ITEM	1
MANAGER'S REPORT NO.	43
COUNCIL MEETING	85/06/17

RE: ENVIRONMENTAL ISSUES CONCERNING THE GREATER VANCOUVER REGIONAL DISTRICT INCINERATION PLANT

Following is a report from the Chief Public Health Inspector on the refuse incinerator that is to be constructed in Burnaby. Council is scheduled to meet with the GVRD to discuss this matter on 1985 June 24.

It would be procedurally appropriate for Council on June 17 to receive the following report and then:

(a) move and second a motion to adopt the Municipal Manager's recommendation;

(b) discuss the report, and when the discussion is concluded;

(c) table the report.

If followed this procedure would result in the matter being brought forward as a tabled item for Council's further consideration at the Council meeting on June 24, after the meeting with the GVRD.

MUNICIPAL MANAGER'S RECOMMENDATION:

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

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TO: MUNICIPAL MANAGER

1985 June 06

FROM: CHIEF PUBLIC HEALTH INSPECTOR

RE: ENVIRONMENTAL ISSUES CONCERNING THE GREATER VANCOUVER REGIONAL DISTRICT INCINERATION PLANT

RECOMMENDATION:

1. THAT this report be received for the information of Council.

SUMMARY:

The following report details G.V.R.D. response to environmental issues raised by the Environmental Health Division concerning the effect the refuse incineration plant will have on ambient air quality and community noise levels. The G.V.R.D. have predicted that emissions from the refuse incineration plant will not affect existing ambient air quality and will comply with existing regulatory requirements. The G.V.R.D. have secured the services of an acoustical consultant to ensure the refuse incineration plant noise emission will not exceed noise bylaw requirements or serve as an annoyance to surrounding residential communities. G.V.R.D. staff are currently establishing a program for ambient air monitoring of the residential communities surrounding the refuse incineration plant. There has been a commitment to have continuous community ambient air monitoring prior to and after startup of the refuse incineration plant.

R E P O R T

A. BACKGROUND

During the 1985 April 29 meeting of Municipal Council, staff were directed to examine further a resolution by Alderman D. Drummond concerning air emissions from the G.V.R.D. incinerator and their staff report on this same subject.

On 1985 May 03, the Environmental Health Division met with the G.V.R.D. staff and discussed in detail our concerns regarding environmental issues associated with the refuse incineration plant.

Correspondence was forwarded to the G.V.R.D. office upon conclusion of the meeting, formally requesting specific information on the outstanding environmental issues. The pertinent sections of the correspondence follows.

"1. Air Dispersion Data

The Environmental Health Division, Corporation of Burnaby, has been directed to advise Municipal Council on the impact that the proposed refuse incineration plant will nave on the municipality's ambient air quality. In addition, Council has questioned the validity of non-site specific dispersion modelling.

The information which the Greater Vancouver Regional District has provided to date, by means of the Battelle Report, has not contained sufficient data in order that we may report back to Municipal Council on this concern.

A report on air dispersion modelling and ambient air concentrations for a proposed incinerator on the North Shore of Vancouver was given to you for your comment. We would appreciate hearing from you as to whether the Greater Vancouver Regional District considers this report valid. Issues addressed in the North Shore report are similar to those on which we require information from you for the proposed Burnaby plant.

2. Community Air Sampling Monitoring Program

The Greater Vancouver Regional District has stated that an air monitoring program, in relation to the operation of the proposed Burnaby refuse incineration plant will take place. In order that we may accurately provide Council with information as to the specifics for the monitoring program, we would request the G.V.R.D. provide this information in writing.

3. Hazardous Waste Entering Refuse Incineration Stream

During our discussion, you explained the operation of the refuse incineration plant in relation to how hazardous materials will be controlled. As in the previous item, in order that we may accurately explain this to Council, we would appreciate receiving in writing the details of the control measures for limiting hazardous wastes in the proposed refuse incineration plant.

4. Refuse Incineration Plant Noise

The information provided by the Regional District to date has not addressed the question of possible increases in community ambient noise levels resulting from the operation of the refuse incineration plant. Without this information, we cannot forward a report covering this issue to Municipal Council."

B. G.V.R.D.'S RESPONSE

On 1985 May 22, correspondence was received from Mr. W. Mechler, Senior Assistant Engineer for the Refuse Incineration Project. The data contained within Mr. Mechler's correspondence addressed the concerned environmental issues as follows:

(i) Air Dispersion Data (Summation of G.V.R.D. response)

The G.V.R.D. reviewed the modelling for the North Shore Refuse and Incineration Plant Study, applied the methodology to their Battelle Report and calculated the prediction of major pollutants from the Burnaby refuse incineration plant. The calculations took into consideration the inclusion of a wet gas scrubbing technology which would result in a lower stack temperature and a possible increase in ground level concentrations of contaminants.

It should be noted that the type of acid gas scrubbing technology, i.e. wet or dry, or quasi-dry, which would be applied to the Burnaby refuse incineration plant has not yet been decided upon.

The results of the G.V.R.D.'s contaminant prediction have been summarized in tabular form and compared with current regulatory limits (see following table).

ITEM 1
MANAGER'S REPORT NO. 43
COUNCIL MEETING 85/06/17

G.V.R.D. PREDICTIONS FOR STACK EMISSIONS FROM BURNABY RIP

AND THEIR EFFECTS ON AMBIENT AIR QUALITY

(Based on Dispersal Model Calculations)

POLLUTANT	PREDICTED RIP STACK EMISSION LEVEL (Micrograms/m^3)	PREDICTED LARGEST 1-HR. AMBIENT AIR QUALITY CONCENTRATION DUE TO INCINERATOR BASED ON BATELLE STUDY (Micrograms/m^3)	EXISTING AMBIENT AIR QUALITY CONCENTRATION LEVEL AT GVRD MONITORING STATIONS NEAR BURNABY RIP (APPROX.) (Micrograms/m^3)	EXISTING REGULATORY AMBIENT AIR CONCENTRATION LIMITS		
				CONCENTRATION (Micrograms/m^3)	AVG/PERIOD	JURISDICTION
Total Particulate	50,000	24	100-130	150/120	24 Hr.	B.C./Fed.
HCL	70,000	34	Zero (B.C. Research)	100	1/2 Hr.	Ont.
HF	5,000	2.4	---	8.6/17.2	1/2 Hr.	Ont. Summer/Winter
SO_2	250,000	120	100	450	1 Hr.	B.C./Fed.
NO_X	300,000	144	800	N/A *	N/A	N/A
HC	300,000	144	---	160	3 Hr.	USEPA
CO	500,000	240	10,000	14,300	1 Hr.	B.C./Fed.
Dioxins/Furans	0.4	0.00019	---	0.00045	1/2 Hr.	Ont.
Lead	100	0.48	2-3	10	1/2-Hr.	Ont.
Cadmium	200	0.096	<0.005	5	1/2 Hr.	Ont.
Zinc	1,000	0.48	<0.5	100	1/2 Hr.	Ont.
Mercury	500	0.24	---	5	1/2 Hr.	Ont.

* Existing ambient standards are expressed as NO_2.
Appropriate limits to be determined during Air Pollution Control Permit application process.

The tabulated data details the G.V.R.D. prediction that during operation of the refuse incineration plant, peak contaminant concentrations for community ambient air will comply with existing regulatory legislation.

It is the opinion of the G.V.R.D. that the relatively low predicted ambient air concentrations, based upon the conservative methodology, are reasonable grounds to consider the modelling conducted to date to be both satisfactory and sufficient.

(ii) Community Air Sampling Monitoring Program (G.V.R.D. response)

"The Regional District is willing to establish two permanent continuously operating monitoring stations located at strategic locations in the South Slope area of Burnaby. However, a few fixed monitoring stations might not give representative results for a relatively large area. In jurisdictions which have established ambient air concentration limits, and where the generator of a new source is required to prove that a change in ambient conditions does not violate these limits (e.g. West Germany), the normal practice is to use mobile monitoring equipment with which repeated measurements are made over a certain period of time at many grid points in a wide area around the source.

In West Germany, regulations specify a grid with monitoring points spaced at 1 km intervals spaced in a circle around the source which extends out to a radius of 30 to 50 times the stack height. For the 60 m stack at the Burnaby RIP, this would be a radius of 3 km. From 13 to 26 measurements per grid point over a period of one year are specified, depending upon prior concentrations and the expected addition from a new source. Monitoring is carried out prior to startup of a facility in order to determine background levels and after establishment of the new source to be able to statistically evaluate for compliance with the allowable ambient limits.

In addition to establishing permanent monitoring stations, the Regional District will arrange for such a mobile monitoring program to be set up around the new source at the Burnaby RIP. We understand that UBC may be capable of providing such a service, and there may be others."

(iii) Hazardous Waste Entering Refuse Incineration Stream (G.V.R.D. response)

"Entry to the Burnaby RIP will not be open to casual deliveries by private or commercial vehicles but will be restricted to authorized vehicles only. These will be municipal vehicles collecting refuse set out in bins and bags from residential neighbourhoods and selected commercial vehicles collecting refuse from containers at apartment blocks and at relatively small commercial establishments. Each vehicle will be issued with a coded, plastic access card which the driver must insert in a card reader at the entrance to gain access to the RIP. The risk of large amounts of "hazardous" wastes being delivered to the plant is greatly minimized by restricting access to accredited haulers.

Small amounts of "hazardous" wastes which are disposed of by householders or by small commercial establishments (such as solvents, paint remnants, pesticides, medications, wood preservatives, acids or alkalines, glues, etc.) cannot be excluded from the waste stream to the RIP, but they do not pose a particular problem. In fact, these rather small amounts of "hazardous" wastes will to a large extent be effectively destroyed by the high temperature of combustion (1100 deg.C) in the grate and above-grate zones of an incinerator, albeit with some small effect on air emissions.

All incinerator operators establish and disseminate an exclusion list of unacceptable wastes which includes larger quantities of hazardous wastes. This will be done at the Burnaby RIP, and an abbreviated version will be posted on a large sign at the entrance to the plant. The crane operators who fill the furnace charging hoppers will be instructed to watch for suspicious containers and would be able to set such items aside.

The municipalities using this facility will be asked to review their garbage bylaws and to ask their collection crews to watch for questionable items, and the operators of container collection services will be asked to instruct their clients on the excluded materials. Containers, overhead-loaded into packers, will be the only avenue for unobserved ingress of any significant amounts of "hazardous" materials, and only education and threat of certain consequences (liability) can be used to minimize this possibility."

(iv) Noise from Plant Operations (G.V.R.D. response)

"Based on personal impressions while visiting RIP's in Europe, some of them located in urban centres near residential dwellings, noise effect on the neighbourhood does not seem to be a particular problem. The Burnaby RIP is being designed to fully comply with your Noise and Sound Abatement Bylaw and Provincial Regulations concerning workplace noise levels. If the operation should fail to meet the specific requirements of your bylaw and other regulations, the contractor would at its own cost have to take additional secondary noise abatement measures such as installation of sound baffles, sound insulation and silencers.

We understand that, apart from assuring plant boundary noise levels are kept below the specified limits, you are concerned about a rise in the general community noise level, especially in the residential areas on the flats northeast of the RIP and on the south slope. We have engaged an acoustical consultant, Barron Associates, to conduct a sound attenuation study which will focus on that latter concern. The critical source in this regard will be the large continuously operating induced draft fans (one to each of the two process lines), which are located out-of-doors between the air pollution control equipment and the chimney stack. Their size may be somewhat affected by the scrubbing and filter system that will be tendered under Contract No. 306. We are obtaining from the contractor a current best estimate of the sound pressure level expected at these fans, and will compare it with available data from two existing plants, as basis for the consultant's study.

In the technical data questionnaires for Contract No. 306, we are asking for data on maximum noise levels emanating from several items of the air pollution equipment, which will be outside the main building in separate housings, especially data on noise from lime injection equipment (high-speed spraydryer or compressed air injection nozzles), pneumatic residue conveying equipment with associated compressor, if used, and occasional rapping noise from electro-static precipitators, if used. When these data are received with the tenders for Contract No. 306 in August, we will ask the acoustical experts to evaluate any additional effect this equipment may have on the community noise level."

C. ENVIRONMENTAL HEALTH DIVISION COMMENTS

The information provided by the G.V.R.D. predicts that the operation of the refuse incineration plant within this Municipality will not affect existing community ambient air quality on the south slope. Peak contaminant concentrations for community ambient air will comply with existing regulatory legislation.

The G.V.R.D. have committed themselves to ensure that the refuse incineration plant noise emission will be in compliance with the Burnaby Noise and Sound Abatement Bylaw and will not serve as an annoyance to the south slope residential community.

The Environmental Health Division will continue its liaison with the G.V.R.D. for establishment of monitoring stations within the south slope community. The air quality data from these monitoring stations will serve to establish existing ambient air quality concentrations prior to the startup of the refuse incineration plant, provide an on-going assessment on the effectiveness of emission controls and forewarn of any public health concerns.

Staff are continuing to collect information from Federal and United States Health and Environmental Protection Agencies on air emissions from refuse incineration plants, their relation to community ambient air quality and public health concerns. Through attendance at educational seminars and environmental health courses, staff are upgrading their knowledge on pollution abatement technology for refuse incineration plants and public health risk assessment.

Further information will be forwarded to Council when appropriate.

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

GVH:la

cc: Director Administrative & Community Services
Director Planning & Building Inspection
Medical Health Officer