

ITEM 7
MANAGER'S REPORT NO. 12
COUNCIL MEETING 86/02/17

RE: GVRD AIR EMISSIONS PERMIT NO. VA330
B.C. HYDRO, BURRARD THERMAL PLANT

MUNICIPAL MANAGER'S RECOMMENDATION:

1. THAT the recommendation of the Chief Public Health Inspector be adopted.

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TO: MUNICIPAL MANAGER 1986 February 11
FROM: CHIEF PUBLIC HEALTH INSPECTOR
RE: G.V.R.D AIR EMISSIONS PERMIT NO. VA330
B.C. HYDRO, BURRARD THERMAL PLANT

RECOMMENDATIONS

1. THAT the City of Port Moody be advised that the Municipality of Burnaby will present a brief in support of the City of Port Moody's appeal to the Provincial Environmental Appeal Board regarding G.V.R.D. Air Emissions Permit No. VA330, B.C. Hydro, Burrard Thermal Plant.
2. THAT the Chief Public Health Inspector be authorized to present a brief to the Provincial Environmental Appeal Board regarding G.V.R.D. Air Emissions Permit No. VA330, B.C. Hydro, Burrard Thermal Plant.
3. THAT a copy of this report be forwarded to the City of Port Moody, P.O. Box 36, Port Moody, B.C., V3H 3E1.

SUMMARY

The City of Port Moody has registered an objection with the Provincial Environmental Appeal Board regarding the G.V.R.D. Air Quality Control Department's issuance of an Air Emission Permit authorizing non-emergency use of the B.C. Hydro, Burrard Thermal Plant. The objection does not relate to the operation of Burrard Thermal Plant for emergency purposes.

The following report details the Environmental Health Division's review of the subject permit and outlines the concerns of potential deterioration of community ambient air quality in North Burnaby, associated with the emission of nitrogen oxides during non-emergency use of the Burrard Thermal Plant.

The report recommends that this municipality present a brief to the Provincial Environmental Appeal Board in support of the City of Port Moody's appeal.

R E P O R TA. CHANGE IN FUNCTION TO B.C. HYDRO BURRARD THERMAL PLANT

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On 1985 December 04, the G.V.R.D Air Pollution Control issued permit No. VA330 authorizing non-emergency use of the B.C. Hydro Burrard Thermal Plant.

According to B.C. Hydro, their reason for changing the function of Burrard Thermal Generating Plant from its present emergency standby mode is to provide a secondary source of surplus energy and power for export.

B. AIR EMISSIONS ASSOCIATED WITH THE NON-EMERGENCY OPERATION OF BURRARD THERMAL PLANT

The change in function and resultant air emissions from the Burrard Thermal Plant, as authorized by the G.V.R.D. Air Emissions Permit, have serious potential concerns to the community ambient air quality in the eastern section of Burrard Inlet.

The air contaminant of concern associated with the proposed non-emergency use of Burrard Thermal Generating Plant is the emission of nitrogen oxides from the plant's power boilers. From data contained in the G.V.R.D. permit and from the University of British Columbia technical consultants to the City of Port Moody, the proposed emission of nitrogen oxides from the Burrard Thermal Plant, operating at 65% maximum daily rate, will be three times the total nitrogen oxides emitted from the four Burrard Inlet oil refineries. The G.V.R.D. Air Emissions Permit authorizes 44% maximum daily rate in 1986 and 1987, and 67% maximum daily rate in 1988.

The major health significance associated with air emissions of nitrogen oxides is the potential down-wind formation of photo-chemical oxidants (ozone).

"Ozone is a pungent-smelling, faintly bluish gas and is the principal component of photochemical smog. It is not emitted directly, but is formed by chemical reactions in the air from two other pollutants, hydrocarbons and nitrogen oxides. Energy from sunlight is needed for these chemical reactions, hence the term 'photochemical' smog. Exposure to high concentrations of ozone can irritate the respiratory system, causing coughing and impaired lung function. Other oxidants that accompany ozone are strong eye irritants."

It is well documented that the eastern section of Burrard Inlet is most affected by poor air quality conditions. Examination of ozone distribution episodes in the Lower Mainland shows that the highest levels and largest numbers of exceedances to the Federal Ambient Air Quality Guidelines occur in the eastern section of Burrard Inlet (North Burnaby, Port Moody, Port Coquitlam).

C. CONCERNS WITH CURTAILMENT REQUIREMENTS AS CONTAINED IN THE AIR EMISSIONS PERMIT FOR THE BURRARD THERMAL PLANT

The G.V.R.D. Air Emissions Permit requires curtailment of emissions from the Burrard Thermal Plant "if unsatisfactory ambient air quality levels are measured at one or more air quality evaluation stations, the District Director may order the permittee to curtail the emissions from designated sources consistent with the need to prevent levels of substances measured at these monitoring stations from reaching or exceeding maximum tolerable levels".

The concern with the curtailment requirement is the ability of the current G.V.R.D. monitoring stations to detail representative air quality monitoring in residential areas of North Burnaby and the use of maximum tolerable level as the stage where the G.V.R.D. Air Quality Director could order curtailment of emissions.

(i) G.V.R.D. Monitoring Stations

The G.V.R.D. Air Quality Monitoring Stations that measure contaminants, including ozone, for this municipality are located at Kensington Park, Confederation Park and Simon Fraser University. The original locations of the air monitoring stations at Kensington and Confederation Parks were for the purposes of monitoring

emissions from Shell and Chevron Refineries. We have been advised by the meteorological experts at the University of British Columbia that, in their opinion, emissions of nitrogen oxides from the Burrard Thermal Plant and the potential for the down-wind formation of oxidants, could likely affect the residential areas of Capitol Hill and Burnaby Mountain.

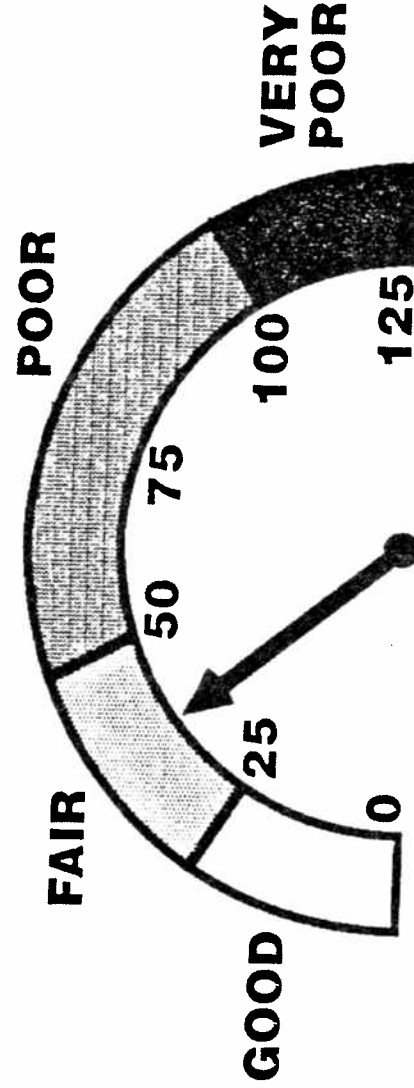
Taking into consideration the magnitude of emissions of nitrogen oxides authorized by the G.V.R.D. permit and the potential for ozone formation, we are concerned as to whether the current G.V.R.D. monitoring stations are adequate in number and location to detail representative ambient air quality in the residential areas of North Burnaby.

(ii) Maximum Tolerable Level

The maximum tolerable level, as defined in the Federal Clean Air Act, "denotes a concentration of an air contaminant that requires abatement without delay to avoid further deterioration to an air quality that endangers the prevailing Canadian lifestyle or, ultimately, to an air quality that poses a substantial risk to public health".

The maximum tolerable level is equal to a value of 100 on the G.V.R.D. Air Quality Index.

Greater Vancouver Air Quality Index



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INDEX VALUE	AIR QUALITY	GENERAL HEALTH EFFECTS	CAUTIONARY STATEMENTS
0 TO 25	GOOD	No measured effects are associated with air quality in this range.	No precautions necessary for the general population.
26 TO 50	FAIR	When index values are in this range, there is adequate protection against effects on the general population.	No precautions necessary for the general population.
51 TO 100	POOR	Short-term exposure may result in irritation or mild aggravation of symptoms in sensitive persons.	Persons with existing heart or respiratory ailments should reduce physical exertion and outdoor activity.
OVER 100	VERY POOR	Significant aggravation of persons with heart and lung disease. Many people in the general population may notice symptoms.	Persons with respiratory and cardiovascular diseases should stay indoors and minimize physical activity.

We are concerned that the G.V.R.D. Air Quality Permit for the Burrard Thermal Plant will not protect the community public health as it allows ambient air quality levels to reach or exceed the maximum tolerable level, or 100 on the G.V.R.D. Air Quality Index, prior to regulatory action being considered.

D. CONCLUSION

The Greater Vancouver Regional District, City of Port Moody and other municipalities in the Lower Mainland and Fraser Valley have notified the Provincial Environmental Appeal Board of their concerns with the G.V.R.D. Air Pollution Control Department's Permit issued on 1985 December 04 to B.C. Hydro, Burrard Thermal Plant. Their objection did not relate to the operation of the Burrard Thermal Plant for emergency purposes.

In order to view how the Municipality of Burnaby is affected by the G.V.R.D. Air Emissions Permit, one has to consider the following points:

- The close proximity of the Burrard Thermal Plant to this Municipality.
- The existing recognized problem with ambient air quality ozone levels in the eastern section of Burrard Inlet, including areas of North Burnaby.
- The significant amount of nitrogen oxides emitted into the atmosphere under conditions of the G.V.R.D. permit for Burrard Thermal Plant.
- The ability of the G.V.R.D. Air Quality Monitoring Stations to adequately state the community ambient air quality levels in residential sections of North Burnaby, such as Capitol Hill and Burnaby Mountain.
- The G.V.R.D. Air Quality Permit requirement for curtailment to be considered when ambient air quality levels, as measured at the G.V.R.D. monitoring stations, reach or exceed the maximum tolerable level.

Taking these factors into consideration, the Environmental Health Division recommends that the Municipality of Burnaby take an active role by presenting a brief, in support of the City of Port Moody's appeal, to the Provincial Environmental Appeal Board regarding G.V.R.D. Air Emissions Permit No. VA330, B.C. Hydro, Burrard Thermal Plant.

The focus of the proposed brief to the Provincial Environmental Appeal Board would be:

1. Request that the Board consider the ability of the existing G.V.R.D. Air Quality Stations to determine levels of air pollution, such as ozone, in the residential areas of Capitol Hill and Burnaby Mountain.
2. State an objection to using "Maximum Tolerable Level" as the indicator of unsatisfactory ambient air quality for considering curtailment of emission from the Burrard Thermal Plant.
3. Ask the Board to consider the quantity of nitrogen oxides authorized to be emitted to an air basin that has been well documented as being affected by poor air quality conditions.

GVH:la

cc: Director Administrative & Community Services
Medical Health Officer

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