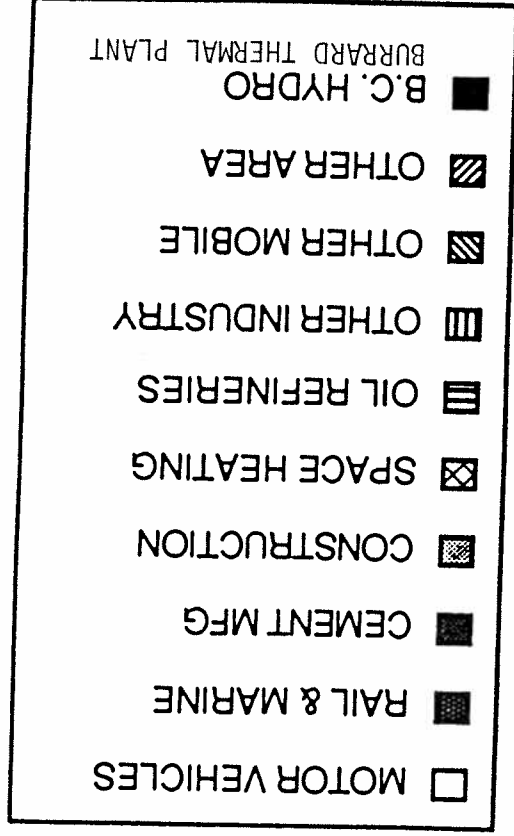


Figure 2 - Sources of Nitrogen Oxides in the Lower Mainland

