

Harmful Pollutants Produced By Heat Plant

By Liz Smith

Eleven thousand gallons of heavy industrial oil is burned a day in peak load periods at the new Central Heating Plant on Montgomery Street.

Three harmful pollutants are produced by the combustion of heavy industrial oils: soot, carbon monoxide and sulphur dioxide. Due to efficient combustion, soot and carbon dioxide are not polluting problems at the plant, but sulphur dioxide is always a product of burning fuels that contain sulphur. Sulphur dioxide removal procedures can be used to extract the sulphur and solidify it. It can then be chemically changed into non-polluting compounds.

There is no treatment program for sulphur dioxide at the Central Heating Plant, although room was left for the necessary equipment in the design of the building.

It has been suggested that the tall smokestack at the plant would lessen the polluting problem on campus. Dr. George Semeluk, UNB chemistry professor, in his report to the Academic Planning and Campus Development Committee of September 1970 entitled, "Minimizing Air Pollution by the New University Central Heating plant" says,

"The tallness of the stacks does not eliminate the problem, and moving the annoyance (and health hazard) from the Campus to the Forest Hill area is questionable morality."

The actual health hazard presented by the plant is difficult to evaluate. Dr. A.D. Broadbent, in an enclosure in Dr. Semeluk's report says,

"Air pollution cannot be rigidly defined in any region because social, industrial, and meteorological factors are constantly changing."

There are no definite figures for the danger level of sulphur dioxide is a mutagen, that is it

causes genetic changes which are generally harmful. These mutations are most apparent in plants.

Mutations have occurred in some of the plants in the greenhouse on the roof of Loring Bailey Hall. Some of the biologists blame this on sulphur dioxide poisoning from the old heating plant on campus, since such mutations had not occurred before.

There is no monitoring system in Fredericton to keep a check on the constituents of the air. In his report Dr. Semeluk says,

"The University should do what it can to sponsor, or cause to be sponsored, a program of monitoring air quality in the Fredericton area...The University should be a leader in efforts to prevent the deterioration which is now occurring and this can only be done effectively if the true situation is known."

The President of UNB, Dr. James Dineen, in an address to the National Symposium on Engineering and Environmental Management in January of this year, expressed similar sentiments to Dr. Demeluk,

"Some trends are becoming clear with regard to the role of Universities in environmental studies. Universities must show a much broader and much more direct concern for social and environmental problems than they have in the past. In fact, the ultimate answer to many environmental management problems may well lie in the hands of educators."

Dr. Semeluk's suggestion for an immediate way to minimize air pollution by the Central Heating Plant is simply to use the fuel with the lowest possible sulphur content. Letters were sent to the three oil companies in the Maritimes asking for an analysis of the sulphur content in their oil. These three com-

panies are: Gulf, Imperial and Irving.

Irving Oil Ltd. refused to reply, even to telephone requests. Dr. Semeluk indicates in his report, however, that the sulphur content in Irving Oil is 2.8 per cent. Gulf Oil estimates their fuel oil to be 2.3 per cent sulphur. Imperial Oil supplies heavy industrial fuel that is 1.8 to 2.0 per cent sulphur.

The University could then give yearly contract to the company supplying oil with the lowest sulphur content.

This procedure would cause the least amount of sulphur dioxide pollution from the plant, and might also encourage the oil companies to develop low sulphur fuel oils more rapidly.

Unfortunately this plan has not been implemented. When tenders were called, only Imperial and Irving submitted. The UNB administration decided to give part of the quota to both these companies to ensure a constant supply of fuel. In the case that one company could not supply sufficient fuel, the other one probably could.

Although from Dr. Semeluk's figures it would seem that Imperial had a lower sulphur content, they apparently can't meet the demand of the heating plant.

Mr. Lloyd Dawson, director of the Physical Plant, says, "In the winter time the companies can hardly keep us supplied."

Imperial is only supplying twenty per cent of the fuel for the plant and Irving supplies the remaining eighty per cent. The fuel oil is then composed of almost 3 per cent sulphur, and a large quantity of sulphur dioxide is escaping into the atmosphere.

In the eastern seaboard of the United States and in large cities like Toronto and Mont-

real the quantity of sulphur is restricted to 1 per cent.

One of the most unfortunate aspects of this problem is

that western Canada produces a "low" sulphur fuel oil, but Canada's oil policy prevents sale of this oil east of the Ottawa.

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