TRANSCRIPT OF TESTIMONY OF
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BEFORE THE
SAN FRANCISCO PUBLIC UTILITIES COMMISSION (SFPUC)
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SFPUC Commissioner
David Hochschild: Can we have Mr. Barry Young come forward please?

We're very fortunate to have Mr. Barry Young with us today. He's a representative of the Bay Area Air Quality Management District and let me just say to you sir your organization has done fantastic work. I've, you know, just been working with you for the last week on this stuff but it's incredibly complex, the emissions part of this whole issue and you guys have provided an enormous amount of insight and so we're very, very grateful to have you here.

I thought by way of introduction before we have you speak I would just present 3 slides that helped me understand what is going on with the existing Mirant Plant and I hope that can kind of lay the groundwork for Mr. Young.

So if you pull up that first slide, no the other one, on the other side. Yeah. So, we've talked about Mirant as one monolithic unit but really I think the best way to understand it is the two elements. The first is unit 3, which is a gas-fired turbine that basically is producing 97% of the energy of the plant. Ok.

The second part are 3 diesel-fired units that are producing only 3% of the energy. Those are diesel peakers. And, you can go to the next chart there. You can see the diesel units are responsible for about 60% of the NOx pollution, and the gas unit is responsible for about 40%.

So, really important to understand the pollution problem is primarily with the diesel units. And, then if you go to the third sheet there, I don't know how readable this is to the audience, but what I tried to do was just break down this conversation into 3 segments.

The diesel units, 4, 5, and 6, unit 3, and the peakers. And you can see on the NOx emissions, that's nitrous oxides, that's the pollutant you'll hear the air board is primarily concerned with. It's actually much higher for the diesel than it is for the gas and the emission factors are basically the same for the peakers and for unit 3. Although with unit 3, the existing unit there, because you can't

ever turn it off, it runs—it goes up to a maximum of 206 megawatts, it has to constantly be on at least 25% of that. It has to run longer.

So in terms of total NOx emissions, you can see at the bottom there, Unit 3 versus the peakers is 36 tons versus 26. Ok, so the peakers are about 10 tons less NOx emissions, but what's interesting from an air quality perspective, what I learned is that that difference is actually de minimus compared to mobile emissions. So for all vehicles in San Francisco it's I think 16,500 tons of NOx.

So, anyways, this was helpful for me in writing, in taking the air quality data and just sort of putting it in perspective and I wonder if you can begin, Mr. Young, by just explaining how the air board views NOx emissions and why that's such a primary concern for health.

Barry Young, BAAQMD: Ok, well President Brooks and fellow Commisssioners, I was—I am—my name is Barry Young and I'm the Air Quality Engineering Manager in the permit evaluation section of the Bay Area Air Quality Management District.

The first, the reason that NOx is one of our primary focuses is because—

SFPUC President Ryan Brooks: Can you explain what NOx is?

Young: Oh ok, NOx is nitrogen oxides and nitrogen oxides is a pollutant that primarily—one of the main reasons we're interested in emissions of nitrogen oxides is that the nitrogen oxides react with sunlight to form ozone and ozone is one of the things that, one of the pollutants that the air district is most interested in because ozone at ground level is hazardous to breathe. And it also degrades property and vegetation and so, the ozone is a problem related to NOx emissions and NOx emissions also contribute to the formation of nitrates and that increases particulate matter in the air also

Hochschild: What kind of health problems are associated with that?

Young: The health problems for particulate, you're talking about asthma, possible links to asthma. With ozone you're talking about lung, lung problems and there are the NO2 itself, we have a national ambient air quality standard in California ambient air quality standard.

Because the NO2, which is nitrogen dioxide, that is a pollutant that will also, is harmful to public health.

SFPUC Commissioner
Richard Sklar: Can I ask you a question Dr. Young? This is all new to me, but am I hearing that the NOx emissions in the city are around 16,000 tons a year and these two facilities—one of them the peakers—would be 16 tons and the plant number 3 is 26, if that's the case it sounds to me like I-280 and 101 dwarf these plants in causing this neighborhood to be so heavily polluted, is that a reasonable assumption?

Young.: The mobile source numbers that were presented, those are for the whole county, San Francisco county. But they are a big proportion of the tons per year in emissions.

Sklar: Let me ask you another question then. The 26 for the peakers, how many hours a year did that assume they were going to run.

Hochschild: That I just took the 3,000 hours per peaker that was given to us. So the, if—the maximum I think permitted is 4,000 hours, so if they ran that it would be 36 tons. But, the expected is I think is 3,000.

SFPUC General
Manager Susan Leal: Actually—

Sklar: So if it ran less than the cumulative 9,000 hours, that number would drop still further, is that correct?

Young: That is correct.

Leal: So, Mr. President and commissioners, one of the things we've raised in our last meeting in referring to the agreement. The first few years under DWR, DWR and Cal ISO call the plant to be run. After the time when we take over, after the first 6 years when we take over, the way we have put together our economic pro forma would then be for them to be there, but not to be run.

So that's an important fact, that should be put.

Sklar: Unless Cal ISO called for them for reliability purposes.

Leal: They can, it's, it's much more in our control.

Sklar: I understand, but if the Cal ISO called for them, that's why we'd have them. Otherwise we'd just throw them away.

Leal: Right, but it's not that—there we can be probably less than 3,000.

Sklar: We think we'd hope that would be in the first couple years, that's another matter for later though.

Hochschild: So just in the interest of kind of just establishing the rest of the landscape of facts. The other thing I learned was that unit 3, again which is the gas powered unit that's producing 97% of the energy, in 2005 had a cleaning technology called SCR, selective catalytic reduction, installed. It was $25 million and that resulted in an almost 90% reduction in NOx emissions. Can you explain how that works?

Young: That is correct. In 2005 the unit number 3 natural gas fired boiler at the Mirant Potrero was an add-on abatement device, called selective catalytic reduction, was installed to control the NOx emissions for the plant.

Hochschild: Ok.

Young: And the selective catalytic reduction is a, is a unit that includes a catalyst and an ammonia injection to reduce the ammonia, reduce the NOx emissions and the reaction is that it converts the NOx emissions to nitrogen and oxygen.

Hochschild: Ok.

And then finally, you know the other pollutant I put on there was PM10. From a health perspective can you explain—so that's particulate matter of 10 microns or less, is that correct?

Young: That is correct.

Hochschild: Can you explain how significant from this source the PM10s are, when you look at the risks to health of pollution, how does that stack up against NOx or other pollutants from a health perspective. How significant is that versus, you know, mobile emissions etc.?

Young: The um, we are primarily, we regulate all the criteria pollutants. NOx is one of the criteria pollutants. PM10 is also a criteria pollutant and so that's the particulate matter less than 10 microns.

The focus has been on NOx emissions primarily due to the ozone attainment status of the Bay Area. It's a regional control plan that we, that the air district has a plan to attain the state ozone ambient air quality standards as soon as we can. So that's why one of the reasons why the focus of our regulatory programs has been NOx emissions. Pm10 we are very involved in the control of the PM10 also. For large combustion equipment normally the focus is NOx

emissions but we are also, normally for natural gas combustion PM10 emissions are not that significant.

Hochschild: Ok.

Brooks: Are the CT's…can I ask this kind of a basic question. Right now we have Mirant and we are looking at shutting down Mirant and the potential for these CT's to be placed. Which is safer? From, what produces—

Young: From a public health standpoint?

Brooks: Yeah, public health.

Young: So are you talking about the diesel turbines, in addition to—

Brooks: I'm talking from an emissions standpoint.

Young: Well, I can't speak for the whole district, the district management, but I would say that the natural gas-fired boiler, controlled with SCR, is a similar public health concern as the new gas turbines. The diesel turbines are currently only controlled with water injection and so those would be probably more of a public health concern. The diesel turbines at Mirant.

Hochschild: Can I as a follow-up question to commissioner Brooks question. On the diesel turbines, it is my understanding that there is a new code in place that by the end of 2000 is very likely to—2009, excuse me, it is very likely to require those diesel turbines to close. Can you explain how that works?

Young: Yeah, I'll explain that. We have in the District in December 2006 amended our Regulation 9, Rule 9, and that is our gas turbine rule. There is a requirement in the gas turbine rule that any non-gaseous fired turbine can only emit up to 42 ppm NOx emissions. And so these diesel turbines would not be able to meet that.

SFPUC Commissioner
Dennis Normandy: You're saying in layman's terms that in 2 years we won't be able to use them?

Leal: The diesel.

Young: Unless—

Normandy: Diesel CTs.

Young: That's right, unless—

Sklar: The diesels go down.

Young: That's right. January 1, 2010 is the effective date, and the diesel turbines would need to be retrofit if they were to continue to be operated.

Sklar: It's highly likely, then, if none of this discussion was taking place the diesels would be closed, that emit 60% of what is emitted there would be closed in 2009, at the end of 2009.

SFPUC Vice-President
Ann Moller Caen: He said they could retrofit.

Sklar: Hmm?

Brooks: Yeah.

Caen: Retrofit?

Sklar: Oh retrofitted. What, would anyone retrofit them? Is there an economic reason to retrofit some, this kind of thing?

Young: These are old turbines. My understanding is that they have been there a long time so there wouldn't be a uh—

Sklar: It wouldn't be worth it—

Young: —economical issue whether it would be worth to retrofit or not.

Brooks: Well then that kind of goes to Commissioner Normandy's question about closing down Mirant. And the feasibility of Mirant staying open.

Leal: I guess, what—if I could Mr. President I think the question would go to, just like the RMR for example, the—what would happen with the conflict between Cal ISO and the Air Quality on that. Because right now, for example, the Regional Water Control Quality Board has said that the baseload plant number 3 is out of compliance because it uses once-through cooling, and is putting super-heated water into the bay. But that is still running, and it has an RMR from Cal ISO, so do you know how that conflict is worked out?

Young: No I don't.

Sklar: Ms. Leal, with all respect they're two separate questions. I understand the water quality question on 3, which I respect, but what I am hearing Mr. Young saying is the 3 diesels that emit 60% of the pollution from there would have to close in 2009 unless they were retrofitted and the economics of retrofitting them would be so high. And since they only produce 3% of the power from there, they would likely disappear from our life if nothing happened at that point. Is that what I am hearing Mr.Young?

Young: That sounds accurate.

Leal: [unintelligible]

Brooks: Hold on, let's…

Sklar: Let Mr. Young respond. He said, I think he said, "that's what it sounds like to me."

Leal: Yes, but Mr. President, one of the things I just, and I, and I, understand that helps shutting down Mirant—which we are very pleased with—the other question is is that, for example, the once-through cooling would be very expensive to retrofit as well and that has been allowed to continue so that's why I asked the question: How is it the conflict between Cal ISO and—

Brooks: That's a good question.

Leal: —the Air Quality and he said he didn't know how that would be resolved. And that's a good question I think we need to explore.

SFPUC Assistant
General Manager
Barbara Hale: Can if I may?

Brooks: Yes, go ahead.

Hale: Commision, Barbara Hale, Assistant General Manager for Power. We have some experience with how this kind of a conflict gets resolved. In specifically at Mirant's Potrero facility when the Air Board needed to—when the facility needed to—meet new air regulations through unit 3 it's very expensive to retrofit that unit that was constructed and became operational in 1965. It's very expensive, not a very economic choice to add that selective cataytic reduction equipment, to bring it into compliance.

Because it is needed for reliability, the California Independent Systems Operators have fully compensated Mirant through the Reliability Must Run contract for those additional costs. So, because the units 3, 4, 5 and 6 are

needed for reliability purposes, the ISO has, in the past, to resolve that conflict between air quality investment and need for reliable electricity, has chosen to ensure the power plant developer, in this case Mirant, gets fully compensated through its Reliability Must Run contract.

Brooks: So what I am hearing Ms. Hale is…Mirant would be in a position to either take on this burden, this huge financial burden which is—they would never do because it's cost prohibitive. Let me back up for a second. Ok. When Cal ISO removes RMR, they're going to stop funding Mirant, correct?

Hale: I'm sorry, I couldn't quite hear you.

Brooks: When Cal ISO removes the reliability must run designation, they will stop using public dollars to fund Mirant.

Hale: That's correct. They have told us they will remove it once we replace the generation.

Brooks: Ok.

Sklar: Ms. Hale, you are asking us to suspend our rational belief. I understood why they funded 25 million dollars to take 3, which provides 97% of the power, they're not about to take any money to deal, and public money, to deal with these 3. You're asking us to believe a fantasy.

And it also seems surprising to me that we learned about the 4, 5, 6 closing only when Commissioner Hochschild did some digging. So I don't believe there is a circumstance in the world where Cal ISO would go for the 2,400 hours a year out of the diesels and pay a fortune to retrofit them. It sounds to me like they would die. I'm not sure it's relevant to our decision here, but it's a nice bit of information that we didn't have before that we needed.

Brooks: I think what's relevant to the situation though is the history and—

Hale: Thank you.

Brooks —Ms. Hale did bring up a perspective of historical, what Cal ISO did historically.

Sklar: On a different set of circumstances. Very different. Very different.

Brooks: I—

Sklar: 97. I would opt to do something that protected 97 percent of my interest, I'm not sure I'd spend money to protect the 3%. But I think that, maybe—any rate.

Hochschild: I have no further questions, unless there's other further questions. I just again really want to thank you for coming. Your agency has done a spectacular job and I really am very grateful to you and in fact in the future I would really hope we can work more closely together, our agency and yours, for the benefit of the air quality in the district.

Young: Thank you, it's been nice to be involved in the process and you know we have staff, we permit all the power plants in the Bay Area. So we have a lot of experience that we're happy to work with you on.

Hochschild: Thank you Mr. Young for coming.

Sklar: Mr. Young could you look at something and maybe come back to us. Assuming that there were, let's say that we ended up not with 9,000 hours of CT time at a facility that was built. Suppose that we ended up with the 2,800 of hours that the diesels run, what would the NOx emissions be from the 3 CT's at about a 2,800 hour running thing. Is it linear?

Young: We have a spreadsheet that we provided to the SFPUC staff. And so we can change the number of hours very easily.

Sklar: Thanks. If you could get it to Mr. Hochschild it would helpful to us as we go forward.

Brooks: Madame General Manager.

Leal: Yes, thank you Mr. President, commissions. I just want to express thanks to the Air Quality Management District for, not only helping us with our CEC permit, which we were able to achieve a CEC permit for the peakers, for the data that was provided to the Air Quality District, and for their ongoing support to Ms. Hale and her staff as they pull forward information and continue to get updated information. Thank you.

Brooks: Thank you very much. Mr. Normandy, did you have any other comments?

Normandy: Just one comment. In regard to the discussion that we had about the objectives and the questions and framework, if anyone wants copies of that. Because that's what we're holding ourselves to. And if you want to have a copy of that in your hands, I'm sure the commission secretary can provide.

Brooks: Commissioner Caen, do you have any comments?

Caen: Not at this time.

Brooks: Thank you very much once again for coming.

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