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(9:08 a.m.)
CHAIRMAN:
Q. Good morning. Trust everybody had a good weekend. Anything before we get started, Ms. Newman?
MS. NEWMAN:
Q. Yes, Mr. Chairman, good morning, Vice-Chair. There was a couple of undertakings on Friday that have been responded to. The first is a letter dated November 3rd, 2004 from Hydro to the Board, and that's a signed copy of that, and we'll call that Information item No. 1.
The second is the cover letter from Government to Hydro covering the certificate of approval, dated February 2nd, 2006, and we'll call that Information item No. 2.
In addition, I understand that there was--I recall that there was some other items that were--questions that were raised but may not qualify entirely as undertakings. In any event, Hydro, through Mr. Young and the witness this morning, are going to address a number of those. So they should be sorted out through testimony. The Consumer Advocate has also filed some authorities. We can, as per

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usual course, call that Information item No. 3. And for your information, there was also a document circulated which is an excerpt from PU-7, is it?
HUTCHINGS, Q.C.:
Q. Yes.
MS. NEWMAN:
Q. Which the Industrial Customers will put to this witness this morning as well. And I don't believe there's any other preliminary items.
CHAIRMAN:
Q. Okay. Good morning, Mr. Young.
MR. YOUNG:
Q. Good morning.
CHAIRMAN:
Q. Would you like to address your other--your issues first, before you introduce the witness?
MR. YOUNG:
Q. No, actually Mr. Chair, what we were proposing to do, what we've come to the practice of doing GRAs and whatnot, when we have some follow-up stuff, we just put them through as evidence of Mr. Haynes, if that's okay?

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CHAIRMAN:
Q. Sure.
MR. YOUNG:
Q. Some of these things are things that just arose from the transcript, things that Mr. Ricketts wasn't particularly familiar with.
CHAIRMAN:
Q. Okay. Would you like to introduce your witness, please?
MR. YOUNG:
Q. Needs not a lot of introduction, Mr. Jim Haynes, vice-president of Regulated Operation with Newfoundland and Labrador Hydro. The title might need some introduction. That's a new title for him. He's available to be sworn.
MR. JAMES HAYNES, SWORN
CHAIRMAN:
Q. Good morning, Mr. Haynes. Good to see you again. When you're ready, Mr. Young.
MR. YOUNG:
Q. Thank you, Chair. Mr. Haynes, pre-filed evidence testimony has been filed in your name. Do you accept that as your testimony in this hearing?

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A. Yes, I do.
Q. Mr. Haynes, as I just mentioned to the Board Chair, there was a couple of issues that came up on Friday with Mr. Ricketts, which we need, I think, to follow up through you and get these bits of information in. The first one, I guess, is a question that was deferred to you. It arises at page 86 in the transcript. I'll read the question that was put to Mr. Ricketts. It says "Mr. Ricketts, there was a suggestion originally that the move to one percent sulphur fuel might perhaps be staged over a period of time. Is that a suggestion that came from within your group?" Mr. Haynes, I wonder if you could explain the circumstances around that proposal and ultimately how Hydro came to its conclusion and its decision of going to one percent sulphur?
A. Yes. We did look at staging. We've been looking at this particular issue for a number of years, I guess. In 2003, we did a fair bit of analytical work based on some work done by Alstrom, did some economic analysis. At that particular time, the differential in one

Page 5

percent, at that particular time, was 2.2 percent we were burning and one percent was in the order of about $6.00 a barrel, and I think the total cost in say 2009 to implement that was in the order of about 20 million dollars a year. So we looked at staging as a means to kind of get there over a period of time.

When we looked at it again in 2004, the prices had changed again, the forecast, and it was in the order of about, I believe, probably around $4.00 a barrel and in the order of about 10 or so million dollars, you know, in 2009. And I guess, you know, we had several meetings with the regulator. We talked about various things, particularly the regulations and trying to meet these particular regulations. I guess, in 2005, the last time we looked at the economic part, the differential was down considerably again, down in the order of $2-3.00 a barrel, and in fact, I think at one time it was between one and two dollars a barrel. And I guess the overall cost to implement that and the rate impact was a lot less and so basically, we said well, we are in violation of the Act, we're not meeting

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it. Rather than stage it in over four years, we'll go and propose one percent. You know, the overall rate impact by doing it that way, the three years difference, was about the same as we would have been over a four-year period previously. So it was more of a--you know, the decision was based on the fact that the cost was a lot less and that based on further testing, further analysis, that we're not compliant, and we're not going to be compliant unless we get there. That's the basis for doing that.

Q. And then the second question arising from the transcript was on page 88. I'll read the question, and this has to do with--a little bit of background, have to do with possible options from an operating point of view to reduce sulphur with different kinds of fuels and different tanks, and the question was "okay, and from a technical point of view,"--it's Mr. Hutchings asking this. "Okay, and from a technical point of view, can the operators designate a particular tank to supply a particular generator at any given time?"

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(9:15 a.m.)

A. No, they can't. The physical infrastructure out there, there's basically one common header from the tank farm to the plant and one day tank and basically the fuel that arrives at the plant is what's ever being channelled from the tank farm. In order to designate, for instance, unit No. 3 to burn one percent, you would have to have another header. You'd have to have another day tank and increased complexity, I guess, with respect to the operation of that. So the physical infrastructure doesn't allow us to do that today.

Q. And just for clarification, the reference to the header, you're talking about a large -

A. I think it's a--I believe it's 16-inch pipe that comes from the tank farm, 12-inch pipe, 12 or 16-inch pipe that comes from the tank farm to the plant. There's only one. If you want to segregate by unit, you would have to have, you know, doubling up of the headers and also the distribution system within the plant.

Q. Just as a follow up to that point, is there any option of changing the fuels from a

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seasonal point of view? For example, changing it from one percent for one part of the year and changing it to two percent for another part of the year? Is that practicable to do that or can you change it within hours or days?

A. You certainly can't change within hours or days. Every time you change the--I mean, if you're--when we buy fuel, we specify, you know, if we were specifying two percent or one percent. You're going to get the supplier to be never above that, because there's penalties for them. You may get it to be, you know, 1.9 if you're expecting two. You might get a .95 or whatever if you're doing one. Those things you don't worry too much about, but when you make a significant change in the fuel sulphur content, you change lots of characteristics, the heating value, ashphaltene content and basically what the fellows at the plant do, they will tweak, fine tune, tune up the boiler if you will, and that takes a bit of time. You have to run through certain load cycles to do all that, and you know, you don't constantly do that. It's an administrative nightmare and

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basically what it would mean is that while we strive to be as efficient as we can, to get a maximum number of kilowatt hours per barrel, every time you change it, you affect that, and you will be constantly chasing those parameters around, re-tweaking if you will, or tuning up your engine, so to speak.

Q. Mr. Hutchings--that's just I think a partial explanation for the next question. On pages 105, 106 and 107, Mr. Hutchings asked Mr. Ricketts a similar question. I'll just read this to you and--it's kind of hard to get this out of the context, but I'll read the whole question. "Just turning over to page 1-2," I think this the Acres report is the reference, "under the heading B, in the second sentence there, a remark is made. This may be in talking--so two levels--to acceptable levels. It says 'this may be achieved by a less costly partial switch in which low sulphur fuel would be used during heavy periods, heavy load periods, and high sulphur fuel during light periods'" and I'm just wondering is the answer you just gave, is it generally addressing that issue?

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A. It's very difficult to do. You have a fuel management issue. Basically when we started ordering one percent sulphur fuel, we segregated the tanks so that we could actually basically burn all the two percent prior to having a fully one percent operation, and it's an administrative thing. I won't say you can't do it seasonally, but the basic issue is that we depend on Holyrood for 466 net megawatts and particularly in the winter season when it's mostly--when it's used most, we expect to be able to dispatch that plant anywhere between--well, in the wintertime, we certainly have 200 megawatts on or 150 megawatts on, but we expect and plan to dispatch that unit anywhere between, based on hydrology, based on if we have issue with a hydro unit, particularly say a 150 megawatt unit such as Bay D'Espoir No. 7. So you know, we plan for its availability at 466 megawatts and to put another constraint in the energy control centre to try to manage around that would be a bit onerous and would be less efficient.

Q. The next question, Mr. Haynes, deals with

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another engineering matter about which Mr. Ricketts, I think, deferred to you. The transcript reference is page 139 and it arose from Mr. Johnson's examining Mr. Ricketts about proprietary fuel additives. The question posed was as follows, and again, the reference is to--it arose out of the Acres report. He said "towards the top of page 62, proprietary fuel additives may provide a reduction in total particulate emissions of about 50 to 60 percent is what they're suggesting. However, the additives may not achieve the required reduction in PM-10 emissions. The question is has there ever been any piloting or testing of these fuel additives at Holyrood to see what they can do for opacity for the people who live around the facility." I'm just wondering, Mr. Haynes, are you aware if Hydro has considered fuel additives to assist in emissions matters?

A. Fuel additives, I'm by no means an expert in fuel additives. There are, I'll venture to say, dozens of different fuel additives. Typically for a hydro plant--I'm sorry, for a thermal plant burning heavy oil, it's usually

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a magnesium oxide derivative. There are a few sometimes things added. There are a half a dozen or more different variations of that. They're all designed basically, I guess, from the vendors to address certain things. We burn mag oxide, very common in the oil industry, basically to prevent slagging on the back end of the boiler--I'm sorry, on the boiler walls, so that we get better heat transfer, more efficiency. We have tried a product called Comate, basically again to attempt to increase efficiency and I guess there has been dialogue with other utilities in Canada and elsewhere with respect to certain trials that they've done on different fuel additives. But basically, they're all to address specific problems. You may fix one problem and create another. You may increase your efficiency, but increase your sooting and vice versa. So we certainly keep up on that. We do have some dialogue and we've done some trials, but basically Comate, Mag oxide, and I believe you go back a number of years, we were burning a different type of mag oxide a long time ago. But well, I should just elaborate a

Page 13

little bit. One of the issues that we did have with mag oxide is vanadium and that's to prevent this vanadium from building up on the back of the boiler and reducing heat transfer. So our focus has been efficiency.

Q. Thank you, Mr. Haynes. This will be my last question. There was some confusion, apparent ambiguity exists in two RFI answers, and probably more than apparent, perhaps it is an ambiguity. The first one I'd refer you to is CA-6, and it's the third paragraph on CA-6. Do you have that, Mr. Haynes?

A. CA-6?

Q. Yes.

A. Yes.

Q. And the third paragraph beginning at line 19, I'll just briefly refer to it. It says "the readings here were inconclusive to you to recording anomalies" and a reference was--that was cross-referenced with PUB-6, if I could refer you to that for a second, please, on page two of three.

A. Okay.

Q. The last sentence of that page, at line 19, says "the quality control process instituted

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at HTGS indicates that the monitoring equipment was performing satisfactorily at the time." I'm just wondering, are these supposed to be referring to the same events and is there something on CA-6 perhaps that ought to be corrected or is there some other explanation?

A. Yes. We double checked that. The lines on CA-6, 19 to 22, specifically refer to lines 9 to 13. That line 23, December 23rd readings is really irrelevant and shouldn't be there, and the section, the lines 14 to 17 which talk about the 970 micrograms per meter cubed and so on, that is correct and those instruments were calibrated properly and were working at that time. I specifically recall that discussion because when we had gone down through, we had this excursion and that question arose. I recall dialogue with the plant manager and environmental fellows at the time. Those were valid results, not calibration testing.

Q. Thank you, Mr. Haynes. Those are my questions. Mr. Haynes is available for cross.

CHAIRMAN:

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Q. Thank you, Mr. Young. Good morning, Mr. Coxworthy.

MR. COXWORTHY:

Q. Thank you, Mr. Chair. Good morning, Mr. Haynes. Mr. Haynes, I just wanted to ask a question of clarification with respect to the last question that Mr. Young asked you regarding CA No. 6. Do you still have that before you?

A. Yes, I do.

Q. And you refer to lines 19 to 23.

A. Yes.

Q. And I just want to clarify in respect of that paragraph. Is that information accurate or not in that paragraph?

A. That information is accurate, but it does not refer to the events of December 2005. It refers to the earlier events where it mentions 1362 on line 12.

Q. So when you say it's accurate then, December 2005 readings referenced in line 23, you're saying that that's a mistake?

A. Yes, it is.

Q. It's not--and so the readings of December 2005 were conclusive?

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A. Yes, they were, as is indicated in PUB-5, I believe.

Q. I believe it was PUB-6.

A. Or PUB-6, sorry.

Q. Mr. Haynes, on Friday, at the end of Mr. Ricketts' questions, the Board had some questions of Mr. Ricketts with respect to of who in Hydro is responsible for overall environmental planning, and Mr. Ricketts, in the course of his answer, described a structure where there were six environmental management systems he referred to within Hydro, one of which I understood to be responsible for Holyrood and the other systems that would be responsible for other operations of Hydro. Would you agree so far?

A. Generally, yes. That's an EMS, environmental management system, compliant with ISO 14001 structure that we've implemented.

Q. So as Mr. Ricketts described it, that was sort of the grass roots and then these types of issues then would move their way up the corporate ladder, and he identified then that some of these issues would become overriding environmental issues.

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A. Yes, they would be significant environmental factors when you go down through and rank all your--there's obviously lots of environmental issues, but basically you go down through and you screen them and you basically, you look for your significant environmental issues.
Q. And the issue that's before the Board here today in terms of the application to go to one percent fuel to reduce the sulphur content and sulphur emissions, is that an overriding environmental issue for Hydro?
A. It's a major environmental issue for Hydro. At the Holyrood plant, the Holyrood plant has its own environmental management system. The plant manager's job with his people is basically to optimize what he's been given. Basically, he doesn't make the decisions on what type of fuel we burn. He doesn't make the decision how many megawatts he's going to generate. That's dictated by others. The energy control centre, for instance, dictate the dispatch for the plant and he has to do the best he can within those parameters. We took the air emissions issue from Holyrood and that was basically made a corporate

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environmental issue. It's a very significant event, a very significant issue, particularly because we're non-compliant, and you know, numerous public complaints and so on.
Q. For how long has it been a significant overriding corporate issue for Hydro, the issue of reducing sulphur emissions?
A. It's been on our radar screen for several years. Lots of dialogue with the regulator and lots of--disputing is a strong word, but I guess, questioning the information that was used in the models and studies. We have invested a lot of money in the last number of years to increase our ambient air monitoring, to collect more data. We've installed another site and so on, and improved the meteorological station. And you know, each time we do the study, there are different results obviously because it looks at, you know, the weather conditions that were prevalent at the time or the last year. This last study we had done by CALPUFF or I'm sorry, Cantox, the report we called it, used more current data, used information from the ambient sites, used information from the

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continuous emissions monitoring system and brings a lot more credibility to the results, and we think that--our view is that basically they are right. We are non-compliant. Not necessarily as bad as we might have thought or some of the studies may have indicated in earlier times when they were making a lot of assumptions under their weather regime and the emissions. We have a lot more credible data now.
(9:30 a.m.)
Q. Mr. Haynes, you've just referred to a Cantox study. Is this the SENES Consultants study -
A. Yes, it is.
Q. - that the -
A. Yes, the CALPUFF modelling. I'm sorry, the Cantox study was a health risk assessment. This is an input into it. I'm sorry.
Q. As Mr. Ricketts described it, and I think as you're describing it, once it becomes an overriding environmental issue, the decision becomes a corporate one. Mr. Ricketts spoke of there being a senior leadership team, an environmental committee of the Board of Directors, executive management, referred to

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those three. Perhaps they're one and the same structures as where the ultimate decision making that is made with respect to an issue like this, moving to one percent sulphur. Is that correct?
A. Yes. There was a study group created in about 2003, of which I was a member, to look at Holyrood. It included environmental people. It included plant people. It included energy control centre people, and it included people from system planning who, you know, who had input particularly on the economic analysis and so on. And we made a presentation to the management committee at that time on probably late 2003. There was no recommendation. It was more of an update, here's the state of where we are. In 2004, the studies were redone. In 2005, we took it to the leadership group and we made a presentation to them, and then from there, to the Board of Directors.
Q. When was that in 2005, that presentation?
A. That would have been in the fall. I don't recall the date exactly, but I suspect it was about November, December.
Q. After the SENES Consultants report came out in

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October 2005?
A. Well, I'm not quite sure of the timing there, but we did do the economic analysis and it was certainly based on the newer forecast price for fuel.
Q. Perhaps we could refer for a moment to the SENES Consultants report, which is IC-1, sub B. Do you have it there before you?
A. Yes, I do.
Q. Are you familiar with that report, Mr. Haynes?
A. I have not read the whole of the report, but I'm pretty familiar with the report.
Q. The information in this report, and this was the most up-to-date modelling which was done for the 2004 year -
A. Yes.
Q. - would that have been information that was available to you and incorporated in your presentation to senior management in the fall of 2005?
A. Aspects of it were, particularly from the point of view of that we're not meeting the environmental requirements of the Province.
Q. There was evidence through Mr. Ricketts, in terms of questioning and answers, which

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demonstrated that some of the modelling predictions were over predictions, based on what your actual monitoring stations were recording. Was that information made known to senior management by you in the fall of 2005 presentation?
A. I can't comment whether they're over predictions. The actual modelling actually pinpoints locations. Our monitoring stations that we have in the field are not necessarily at those exact locations because there's no power available, because they're on private property, we can't get there or whatever. So I would be reluctant to say that they were over estimations. The requirements, I guess, and the protocol in place at the Provincial government, Department of Environment, is based on modelling, you know, and certainly the results do indicate that there are areas that we have exceedance, particularly on sulphur dioxide.
Q. So am I to take it from that, Mr. Haynes, that the information you would have given to senior management in the fall of 2005 was not that the modelling was over predicting, at least in

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some cases, the SO2 emissions?
A. I have not concluded that the model is over predicted.
Q. I understand what you're saying. I'm asking what information did you give to senior management in the fall of 2005?
A. That -
Q. Am I to take it from what you're saying that you did not--perhaps because you don't agree, but that you did not advise senior management that the SENES report indicated over prediction in some--certainly in some cases, based on the available monitoring data?
A. I don't recall if we actually talked about the report per se to senior management. We certainly did say that we were outside the limits prescribed by Government for the concentrations of sulphur dioxide particulate.
Q. As predicted by the modelling?
A. As predicted by the model, which is the system in place by the Government.
Q. I'd like to move on then to talk about the ambient air monitoring system that Hydro currently has in place in Holyrood. It was Mr. Ricketts' evidence, and I believe this is

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at page 28 and 29 of the transcript, that they have--that Hydro has an intricate, and in fact a more intricate grid of monitoring than other utilities in the Atlantic Provinces. Were you aware of that?
A. Yes.
Q. And that the fifth site, the Indian Pond drive site, was set up fairly recently. Mr. Ricketts' evidence was that it was established late 2003, early 2004.
A. That's correct.
Q. Do you know--that's about the time I think you mentioned that you became a member of the study group. Do you know why that fifth station was established and why it was established at that site?
A. Prior to that, we actually installed a temporary monitoring station in the Seal Cove area, basically because we had numerous complaints, particularly around Indian Pond, from the residents that the smell, the smoke, etcetera, etcetera, was a major irritant and a nuisance. The temporary instrumentation that we did install did indicate that there were some excursions and so basically we had

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proposed a capital budget item to the Public Utilities Board to install what we called a mobile site. Mobile is basically it's in a trailer and we can move it around, but it's not something that we'll drag around on a moment's notice. It's more of a you put it here for a few years, maybe later on if things change and there's, you know, an identified need somewhere else, we could relocate it. It was specifically put in that area because there were numerous complaints and we wanted to validate that before we actually tried to take action or to propose that we actually go and spend money, capital or operating, to fix these issues, to give us -

Q. Is it still--I'm sorry, Mr. Haynes. Is it still in that area?

A. Yes, it is.

Q. Is there any current plans to move it from that area?

A. No, not at this point in time.

Q. You mentioned in some of your earlier answers, Mr. Haynes, that one of the problems, as you understand it, with monitoring is it may not be possible or it may be difficult to place

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monitoring stations in all of the areas that the Department might like to see it. But isn't Indian Pond Drive sited at or very near the highest high for SO2 concentrations, as shown by the 2004 modelling?

A. I believe it is, but I'm not absolutely sure. It was partly response to our neighbours' complaints and I know that our plant personnel have gone over in that area when they've complained sometimes and actually, you know, you actually do see it, smell it, etcetera.

Q. So what other highest high points, other than at or near Indian Pond Drive, are you referring to when you say that there would be difficulty in siting stations at those sites?

A. I think some were up in the--I'll say up in the hills or I don't recall the actual name of the hill, but there are some that are somewhat remote. You have to look at the topology, you know, the prevailing winds and so on, and there's no power supply up there and you know, there are no immediate neighbours per se. However, that's not an excuse to pollute obviously.

Q. Are you aware that the SENES Consultants

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report only identified, in terms of the top 50 concentrations, hourly concentrations, the area around Seal Cove that we're talking about here, the Indian Pond Drive, as being a highest high point?

A. I'm not sufficiently familiar with the report.

Q. You referred to other sites that you understand also had high concentrations of SO2. There was the evidence of Mr. Ricketts that some of those areas were in the vicinity of the Lawrence Pond site, not necessarily close by, but in that general area. It was my understanding from Mr. Ricketts' evidence though that those earliest highest highs, earlier highest highs, were in respect of wind data that was input (ted into the modelling, that was found to be less than reliable. Up until the 2004 modelling, the wind data that was being used was from places like the St. John's Airport, Argentia, other areas some removed from Holyrood. The 2004 modelling, which is reported in the SENES report, was the first one that used, as Mr. Ricketts described it, more accurate local weather data, in particular wind direction being more accurate

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and resulted in different results in the 2004 modelling than you'd seen in previous years. Were you aware of that, that the 2004 modelling, in fact, showed different results from previous years?

A. Yes, and I recall looking at, you know, the isoplets or the drawings that actually show the areas of exceeding the regulations and they have changed over time. Some of it due to the wind regime or the weather patterns, and certainly a lot of it, due to better data.

Q. So under this, the more accurate modelling that was done in 2004, using more accurate weather data, are there any other high SO 2 concentration areas that you're aware of, other than the one that's in the vicinity of Indian Pond Drive?

A. I'm reluctant to answer off the cuff. It seems to me that there were a few, but I can't be specific. There were two or three--there are three or four topo maps that come to mind with a couple of red marks in different locations, but -

Q. Perhaps it would be of assistance, Mr. -

A. - but the issue is that we are violating. We

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are outside the regulations, and whether it's one kilometre, two kilometres or whatever, we are in violation of the Act.

Q. Perhaps it would be of assistance to turn to the SENES Consultants report for the Board, IC-1 sub B. And at the same time, if I could ask, do you have PUB No. 6, the RFI response? And the page of PUB No. 6 that I wanted to refer to was page three.

A. Okay.

Q. And you'll see, starting with that, you'll see that that locates us for us the Indian Pond Drive monitoring station?

A. Yes.

Q. And then if I could ask, while still keeping PUB-6 open, if we could turn to page 4-4 of the SENES Consultants report. And at the top of that page, 4-4 of the SENES report, there's a figure 4.2 which shows contours of ISO exceedance of one hour SO2 concentrations, and the discussion with respect to that figure is on the previous pages, pages 4-2, 4-3. And on 4-2, there's a discussion under the heading SO2, "the maximum one-hour concentration of 3,147 micrograms per cubic metre exceeds the

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AQS criteria. Figure 4.1 presents the maximum SO2 one-hour concentration isoplets. Plots for all the contaminants are contained in Appendix B." Then it goes on on the next page to talk about Figure 4.2 presents the hours of exceedance of the one-hour SO2. "At the maximum location, the standard is predicted to be exceeding five times in 2004. Note that the graphic is zoomed in to be able to see the areas of exceedance." So that is what Figure 4.2 is intended to show. Would you agree that the new Indian Pond Drive site is in the very midst of the area of concentration that's shown by Figure 4.2?

A. Yes, it certainly implies that.

Q. If we could stay in the SENES report for a moment and turn to Table 4.6, which is at page 4-7.

A. Table 4.6, yes.

Q. At page 4-7. And you'll recall that earlier I had asked you whether any information had been provided to senior management about the over prediction of SO2 concentrations. Table 4.6 is a comparison of predicted and monitored SO2 concentrations?

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A. Yes.

Q. And you'll see that the predicted high figures, the ones that are predicted to be in exceedance of the 900 microgram standard as set by Government, are at Lawrence Pond, Indian Pond, and Indian Pond Drive, although I do note that there is a footnote to the Indian Pond Drive that the data for Indian Pond Drive has only been available since late 2004. The data for Lawrence Pond and for Indian Pond for predicted, as compared to observed, would you agree that they are over predicting, based on that information, by a factor of four?

A. Well, the observed is obviously lower than the predicted, yes.

Q. And would you agree by a very significant margin?

A. Yes, but I would go back to what's in the introductory comments to this particular report, which basically said that there was a favourable comparison. The CALPUFF model results favoured--compared favourably with the concentrations monitored at the four stations. So I'm -

Q. I recognize that's a general comment made at

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the beginning, but I guess the facts don't lie, I suppose, in terms -

A. No.

Q. - of Table 4.6., and I'd suggest to you that that is a significant over prediction, particularly when you bear in mind that the observed is significantly below the 900 microgram standard.

A. Yeah.

Q. And then if we look at Indian Pond Drive, and I acknowledge the footnote that the information from Indian Pond Drive is relatively new and you don't have as deep a data set, but is there any reason to think that what's happening at Indian Pond Drive is not also an over prediction, even based on early data?

A. I'm really not qualified to say. That would be more of a science question, which I'm not an expert in. But the Indian Pond Drive is much closer to the plant and it's been the source of many residential complaints.

Q. If Indian Pond Drive was also, over time, if the data for Indian Pond Drive was also to show consistent over prediction, and if Indian

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Pond Drive is at or very near the highest high point that's been identified by SENES, would that tell you that the modelling is not providing accurate information with respect to actual SO2 concentrations from Holyrood?

A. The modelling is just that, it's a model. It's a deterministic model whereby you feed in a whole raft of parameters and a lot of it based on weather and emissions, fuel content, and measured stack emissions and it's not a probabilistic model. It's a deterministic one and you can change many parameters to affect the outcome. I mean, there are some indications there which are actually the observed is higher than the model. The model is not perfect.

Q. Let's talk about those for a second. I think you were indicating the Green Acres and Butterpot -

A. Yeah.

Q. - observations. There were some comments by SENES about that. If you want to turn to page 4-8, and they're talking about the two other monitoring stations which, as you've noted, showed under prediction that are not in the

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predominant wind direction. Green Acres and Butterpot show much better agreement of the predicted and monitored concentrations for one hour and 24 averaging periods. So I think they're indicating that although there's under prediction, the under prediction isn't of the same magnitude as the over prediction -

(9:45 a.m.)

A. No, it's not.

Q. - in the other stations. They then go on to say "for all time averaging periods, the predicted concentrations at these stations are less than the observed. If a suitable background concentration was added to these predicted concentrations, the agreement would improve." They then go on in the next paragraph, "on an annual basis, it would be expected that the monitoring concentration should always be higher than the modelled concentrations, as there are other sources that will contribute to the ambient SO2 level." By other sources, would you understand them to mean other sources than Holyrood?

A. Yes, other people's furnaces, for instance, or

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whatever, I would imagine.

Q. So based on this modelling study, the model concentrations are less than the measured SO2 concentrations, which is likely contributable to background. Would you understand they are explaining the under prediction at Green Acres and Butterpot on the basis that it's background SO2 that's leading to the higher observed readings at Green Acres and Butterpot?

A. They're certainly implying that. They say it's likely.

Q. You mentioned in some of your earlier testimony, Mr. Haynes, that over the years, since you've been involved with this study group looking at this issue, that there have been--you didn't want to call them disputes, but discussions with the Department, with the regulator, about this issue, and there wasn't always complete agreement between the Department and Hydro on it. Was one of those issues the question of using this modelling alone to predict SO2 concentrations?

A. Yes, we discussed that in meetings with the regulator. However, I mean, the models are

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well recognized across North America. They're endorsed by the EPA of the U.S. Department of Environment and they're used in many jurisdictions, and it's not an uncommon method to regulate based on modelling. It's very common.

Q. Do you know, Mr. Haynes, whether in other jurisdictions where they're using this CALPUFF modelling, whether they have the same over prediction issues that appear to be the case here?

A. I don't--I do not know.

Q. If I could ask the Board and Mr. Haynes, if we could turn to CA-18, which is a Guidance Document. CA-18, I'm sorry, sub A, which is a Guidance Document issued by the Department of Environment and Conservation.

A. Yes.

Q. Entitled "the determination of compliance with the ambient air quality standards." You'll see that there's a second revision, September 20th, 2005. To your understanding, is this Guidance Document still applicable to the Holyrood operation?

A. That's my understanding, yes.

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Q. If I could ask you then to turn to paragraphs 9, 10 and 11 of that document? That's at page 10 of that Guidance Document.
A. Yes.
Q. Mr. Haynes, you've indicated in your evidence that it's your understanding that the Holyrood emissions are non-compliant with the regulator?
A. Yes.
Q. And if one looks at paragraph nine, "if non-compliance is determined, a facility may elect to enter into a compliance agreement with the Department for the purposes of," and there are two options, maybe not mutually exclusive, but nonetheless, two options, "attaining compliance within a reasonable time frame; or establishing a compliance ambient monitoring network at locations of maximum predicted non-compliance." When did Hydro first become aware that it was non-compliant with the regulator?
A. I can't answer specifically, but I believe in all the previous testing as well, there were areas of--there were times of non-compliance. There were questions on the data quality.

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There were questions on the weather regime they were using, because, you know, St. John's and Gander is a little bit remote from Holyrood. And there were also questions on the actual stack effluent itself, which has been complemented by the continuous emissions monitoring system to give them more realistic data.
Q. With respect to SO2 emissions, when did Hydro become aware that it was non-compliant?
A. A few years ago. I don't know the date specifically.
Q. Okay, was there some -
A. But this particular document -
Q. - some notice issued by the Department, by the regulator some years ago with respect to non-compliance?
A. No, I don't know if there was actually a formal notice, but this particular document was actually -
Q. The Guidance Document?
A. The Guidance Document was actually, the issue date 2001, 2004 was I guess when there was a lot of attention paid to that by us, when it was actually brought into force.

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Q. I'm sorry, when the Guidance Document was brought into force?
A. When the guidance--there was some changes made.
Q. Sure.
A. And I don't recall specifically the changes, but certainly when these changes were made, it made us much more accountable and this was it, so to speak.
Q. Do you recall what the nature of those changes were?
A. I don't recall offhand. I think part of it was the change in the model to the CALPUFF model instead of whatever we used before, was part of it. And basically the modelling was going to be the basis of the regulation.
Q. Going back then to paragraph 9A, whenever non-compliance was determined, did Hydro elect to enter into or negotiate a compliance agreement with the Department?
A. Certainly we started. There were discussions on a compliance agreement, along concurrently with the certificate of approval, and -
Q. This is the certificate of approval that was issued in February of 2006?

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A. Yes, but concurrently with that, there was discussions on a compliance agreement with respect to air emissions specifically.
Q. So when would those discussions with respect to a compliance agreement, when would they have commenced?
A. They would have commenced over a year ago, we probably started that. A long time getting the, you know, certificate of approval and the compliance agreement, and we never did execute a compliance agreement.
Q. Is there a draft or was there ever a draft compliance agreement?
A. There were several drafts back and forth, yes, between the parties.
Q. With respect to SO2?
A. Well, the compliance agreement in general, there was a document there, but emissions was the key.
Q. Including SO2 emissions?
A. I believe it was specifically stated, yes, SO2, and we--you know, they expect a plan, how we're going to get to compliance, and what we're doing right now doesn't assure us of compliance. The calculations actually imply

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that we need .6 percent sulphur to be compliant, and we haven't proposed that.
Q. Has a compliance agreement been entered into with the Department?
A. No.
Q. So they haven't agreed to one percent sulphur reduction being the solution?
A. No, they haven't, but we think we have a--we think that by going to one percent sulphur and doing our best in the plant with respect to, you know, watching the situation and maybe curtailing load occasionally, when we have to, if we can, if there are other generation available, we have a pretty good crack of getting it. But at the end of the day, give us, you know, a year or two burning one percent sulphur fuel and we're still non-compliant, obviously we'll have to address the issue again.
Q. In the course of those discussions which you've told us, Mr. Haynes, went on over a year, did the Department give any indication to Hydro of what they considered, the Department, a reasonable time frame to bring yourself within compliance?

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A. I don't think so. Certainly the Director, you know, basically there's a fairly black and white interpretation at times with the regulators. You're not in compliance, fix it. We didn't get into a discussion on whether it was going to be a two-year, three-year, five-year time frame to bring us into compliance.
Q. So the discussions never progressed to that point?
A. I don't think we got that far, no.
Q. With reference then, if I could ask you, Mr. Haynes, to look to paragraph 9B. This seems to be an alternative, at least as I read this, route of entering into a compliance agreement, and that's for the establishment of a compliance ambient monitoring network which, again as I would read this, would then allow you for at least two years, to obtain monitoring data based on that network and then reevaluate whether there's compliance, based on that data.
A. Um-hm.
Q. Have there been any discussions, negotiations with the Department regarding establishing a compliance ambient monitoring network?

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A. But we already have an ambient monitoring network, which we've had in place in various forms since 1994/95. So we have quite a bit of data already accumulated and with the added information, I guess, from the continuous emissions monitoring, a better utilization of the local weather. We don't think there's anything to be gained by that. We already have a tremendous amount of data, all of which or most of which is incorporated in the studies.
Q. But Mr. Haynes, we know from Mr. Ricketts' evidence that all of the modelling for 2004 was based on weather data which was not considered to be as accurate as the weather data which is now being used or was used for the first time for the 2004 modelling. And we also know that all of the previous modelling, including the 2004, doesn't include the results for Indian Pond Drive, which the 2004 modelling has shown to be the highest high point for concentration. Isn't there reason to think that, in fact, the data prior to 2004 may not have been particularly accurate and, in fact, it's on a go-forward basis that we

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should be looking at the modelling data to determine whether there's compliance?
A. Based on the 2004 data and some of the monitoring that we have done, we had been non-compliant. So -
Q. According to the modelling.
A. And according to December 2005, where there were three or four incidents which we clarified this morning between--I forget the questions, between the PUB questions and the CA's questions, where we have had recorded events of non-compliance.
Q. Those December 2005, seeing as you bring them up, which station recorded those December 2005 events?
A. I don't know offhand.
Q. Was there an investigation of what were the conditions at the Holyrood plant? Was there any explanation in terms of any particular activities occurring at the plant at that time that might have explained the high emissions in December 2005?
A. No, I don't think so. I think it was business as usual. What was done was to make sure that the instruments were not--were calibrated

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properly and they were functioning properly. So it was real data as opposed to, you know, testing or some local condition. We've had--you know, we've had several--I mean, there's anecdotal information, but you know, because of complaints, because you know, the smog on the ground or whatever, but you know, we don't have--there was no--my recollection, there was no particular "upset" in the plant that would have caused that. It was basically a combination of the weather and the loading at the time, both of which are very important factors in the ground level concentrations.

Q. The loading, was it a heavy loading period, when the 2005 events occurred?

A. December typically is. We're usually up on load at that particular time, during the day. I can't say offhand whether we were going flat out at that particular time, but in December to March, we would often be up on full load, if you will, at the plant.

Q. And what was the weather condition, as you understand it, that contributed to the December 2005 event?

A. That I don't know.

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Q. Is it your understanding that there was some weather condition that contributed to it?

A. I would assume that if the--if you look at all the individual hours that we monitor and we had three events there in one day, I guess--or in one small short period, that it was a combination of weather and load and maybe there was no wind. Maybe it just went up and dropped down. Those are all the factors that go into the model, which are a little bit--it's a best guess, I guess, best information you have.

Q. But would I be correct in saying that since 1992, which is when I understand the four original monitoring sites were established, these three exceedance events in December 2005 are the only confirmed observed exceedances that have been measured by any of the five stations?

A. I believe that's correct.

Q. To go back then to question 9 or paragraph 9B in the Guidance Document and the establishment of a compliance ambient monitoring network, is it your understanding that your five stations now comprise a compliance ambient monitoring

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network?

A. Yes, they would. They were all put in to measure our compliance with the regulations.

Q. Why wouldn't you then elect, under 9B, to allow for two years of further monitoring, now that you have that fifth station at Indian Pond Drive, which doesn't have a very deep data set, to determine whether with that additional modelling and observations over the next two years, using a more accurate model, using more accurate weather data as you're now doing for the first time or first did for 2004, why wouldn't you elect, for the next two years, to determine by monitoring whether in fact you may be able to show that you are in compliance?

A. We don't think it's the prudent thing to do. We have had lots of complaints. Some of that's anecdotal. We've had three or four actual measurements that actually did confirm that we were non-compliant. If we had three or four under our operating regime, which you know, it depends on the load of the plant, I mean, basically this plant could be called upon for full generation for an extended

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period of time, and if we have three in the current operating regime, as we--you know, if we call on that plant more, there may be dozens. We don't know that. I doubt very much it will ever be less. I can only see an increase over the time.

Q. That's very speculative though to say there may be dozens if there's only been three in the last 13-14 years?

A. The regulations do not give us the ability to forget even one violation. The regulations are clear. It's basically says there's no allowance in the Provincial regulations that we can have three, four or five events over two, one to a five-year time frame. It basically says you're in violation of the Act and regulations.

(10:00 a.m.)

Q. But the Department's notice to you, we've seen it February 2006, that you are non-compliant, is that based on the three exceedances that you're talking about in December 2005?

A. I would expect that's based on the actual modelling because that's what the Department relies on, the modelling information.

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Q. If I could ask you, Mr. Haynes, to turn to paragraph 11 in the Guidance Documents. It's on the same page, page 10.
A. Yes.
Q. And one of the things that were mentioned, one of the issues that was mentioned by Mr. Ricketts, and I think it's been alluded to by yourself as well, is that it's not always practical to have your compliance ambient monitoring station at the very spot of the predicted non-compliance. Paragraph 11 though does appear to allow for negotiation with the Department to arrive at agreement that, look, you know, we can't put a station on the very spot, but we can put one here close by, like Indian Pond Drive, for instance. And using then the data from that, pro rate observed rates against the compliance, against, I'm sorry, the modelling rates to arrive at a determination of whether there's compliance. Have there been discussions or negotiations with the Department about establishing a compliance agreement along the lines of paragraph 11?
A. Not that I'm aware of. It may have happened

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through Environment department, but I'm not aware that we've had any ongoing discussion with them on that. I mean, the locations that we have now are not the ideal locations and I presume that's already considered in the modelling.
Q. You've mentioned that, but again, what location are you not currently measuring at or near to that is a high SO2 concentration area?
A. I don't recall offhand.
Q. If we could turn to the certificate of approval that was issued in February of 2006.
CHAIRMAN:
Q. Excuse me, Mr. Coxworthy. Before you go down that road, I'd like to take five minutes, please, if I could.
MR. COXWORTHY:
Q. Thank you, Mr. Chair.
(BREAK - 10:02 A.M.)
(RESUME - 10:09 A.M.)
(10:09 a.m.)
CHAIRMAN:
Q. I apologize, Mr. Coxworthy, Mr. Haynes, for interruption. When you're ready, please?
MR. COXWORTHY:

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Q. Thank you, Mr. Chair. Mr. Haynes, I was about to move onto the Certificate of Approval, but before we move on from the questions I was putting to you which was suggesting, I was suggesting that perhaps it might be a good idea to look at future data as opposed to past data from the point of view of modelling. And a further question I'd like to put to you along those, in reference to that issue is what are the projections for loading on the Holyrood plant in the coming years give that Stephenville mill is now off line?
A. From an energy point of view there will be, I'll say, approximately 500 gigawatt hours less. From a demand point of view, for instance, in the middle of winter or whatever the case was we'll still be operating up at full load on occasion, maybe a little less frequently, but that can happen at any time. But, you know, it's basically the--you know, we had planned Holyrood for about three terawatt hours of energy. We've certainly got some relief with Abitibi Stephenville closed in the sense that, you know, basically what we'll do is we'll maximize hydraulic resources

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and basically Holyrood fills in the gap, but we do run it occasion as well, I guess, depending on the overall loading situation where water is, if we have too much water, too little water. It can vary, the hydrology part can vary up to 900 gigawatt hours a year and all the shortfall is made up from Holyrood.
Q. But, it is anticipated that with Stephenville off-line there will be fewer heavy load or maximum load circumstances that there would have been if Stephenville were still on-line?
A. Yes, overall. But, there will be many days when we will be operating the plant at full load, at full load.
Q. Has there been any projection at all about how many fewer days of heavy load you will have due to Stephenville being off-line?
A. Basically what I see and what I look at is basically just the total energy, and I don't recall the numbers. There's an energy--there is less energy expected from Holyrood and it will usually shorten the window--or sorry, widen the window in the summer when the plant is maybe totally shut down. In December we look at our, you know, peak operating months,

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so basically November to March and try to make--trying to ensure that all generation is available for that period of time.
Q. Does it stand to reason that there will be less fuel burned at Holyrood -
A. Yes, there will.
Q. - with Stephenville off-line?
A. Yes, there will.
Q. Has there been any projection of that over the coming years?
A. Yes, there has, but I can't recall the number offhand. It's basically, say, 500 gigawatt hours divided by 600 or 630 or so.
Q. By order of magnitude can you give us any sort of indication of how much less fuel?
A. 800,000 barrels, I think.
Q. Has that been part of your discussion with government in terms of how you can minimize your environmental impact on the environment, have you discussed with them the fact that, look, here is something that granted wasn't anything we did, but nonetheless, it's a development that is going to result in our having to burn less fuel?
A. It'll burn less fuel over the year, but it

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won't necessarily diminish point emissions if we're running at full load, you know. And, you know, if you go back to the air quality standards and look at one hour and three hour, eight hour, 24 hour and you know, if I recall in the three hour I think we were about 70 hours a year that we'll be in violation of the Act. So, it's, I don't think that materially changes the need to go to one percent sulphur fuel.
Q. Mr. Ricketts suggested that the only way that we would know for certain what the impact of, for instance, taking Stephenville off is to do the modelling over the coming years and obtain the observations for the monitoring sites over the coming years and see what those are?
A. Yes, that is a factor, as is hydrology a factor.
Q. If we could turn now to the Certificate of Approval? And this is the one that was issued February 2, 2006. Sorry, I haven't noted for the Board what the exhibit number is. Perhaps Ms. Newman could assist me with
MS. NEWMAN:
Q. It's attached to the evidence and it's at my

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Tab 3, the back of that package.
MR. COXWORTHY:
Q. Thank you, Ms. Newman. Do you have a copy of the Certificate of Approval there?
A. Yes, I do.
Q. If I could ask you, Mr. Haynes, to turn to page 17 of 20?
MS. NEWMAN:
Q. Before you move on, just to make sure everybody has it, it's the pre-filed evidence of Mr. Haynes, it's attachments to that.
(10:15 a.m.)
MR. COXWORTHY:
Q. Thank you. And at page 17 of 20 I wanted to turn to paragraph 76. And the Certificate which has now been issued and which applies to Holyrood says that Hydro shall be required to complete stack emissions testing once every four years if it has been show via the registered dispersion model that the station is in compliance. If it has been show via the registered dispersion model that the thermal generation station is not in compliance--and is it your understanding that that's the situation now?

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A. That's my understanding, yes.
Q. Then the thermal generation station shall complete stack emissions testing every two years. Is there any other consequence under the Certificate of Approval of your not being in compliance other than the requirement for stack emissions being more frequent, going from four to two years?
A. We've been doing stack emission testing for two-year intervals for quite a period of time now and that's the primary one. If we were compliant, they'd come back and do, I guess, a reality check, if you will, every four years. But, this is an input, basically or to validate some of the input data in the CALPUFF modelling. It actually measures the in situ gases which we do now with the CEM system, as well, if I might add.
Q. Did you have a Certificate of Approval with respect to this particular facility before the February, 2006 one that was issued?
A. I don't think we had to have a Certificate of Approval. I'm going out on a limb here, I don't think we actually had a Certificate of Approval before because it wasn't required.

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That's a new requirement.
Q. Certainly the evidence that's been filed to date would suggest that this would appear to be the first one that was issued for various reasons. But, my question to you again is under the Certificate of Approval the Holyrood station's first, or generation plant's first Certificate of Approval, is there any consequence to being in noncompliance other than having to go from four years to two years for stack emissions, is there any other expressed consequence in the Certificate?
A. You know, there are lots of other emissions besides SO2. There is a provision in the Act to fine us for opacity violations which we've monitored and we know that we are in violation of opacity. And there are other things that the minister can do at any point in time with respect to action against us. And I guess if they were really to exercise a big stick, if you will, they can basically fine us or take us to court based on the current emissions. The modelling does not support the fact that we are complaint.
Q. Have they, in fact, indicated they're going to

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take any of those big stick approaches?
A. They haven't said that, no, but they haven't said they're not.
Q. If I could ask you, Mr. Haynes, I think this has been entered in as information letter No. 2 this morning, to turn to the February 2nd, 2006 letter of the department to Hydro, which was the covering letter to the Certificate of Approval?
A. Yes.
Q. Had there been anything received from the department prior to this February 2nd, 2006 letter received by Hydro that indicated that the department considered the Holyrood plant to be non-compliant or its emissions to be non-compliant?
A. There was another letter, but I'm not sure of the date. I think it was a little bit after that one. I think that was the initial one that came with the Certificate, other than discussions in meetings and so no, which there have been many on this particular item.
Q. Were you party to these meetings?
A. Some of the meetings, not all of the meetings.
Q. With department officials?

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A. Yes. We met with the deputy minister and with the director on two or three occasions. There was, you know, frank--and the environment department basically took the lead on, and the legal department, on the actual Certificate of Approval and so on. There was many exchanges.
Q. The third paragraph of that February 2nd, 2006 letter, Mr. Haynes, I had a few questions about some of the statements that are made by the department in that letter. The first sentence is they are indicating that they have found you to be non-compliant with respect to ambient air concentrations of sulphur dioxide, particulate matter and nitrogen oxide, oxides in areas outside of the station property line?
A. Yes.
Q. Then goes on to say, "Furthermore, this department cannot issue a compliance agreement if Hydro remains unwilling to acknowledge non-compliance." Was Hydro denying its non-compliance as of February 2nd, 2006?
A. Were we denying that we were non-compliant? We would not sign a piece of paper saying that we were non-compliant if there was a

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possibility of, you know, further court action and so on. That was basically a legal issue whereby we basically were not prepared to actually--we didn't think that we needed to admit that we were non-compliant on paper, signed, seals and delivered, to actually enter into an compliance agreement. They would not agree to that and we wouldn't admit that we were non-compliant. But, we realized we had areas of non-compliance. It was unnecessary to seal our fate that way, as far as we're concerned.
Q. But, help me understand this, Mr. Haynes. You filed, Hydro has filed, I should say, I'm sorry, in January this year an application which I understand is based on the rationale for bringing the application and seeking approval for one percent fuel that you are non-complaint?
A. That we are determined non-compliant by the regulator, yes. The regulator has determined us to be non-compliant.
Q. But, you're not prepared to acknowledge that?
A. Not in a legal document, no. We weren't prepared to do it with respect to the

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Compliance Agreement.
Q. Is that the only obstacle to entering in a compliance agreement with the department, that you're not prepared to acknowledge what you yourself have acknowledged is the modelling result which you say is the result that you have to live with because government has imposed this modelling result?
A. I don't know if I saw the actual last draft of the Compliance Agreement, but there are many things in the Compliance Agreement that were there, things as being exceeding regulations. They wanted the plan to be fully compliant and not only to be fully compliant to be, exceed the regulations. And, you know, we weren't--there were several things which caused us some concern, but the biggest one was, you know, that we did not want to actually sign in a formal document with the regulator that we were non-compliant. But, there were other issues, and I don't recall them all, but exceeding compliance was one of the things they wanted in that document which we had some trouble with.
Q. Were there other issues--the other issues you

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mentioned that were obstacles to signing a non-compliance agreement, were they in respect of SO2 emissions?
A. I think they were just emissions in general. There are particulate issues and there are SO2, nitrous oxide issues, although they're very small. Particulate and SO2 were the primary ones.
Q. Are negotiations ongoing with the department about entering into a compliance agreement that you may be able to accept?
A. Not at this time. There's been no negotiations on the Compliance Agreement for some time now.
Q. Is it anticipated that there will be future negotiations?
A. I'm not sure. If--we think that by going to one percent sulphur fuel and we do the monitoring that we will be compliant, so if that buys it with the department, they may come back tomorrow and demand that, I'm not sure. That's--we're not actively seeking to sign a compliance agreement at this point in time.
Q. But, if you do get approval to go to one

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percent, at least based on this letter and what you're telling me, we don't know and you can't say that the department will accept that you're compliant?
A. No, they may not.
Q. By that move?
A. They may not. I mean, their modelling says we have to be .6 percent sulphur to be compliant. We're suggesting that if we go to one percent sulphur, that we can make major inroads and maybe even make it with more modelling in the intervening period.
Q. Have you in the course of your discussions with Hydro proposed to them either concurrently with a one percent reduction in sulphur fuel or otherwise your proceeding on to paragraph 9(b) of the Guidance Document, which we were referring to before, allowing for a period of time, a further two years of monitoring and then using that data to prorate the model information with the observation information?
A. I don't recall any level of discussion on that. It may have happened between the environment department and the government, I'm

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not sure.
Q. Do you know if that's part of this draft compliance agreement, is there any -
A. I don't recall offhand.
Q. Would there be any objection by Hydro to moving to that sort of regime?
A. Can you just repeat, can you just -
Q. Referring again, and perhaps we need to go back to it, to the Guidance Document, paragraphs 9(a) and paragraph 11, which you'll recall talks about the ability of using a compliance monitoring network and taking the data from that network for a period of two years and then prorating that data against the modelling results so that if you have, for instance, the type of over-prediction events that we saw in the SENES Report there's an ability to go back to the department and say, yes, the model predicts this, but it should be prorated based on our observations. Have there been any discussions with Hydro, I'm sorry, with the department about entering into a compliance agreement along those lines?
A. With two percent or one percent fuel?
Q. With either.

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A. Either. I don't think there have been any major discussions, no. But, I mean, from a point of view of, I guess we've gone based on their modelling, 70 percent of the distance to what they deem to be, what the modelling indicates would make us fully compliant with the SO2 side. We've gone 70 percent of the way. And I don't think we have any objection at all to agreeing that we would want to monitor that for two years and then we see where we go. You know, what we're trying to avoid is a major capital investment of 150, 200 million dollars to clean it up as it would be done if it was a new plant.

Q. So, you say Hydro would have no objection. Has Hydro actually proposed that to the department as a basis for a compliance agreement, to use a compliance ambient air monitoring network?

A. I don't think we have, no.

Q. Why not?

A. Because we believe that between the evidence that we have, between the modelling, that we are non-compliant and that we need to make progress towards being compliant.

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Q. But, you've just said to us, Mr. Haynes, you are prepared to acknowledged, the department-- you're prepared to say here in this room that you're non-compliant -

A. Yes, I'm prepared to say it here, yes.

Q. - but you're not prepared to acknowledge it to the department. I'm having difficulty reconciling -

A. The department has determined us to be non-compliant. We have proposed to go 70 percent the distance to what they think would make us compliant, which would be .6 percent. We propose to go to one percent sulphur fuel. You know, another couple of years of monitoring and maybe we will be compliant, hopefully we will. But, to actually sign a document was a legal advice that we would not actually commit that in writing that particular way with the department, with the regulator.

Q. If I could ask you, Mr. Haynes, to turn to, the document is at CA-5, the RFI results, and it's the February 6th, I believe, 2006 letter from the department that actually deems you to be, deems Hydro to be in non-compliance?

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A. Yes.

Q. It's page 2 of 2, CA-5. And if I could refer you then to the bottom of the last paragraph. I'm sorry, and I said it was February 6, it's February 9, 2006. And the last paragraph reads, "The department is willing to continue discussing options for reducing emissions and compliance agreements to allow time for Hydro to implement mitigative measures." Has there been any discussion between Hydro and the department as to how much time Hydro might be given -

A. I don't recall a discussion -

Q. - to bring in mitigative measures?

A. I don't recall that. We met with them, we presented our approach. Their initial comment was, a good start. Definitely, we didn't get embraced, if you will, that this was the right thing to do. It was basically the comment was it was a good start, definitely not enough, in their mind. That's what I specifically recall when we actually tabled the plan to actually move down to a lower sulphur fuel.

Q. Have they withdrawn this invitation by this last paragraph they are willing to continue to

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discuss options for reducing emissions and compliance agreements, have they -

A. No, I don't -

Q. - said to you they don't want to talk any more?

A. I don't think so. I'm sure they're willing to talk. But, we presented the one percent sulphur fuel plan and basically it was a good start was the comment that sticks in my mind.

Q. Mr. Haynes, if we could turn, I think this document was entered in as Information No. 1 this morning, Mr. Chair, to a letter dated November 3, 2004? This is a--perhaps a moment could be taken to provide a copy to Mr. Haynes.

MR. HAYES:

Q. Excuse me, I don't believe we have a copy of that.

MS. NEWMAN:

Q. That's a letter from Newfoundland and Labrador Hydro, November 3rd, 2004 to the Board.

MR. COXWORTHY:

Q. It was circulated late on Friday, but -

A. Oh, it was circulated on Friday?

Q. After we'd adjourned.

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A. I have it now.
Q. Mr. Haynes, are you familiar with this letter?
A. Yes.
Q. And it's actually referred to, I would note for the record, in paragraph 3 of Hydro's application here before the Board. Were you involved in this information being provided to the Board in November, 2004?
(10:30 a.m.)
A. Yes, I was.
Q. I would like to go to this letter and identifies certain issues and I guess identifies where we are today as compared to where you were in November 3rd, 2004. Was this an attempt, and I guess I'm referring to the last sentence on the first page, to map out to the PUB where you thought you were going to be over the coming year term, in terms of environmental issues?
A. This was a year or so after we actually done the first review of changing the sulphur content at Holyrood. In our initial, when we did--you asked about, before about staging, or Geoff did, we looked at going from 2.2 and then moving down over time. Part 1 of the

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plan was to go from 2.2 to 2, but that got superseded by the regulation, the government evoked that, so year one was taken care of, if you will. So, you know, but we had been studying the moving to a lower sulphur fuel to alleviate these concerns and that was why that was, just a heads up, if you will. We were looking.
Q. Hasn't Hydro's compliance picture improved since this letter was issued in November, 2004?
A. It has a bit, yes, in the modelling. The modelling does indicate less areas, but we're still non-compliant.
Q. I understand. But, having improved, why isn't the staged reduction in sulphur fuel still being considered, as was being considered at this time as indicated by this letter, as an option?
A. One of the factors was the differential price. Back in 2003, the first time we looked at it, there was about a $20 million price tag to move to one percent sulphur fuel and it's now down to a much lesser amount. That was a consideration. And also I think that the

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regulations, the interpretation document that the government are now using has more force. I can't recall the base, but it seems to me it's now fully implemented that particular, the Guidance Document on the application of model is now entrenched more than it was before, but I don't recall the mechanics.
Q. But, we've been through that Guidance Document. What about that Guidance Document makes it more difficult to implement a staged reduction in fuel than was the case in November of 2004?
A. I'm sorry?
Q. What in that Guidance Document is more, has placed a more stringent requirement on Hydro with respect to emissions than was the case in November, 2004 when you wrote this letter to the PUB?
A. I'm not sure it was more stringent. I guess the modelling has given us some--the improved modelling and improved data has eliminated some questions that we had a chance to be compliant. We don't think we do. That based on the modelling there now and the most recent information, the CEM data, the meteorological

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data more suitable to Holyrood that we are still non-compliant. So, we've accepted a bit more that we are non-compliant. But, we haven't gone to .6, we have only taken a 70 percent step to that.
Q. If we could turn to page 3 of 7 of this letter November 2004 to the Board? And one of the steps that you outline to the Board is at the top of page 3 of 7 that you are taking in terms of addressing environmental issues is expanding your monitoring capabilities to provide real data with respect to determining actual ground level concentration for various substances and to determine the level of compliance to regulatory limits. Do you still believe that this is the way Hydro should be going to demonstrate compliance or to assist in demonstrating compliance to establish its monitoring capabilities, expand them if necessary?
A. Well, we have done that, we've expanded them, we've improved the instruments gone down to PM 2.5 as opposed to just total suspended particulates which is the breathable one which people are very concerned about and which the

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regulations are concerned about. And you know, the PM 2.5, I guess we've been tagged as being the fifth largest polluter in Canada for that, and we certainly don't need to be there.

Q. If you were just going to rely on modelling results, though, why do you need to expand your monitoring stations?

A. We were trying to validate the model, we were trying to validate the overall modelling in the sense of having better data to go in there. Certainly measuring the actuals on the ground whether we are really compliant was an argument with the department and we had been, you know, three or four times been non-compliant. But -

Q. In December of 2005?

A. Yes.

Q. Has the monitoring validated the modelling, even the more accurate 2004 modelling that was done by SENES Consultant?

A. That I'm really not competent to say whether it has or hasn't. I mean, I can only go by the comments in the SENES report up front that says they were. They were, I forget the words, but they were not condemning of any of

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that, they were complimentary, actually.

Q. But, in terms -

A. But, there were differences, I admit.

Q. Do you accept that the modelling results are more accurate than the observation results for the sites at Indian Pond and Lawrence Pond and Indian Pond Drive?

A. No, I don't accept that. I mean, the actual in situ measurement, as long as the instruments are calibrated and appropriate, is the acid test, but I'd say that one metre above ground level, which is where the regulation is, those are the actual numbers.

Q. So, to the extent that the modelling is over predicting at those sites, do you accept that the modelling has been validated by the observations?

A. Well, the modelling has been, in some areas, I guess the modelling is close, in other areas it's off a bit. I think the other thing not to--the other thing to keep in mind is that if we were to run that plant, you know, three units, 24 hours a day at full load, I think we'd have a different picture. But, that is the way we need the flexibility to run that

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plant. But, the hydraulic conditions, the availability of other hydro generation affect that. We minimize the use of that plant in sofar as possible. But, at any point in time if we were to lose, you know, number 7 at Bay d'Espoir or Upper Salmon, another major Hydro plant, we may be called upon to run it on the pins for an extended period, in which case I would suggest that the modelling would have a different output, the modelling would look different, more non-compliance.

Q. If we could turn, Mr. Haynes, to page 5, still in this November, 2004 letter to the Board, under the heading "Federal, Provincial Regulatory Environment"?

A. Yes.

Q. And I'd also like to refer at the same time to PUB-14, the response to that request for information. In November, 2004 were you indicating to the Board that you would be looking to reduce allowable levels to one percent if the Federal Government established a new regulatory limit for sulphur content?

A. That was part of the framework, yes. They had initiated this paper in, I believe, 2003

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saying that, you know, I forget what they call it, but it was out there for comment by the industry, that they were looking at setting a Canadian standard of moving to one percent by 2009, I believe. And, you know, we did look at--that was an input, that was consideration.l

Q. In fact, looking at page 5 and looking at the first paragraph under the heading, "Federal, Provincial Regulatory Environment", in November 2004 what was stated was, "Given the uncertainty surrounding the reduction in sulphur content and the timing, Hydro does not currently propose taking any further action other than what is required in 2005 to meet the current provincial regulatory limits for sulphur content." Have the current provincial regulatory limits for sulphur content changed since November, 2004?

A. No. No, they haven't, not for the what we can purchase.

Q. And is it your understanding that the Federal Government has taken any further steps towards a one percent regulatory standard for sulphur?

A. No. I had a look at that again the weekend

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and the only things that they seem to have pursued thus far has been diesel fuel sulphur. They seem to have left the heavy fuel oil alone to this point in time.

Q. And, in fact, the response to PUB-14 would indicate that the Federal Government hasn't taken any action since 2003 to push forward that file?

A. Not as yet, no, only diesel, it appears they pushed diesel.

Q. What has happened since November, 2004 when you appeared to be fairly confident that with your monitoring that you were putting in place that at most you might have to look at doing stage reduction over time, what has happened in just a little over a year to cause that plan, as outlined to the Board, to change?

A. One of the things that we did with the additional monitoring stations, additional data, credible data is put the CALPUFF model, it's validated some of this. We had our doubts based, I guess, on the modelling that, you know, it certainly wasn't as bad as the initial study showed. It's improved, but it's not perfect. We're still outside the

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regulations. But, it has -

Q. Based on the modelling?

A. Based on the modelling, but it has improved. But, we do have some events where we are--we have exceeded. And the modelling, as I mentioned a little while ago, you know, we've focused here this morning along the one-hour rating. If you go back to the ambient air quality regulations or guidelines, whatever, they also have a three-hour thing. And for the three-hour number, the model indicates that we'd be about 70 hours a year non-compliant based on that, so -

Q. Has there been any observed observation of non-compliance with the three hour?

A. Yes. I'm sorry. I can't answer that. I don't know offhand.

Q. Well, the only ones that we know about, correct me if I'm wrong, in terms of observed non-compliance events were what you've told us this morning?

A. Yes, at a one hour.

Q. The December, 2005?

A. That's correct.

Q. And they were one hour?

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A. I believe they are one hour.

Q. Mr. Haynes, if we could turn to the SGE Acres Report dated February, 2004? It's attached to the application.

A. I'm sorry, I have it now. My apologies.

Q. And I want to turn to the introduction section. You've already spoken to this in some of the questions that Mr. Young answered at the outset of today's hearing. But, he didn't put to you, I don't believe anyway, the particular provisions or particular statements that were made in this report. And in the introduction section, if you look at the bottom of the first page, it talks about SGE Acres having looked at two basic approaches to determine the cost effectiveness and impact of the most likely emission control options. And now on the next page they identify the two basic approaches they took. One of them was continuation of the current fuel type and then various types of engineering solutions, if I can call them that, to reduce emissions. And then option B or approach B was switch to low sulphur fuels. And in the introduction they talk about switching to low sulphur fuel would

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permit SO2 levels to be reduced to acceptable levels. "This may be achieved by a less costly partial switch in which low sulphur fuel would be used during heavy load periods and high sulphur fuel during light periods." There's no treatment of a switch to partial, a partial switch to low sulphur fuel in the report itself. This statement sort of stands in isolation in the introduction, but it doesn't appear, to my reading of it, and this question was put to Mr. Ricketts and he wasn't able to explain why there wasn't. Now, you've given to the Board today in your evidence some reasons why you believe a partial switch wouldn't be practical. Why isn't that treatment, do you know why it isn't in the SGE Acres Report?

A. It wasn't pursued as being a viable option from our perspective in the sense that the infrastructure doesn't support it. You'd be constantly re-tuning, re-tweaking boilers and so on. It was--I don't recall any heavy discussion of whether we should pursue all that. The other one is just an administrative one that basically our peak times are

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basically, you know, March to December when most of our fuel is burned. There will be small benefits by actually doing that on the shoulder seasons. There would be some, but it would be pretty low.

Q. Oh, I understand that that's Hydro's view. I guess what I'm asking, though, is Hydro having retained this consultant to advise you on this issue appeared to be expressing a different view in this introduction. Do you know why this issue wasn't pursued by SGE Acres in this report, why there's no treatment that follows up on that introductory statement in the report?

(10:45 a.m.)

A. I don't recall offhand why it wasn't pursued by us or by Acres from that particular point of view. The mechanics of doing it, the infrastructure is not there, for one, the complexity of changing, re-tweaking, re-tuning boilers, but in hindsight a discussion would have been helpful.

Q. Well, it certainly would have saved you having to tell us this morning the reasons why it would be an issue.

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A. I agree.

Q. Or a problem. What happened earlier this year when you switched from two percent to one percent, was there any disruption in production at Holyrood?

A. No, I don't think there was any disruption. We actually switched over, I believe, in March sometime and they went back and they re-tweaked, re-tuned the boilers. And the biggest significant thing was the market reduction, obviously, in the SO2 and I believe the particulate, as well.

Q. So, was there any loss in efficiency at Holyrood as a result of that switch-over from two percent to one percent earlier this year?

A. I suspect there would have been in theory but that would only be speculation on my part. They would have to go into the details of the, how long it took them to re-tune and to -

Q. You're not actually aware of there having been any loss of efficiency?

A. Not of significance because it was done and it was redone and it was switched, they were re-tuned and the, you know, the adjustments made in the settings, if you will.

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Q. If there had been a significant loss of efficiency or some upset in the generating station operation as a result of that switch, would you have been made aware of that?

A. I probably would have, but there was lots of other things on the go at the plant at the particular time. You know, we're not running, we weren't running very efficiently anyway because we had a lot of water on the go at a certain period of time, so, you know, I would not have seen a drop in the kilowatt hours per barrel being, you know, pegged on this particular event there, there were so many other factors. Particularly, we were running at low loads for extended periods and the efficiency was down below 600 most of the time, anyway, kilowatt hours per barrel.

Q. PUB-1, I believe, indicates that the first contract to purchase one percent was negotiated in January of this year?

A. It was ordered in by January, yes.

Q. When was the decision taken by Hydro to go to PUB--to one percent?

A. It was late, late in 2005 we actually made that decision. It was approved by the Board

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of Directors to do that.

Q. At that time had there been a decision taken to apply to the PUB, as well, for approval?

A. Certainly that was a part of it, we were going to apply to the Public Utilities Board for approval. But, we did make a decision to move ahead.

Q. Were you aware at that time of how long it might take before you could actually take delivery of one percent fuel?

A. I we had several discussion, not me, personally. There were discussions with the supplier, our contractor, Westport, on when we could get one percent fuel and when we did decide to go one percent fuel, they had one available and actually delivered it early.

Q. When did the process start at Holyrood to prepare for switching over from one percent--from two percent, I'm sorry, to one percent?

A. I think the switch was in March, I believe, when we actually consumed the remaining two percent and then we switched over to one percent. When we took delivery of the one percent, we put it in basically an empty or a near empty tank and then when the, you know,

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we would just stage it in so we could burn off or utilize all the two percent so we could have a clean switch to one percent and then re-tune everything and go forward from there.

Q. So, I think it goes without saying, but I'll say it anyway, the four tanks you have out there, the storage tanks, there would have been a period of time when some of them had two percent -

A. Yes.

Q. -sulphur fuel and some of them would have had one percent?

A. Yes.

Q. You wouldn't have mixing within a tank, I presume that that's--or would you?

A. There would always be a little bit of residual fuel in the bottom of the tank when you take delivery, you know, two or three feet or one foot or whatever the case was, but basically the pipe, the tank is filled and it's isolated and the tanks are not all connected all the one time. There's only one tank supplying fuel at a time, you know. And we would just walk down through the tank farm, if you will, to successively use the two percent, take

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delivery of one percent when the two percent was all gone or 98 percent of it or whatever the number is, then we would switch to one percent.

Q. And I think you've mentioned, and I've certainly seen it in the evidence, there's one day tank in addition to those four storage tanks, I'll call them?

A. That's correct.

Q. And they would draw, that day tank would draw down on one of the storage tanks?

A. Typically, yes, unless you were switching over because the other tank was empty or whatever.

Q. And when it's called a day tank, does it actually hold the fuel for a typical day, if one cal talk about a typical day or is it not -

A. I have no idea of the volume. I'm not sure.

Q. You don't know what kind of through-put -

A. It allows time for switching and doing things up in the switch-yard if you have a problem and so on, but whether it can actually do a full day's production at I think 19,000 barrels, I'm not sure.

Q. I just wonder what kind of through-put you

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have through that day tank, you know, is it an hour or two, it's refilling at that sort of frequency? You don't have any idea?

A. I don't remember. I used to know when I worked out there, but I really don't.

Q. So, we shouldn't take day tank too literally, then?

A. No, not too literally. But, it might be a day to allow at least a shift, I would suspect, so they can do work up in the switch-yard and not be hampered by having to shut down the plant because we can't get fuel to the thing if we have to do emergency work in the switch-yard, which occasionally happens.

MR. YOUNG:

Q. Mr. Coxworthy, if this is important, we can probably get an undertaking to provide the information.

MR. COXWORTHY:

Q. I think we'll see where this goes. You mentioned in terms of the impracticalities or difficulty in having, switching back and forth from one percent to two percent that the infrastructure there, at least as it stands now, wouldn't allow for it or at least

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wouldn't allow for it without loss of efficiency. There wasn't any loss of efficiency that you are aware of in the switch in the switch from one percent to two percent earlier this year. So, what types of loss of efficiency are you concerned about if, say, in September one was to switch back from one percent to two percent?

A. I wasn't made aware of any loss in efficiency in the switch this year. There would have been a theoretical loss. I don't know if anybody actually calculated how long or how long it took to re-tune and readjust the settings. But, typically when you readjust the settings on the boiler, you're running up and down through, say, 50 to 150 megawatts just to make sure you can fire at both extremes, if you will, and still meet, and still be efficient and meet, you know, the boiler demands or the system demands.

Q. Is this theoretical loss of efficiency the only impediment to at least on a seasonal basis switching back and forth form one sulphur mix to another?

A. That and probably generally fuel management,

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just trying to make sure that you have one tank or two tanks or some, what is the right split between one percent and two percent to have up there, if that was a solution. But, the other thing to keep in mind is that in any particular point in time if that plant is--if all units are available at Holyrood, whether it's June or January 1st, that if we have other disruptions on the system, they can be called upon to generate at full load. That is, if the units are available, then basically the energy control centre can call upon that plant to fire up the works and run full load. If, for instance, we lose the transmission to the east coast or we lose major hydraulic generation, you know, the energy control centre is trying to manage the whole and the more restrictions, the more difficult it is.

Q. If we could turn to PUB-8, which is the April 12th, 2004, I call it internal Hydro report, but the internal Hydro report on air emission control assessment? And I want to turn to page 16. And at page 16 if you look at the, I guess, the third paragraph, the one that starts, "The Hydro working group considered

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current legislation", etcetera. In that paragraph there's reference to the SGE Acres report. I was wondering, though, the report that's dated, the date given for the report there is December, 2003. The version of the report we've seen is dated February, 2004. Have you seen any earlier or other version of the SGE Acres report? And I guess I'm thinking about this issue of the partial switch, whether there's any other version of the report that may deal with that in some more detail or any detail as compared to the February, 2004?

A. I don't recall anything in the--I mean, I've read the draft report earlier on, but I don't recall any discussion on the partial switch.

Q. If we could turn to page 24, then, in the same internal report of Hydro? Quite apart from your concerns about it, whether it would meet your regulatory requirements or not, is there any practical impediment to Hydro proceeding by way of a staged reduction in the sulphur content of its fuel as identified as the recommendation at page 24 of this report?

A. No, there's no major practical thing other

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than the fact that based on the modelling and so on that we won't be compliant until we had--well, the modelling says we need to go to .6. We think we have a chance of doing it at one percent, so that's -

Q. Didn't the modelling show that you might have needed to go to .6 or for that matter even more because, of course, the modelling was showing worst results before 2004 and previous years?

A. I don't recall the--I don't recall the numbers at that particular time.

Q. Doesn't it stand to reason that if improved modelling suggests that you need to go to .6, improved modelling results, that if the modelling results were worse in previous years, certainly it must have called for, as you're explaining it, as much of a reduction, even in those previous years?

A. It may have, it may have been more onerous than .6, I don't know.

Q. That's right, or more onerous, absolutely, that's my point. So, given that, why then in April of 2004 was it thought to be sufficient to go by way of a staged reduction regime as

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shown on page 24 of this internal Hydro report?

A. I can't be specific but my recollection is that has a lot to do with the Compliance Agreement, the interpretation document that the Provincial Government had there, that there was--but, I can't be specific as to what changed.

Q. Okay. But, let's be clear, there's no compliance agreement?

A. No, I'm sorry, the interpretation document. The determination and compliance with the Guidance Document.

Q. The Guidance Document, I think--okay. Where in the Guidance Document, which has been in place for many years, it's been revised over time, as you pointed out, what in the Guidance Document has placed a more stringent requirement on Hydro that makes it inappropriate for you to take the staged approach to sulphur reduction?

A. It's my recollection, and I would try to confirm that through lunch or whatever, that this particular document was not in full force or we were not aware that it was the defacto

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document that the government were going to use to regulate it. My understanding forward was that it was a document that was there for guidance, but it never had the same force. Now, that's something that I'll have to check.

Q. I understand that. And assuming that's to be the case, what in that document, then, has imposed more stringent requirements on Hydro than was the case in April, 2004? I'm not questioning your assumption that it may not have been in full effect earlier in 2004, but what--now that it is in full effect, what in that document has imposed a more stringent requirement that doesn't make it possible for you to proceed by way of staged reduction of sulphur fuel?

A. I'm not sure offhand. I can't point to the specific thing that has changed or that would help me help you here. Without going down through and reading the previous documents I can't answer your question. I'm sorry.

Q. If we could turn, moving on from there, to IC-4, RFI IC-4? And at IC-4, Mr. Haynes, if you have it there before you, that's a calculation of the estimated rate increases for Hydro's

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customers which would arise from going to one percent sulphur. Also, the other options are outlined there, as well, 1.75, 1.5, 1.25, all the way down to .5 percent. These calculations, do you know if these take into account the fact that Stephenville mill is no longer a part of the IC load, the Industrial Customers' load?

(11:00 a.m.)

A. These were responses to questions, they should include Stephenville impact, yes.

Q. Do you know whether they do or not, though?

A. Not specifically, but I can get that answer.

Q. Could we, yes. Thank you. In response to some earlier questioning you've indicated that one of the reasons why Hydro felt it appropriate to go to one percent now as opposed to how it felt in November, 2004, for instance, is that the cost, the incremental cost of going from two percent to one percent had reduced in the intervening years?

A. Yes.

Q. There's no guarantee, of course, that that'll continue to be the case in future years, is it?

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A. No.

Q. No. So, we do have very recently in time, within the last two years, a fairly dramatic reduction in the incremental cost?

A. The forecasters that we used, P.I.R.A., certainly forecasted that down. In December the price was very high basically in relation to Hurricane Katrina, we're told and understand. We were also told that they would drop significantly and they have.

Q. But, this is a snapshot in time and for all we know six months from now the spread between two percent and one percent may go up again?

A. It's a forecast.

Q. And certainly over longer periods of time we just can't say? There's no law that says it's going to continue to reduce or a principle of the market?

A. No. That's correct.

Q. So, we know for now it appears that the picture has improved, but that won't necessarily stay the case. However, even with that, if one looks at the difference between one percent in incremental costs and what it would be for your customers at 1.5 is a very

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significant difference in that cost. Did you take that into account when deciding whether to go to one percent as opposed to 1.5 percent, the difference in the additional cost to your customers of one option as opposed to the other?

A. We looked primarily at the two percent versus one percent between what we're doing now and what we expected to happen in 2003, and that was primary--we didn't look at any great scrutiny, if you will, of the staging down now because the differential was lower and we thought that was a reasonable impact for what we were going to achieve, which basically bring us largely, we certainly hope, into compliance.

Q. But, if your responsibility is to look, at least, at the least cost alternatives for your customers that would bring you within regulatory compliance, why wouldn't you look at one of these other midpoints between one percent and two percent as a least cost or a lesser cost alternative?

A. Because the modelling still indicates that at one percent we would not be 110 percent or 100

Page 97

percent compliant.
Q. Modelling based on one year's accurate modelling?
A. One year's accurate modelling.
Q. Or more accurate modelling?
A. Yeah, that's correct. It still doesn't meet the regulations, so.
Q. But, you don't know that one percent will necessarily bring you there?
A. No, we don't, but we certainly think that we're making a 70 percent improvement and we have a good chance of actually getting there. Hopefully, we will. Because the discussion then will be either capital or even going to a lower percent sulphur fuel.
Q. Or perhaps looking at whether your observation stations readings can be prorated against the modelling?
A. I think they -
Q. Have you ruled out that as an option?
A. But, I think they do that in the CALPUFF modelling anyway, I believe that they actually do that.
Q. The model itself produces a number based on the modelling results only?

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A. Yes.
Q. I think it's up to government or Hydro then to do the comparison, as you're suggesting, with the observations? SENES Consultants certainly have done that in their report?
A. Yeah, okay.
Q. Mr. Haynes, I have no further questions for you, but I understand that Mr. Hutchings, just at a discrete point, Mr. Chair, wanted to ask, I believe, very few questions before the Industrial Customers conclude their questioning.

CHAIRMAN:

Q. Thank you, Mr. Coxworthy. Could we break now, Mr. Hutchings, and resume your questioning after, is that okay?

HUTCHINGS, Q.C.:

Q. That would be fine. Thank you, Mr. Chair.

CHAIRMAN:

Q. Thank you. We will resume at 11:30.

(Recess 11:05 a.m.)

(Reconvened 11:34 a.m.)

CHAIRMAN:

Q. Before we get started, Ms. Newman, is there anything preliminary that you wish to raise?

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MS. NEWMAN:

Q. No, nothing.

CHAIRMAN:

Q. Are you ready Mr. Haynes? When you're ready.

HUTCHINGS, Q.C.:

Q. Yes, thank you, Mr. Chairman, good morning again Mr. Haynes. Mr. Young teased us a little bit with your new title when you took the stand. Can you perhaps tell us how that has changed your duties and specifically whether or not matters affecting rates now come under your bailiwick?
A. Matters affecting rates? Part of it, obviously, basically regulated operations look after a--a simple way to describe it is pretty well everybody outside of St. John's is in regulated operations. The wires, distribution, isolated systems and the generating plant. The, what has been taken out of my old job, which was vice-president of production, is the engineering department. That's moved over to an engineering VP who looks after all engineering for Hydro, as well as the IS&T Group have been taken out. So regulated operations, the control centre, you

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know, system dispatch, that's basically--and customer service for distribution and all the field staff.
Q. So the rate function hasn't been added to your -
A. No, the rate's department still report, thankfully, to the vice-president of finance.
Q. So you will be delighted to respond to my questions concerning the RST. What we're talking about here, Mr. Haynes, in terms of the proposed change is really an increase in a specific operating expense of Hydro, correct?
A. Yes.
Q. You were making a conscious decision to use a better quality of fuel, if we can call it that, not unlike a decision to use a better quality of paper in your photocopier. It's a business decision you're taking for various reasons.
A. Yeah, for various reasons being the important point.
Q. And I don't want--Mr. Coxworthy has talked about the reasons with you, I'm not going to recover that ground. My question basically relates to the proper regulatory treatment of

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that expense and why this has not been treated like a change in any other expense and become part of a general rate hearing, as opposed to the suggestion that it should flow through the RSP?

A. It's specifically related to the price of oil, you know, when we moved from 2.2 to 2, the same thing happened.

Q. Yes.

A. And that was a specific initiative of government actually to mandate the actual percentage content, and the other side of the coin is the regulatory side of what our emission levels are, what our compliances with the air ambient, with the air quality standards. The 2.2 to 2 percent, obviously affected ambient air quality, but it also affected the total amount of sulphur dioxide discharge into the environment, which the government has their own cap on, which is a separate regulation, if you will or a separate requirement.

Q. And while the effect of going from 2.2 to 2 percent wasn't an insignificant change cost wise, there is a significant effect from going

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to, from 2 percent to 1 percent annually, correct?

A. It's measurable, obviously 2 percent or 1 to 2 percent, it's noteworthy.

Q. Yeah, and at the time the application was filed, they were looking at something close to 8 million dollars annually and now with the changes that have occurred, it's something between 6.5 and 7, is that correct?

A. I believe that's the number, but -

Q. Okay, so we're talking a significant amount of money annually, as a result of this impact. Would you, the Rate Stabilization Plan, as described in Hydro's rates, is said to be intended to smooth rate impacts for variations between actual results and test of your cost of service estimates, that's a correct statement, is it?

A. Yes, and in the annual adjustment looks after the change and the rider looks after the actual change in the price of fuel.

Q. Yes.

A. Besides the module.

Q. Yeah. I had distributed this morning an extract from P.U. 7, 2002, 2003, which is the

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last really extended discussion of the RSP that we have from the Board. It was mentioned in the last General Rate hearing, but most of the issues had been resolved by agreement, so there's only a page or two there. I provided copies this morning to Ms. Blundon for distribution.

MS. NEWMAN:

Q. Yes, they've been circulated.

HUTCHINGS, Q.C.:

Q. Everybody has them?

CHAIRMAN:

Q. Mine disappeared somewhere, I don't know where, but I have another one now. Thanks.

HUTCHINGS, Q.C.:

Q. All right. The extract starts at page 79 and discusses the introduction, the history basically of the RSP and the current status proposals and the issues raised at the hearing. What I would like to refer your attention to is paragraph--is page 83, the second last page of the extract that I provided. And directing your attention to paragraph headed 5, the continuation of the RSP. At the bottom of that page, the Board

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says, "the Board agrees with NP and NLH that RSP provides rate stability to customers and also provides a mechanism to eliminate volatility in NLH's revenue requirement due to events beyond NLH's control. This was the original intent of the RSP and remains so today." Now, the change that we're talking about here in the price of fuel isn't one that's beyond Hydro's control, is it, it is one that you are choosing to undertake for specific reasons?

A. We're choosing, if you will, to meet the regulations of the province, from the point of view of pollution abatement and pollution.

Q. Yes, and you had a number of options.

A. A number of options, but our option primarily is that we obey the law, that we actually are compliant with the legislation.

Q. No, I quite understand that, in the same way as you would have to, you know, upgrade your vehicles if the emission standards for vehicles changed.

A. Yes.

Q. Yes, okay. So in terms of the factors that the RSP is intended to direct itself to, you

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know, general oil prices and the volatility and the matters beyond your control, this application isn't addressing that type of a change, is it?

A. It's only addressing the price of fuel because there's a different standard or different specification applied.

Q. Yes.

A. But it is a fuel price.

Q. It is a fuel price and you have chosen to go to a different grade of fuel and that is what's changing the price?

A. Yes.

Q. And it is not a question of world oil prices changing generally or anything of that nature?

A. No, it's basically a change specification to meet the environmental requirements and the price is just a fall out.

Q. Okay, all right, thank you, Mr. Haynes. Those are all the questions I had, Mr. Chair.

CHAIRMAN:

Q. Thank you, Mr. Hutchings. Good morning Mr. Johnson.

MR. JOHNSON:

Q. Good morning Mr. Chairman, Vice-Chair.

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Obviously some of the ground has been tilled this morning, Mr. Haynes. I recognize, as I'm sure you do nowadays, that the heightened attention being paid to environmental issues, more generally the public's perception of environmental issues and their importance and that sort of thing. But would it be not fair to say that regardless of that, that it is a cold reality, I suppose, for this Board and for the parties to such an application as this, that a sanctioning of recovering extra monies from consumers is not based on whether something is more environmental friendly or not, but it's necessary--the question is whether or not it's necessary to comply with the law of the land. Would me and you be on the same wave length on that?

A. Hydro absolutely wants to comply with the law of the land and obviously part of this application is to do all of that. I mean, there are other considerations, not--and being a good neighbour is a small part of it. You know, we are written up last year as being the--and specifically the discussion was around PM 2.5, we're the fifth largest

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polluter in the country of fine particulate. Fine particulate is a health issue and, you know, we all have an obligation to ensure the health and welfare of our employees and the public and we are definitely, you know, we are not complying with the legislation, we've been written up by a national, you know, people if you will about our contribution to PM 2.5 pollution, we need to fix it. And the fact that we're non-complaint, there's an added avenue to do all of that. You know, there's been a change in Hydro, we have a new leadership group or management committee and a new Board of Directors, largely, and we are not complaint and we need to be making significant inroads to get there, which this is intended to do.

Q. And in terms of the Pre-filed Evidence, I think Mr. Ricketts agreed that, when I put it to him, that it would be a fair statement, say on my behalf, to say that Hydro's application is really directed and focused at meeting the modelling, that that's the impetus.

A. Yes, and that's the regulatory environment that the government has adopted, the modelling

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is a primary measure of our compliance.

(11:45 a.m.)

Q. And I understand from the evidence that was given by Mr. Ricketts that in the past when other models may have been used, that we've heard, and perhaps you will confirm, that the predictions under those models were significantly worse than the most current modelling regime?

A. That's my correction, that we have been getting better with better data.

Q. And can you speak to the magnitude of the predicted exceedances under those previous models?

A. Not the specific numbers, but in some of the reports there are drawings there which actually have a red isopleth around certain areas, around the Holyrood Plant and they've gotten smaller in some of the areas, but I can't speak to the magnitude, I don't know those numbers offhand.

Q. Hydro has been monitoring as opposed to modelling for SO2 since 1992, 1993?

A. Yeah, '93 or '94 actually I believe was the first one, but that time frame.

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Q. And we've already heard, with the exception of the readings taken in December of 2005 from one monitoring station, that there's never been shown to be an exceedance, in terms of the actual monitored results?
A. With December of 2005 exempted, yes, because they did show.
Q. Being an exception, I understand that. And when did the switch over take place from burning 2.2 to 2 percent sulphur content fuel happen?
A. From 2.2 to 2?
Q. Yes.
A. I believe it was the beginning of 2005 we actually started burning 2 percent.
Q. The 2, okay. And how long had Hydro been burning the 2.2 percent?
A. That goes back a number of years prior to that, I'll say six to ten years. It's been 2.2 percent for quite awhile. I don't recall the date, but it's been a number of years, quite awhile.
Q. And were you burning, to your recollection at Holyrood, anything in excess of 2.2 while Hydro was carrying out its ambient monitoring

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program?
A. No, I think--I'm not a hundred percent sure, but I believe we were burning 2.2 when we were doing this ambient monitoring program.
Q. Okay, throughout that whole period. Mr. Coxworthy referred you to a comparison table at page 4-7 of the SENE's Consultant Limited Report?
A. Yes.
Q. And these are obviously showing, I think you would agree, some significant over predictions, vis-a-vis the observed monitoring, you would agree with that, I take it?
A. Yes, they certainly indicate that.
Q. And was over prediction happening in respect of previous reports that were the counterparts to the most recent SENES Consultant's Limited report in recent years?
A. I would expect they were, given the fact that we had a wider area of non-compliance, but we never had a lot of recorded fact to substantiate that. That's speculation on my part.
Q. And are you familiar with whether or not the

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previous equivalence of the SENES report in previous years would actually set out a comparison of predicted and monitored SO2 concentrations?
A. I'm not aware. The model is very different than the previous model. This particular CALPUFF model looks at the terrain, looks at the wind water--I'm sorry, land water impacts and so on, it's a different tool, supposed to be much more appropriate to the physical environment of Holyrood.
Q. Would it be possible to check to see in these previous reports whether or not there was reference to the comparison between predicted and monitored concentrations and to advise us subsequently of what the differences were?
A. I'm sure we can dig out the reports and review that, yes.
Q. In light of these, you know, fairly significant over predictions, has there been any concrete steps taken by Hydro to get at the underlying reason why these over predictions are taking place, and one of the things I have in mind, for instance, if this model and certainly that appears to be

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absolutely correct, the model is being used in other jurisdictions, et cetera, to find out whether these other jurisdictions, they are subjecting themselves to an over prediction, vis-a-vis monitored results in the same fashion that we're seeing.
A. I'm not aware that we had, that our environment department has actually engaged anybody in a discussion.
Q. Is it a concern of yours, in your capacity with the company, that Hydro might want to be cautious about spending an extra 6 million or 8 million dollars a year and goodness knows what the incremental cost would be over the coming periods, but about spending money in that range of magnitude to comply with models that could be subject to such over predictions?
A. While the models can be subject to over prediction, we do have recorded events. I don't think we should discount that, I mean, we have had recorded excursions beyond the limits, you know, I think the fact that it took from 2003 to 2006 for us to actually get here before the Board and make this proposal

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implies that we didn't take this decision lightly. There has been a change in the management structure, there's been a change in the Board of Directors and this has been a hot topic in a sense of consumer complaints, in the sense of discussions with the regulator, the environmental regulator that we're not fixing the issue and the decision is not taken lightly to do all of this, but we strongly believe, the company, the leadership group, the Board of Directors, that we have to make this move. We have to make this large strive to be complaint and as I said two or three times, we have not gone, taken the model and said we have to go by--to purchase .6 percent fuel, that would be a, you know, more than doubling of what we're currently--the current rate impact, if you look at the answers that were provided in CA-1, I believe, with the differential between 2.2 or 2 and 1 and the differential between 1 and .5. So we have not adopted and ran with the model results. We have taken a, you know, a seventy percent solution hoping that we can manage the rest, but we are the fifth largest polluter of PM

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2.5 which is a health risk issue. We have had many complaints by people in the area with respect to children, the Cantox reports that had been done, which are--I think we're pretty well ready now to finish up the other one, have indicated that there are issues with asthmatic people and susceptible people with the emissions that we emit from the plant and we had to take action. We had to lead. I would add that, you know, there are other utilities in Canada who burn one percent fuel, there are some who actually burn less. Some is on a unit-by-unit basis, so we're not the first by any stretch to actually be making this move to actually clean up our act. In most jurisdictions they have been able to switch to natural gas or they put in, you know, back end capture technology. We're reluctant to go that way until we see where we're going to get with natural gas supply or a DC infeed. We don't want to throw away a hundred and fifty or two hundred million dollars to find that--because that would be essentially a waste of money. We can walk back from a one percent sulphur fuel decision

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if we find ourselves, in the next few years, being able to avail of natural gas, which may be a possibility.

Q. I understand that. Mr. Haynes, with respect to the other utilities that may be burning at one percent or something lower than two percent, do you know whether or not they have an actual monitoring system in place and whether their readings were indicating non-compliance based on actual monitor?

A. I'm not aware of that detail, I know that one specific one, I think is Courtney Bay or Courtney something in New Brunswick, it's part of their Certificate of Approval that they can only burn one percent. They had two one hundred megawatt units, one, I think has capture technology or has been converted to natural gas; the other one burns oil, but it can only operate as a back-up unit and is restricted to one percent.

Q. Would you accept the contention that if as we've seen, and I think it's probably demonstrable, that these models are the subject to such wide variances from actual monitor results, that that might imply that

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there is a risk that the money being spent on the one percent fuel might be for not in the sense that we are trying to spend to keep up with the model that's like trying to hit a moving target?

A. I would tend to agree with you if we were actually proposing to go to .6 percent to meet the total outcome of the model, but, you know, we're not walking all the way down the road to adopting exactly what the model says. We haven't split the distance, but we've gone seventy percent of the way and hopefully manage the rest.

Q. But certainly this comparison of predicted and monitored concentrations is comparing modelling to what we've presently been burning for the last while, which is two percent?

A. Yes.

Q. And so, I guess, that's where I'm coming from.

A. But you can't discount the fact that we've had three or four measured excursions beyond the limit either, even though the model says that the predicted is 1481, for instance, the observed, I'm sorry, is 289, the predicted was 1481. We have had areas of excursion, we've

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had three or four events where we've actually exceeded the regulations, so I would suggest that, you know, depending on the loading of the plant at the time, there are still many numerous variables that go into that, that I think that we could, you know, have hit those predicted under different situations. The model is deterministic, it's not a probabilistic approach. It doesn't -

Q. Does it cause you any pause to consider that the readings were isolated to that one particular time in December of 2005 against a back drop of 12 or 13 years of data from other monitoring stations that never showed a single monitored exceedance?

A. But we don't have the monitoring stations-- yes, it's a pause for concern. I understand on that particular day we weren't at full load, it was just a, the environmental characteristics today wasn't--it wasn't at a 466 megawatt load which would have been a lot worse, and the monitoring stations that we do have are not in the designated worse areas. It's a very, very broad area and, you know, I'm sure that people in this room have driven

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over the Holyrood access road and actually smelled the plume, smell it as you drove by, which implies that we have an issue. But that's antidotal information, obviously.

Q. If I might refer you to the Guidance Document that was referred to earlier, it's attached at CA 18.

A. Yes.

Q. And I just want to focus on 9(b) for the moment, we've heard from Mr. Ricketts, as you're probably aware, that there seems to be no issue with the monitors that you have on the ground now in terms of, you know, whether they're technically compliant and up to code and up to standards, et cetera. You accept that?

A. I agree, we've spent a lot of time insuring that.

Q. Okay. And as I--as I look at 9(b), if Hydro were minded to pursue a 9(b) solution to this compliance problem, what steps would you envision that would be necessary to get down the road of trying to come within 9(b), where would you start?

(12:00 p.m.)

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A. I guess if you were to sit down and look at a blank map of the area, I guess the first thing would be the location of the instruments, whether you could actually relocate them to the appropriate locations where the modelling predicts that we would be non-compliant. And I guess then discussion and negotiation with Department of Environment to look at a time frame for testing and so on. You know, but, I mean, the location of the instruments right now may not be the perfect one based on the model, and I don't know if it would ever be perfect because you are using weather data that does vary a little bit from year to year, plant emission data which can change, and you are in some sense chasing a moving target with respect to that. I mean, the original locations were done as best as they can. The current model says they're somewhere else. But, you know, I think I keep focusing back to the fact that we've had measured non-compliance and I can't kind of let go of that, that we have been not modelled to be non-compliant, we have demonstrated that we are non-compliant. And if we were to take a

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portable instrument, if you can get one, and I have no idea if you can, and run around, you may find more, but that's speculative as the model. You know, we're not looking for a place where we're broke to justify why we should be changing to one percent sulphur fuel. We have demonstrated in the Seal Cove station, that we're non-compliant.

Q. But, do I understand that Hydro to this point has not even made a proposal to the Department of Environment to establish compliance ambient monitoring network?

A. We have a network now. Whether it's 100 percent would meet the intent of the Guidance Document placed at the exact grid location where they think would be the worse offenders, we have not had any negotiation of any consequence along those lines. We had five instruments out there, we've already said we probably had more than most other utilities for a single plant and we think we have an adequate information to justify why we need to be moving off two percent fuel.

Q. But, does it not cause you some pause to consider that we may be embarking on an 8, 6.5

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to 8 million dollar solution on an annual basis or partial solution or whatever it would end up being at the end of the day when as I understand it we don't even have a letter on file from Hydro to the department proposing a compliance ambient monitoring network, nor do we have a letter on file from the department yet saying to Hydro that what you have in the ground presently won't cut it for us? I mean, to my way of thinking that seems to be pretty glaring.

A. We have two letters on file from the government saying weren't non-compliance which are in evidence. We also have recorded events where we're non-compliant. So -

Q. Yeah, I understand that. But, the letter from the Department of Environment that's produced itself sets out the monitoring network as being a possibility, refer to that?

A. Yes, it does. The provisional one.

Q. That's at CA-5?

A. Yes.

Q. Right? The thermal generating station will be deemed non-compliant until such time as acceptable modelling based on current stack

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testing data or approved compliance monitoring in areas of exceedances demonstrate compliance. And then they specifically refer to the attached Guidance Document. So, aren't they telling you that, you know, this is a viable option?

A. They're implying that we can do all that, but we have still had occasions of non-compliance. We have had measured events of non-compliance. So, it's not that we have no time frames of the fact that the instruments didn't register that we were non-compliant besides the modelling. We do have substantiation that we're not compliant.

Q. Yeah. But, you also, do you not, have substantiation going back 12 or 13 years of showing steady compliance throughout that whole time period under, goodness knows, a variety of different circumstances and scenarios, wind share and temperature and load, etcetera? And is there any--do you ascribe any weight to that past data?

A. Yes. The instruments in that location have not picked up that we've been out of compliance, that's correct.

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Q. With respect to if a further monitoring site had to be established, I think Mr. Ricketts probably wanted to defer to you or someone else to what the cost of these monitoring stations would be, what would we be talking about, Mr. Haynes?

A. The last one that we established was at Indian Pond and I believe that was in the order of about a quarter of a million dollars to establish what we called a mobile station. That was a capital budget a few years ago, which I'm pretty sure was about $247,000 rings a bell, but.

Q. If I could refer you to the correspondence that came from Ms. Greene to the Board on November 3rd, 2004? And I'm referring to page 6 of 7. In the top part of that page the letter indicates that work, the work that has been undertaken to date has identified the lowest cost alternative to meet currently anticipated future environmental requirements is to reduce the sulphur content in fuel to one percent, which will also reduce particulates. Depending on the results of the monitoring program over time, there may be a

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need to reduce the sulphur content to less than two percent to bring the emissions to an acceptable level. And there's a reference to the monitoring program as being a driver of that decision?

A. Yeah.

Q. Okay. And I take it it's the single, it's the single showing from December, 2005 which constitutes the results of the monitoring program that gets us to this, to where we are today?

A. That's a part of it. When we started looking at one percent sulphur fuel or other things, we had set several goals. Obviously sulphur was one. Particulates was another that we were looking to reduce the particulates because we do exceed the opacity regulations, we do actually, you know, can get fined by the department for violating that. And there are, you know, when you're firing up a gun or starting up a furnace, there are provisions, you know, to exceed that regulation occasionally, but we anticipate that we will be in violation of that several times. Part of the goal was to reduce the particulates, to

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reduce the sulphur dioxide, and going to one percent sulphur fuel would, in our minds, would achieve that. We would have a reduction in the particulates, we would have a reduction--and the opacity was, you know, a visual one, more or less. The reduction fuel also reduces the PM 2.5, which is a public health issue. We do have a community liaison group there which Department of Health have representatives on and basically it is a subject of some concern, as evidenced by being the fifth single point emitter of PM 2.5 in the country. And this will alleviate, in a large part, that we expect to see a 20 or 30 percent reduction in the fines, as well, which is a public health issue.

Q. The Acres Report talked in brief terms about fuel additives as a way of reducing total particulate to the tune of, say, 50 to 60 percent?

A. Yes, they did say that.

Q. And I guess I presume that the cost of the proprietary fuel additive is not as subject to fluctuation like the difference between two percent and one percent, the incremental cost

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difference?

A. It's, we haven't pursued that, as you know. But, the--if you were to go--when we burn, the ash, all the residue goes somewhere. It either stays in the boiler and slags up, blocks up, reduces efficiency or it goes up the stack. And if we were to--you know, the focus of our fuel additives to date has been to increase efficiency. If you change the focus to actually increase the--to reduce the particulate emission, then generally speaking, and that slag, ash, whatever, is going to stay in the boiler, it's going to stick to the walls, it's going to block air heaters, it's going to reduce efficiency. I think, you know, you would have to look at a fairly comprehensive economic evaluation and our gut says that we're going to lose so much on efficiency that, you know, our gut, we did not do a study, but we would lose a lot of efficiency if we were to retain all that ash in the boiler.

Q. In terms of, has that been studied, to your knowledge, at other utilities in terms of the loss of efficiency?

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A. I'm not sure if there's been a big study on that. We are familiar with the Comate trial that we did which basically, you know, it keeps the boiler a bit cleaner and keeps, you know, the air heaters, heat exchanges cleaner and so on. But, you know, as the, you know, the ash does leave the stack, so it goes up in the air somewhere. And then there's an issue of the particle size, 2.5 PM 10 or whatever.

Q. To your knowledge do the vendors of these proprietary fuel additives indicate that you'd seen loss of efficiency?

A. I can't speak with any authority on that there.

Q. And in terms of, you know, an annual cost of the fuel additives, provided that it made sense from an efficiency point of view, etcetera, do we have any sense or do you have any sense as to what the annual cost would be?

A. Not the cost that Acres were referring to. I mean, our cost of fuel additive right now could be, you know, 150,000 to three or four hundred thousand a year, depending on the type and the amount, obviously. But, I don't know, through the Acres' comment, I do not know the

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answer of what their--you know, there's dozens of different fuel additives that they all plan to do this and do that and make your life easier and we've trialed a few years ago, which, you know, have not been effective. Magnesium oxide is pretty well the standard for an oil-fired plant.

Q. And is the one that was tried a few years ago, was that one where the--is that produced by a vendor which claimed that it reduced particulates 50 to 60 percent?

A. No, I don't think so. I think our focus has been, as I said, efficiency is what we've been striving for, to increase our 600 kilowatt hours per barrel as high as we could get it.

Q. Okay. Is there any reason that Hydro has not delved more deeply into what would be the technical ramifications of switching to one of these fuel additives from the point of view efficiency and actually trying to quantify what the impact would be?

A. We don't think it's a solution. We have not pursued it in any great detail at all. You know, we're trying to fix several issues. I mean, we could fix sulphur dioxide--sorry. We

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could do other capital things to prevent, to help the particulate emissions, the sooting that we do on our neighbours and so on. We see the one percent sulphur fuel as trying to alleviate two or three different issues and being the compromise that brings us largely into compliance that covers of particulate, fine particulate and sulphur emissions. You know, there's two or three benefits. You know, if you were to go and speak to a--if we were to pursue, and I'm--you know, fuel additive people, I don't think anybody is going to have a fuel additive that's going to help sulphur dioxide emissions. It may be particulate. But, sulphur, it basically is a formula that's in one of these reports here which pretty well tells you exactly what sulphur emissions you're going to have, your total discharge based on fuel content that you burn.

Q. And I guess the complaints, would it be fair to say that the complaints you've been getting, they really have to do more about particulate?

A. And sulphur, the smell.

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Q. The smell, too.

A. There is a smell, an odour issue. Smoke is on the ground. And the particulate issues are, too. One is the sooting that occasionally happens when we have an upset or whatever, which we look after, and the other one is the fine particulate because people see that as a health issue. You know, we've had, you know, complaints about discolouring of siding they blame on us and so on. We don't accept that, but that's their claim. But, in the PM 2.5, that is a health concern and one which we are anxious to help reduce.

Q. Can you still smell the--have you been out to Holyrood since the switch-over to one percent, can you still smell the sulphur?

A. Well, I've only rarely smelled it, but, you know, there's a smell of sulphur two or three--first of all it's the emissions, the other one is just off the tanks themselves. But, I mean, there's less--there should be less, I can't remember the sulphur gas that comes off the tank itself. You know, we get some complaints when we're actually filling the tanks. But, I mean, there's less sulphur in

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the fuel, chemistry says there should be less sulphur gas emitted. And then, of course, we're burning less, there'll be less at the stacks.

Q. Okay.

A. But, that's chemistry and I'm not good at chemistry, I'm afraid.

Q. Thank you, very much, Mr. Haynes.

CHAIRMAN:

Q. Thank you, Mr. Johnson. Mr. Hayes, do you have any questions?

MR. HAYES:

Q. No questions, Mr. Chair.

CHAIRMAN:

Q. Thank you. Ms. Newman?

MS. NEWMAN:

Q. I have just a couple, actually. Going to the February 9th letter from government to Hydro, it's at CA-5, I believe it is.

A. Okay.

Q. And where it says that, you know, Hydro has the option of approved compliance monitoring in areas of exceedances demonstrating compliance. And you had indicated, well, that's maybe not an option because there was

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already demonstrated monitored exceedances?

A. Yes.

Q. Have there been any since the date of this letter?

A. Non-compliancies?

Q. Um-hm.

A. Not that I'm aware of.

Q. Okay. So, those exceedances would have predated this letter?

A. Yes. They were in December, I believe, those particular ones.

(12:15 p.m.)

Q. Okay. And would the department have been aware of those?

A. We send in our data regularly. Now, whether they actually take the time to go down and scrutinize it, I can't tell you that and I don't know. We send them a tremendous amount of information.

Q. So, they likely would have had the information available to know that there was these exceedances and -

A. I would anticipate that they did.

Q. But, they wrote on February 9th to say that that was an option, to do compliance

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monitoring?
A. Yes, they did.
Q. I want to look to now CA-6 and lines 14 to 17. And that's the details around the actual exceedances.
A. Yes.
Q. So, it looks to me like they were at 1600 hours, 970 and at 1700 hours, 1106 and at 1800 hours, 1044?
A. Yes.
Q. So, they would appear to me from a layperson to be marginally over the 900 versus what the modelling was showing, which was dramatically over the 900?
A. They're marginally over the 900, which is the one-hour limit, yes.
Q. Yes. And that's the only exceedances that Hydro has monitored and found?
A. Yes. Now, I believe the three-hour limit is 600, I believe, so I would expected that if we were over at 16, 17 and 18, we probably exceeded the three-hour limit, as well, although there's no comments there on that.
Q. Yeah, that hasn't been presented.
A. No, no. The three-hour limit is in one of the

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reports there.
Q. So, we can assume then that this was the only exceedance? Are you satisfied with that?
A. That's all I'm aware of, yeah.
Q. I wonder would you be able to tell me what change in sulphur content in fuel would be necessary to meet the worst of these exceedances that were actually found?
A. You mean to get these below the limit?
Q. Yes. Below the 900.
A. I can't do that offhand.
Q. Can you undertake to provide it to us?
A. Yes. I think it's a matter of calculating from some of the information that's in one of the reports there to actually work backwards, but I'll--I'm assuming it could be done, but -

MR. YOUNG:

Q. And I'm well in over my waders, as someone has pointed out to me before on one of these technical issues. I'm not sure that could be done. There is an answer which sort of works back to see what we need, and that's the reference that has been made several times by Mr. Ricketts and Mr. Haynes about the .6 percent. But, I don't know whether or not you

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could, in a particular instance, meaningfully work it backwards. We could probably give it a go, but.

MS. NEWMAN:

Q. Okay.

MR. YOUNG:

Q. I'm not sure that science is reliable. Based on what I've been hearing from other people in other instances.

MS. NEWMAN:

Q. Yeah. If you could undertake to try that, it would be great. And the last point that I wanted to touch upon was the actual timing of the purchases of the one percent fuel. I did ask this question of Mr. Ricketts, as well, and he suggested it may be you that should answer it and Mr. Young suggested it may be he that has to answer it, so I'll put it to you and see. The one percent fuel was purchased by Hydro initially in January?
A. We've had two shipments of one percent fuel to date. The first one was ordered for, actually, the order was placed for February, but they wanted to deliver on January which we agreed to as long was we had the February

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price. The second delivery was around March the 17th, I believe, somewhere in that time frame. And the extra cost actually was 91 cents a barrel for one and I think about 60 odd cents for the other was the actual, the incremental cost of the one percent versus two percent.
Q. And clearly there's no order of the Board with respect to approval of this particular expense yet?
A. That's correct.
Q. Is Hydro seeking the recovery of that cost differential in the RSP calculation beginning in July 1 for Newfoundland Power and then for January 1 for the Industrial Customers?
A. Yes, we are.
Q. Those are all my questions.

CHAIRMAN:

Q. Thank you, Ms. Newman. Commissioner Whalen.

VICE-CHAIR WHALEN:

Q. Good afternoon, Mr. Haynes, nice to see you again. I thought I didn't have any questions except when you were talking with Mr. Johnson about the issue of compliance and your comment that we couldn't--we shouldn't forget that

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we've had three or a number of them, there was one and then there was three or four instances of non-compliance, and I just wanted to be sure that I understood what is the test for compliance. The Guidance Document itself actually, as I read it, states categorically that compliance for a facility will be determined based on the predicted levels for all locations at or beyond the administrative boundaries. So my understanding is that compliance is not based on your ambient--your hourly numbers. So if you had submitted those to the Department of Environment, based on this, I don't think the Department would have deemed you to be non-compliant for the purposes of this, these standards, I think.

A. You're probably right, but I suspect that they will find a way, because basically what they're going to do is they're going to look at--I mean, I think somebody speculated one time we needed to be running around with a meter looking for where we're not compliant. But I mean, the regulations change, the interpretations change as well.

Q. But this Guidance Document, as you stated this

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morning, which we're not sure was being used with its full force, I guess, I understood, prior to this, does state that "compliance with the ambient air quality standards will be determined through a dispersion model registered with the Department and conducted in accordance with GDPD." So it is the dispersion modelling results that determines compliance with the air quality standards and not the single one of readings.

A. That's my understanding, yes.

Q. That's my understanding. Is the 2005 dispersion modelling currently under way?

A. I don't--I think we had to do stack testing to do all that. It seems to me it's every second year. I'm not certain on that answer.

Q. So you've got a 2004 testing done, you wouldn't be doing a modelling for 2005 itself?

A. I don't think so. We do the stack--you know, we do the in situ stack emission testing every second year and that's an input into that particular review.

Q. So it isn't an annual--it's not an annual dispersion modelling?

A. I don't think so, but I'm not 100 percent on

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that.

Q. Okay. I was just wondering because January 2005, you would have been burning two percent sulphur fuel. So the next time the dispersion modelling is undertaken, it will reflect that change.

A. Yes, except the stack testing, if that's done in the fall, when we get all the machines back, it will be based on one percent sulphur fuel, if we do it in this fall, this coming fall or -

Q. This coming fall, so you won't actually capture the impact of moving to two percent. It'll kind of be lost in the transition, if this moves. And I guess, the one thing that I remember from my graduate work is that the only thing we know for certain is that the results of all modelling is wrong.

A. Absolutely, I won't argue with you there.

Q. And I guess, you know, just going back, these exceedances that were measured in December, we could actually have dispersion modelling for 2005 that would show you to be compliant, even with those ambient exceedances measured on a one-of?

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A. I would think that's possible, but I also suspect that there will be a lot of scrutiny of the data as well, to ensure that it's--you know, that they're tweaking and tuning the model for the actuals.

Q. Yes.

A. Which they talk about in the SENES report as well.

Q. So the basis on which you're moving forward with the move to one percent is based on the Department's deeming Hydro to be non-compliant on the basis of the 2004 dispersion modelling results, which shows the--what I understand to be fairly low frequency of exceedances on the one-hour and three-hour?

A. Yes.

Q. Particularly.

A. I think the three-hour, it was 70 hours in a year for the three-hour.

Q. And the one hour, I think, was .06 or something, similar number.

A. Yeah, it was about five hours or so.

Q. Five hours, yes.

A. I would just add that on the three-hour one, I mean, while it's 70 hours, that could be

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spread over a long period of time as the plant cycles up and down in load.

Q. Sure. Okay, that's all I have. Thank you, Mr. Haynes.

CHAIRMAN:

Q. Thank you, Commissioner Whalen. Mr. Haynes, I have just one area of questioning, and it relates to, I raised the issue with Mr. Ricketts about Hydro being, I think, the fifth worst polluter in Canada, by some measure, in any event, and you've mentioned it three times here this morning, if I recall it correctly. I did ask him about that, I guess, and with respect to what degree reducing SO2 emissions would improve that, and I'm a little bit confused with what you said and what he said, and I'm going to break my own rule here now, which is not to read long lengthy transcript pieces.

He commented, "we did have the notoriety of, you know, being picked on. We report annually to the National Pollutant Research Inventory, a national database for collection of pollutant releases, and overall individual pollutants are put into the data relating to

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your annual volumetric releases, the same calculation we report annually to the Department of Environment, and we were the fifth largest emitter of fine particulate in the nation, in that time, in that year, and that was picked up by the media."

My question to him was "so would that be primarily in respect of what, SO2?" "No, that's fine particulate which is the particulate, yeah, we're a lesser emitter of sulphur dioxide overall in terms of volume annually than many others. You know, smelters produce a lot of sulphur dioxide, other utilities, larger capacity systems produce and use sulphur dioxide" dah, dah, dah. My question then, "so are you doing anything to mitigate that or have you done anything?" "We have no capture technology," he says. "We have no capture technology on Holyrood at all. The majority of similar types of plants operating in the U.S. or in Canada has some form of capture technology, especially related to particulate, and that's why ours would be high. We have no back end capture for particulate but many of the others would have

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electrostatic precipitators or bag houses or whatever to capture that particulate before it goes out the stack. Ours was built in a time when it wasn't required and hasn't been upgraded to do that."

Now you mention that, the idea that Hydro is, like I say, fifth in the nation in terms of its categorization, I guess, as a polluter. You did mention, throughout the course on a number of occasions too, that you're hoping that certainly with the new Board of Directors, with the new view of management here and using the reduced sulphur content of fuel, that indeed you're hoping to cover off fine particulates. You're anxious to help reduce the particulates as well. Now I didn't--there seems to be a bit of a disconnect, and maybe I'm just misunderstanding, between what you're saying and what Mr. Ricketts said here. He seemed to indicate that yes, certainly with regard to SO2 emissions, that would be substantially reduced, but he didn't suggest that by virtue of doing that with the lower content, sulphur content in the fuel, that indeed that was

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going to affect these other things.

So presumably, from what he said, I sort of got the impression that indeed that ranking may not change at all as a result of that, and I think I did ask later on, and I won't get into reading that, what plans did Hydro have to perhaps reduce that aspect of it, which is the fine particulate, the sooting, I understand, and all that that you commented on as well. And I didn't get the impression there was anything that you were contemplating in that area or that the management or the Board of Directors would be, for example. Can you comment on that for me?

(12:30 p.m.)

A. When you move to one percent sulphur fuel, if you--I can't find the actual reference in the Acres report and I've seen it in other places, through EnerCan publications and so on, but when you do move to a lower sulphur fuel, there's other characteristics in the fuel that change. The ashphaltenes are lower. There's a whole bunch of chemistry that--it's not just sulphur that changes. And when you burn lower sulphur fuel, I think in our actual filing, we

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mentioned that we might be up to a 40 to 60 percent reduction in the total particulates that we emit, because of the fuel chemistry. And then there is--somewhere else in the document, it says that we can anticipate maybe a 30 percent decrease in the PM 2.5 emissions by going to one percent sulphur fuel. So one percent sulphur does a few things. It reduces the total particulate and it reduces the fine particulate, PM 2.5, which is the one that most--which is breathable and gets actually into your lungs. So there are those three benefits. We anticipate seeing a reduction and if I recall correctly, when we actually switched to lower sulphur fuel, there was obviously a sharp reduction in the sulphur that we're measuring and also the opacity is not as high. But I -

Q. So that results all from the fuel?

A. All from one percent fuel.

Q. I see, because, you know, I don't--I didn't get that impression here, because he seemed to say that there was no capture technology available, that that wouldn't result -

A. No, it would -

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Q. - as a result, that wouldn't reduce the particulates measurably, in any event.

A. We should not be in the top ten PM 2.5s if we move to one percent sulphur fuel. Matter of fact, on page 4-6 of the Acres report there, in the first paragraph under 4.2.3.1 it says "it was estimated that reducing sulphur fuel content to one percent will reduce total particulate emissions in the range of 40 to 60 percent with no change in the particular size distribution profile," etcetera. And the next paragraph on the same page says "on this basis, it is considered that a reduction in fuel sulphur content would yield a reduction in the PM 2.5 emissions in the range of up to about 30 percent." So one percent fuel doesn't just help sulphur. It also helps the particulate, both the total particulate and the PM 2.5, which is the one--we were written up on PM 2.5. That was that particular article in the paper that singled us out as being the fifth largest single point emitter. So there are -

Q. Are you taking other measures to reduce the particulates overall?

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A. We have money in the future in the capital plan, but they're not firm yet. You know, we talked about a cyclone. We've talked about screens. We talked about an ESP to do some of these things, but they have not been put forward to the Public Utilities Board for consideration as yet.

Q. In terms of the neighbourhood complaints and the community complaints, do they revolve around the particulates more so than the SO2?

A. They evolve around everything. Our complaints are, you know, odour, visibility and, you know, sometimes noise, as well, which is part of the issue, but not related to fuel. But they basically complain about those things. We did review this with the community liaison committee, who were very, very pleased that we're going this way. However, to say that they were "that's it, we're finished," definitely not there. They want a lot more done, particularly the councils of Holyrood and CBS would like to see, you know, the visible things disappear, the whole thing be a lot more environmentally benign than it is or than we can actually make it. The only way to

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fix the whole is to go in and spend, I'll say, you know, 150 to 200 million dollars to actually put in state-of-the-art capture technology, which we're reluctant to bring forward. We think this is a compromise that'll buy us time to see where natural gas goes, because that will change what we do. We may not need--we certainly wouldn't need desulphurization technology if we go with natural gas. Whether we need ESPs, I don't think so, but that's not necessarily ruled out. And of course, a DC infeed would basically put the plant to a standby status anyway.

Q. Okay.

VICE-CHAIR WHALEN:

Q. Can I just ask -

CHAIRMAN:

Q. Sure.

VICE-CHAIR WHALEN:

Q. - is Hydro in violation of any air quality standards with respect to its particulates 2.5 or 10?

A. I think we've had some excursions there, but I can't speak--I mean, the letter says--the

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letters say different things different times. One talks about sulphur particulate and nitrous oxide. The other one, one letter, I think, just dropped--happened to drop one of those.

Q. Yes, that's my point, is that the letter, the February 9th letter just makes specific reference to sulphur dioxide and nitrous oxide and doesn't make any mention of your PM numbers at all.

A. Of PM 2.5, no, it doesn't. But it would be--I think the earlier or the later letter actually did mention that. It's a bit of a moving target at times.

CHAIRMAN:

Q. Mr. Young, are there any questions relating to the Board questions? No? Mr. Young, redirect?

MR. YOUNG:

Q. I have just one, and it arises from the last question actually. I wonder, Mr. Haynes, if you could turn to page CA-4, and this is really just to identify for the benefit of the Board, and I'd also refer you to--lost my page here. What I was struggling to do as you were

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saying, I realize that some of these issues that you've just raised were discussed, if not exactly the same question and in the same way, but were discussed in the information requests. CA-4, Mr. Haynes, refers to a slightly different question, but it does, on page--turn to page 204, about the middle of the page, starting there. There's some discussion of the link between sulphur content and particulate matter emissions, and I'm not going to wade through the chemistry of that or ask Mr. Haynes to do it at this point, Mr. Chair, unless you want to do that, but there is at least one other reference in there also we can probably refer to in argument. And that's all we have in the matter of testimony. Thanks.

CHAIRMAN:

Q. Okay. Thank you very much. I think that brings us to a conclusion. Any questions arising? I thought I'd asked that already.

MR. YOUNG:

Q. I probably should jump in. There was an undertaking or two that come up in the last half hour or so, and I don't know, now that

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testimony has closed, what might be the easiest way to do that. It's really just an issue of making sure that the information gets out and before the parties.

MS. NEWMAN:

Q. We'll talk about that after.

MR. YOUNG:

Q. Okay.

MS. NEWMAN:

Q. You just put it in writing probably, but we'll work it out.

MR. YOUNG:

Q. I sometimes find with those, Mr. Chair, it's best to look at the transcripts to determine exactly what the undertaking was, and then everyone understands what they should expect to receive.

CHAIRMAN:

Q. Leave that to you and Ms. Newman.

MS. NEWMAN:

Q. Yes, we'll work it out.

CHAIRMAN:

Q. That's okay.

MS. NEWMAN:

Q. Mr. Chairman, also counsel have discussed

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closing arguments and would like to propose that written arguments be filed by the end of the week, by Friday.

CHAIRMAN:

Q. Sounds good to me. I think we have--we normally would look at oral and written, but I think there's a problem with scheduling over the next couple of weeks in any event. So I guess we'll rely on written. We have the transcripts. It's only two days. I think we have a good feel, supplemented by the written argument, I think should suffice.

HUTCHINGS, Q.C.:

Q. Obviously, Mr. Chair, if after review of the written argument, the Board feels it needs oral submission, you can always schedule it.

CHAIRMAN:

Q. Yes, sure. Appreciate that, yes.

MR. YOUNG:

Q. Mr. Chair, the other comment I'd make in that regard is that the standard approach in any argument, I suppose, is the applicant goes first and then the others have an opportunity to rebut that and then the applicant has an opportunity to deal with points arising. The

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nature of this, it's mostly very technical. I would imagine one good thorough go around by everyone will do, but I just want to make the point that if something arises that we feel requires a second comment, I'd ask the Board to stay aware that--to compress the schedule, we're willing to go this way, but we may wish to ask for an opportunity to rebut, in a reasonable period of time.

CHAIRMAN:

Q. Anybody have any objection to that? I think that's reasonable.

MR. YOUNG:

Q. I don't anticipate that to occur, but, you know, leave the option open.

HUTCHINGS, Q.C.:

Q. Yes. It would be the same situation for everybody, if there was a necessity to rebut, I guess.

CHAIRMAN:

Q. Hopefully we wouldn't have too many iterations. Okay. Anything else? Okay. This brings us to a close. I want to thank you very much, Mr. Haynes, for your testimony here this morning. Thank everybody for your

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cooperation and as well, the staff for their preparation prior to the hearing and indeed, throughout, and then thanks to Discoveries Unlimited as well. So we look forward to your final written argument on Friday and we'll certainly do our utmost to turn this around as quickly as possible. Thank you very much. Good day.

UPON CONCLUSION AT 12:40 p.m.

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CERTIFICATE

I, Judy Moss, hereby certify that the foregoing is a true and correct transcript of an application by NL Hydro for Approval of Recovery of Costs of 1% Fuel through the Rate Stabilization Plan, heard on the 8th day of May, A.D., 2006 before the Board of Commissioners of the Public Utilities Board, St. John's, Newfoundland and Labrador and was transcribed by me to the best of my ability by means of a sound apparatus.

Dated at St. John's, Newfoundland and Labrador this 8th day of May, A.D., 2006

Judy Moss