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6 BEFORE THE STATE OF WASHINGTON
7 ENERGY FACILITY SITE EVALUATION COUNCIL

8 In the Matter of)
9 Application No. 99-1)
10 SUMAS ENERGY 2, INC.) EXHIBIT _____ (DAJ-T)
11 SUMAS ENERGY 2 GENERATION)
12 FACILITY)
_____)

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14 WHATCOM COUNTY'S PREFILED TESTIMONY
15 WITNESS # _____ : DANIEL A. JAFFE

16 Q: Please introduce yourself to the Council.

17 A: I am Daniel A. Jaffe. I am a professor at the University of Washington at Bothell. I hold
18 a Doctorate in Chemistry from the University of Washington. In my studies and research I have
19 focused upon the global impacts of environmental pollutants and their long range transport,
20 especially ozone, nitrogen oxides (NOx), CO, sulfur oxides (SO2x), and heavy metals in the
Arctic and Pacific regions. I have attached a copy of my Curriculum Vitae as Exhibit DAJ-1
hereto for the Council's reference.

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22 Q: What are the subjects of your testimony?

23 A: I have reviewed the relevant portions of the following documents regarding the SE2
24 project pertaining to air quality: 1) the Draft Environmental Impact Statement (DEIS); 2) the
25 City of Abbotsford's comments on the DEIS (May 2), and 3) the "pre-file" statements relevant to
air quality which were available on-line as of June 1, 2000. Based on this review, my education,

1 research and experience, there are three key air quality issues which I wish to address
2 surrounding the SE2 plant proposal. First, The possible exceedance of the Canadian particulate
3 "air quality objectives" which may result from the operation of SE2 as proposed. Second, the
4 contributions which the proposed SE2 plant may have upon ozone exceedances. And third, the
5 likely impact from SE2 upon Washington State's total greenhouse gas emissions.

6 Q: What impact, if any, will the planned operation of SE2 have upon the air quality in the
7 Abbotsford and adjacent areas of the plant in relation to particulate matter?

8 A: The data show that for particulate matter less than 10 microns in diameter (PM10) the
9 city of Abbotsford, British Columbia, already exceeds the Canadian air quality objectives. Given
10 that the SE2 will have significant emissions of particulates, especially during oil firing which is
11 more likely during winter, there is the potential to significantly exacerbate this situation. The
12 DEIS states that the worst periods for particulate air pollution in Abbotsford are associated with
13 high winds and wind blown dust. On the other hand, according to the DEIS, the worst
14 contribution of the SE2 emissions to ambient concentrations occurs under low wind conditions.
15 Thus they conclude that it is unlikely that high particulate concentrations from SE2 will occur
16 simultaneously with high ambient concentrations. While this is a plausible statement, there is
17 insufficient evidence presented to show whether it is true or not. There is an alternate, equally
18 plausible, possibility. In other areas of the Pacific northwest, it is common to exceed the
19 particulate standards during winter under stagnant, high pressure conditions. If this is also the
20 cause for the Abbotsford exceedances, then the statement in the DEIS is wrong and the SE2
21 project will significantly contribute to exceedances of the Canadian air quality objectives (see
22 pages 3.1-13 and 3.1-14 in the DEIS).

23 Q: What impact, if any, will SE2 have upon air quality in respect to ozone?

24 A: The data show that Abbotsford already exceeds the Canadian air quality objectives for
25 ozone. Given the significant emissions of NOx from SE2 there is the potential to make this
situation worse. This is because NOx is the key, usually limiting, ingredient in making
photochemical ozone smog. The DEIS largely ignores ozone, but in one of the exhibits (EH-3)
there is a model calculation which estimates the SE2 contribution to local ozone for one case.
These calculation suggests that for the one case considered, the SE2 will contribute to the ozone
exceedance by about 2 ppbv. This is not insignificant and I think worthy of further examination.
The problem with this is that they have not done a worst case scenario, but rather they have only
modeled one case that was convenient for them to run because they already had the data. For
example, quoting from EH-3, the authors state: "The August 05 day is also of interest. If the
meteorological pattern had not changed significantly in the later afternoon with the intrusion of
cooler air and stratus, this day would have qualified as an ozone episode day." [Cenzo and
Pottier, SE2 Exhibit EH-3]. Thus, in my opinion, the DEIS has not demonstrated that the SE2
plant will not have a significant impact on ozone. As a result of this concern, and the fact that
the SE2 plant is proposed for an area which already has problems with ozone (albeit across the

1 border), I believe it is appropriate to require the most stringent NOx standard which is
2 technically feasible.

3 Q: What is the likely impact from SE2 upon Washington state's total greenhouse gas
4 emissions?

5 A: Based on the emissions and fuel consumption for SE2 and EPA data on Washington's
6 greenhouse gas emissions, I calculate that the SE2 will add about 3% to Washington state's total
7 carbon dioxide emissions, once it is fully operational. Given the substantial scientific consensus
8 which has emerged on the role of fossil fuel carbon dioxide emissions on global climate, it would
9 seem to me that it would be appropriate to require, at the very least, a more thorough review of
10 alternatives. I was surprised how little discussion there is in the DEIS on alternative energy
11 sources or energy conservation in view of the potential environmental impacts of the plant.
12 There is little question that most citizens support more environmentally benign sources of power,
13 when that choice is given to them. It therefore seems logical that the Council should act so as to
14 ensure that the most environmentally benign form of energy generation is being used to meet our
15 needs.

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END OF TESTIMONY

I declare under penalty of perjury that the above testimony is true and correct to the best of
my knowledge.

Executed at _____, Washington, on this _____ day of June, 2000.

By: _____
Daniel A. Jaffe, Ph.D.