

New York State Public Service Commission

In the Matter of

Case 99-F-1314 - Application of Consolidated
Edison Company of New York, Inc. for a Certificate
of Environmental and Public Need Pursuant to
Article X of the New York State Public Service Law
to Repower its East River Generating Station in
Manhattan, New York County, New York

MINUTES OF HEARING held at the Public Service

Commission, One Pennsylvania Plaza, New York, New
York on Friday, April 20, 2001, commencing at 9:02
a.m.

BEFORE: WALTER T. MOYNIHAN,
Administrative Law Judge
Public Service Commission

DANIEL P. O'CONNELL,
Administrative Law Judge
Department of Environmental
Conservation

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ORIGINAL

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MATHY V. STANISLAUS, ESQ.
DANIEL GUTMAN, ESQ.
EREC/Community Board 3

ALSO PRESENT:

JEFFREY L. RIBACK, Associate Counsel
PETER GARAM
Consolidated Edison

ELWOOD HALTERMAN
KAISER AZIZ
EREC/Community Board 3

WILLIAM G. LITTLE
New York State Department of Environmental
Conservation
50 Wolf Road
Albany, New York 12233-1500

I N D E X

VOIR

<u>WITNESS</u>	<u>DIRECT</u>	<u>CROSS</u>	<u>REDIRECT</u>	<u>RECROSS</u>	<u>DIRE</u>
G. Yarwood	1007	1029		1206	
M. Cinadr	1053	1067			
S.E. Halterman	1103	1123	1193	1211	1105
K. Aziz	1217	1226		1284	
S. Kurtz	1299	1305			

<u>EXHIBIT NO.</u>		<u>FOR IDENT.</u>	<u>IN EVID.</u>
37	Resume of Greg Yarwood	1027	1051
38	Memorandum from Greg Yarwood to Steven Kurtz, April 10, 2001	1028	1051
39	California Energy Commission proposed decision on Otay Mesa generating project	1066	
40	Commission order certificating the LaPaloma generating project	1141	
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42	Table from Goal Line Environmental Technology	1192	1216
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44	Layout depiction of proposed Kips Bay facility	1225	
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48	Picture of 74th Street steam station	1290	1297

1 JUDGE MOYNIHAN: Please come to
2 order.

3 I will call Case 99-F-1314. This is
4 Con Ed's Application for Certificate of
5 Environmental Compatibility and Public Need
6 to Repower the East River Generating
7 Station to Replace the Waterside Generating
8 Station in Manhattan, New York County, New
9 York.

10 We have a new reporter, so I am going
11 to ask counsel, if they would, to please
12 note their appearances again before we
13 begin.

14 MR. GARAM: Peter Garam for Con
15 Edison.

16 MR. RIBACK: Jeffrey Riback for Con
17 Edison.

18 MR. KARMELE: Good morning. Philip
19 Karmel for Con Edison.

20 MR. PADEN: Peter Paden for Con
21 Edison.

22 MR. STACK: Robert Stack for Con
23 Edison.

24 MR. HALTERMAN: Elwood Halterman for
25 EREC/CB3.

1 MR. GUTMAN: Daniel Gutman for
2 EREC/CB3.

3 MR. STANISLAUS: Mathy Stanislaus
4 for EREC/CB3.

5 MR. AZIZ: Kaiser Aziz for EREC/CB3.

6 MR. LITTLE: William Little for the
7 Department of Environmental Conservation.

8 MR. LANG: Kevin Lang for the Public
9 Service Commission.

10 JUDGE MOYNIHAN: Are there any other
11 appearances?

12 All right. Before we call our first
13 witness, I believe we have the schedule for
14 next week, that had been left to today to
15 discuss. Have the parties come to any type
16 of agreement on the order of witnesses for
17 next week?

18 MR. KARMEL: I don't think we have
19 discussed it, your Honor.

20 JUDGE MOYNIHAN: You haven't
21 discussed it?

22 MR. KARMEL: Maybe at a break today
23 we can try to get together and reach some
24 type of agreement.

25 JUDGE MOYNIHAN: After lunch can

1 someone report back to me?

2 MR. LITTLE: One quick question on
3 Monday. Will you be thinking of a 9:00
4 a.m. or a 10:00 a.m.?

5 JUDGE MOYNIHAN: I have been
6 thinking of 10:00 a.m. just so I can get
7 down here without having to get up at 3:00
8 in the morning.

9 MR. LITTLE: Those of us from Albany
10 appreciate that.

11 JUDGE MOYNIHAN: Anything else
12 before we call our next witness?

13 MR. STANISLAUS: I guess I missed
14 the scheduling. I guess we haven't agreed
15 on a schedule for Monday, right, and for
16 Tuesday I guess that would probably be the
17 best place to put Charles Komanoff.

18 MR. KARMEL: Why don't we discuss it
19 at a break.

20 JUDGE MOYNIHAN: I do have a
21 schedule for Monday that was given to me.
22 I was thinking subsequent --

23 MR. STANISLAUS: We will discuss it
24 at a break and come back; that's fine.

25 JUDGE MOYNIHAN: Is there anything

1 else?

2 MR. KARMELE: Your Honor, I would
3 like to raise a point in preparing for
4 today's hearing session. I thought about
5 something that had been said at the
6 conclusion of yesterday's hearing session,
7 and I now am thinking that additional
8 information would be appropriate.

9 Judge O'Connell yesterday asked me a
10 question as to whether the supplementary
11 testimony of Mr. Shansky was being put in
12 only with respect to PM 2.5 issues, and I
13 said yes, that was the case. Upon
14 reflection, I now realize that that was
15 cited in Dr. Greg Yarwood's testimony.
16 Greg Yarwood will be testifying today, so
17 that testimony of Mr. Shansky did have
18 another purpose that I didn't realize at
19 that time.

20 And the document marked as Exhibit 12
21 is also relied upon by Dr. Yarwood, so that
22 it does have another distinct SCONOX
23 related purpose apart from PM 2.5.

24 JUDGE MOYNIHAN: Thank you.

25 Anything else?

1 MR. LITTLE: Your Honor, I have one
2 housekeeping matter. I probably should
3 have done this yesterday and I apologize,
4 but with your permission, this will only
5 take a minute.

6 On the alternatives issue we had
7 submitted direct testimony of Jesse Decker,
8 who is a supervisor of utility accounting
9 and finance. We were advised by all of the
10 parties that none of them had any
11 cross-examination. We would like to offer
12 his testimony, and we have an affidavit of
13 a sponsoring witness that we would like to
14 submit at this time.

15 JUDGE MOYNIHAN: I just want to make
16 sure. Are there other objections?

17 Okay, you have the affidavit there
18 with you?

19 MR. LITTLE: Yes, your Honor.

20 JUDGE MOYNIHAN: All right. I will
21 instruct the reporter to put the affidavit
22 in and follow it with testimony.

23 MR. LITTLE: Do you want the
24 original or should I give the original?

25 JUDGE MOYNIHAN: Give the original

1 to the reporter.

2 JUDGE MOYNIHAN: Is there anything
3 else?

4 Mr. Karmel.

5 MR. KARMEL: Well, ordinarily, your
6 Honor, we would now, if we're going to
7 begin SCONOX, call Steve Kurtz, who is the
8 witness on SCONOX, but we have agreed to
9 put that off, so we will we will call
10 Dr. Greg Yarwood, who is a more minor
11 witness with respect to SCONOX. But he is
12 our out-of-town witness and we are going to
13 put Steve Kurtz off until after the
14 out-of-town witness has testified.

15 JUDGE MOYNIHAN: Okay. Good.

16 Whereupon,

17 GREG YARWOOD,
18 having been first duly sworn, was examined and
19 testified as follows:

20 JUDGE MOYNIHAN: Dr. Yarwood, please
21 be seated and state and spell your name for
22 our reporter.

23 THE WITNESS: My name is Greg
24 Yarwood, Y-A-R-W-O-O-D, Greg Yarwood.

25 DIRECT EXAMINATION

1 BY MR. KARMEL:

2 Q. Good morning, Dr. Yarwood. Have you
3 prepared prefiled rebuttal testimony in this
4 proceeding?

5 A. Yes, I have.

6 Q. And if you were asked the questions
7 asked to you in the prefiled testimony, would your
8 answers today, now that you are under oath, be the
9 same as the answers you set forth in your prefiled
10 testimony?

11 A. Yes, they will.

12 MR. KARMEL: I would move that
13 Dr. Yarwood's prefiled testimony be
14 submitted as if given here today.

15 JUDGE MOYNIHAN: Are there any
16 objections?

17 Motion granted.
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Rebuttal Testimony of
Greg Yarwood, Ph.D.

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1 Q. Please state your name, employer and business address.

2 A. My name is Greg Yarwood. I am employed as a Senior Consultant by ENVIRON
3 Corporation, an environmental consulting firm. My business address is 101 Rowland Way, Suite
4 220, Novato, CA 94945-5010. I offer this rebuttal testimony on behalf of Consolidated Edison
5 Company of New York, Inc. (Con Edison).

6 Q. Please describe your educational background and areas of expertise.

7 A. I hold a Ph.D. in Chemistry from the University of Cambridge, England. My technical
8 expertise is in atmospheric chemistry, photochemical modeling, photochemical model
9 development, the interpretation of ambient air quality data, mobile source emissions modeling,
10 and emissions inventory development. I am an experienced project manager and provide
11 technical direction for projects at ENVIRON. My resume is annexed as Exhibit 1 hereto.

12 Q. What is the subject matter of your rebuttal testimony?

13 A. My rebuttal testimony addresses the issue of secondary formation of particulate matter,
14 which was presented by the testimony of S. Elwood Halterman, Jr. on behalf of EREC/CB3.
15 Specifically, Mr. Halterman testifies that (i) the SCR included as pollution control equipment in
16 the design of the East River Repowering Project (the Project) has the potential to emit 365.7 tons
17 per year of ammonia; (ii) the ammonia will undergo certain chemical reactions in the atmosphere
18 to form secondary particulate matter; and (iii) the potential quantity of secondary particulate
19 matter that may be formed by the ammonia emissions is 1,518.7 tons per year.

20 Q. Please summarize your rebuttal testimony.

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1 A. Mr. Halterman's testimony fails to provide an accurate assessment of how the Project
2 will affect the secondary formation of particulate matter. If the Project's impacts are assessed in
3 their entirety, the Project will reduce rather than increase secondary particulate matter formation.

4 Q. Please summarize the basis of your opinion.

5 A. I summarize the basis of my opinion below. My opinion is documented in greater
6 detail in the annexed memorandum dated April 10, 2001 (Exhibit 2).

7 First, as to the amount of ammonia that the Project will emit, Mr. Halterman states that
8 he relied upon Con Edison's air permit application, which requested an ammonia permit limit of
9 10.0 ppmvd @ 15% O₂. Mr. Halterman has disregarded the fact that the air permit proposed for
10 the Project by the New York State Department of Environmental Conservation has an ammonia
11 emissions limit of 5.0 ppmvd @ 15% O₂. Thus, Mr. Halterman assumes that the Project will
12 emit ammonia at twice the maximum emissions rate allowed by the proposed permit, and that, in
13 addition, the Project will operate at 100% of its maximum capacity each hour of the year. In my
14 analysis, it has been conservatively assumed that ammonia emissions will be at the maximum
15 emissions rate allowed by the proposed permit (5.0 ppmvd @ 15% O₂). I have relied upon Con
16 Edison's estimate that, at this emissions rate, ammonia emissions will be 101.4 tons per year in
17 light of the anticipated steam and electric generation of the Project that Con Edison considers to
18 be generally representative of anticipated future operation.

19 Second, Mr. Halterman does not correctly describe the chemical reactions that may
20 occur in the atmosphere after the ammonia is emitted from the Project stacks. The specific
21 chemical reactions that Mr. Halterman describes in his testimony will not occur, although other
22 chemical reactions may occur that would result in the secondary formation of particulate matter.

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1 Further information as to these chemical reactions is presented in the attached memorandum
2 (Exhibit 2).

3 Third, in incorrectly describing the chemical reactions at issue, Mr. Halterman has
4 ascribed to the Project the mass of sulfate particulate that would exist as particulate regardless of
5 whether the Project emits ammonia or not. As a result, Mr. Halterman's computation of the
6 mass of particulate matter that would result from the release of each molecule of ammonia is
7 incorrect and results in a substantial overestimate of the mass of particulate matter that may be
8 formed as a result of ammonia emissions into the atmosphere.

9 Fourth, Mr. Halterman's statement that he is "assuming an equimolar split between
10 sulfate and nitrate conversion" reflects his reliance upon an arbitrary assumption that is not based
11 on scientific evidence. When actual data are considered that provide a basis for the "split" to be
12 estimated, it is apparent that Mr. Halterman's assumption results in a further upward bias in his
13 estimates of potential secondary particulate matter related to ammonia emissions.

14 Fifth, once the foregoing matters are taken into account, a more reasonable upper limit
15 on the potential formation of secondary particulate matter in the atmosphere from ammonia
16 emissions is 150 tons per year.

17 Sixth, Mr. Halterman fails to consider the fact that other criteria contaminants
18 associated with the combustion of fossil fuels (oil or natural gas) also act as precursors to the
19 formation of secondary particulate matter in the atmosphere. Con Edison has estimated that the
20 Project, together with the retirement of the Waterside Generating Station and associated emission
21 reduction measures that have been proposed for the East River Generating Complex, is projected
22 to result in net decreases of sulfur dioxide, nitrogen oxides, and volatile organic compounds, all

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1 of which are precursors to the potential formation of secondary particulate matter in the
2 atmosphere. Once these net decreases are considered, it is clear that, when considered in its
3 entirety, the Project will reduce rather than increase the amount of secondary particulate matter
4 that may be formed in the atmosphere. In the annexed memorandum (Exhibit 2), I estimate that
5 the resulting potential reduction in secondary particulate matter that may be formed in the
6 atmosphere as a result of the Project and related emission changes is 897 tons per year or greater.

7 Seventh, to provide some perspective on the ammonia emissions that are the subject of
8 Mr. Halterman's testimony, the annexed memorandum (Exhibit 2) notes that those emissions are
9 projected to be about one percent of the total ammonia released into the atmosphere in New York
10 City.

11 Q. Does this conclude your testimony at this time?

12 A. Yes.

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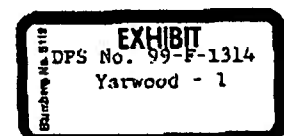
GREG YARWOOD, Ph.D.**EDUCATION**

- 1987 Ph.D., Chemistry, University of Cambridge, England
- 1982 B.Sc., Chemistry, University of Bath, England

EXPERIENCE

Dr. Greg Yarwood is a Senior Consultant at ENVIRON Corporation. He has technical expertise in atmospheric chemistry, photochemical modeling, photochemical model development, the interpretation of ambient air quality data, mobile source emissions modeling, and emissions inventory development. He is an experienced project manager and provides technical direction for projects at ENVIRON. His experience includes the following:

- Principal investigator for the development and implementation of ENVIRON's Ozone Source Apportionment Technology (OSAT). OSAT apportions model estimated ozone among user selected emission categories and geographical areas permitting the development of more effective and more equitable ozone control strategies.
- Lead implementation of the Decoupled Direct Method (DDM) for sensitivity analysis and the Process Analysis (PA) diagnostic method in ENVIRON's Comprehensive Air Quality Model with extensions (CAMx). This makes CAMx unique in providing three complementary "probing tools," OSAT, DDM and PA in a single framework.
- Managed urban and regional scale modeling to develop control strategies for 1-hour and 8-hour ozone in East Texas. The modeling used the CAMx ozone model, MM5 meteorological model and the EPS2 and GloBEIS emission models. The selection of control strategies was carried through a collaborative process involving local stakeholders from industry, local government, environmental, and regulatory organizations.
- Performed extensive air quality (UAM) modeling of reformulated and alternative fuels for the joint Auto/Oil Air Quality Improvement Research Program (AQIRP). Dr. Yarwood was responsible for overseeing emissions data analysis, emissions inventory development and photochemical modeling, and for integrating and explaining the data analysis, emissions, and air quality modeling issues and results.
- Co-principal investigator for a study to investigate the feasibility of using a 1995/1996 field study in the Los Angeles basin to (1) detect the introduction of California Phase 2 reformulated gasoline, and (2) evaluate the ability of photochemical modeling to predict the change in air quality since the last major field study in 1987. The methods proposed in the feasibility study were later used to successfully identify the signatures of RFG in the Los Angeles atmosphere.



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GREG YARWOOD, Ph.D.

- Lead the development of a new biogenic emissions model (GloBEIS) and supporting landcover databases for Texas. GloBEIS updates the methodologies of the BEIS2 model. The Texas landcover data are based local surveys, satellite data, existing landcover databases synthesized through GIS analyses using ARC/Info. Also developed methodologies for quantifying the impacts of cloud cover on isoprene emissions from satellite data.
- Project manager for an EPA to review of VOC receptor modeling studies and ambient VOC:NO_x and CO:NO_x ratio studies for evidence of systematic biases in emission inventories.
- Developed locally specific VOC speciation profiles to enhance photochemical ozone modeling of the Dallas area. Profiles were developed about 300 of point sources based on actual reported emissions data and for mobile and area sources.
- Developed state of the science fast chemistry solvers for the CAMx model including a Chemical Mechanism Compiler (CMC). The CMC allows the chemical mechanism used in CAMx to be changed easily by automatically re-generating the chemistry solver for each new mechanism. The CMC has been used to implement the CB4 and SAPRC mechanisms in CAMx as well as mechanism extensions for chlorine initiated chemistry.
- Compared and critically evaluated photochemical mechanisms used in global tropospheric chemistry models for an EPA-sponsored inter-comparison of models used to estimate the impacts of methane, CO, VOCs and NO_x on global tropospheric ozone and global warming.
- Member of the CRC Research Panel on the Atmospheric Chemistry of Hydrocarbons (RPACH) which reviewed the chemistry of alkene (1997-1998) and aromatic hydrocarbons (1999-2000).
- Led an analysis of ozone air quality benefits for several reformulated fuel and advanced vehicle programs in Canada. The project combined emission projections, ambient air quality data and photochemical modeling analyses to project changes in ozone for the whole of Canada.
- Managed a project that combined reactive plume modeling with analyses of ambient data to estimate the potential impacts of offshore drilling activities on tropospheric ozone levels near Prudhoe Bay, Alaska.
- Prepared a critical review of models being used for integrated assessment of ozone control strategies in the European Community. The EMEP and RAINS ozone models were reviewed in depth, and the review was completed in two weeks to meet the clients' schedule.
- Reviewed the methodology for modeling non-exhaust emissions in the California Air Resources Board EMFAC 7G model.

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GREG YARWOOD, Ph.D.

Prior to joining ENVIRON Corporation, Dr. Yarwood held the following positions:

- Senior Scientist in the Atmospheric Chemistry Group at Systems Applications International. Served as technical lead on photochemical modeling projects related to reformulated and alternative fuels and advanced vehicle controls, developed a fast chemistry solver for the UAM and UAM-V, and reviewed receptor modeling and ambient measurement data to assess accuracy of mobile source and other components of emission inventories.
- Postdoctoral research associate at the Center for Atmospheric Chemistry, York University, Toronto. Studied the products and mechanisms of hydrocarbon oxidation reactions under atmospheric conditions using long-path FTIR spectroscopy and environmental chambers.
- Postdoctoral research associate at Brookhaven National Laboratory, Long Island, NY. Studied the kinetics of oxygen atom reactions with alkenes and nitric oxide using shock tube/flash-photolysis and flash-photolysis/resonance fluorescence techniques.
- Graduate student in the Department of Physical Chemistry at the University of Cambridge. Studied the kinetics and infrared spectroscopy of weakly bound molecules, such as N_2O_3 , in the gas phase.

PROFESSIONAL MEMBERSHIPS

Air and Waste Management Association

American Chemical Society

American Geophysical Union

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GREG YARWOOD, Ph.D**PUBLICATIONS AND PRESENTATIONS**

- G. Yarwood (with C. Wiedinmyer, I.W. Strange, M. Estes, and D. Allen. 2000. Biogenic hydrocarbon emission estimates for North Central Texas", *Atmos. Environ.* 34 (2000) 3419-3425.
- G. Yarwood (with A. Pollack). 1997. "The Contribution of On-Road Vehicles to Ozone in the Eastern United States". Presented at the Seventh Annual CRC On-Road Vehicle Emissions Workshop, San Diego, California (April, 1997).
- G. Yarwood (with A.K. Pollack, A. Dunder, J. Fieber, J. Heiken, J. Cohen, S. Shepard, C. Schleyer). 1996. Revision of Mobile Source Emission Inventories Using Real-World Measurements - Use in Auto/Oil Air Quality Modeling. Submitted to *Journal of the Air and Waste Management Association*.
- G. Yarwood (with J. Heiken, G. Wilson, M. Yocke, R. Morris and L. Chinkin). 1996. Development of a Regional Modeling Emissions Inventory for the State of Texas. Presented at the Air and Waste Management Association Conference on the Emission Inventory, New Orleans, Louisiana.
- G. Yarwood (with R.E. Morris, M.A. Yocke, H. Hogo and T. Chico). 1996. "Development of a Methodology for Source Apportionment of Ozone Concentration Estimates from a Photochemical Grid Model" presented at the 89th Annual Meeting of the Air and Waste Management Association, Nashville, Tennessee. June 23 - 28.
- G. Yarwood (with C.A. Emery, R.E. Morris, and M.A. Yocke). 1996. The Extended Urban/Regional Airshed Model (UAMX) -- Initial Development and Testing of an Advanced, Publicly-Available, Nested-Grid Ozone Model that will Emulate UAM-V and Other Advanced Grid Models, presented at the 89th AWMA Annual Meeting, Nashville, TN, June 23-28.
- G. Yarwood (with A. M. Dunker, R. E. Morris, A. K. Pollack and C. H. Schleyer). 1995. "Photochemical Modeling of the Impact of Fuels and Vehicles on Urban Ozone Using Auto/Oil Program Data". *Environmental Science and Technology* 30(3): 787-801.
- G. Yarwood (with S. Reynolds, H. Michaels, P. Roth, D. McNally and L.A. Gardner). 1996. "Alternative Base Cases in Photochemical Modeling: Their Construction, Role and Value". *Atmospheric Environment* 30(12): 1977-1988.
- G. Yarwood (with D.P. Chock, A.M. Dunker, R.E. Morris, A.K. Pollack and C.H. Schleyer). 1995. "Sensitivity of Urban Airshed Model Results for Test Fuels to Uncertainties in Light Duty Vehicle Emissions and Alternative Chemical Mechanisms-Auto/Oil Air Quality Improvement Research Program". *Atmospheric Environment* 29(21): 3067-3084.

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- G. Yarwood (with T.E. Stoeckenius, J.P. Cohen and S.B. Shepard). 1995. "A Clustering Method for Identifying Ozone Episodes with Similar Meteorological Conditions: Application to Model Evaluation and Trend Analysis in the South Coast (Los Angeles) Air Basin". Presented at the 88th Annual Meeting of the Air and Waste Management Association, San Antonio, Texas (June, 1995). Paper 95-FA113C.01.
- G. Yarwood (with T.E. Stoeckenius and R.E. Looker). 1995. "Modeling the Change in Episodic Ozone between 1987 and 1993 in the South Coast (Los Angeles) Air Basin". Presented at the 88th Annual Meeting of the Air and Waste Management Association, San Antonio, Texas (June, 1995). Paper 95-RA113A.06.
- G. Yarwood (with P.D. Guthrie, S.B. Shepard and M.P. Ligocki). 1995. "Fast UAM: An Example of an Adaptive Approximation Solver for Atmospheric Chemistry Problems", Presented at SciCADE95, Stanford University (28 March - 1 April).
- G. Yarwood (with M. P. Logocki). 1995. "Realistic Mobile Speciation Profiles: Implications for VOC Receptor Modeling and Inventory Assessments". Presented at the Fifth Annual CRC On-Road Vehicle Emissions Workshop, San Diego, California (April, 1995).
- G. Yarwood (with J.G. Calvert and A.M. Dunker). 1994. "An Evaluation of the Mechanism of Nitrous Acid Formation in the Urban Atmosphere", *Res. Chem. Intermed.*, Vol. 20, No3/4/5, pp. 463-502.
- G. Yarwood (with A. M. Dunker, R. E. Morris, and C. H. Schleyer). 1994. "Fuels, Vehicles and Their Impact on Urban Ozone". Presented at the 7th BOC Priestley Conference, Bucknell University, Lewisburg, Pennsylvania (24-27 June).
- G. Yarwood (with C.H. Schleyer, W. J. Koehl, W. R. Leppard, A. M. Dunker, and J. P. Cohen). 1994. "The Effect of Gasoline Olefin Composition on Predicted Ozone in 2005/2010 Auto/Oil Air Quality Improvement Research Program". Presented at the SAE International Congress. (1 March).
- G. Yarwood (with R. E. Morris, A. M. Dunker, A. K. Pollack, J. L. Fieber, and C.H. Schleyer). 1993. "Methodology for Air Quality Modeling in Phase II of the Auto/Oil Air Quality Improvement Research Program". Presented at the Regional Photochemical Measurement and Modeling Studies International Conference and Course, San Diego, California (8-12 November).
- G. Yarwood (with A. M. Dunker, R. E. Morris, J. L. Fieber, C. H. Schleyer, and Alison Pollack). 1993. "Methodology for Air Quality Modeling in Phase II of the Auto/Oil Program." Presented at the 1993 AE Fuels and Lubricants Meeting (19 October).
- G. Yarwood (with C. H. Schleyer, A. M. Dunker, J. Cohen, and A. K. Pollack). 1993. "Effect of Fuel Sulfur Content on Predicted Ozone for Years 2005/2010-Auto/Oil Air Quality

GREG YARWOOD, Ph.D.

- Improvement Research Program." Paper presented at the SAE International Fuels and Lubricants Meeting, Philadelphia, Pennsylvania (19 October).
- G. Yarwood (with T. Zhu, J. Chen and H. Niki). 1993. "FTIR study of the formation of cis- and trans-chlorovinyl radicals in the $\text{Cl} + \text{C}_2\text{H}_2$ reaction", *J. Physical Chem.*, 98:5065.
- G. Yarwood (with D. P. Chock, A. M. Dunker, C. H. Schleyer, R. E. Morris, and A. K. Pollack). 1993. "Sensitivity of Urban Airshed Model Results for Test Fuels to Uncertainties in Light-Duty Vehicle and Biogenic Emissions and Alternative Chemical Mechanisms-Auto/Oil Air Quality Improvement Research Program", presented at the Regional Photochemical Air Quality Measurement and Modeling Studies, Session M5, San Diego, California (November 7-12).
- G. Yarwood (with T. Zhu, J. Chen, and H. Niki). 1993 "Evidence for the heterogeneous formation of nitrous acid from peroxyntic acid in environmental chambers", *Environ. Sci. Technol.*, 27:982-983
- G. Yarwood (with N. Peng and H. Niki). 1992. "FTIR study of the Cl and Br atom initiated oxidation of ethene", *Int. J. Chem. Kinet.*, 24:369.
- G. Yarwood (with H. Niki and P. D. Maker). 1991. "Kinetic and IR spectroscopic studies of formyl bromide (HCOBr) formed via the reaction $\text{HCO} + \text{Br}_2 \rightarrow \text{HCOBr} + \text{Br}$ ", *J. Phys. Chem.*, 95(12):4773-4777.
- G. Yarwood (with N. Peng and H. Niki). 1991. "FTIR study of the mechanism of the Cl and Br atom initiated oxidation of acetylene", *J. Phys. Chem.*, 95(19):7330-7337.
- G. Yarwood (with J. W. Sutherland, M. A. Wickramaaratchi, and R. B. Klemm). 1991. "Direct rate constant measurements for the reaction $\text{O} + \text{NO} + \text{Ar} \rightarrow \text{NO}_2 + \text{Ar}$ at 300-1341 K", *J. Phys. Chem.*, 95(22):8771-8775.
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ENVIRON**MEMORANDUM**

To: Stephen A. Kurtz
From: Greg Yarwood, Ph.D.
Date: April 10, 2001
Subject: Impact of Consolidated Edison Company's East River Repowering Project on the formation of secondary particulate matter

This memorandum discusses the potential impacts of Con Edison's East River Repowering Project (ERRP) on the formation of secondary particulate matter (PM). Secondary PM is formed when trace gases in the atmosphere undergo chemical transformations and are converted to particulates (see Atmospheric Chemistry and Physics by Seinfeld and Pandis, John Wiley & Sons, 1998). Projected changes in the emissions of sulfur dioxide (SO_2), nitrogen oxides (NO_x), volatile organic compounds (VOCs) and ammonia (NH_3) due to the ERRP, the closure of the Waterside facility, and associated emission reduction measures that Con Edison has proposed for the East River Generating Complex have the potential to impact secondary PM. The combined impact of these projected emission changes is estimated to result in a projected reduction in potential secondary PM of 897 tons per year or greater.

In the last part of this memorandum, data are also presented to place the ERRP's use of ammonia in perspective relative to the many other sources of ammonia emissions in New York City.

Background

The mechanisms by which SO_2 , NO_x , VOCs and NH_3 can form secondary PM are discussed briefly below.

SO_2 reacts in the atmosphere to form sulfuric acid (H_2SO_4). Sulfuric acid will move essentially completely from the gas phase into the particulate phase.

NO_x react in the atmosphere to form nitric acid (HNO_3) and other types of nitrates. Over time, some of the nitric acid and nitrates that are formed will enter the particulate phase. The amount of PM nitrate formed depends upon atmospheric conditions and the presence/absence of other trace constituents in the atmosphere.

VOCs react in the atmosphere to many different organic products. Over time, some of the products formed by some VOCs can become secondary PM. The amount of secondary organic PM formed depends upon the atmospheric conditions and the presence/absence of other trace constituents in the atmosphere.

NH_3 can form secondary PM by reacting with acidic gasses or acidic particles. For example, over time, ammonia can react with particulate sulfuric acid to form particulate ammonium sulfate $[(\text{NH}_4)_2\text{SO}_4]$. Ammonia can also react with gaseous nitric acid to form particulate ammonium nitrate (NH_4NO_3) . The amount of secondary PM ammonium formed depends upon the atmospheric conditions and the presence/absence of other trace constituents in the atmosphere.

Secondary PM Impact of Increased Ammonia Emissions

Con Edison has projected that annual NH_3 emissions from the ERRP will be 101.4 tons/yr (analysis dated April 4, 2001). According to Con Edison, this number is calculated using the ammonia emissions rate in the draft permit issued for the ERRP (5ppmvd ammonia slip corrected to 15% O_2) and reflects the anticipated steam and electric generation that is generally representative of anticipated future operation. The Con Edison estimate is conservative in assuming that ammonia is emitted at the maximum emissions rate allowed by the draft permit. Therefore, it is likely that actual ammonia emissions will be less than 100 tons/yr. The potential to emit ammonia is 182.5 tons/yr assuming operation at the maximum emissions rate in the draft permit and at 100% capacity for 8760 hours per year.

The emission of ammonia may increase the formation of secondary PM as the ammonia reacts with acidic gasses or acidic particles, as noted above. A simple and conservative analysis is to assume that all of ERRP ammonia emissions are eventually incorporated into the particulate phase as ammonium. The ammonium could be associated with sulfate, nitrate or both. The relative amounts of sulfate and nitrate formed can be estimated from the observed ratio of PM_{10} sulfate to nitrate at the NYSDEC monitoring stations in the area. Complete data are available for only two in-City monitoring stations for these parameters. The Mabel Dean Bacon monitoring site in Manhattan is the closest site to the ERRP with complete PM_{10} sulfate and nitrate data. In 1999, the annual average inhalable particulate matter (PM_{10}) sulfate and nitrate at Mabel Dean were 4.5 and 0.9 $\mu\text{g}/\text{m}^3$, respectively (NYSDEC 1999 New York State Air Quality Report, March 2001). This suggests that ERRP ammonia emissions will predominately form sulfate rather than nitrate. A simple estimate based on the Mabel Dean observations is that 87% of the ammonia will eventually form ammonium sulfate and 13% will eventually form ammonium nitrate.

The increase in PM mass due to ammonium sulfate formation can be estimated as follows. Ammonia gas reacts with particulate sulfuric acid to form particulate ammonium sulfate. This reaction transfers ammonia from the gas phase into the particulate phase, and so the increase in secondary particulate mass is equal to the mass of ammonia incorporated into the particulate phase:

$$\begin{aligned} \text{Increase in secondary PM mass} \\ \text{due to ammonium sulfate formation} &= 101.4 (\text{NH}_3 \text{ tons/yr}) \\ &\quad \times 0.87 (\text{fraction of ammonia reacting with sulfate}) \\ &= 88.2 \text{ tons/yr} \end{aligned}$$

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The increase in PM mass due to ammonium nitrate formation can be estimated as follows. Ammonia gas and nitric acid gas react to form particulate nitrate. The assumption that ammonia and nitric acid react completely to form ammonium nitrate is conservative because, in reality, the reaction is in equilibrium and there is a tendency for some of the ammonia and nitric acid to remain as gases. Nevertheless, using this conservative assumption, the increase in secondary particulate mass is the mass of ammonium nitrate formed:

$$\begin{aligned}
 \text{Increase in secondary PM mass} \\
 \text{due to ammonium nitrate formation} &= 101.4 \text{ (NH}_3 \text{ tons/yr)} \\
 &\quad \times 0.13 \text{ (fraction of ammonia reacting with nitrate)} \\
 &\quad \times 80 \text{ (g/mole NH}_4\text{NO}_3) / 17 \text{ (g/mole NH}_3) \\
 &= 62.0 \text{ tons/yr}
 \end{aligned}$$

The estimated total increase in secondary PM due to ERRP ammonia emissions is 150 tons/yr.

Secondary PM Impact of Decreased Sulfur Dioxide Emissions

The ERRP and related actions are projected to decrease annual SO₂ emissions by 698 tons (Tables 2.1 and 3.1 of Peter Tom Memorandum, March 23, 2001). This projected emissions reduction number for SO₂ does not include additional SO₂ emissions reductions that are projected to occur as a result of the displacement of electric generation, as presented in Rick Shansky's supplemental direct testimony on behalf of Con Edison. The projected decrease in SO₂ emissions will decrease the formation of particulate sulfate by reducing the amount of precursor emissions. Most of the SO₂ emitted to the atmosphere is converted to sulfate, so a simple estimate of the change in particulate sulfate due to the projected SO₂ emissions reduction is:

$$\begin{aligned}
 \text{Sulfate reduction} &= 698 \text{ (tons/yr SO}_2\text{)} \\
 &\quad \times 96 \text{ (g/mole sulfate) / 64 (g/mole SO}_2\text{)} \\
 &= 1047 \text{ tons/yr}
 \end{aligned}$$

Secondary PM Impact of Decreased Nitrogen Oxide Emissions

The ERRP and related actions are projected to decrease annual NO_x emissions by 1,716 tons (Tables 2.1 and 3.1 of Peter Tom Memorandum, March 23, 2001). This projected emissions reduction number for NO_x does not include the additional NO_x emissions reductions that are projected to occur as a result of the displacement of electric generation, as set forth in Rick Shansky's supplemental direct testimony on behalf of Con Edison. The projected decrease in NO_x emissions will tend to decrease the formation of secondary particulate nitrate by decreasing the precursor emissions. However, there is no simple way to quantify the change in particulate nitrate due to this NO_x emission reduction.

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Secondary PM Impact of Decreased VOC Emissions

The ERRP and related actions are projected to decrease annual VOC emissions by 20 tons (Tables 2.1 and 3.1 of Peter Tom Memorandum, March 23, 2001). This will tend to decrease the formation of secondary organic particulate by decreasing the amount of precursor emissions. However, there is no simple way to quantify the change in secondary PM due to this VOC emission reduction.

Summary of Combined Secondary PM Impacts

The potential impacts on secondary PM resulting from changes in the emissions of SO₂, NO_x, VOC and NH₃ were discussed above. Emissions of NH₃ are projected to increase, resulting in an estimated increase in secondary PM of 150 tons/yr under the conservative assumptions identified above. Emissions of SO₂, NO_x and VOC are projected to decrease, resulting in decreases in secondary PM. The projected SO₂ reductions from the Con Edison steam system alone (without consideration of electric displacement) are estimated to reduce secondary PM by 1047 tons/yr. Reductions in secondary PM due to NO_x and VOC emission reductions were not estimated. Thus, the combined impact of the ERRP-related emission changes is estimated to be a reduction in potential secondary PM of 897 tons/yr or greater.

Comparison to Mr. Halterman's Evaluation of Secondary PM Impacts

S. Elwood Halterman Jr. has evaluated the potential secondary PM impacts of the ERRP project (Testimony of S. Elwood Halterman, Jr., March 26, 2001). In his testimony, Mr. Halterman inaccurately characterized the formation of sulfates and nitrates as being due to reactions of ammonia with gaseous sulfur oxides and NO_x. As discussed above, ammonium sulfate and ammonium nitrate are formed when ammonia reacts with sulfuric acid aerosols and nitric acid gas, respectively. Mr. Halterman then estimated the potential generation of 1,518.7 tons/yr of secondary PM. His analysis contains the following important differences from the analysis presented above:

- Mr. Halterman assumed annual ammonia emissions of 365.7 tons/yr. This exceeds the emissions estimate provided by Con Edison of 101.4 tons/yr. The Con Edison estimate is conservative in assuming that ammonia is emitted at the maximum emissions rate allowed by the draft permit. Therefore, it is likely that actual ammonia emissions will be less than 100 tons/yr.
- Mr. Halterman arbitrarily assumed an equimolar split between sulfate and nitrate conversion of ammonia. The available monitoring data from Mabel Dean Bacon suggest that ammonia would predominantly form sulfate rather than nitrate, as discussed above.
- When Mr. Halterman estimated the "potential generation of 1,518.7 tons/yr" of PM he included the mass of sulfate associated with ammonium sulfate. This ignores the fact that the sulfate would be in the particulate phase regardless of whether it reacted with ammonia from

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the ERRP. In this way, Mr. Halterman's methodology very significantly overstates the increase in secondary PM attributable to the ERRP.

- Mr. Halterman fails to consider reductions in secondary PM attributable to the projected reductions in SO₂, NO_x and VOC emissions associated with the ERRP, the closure of Waterside, and related emission reduction measures that Con Edison has proposed for the East River Generating Complex. As discussed above, the reduction in SO₂ emissions due to the ERRP is estimated to reduce sulfate PM formation by 1047 tons/yr.

When these four factors are taken into account, the estimated impact of the ERRP on secondary PM is changed from a potential increase of 1,519 tons/yr, as estimated by Mr. Halterman, to a projected reduction of at least 897 tons/yr.

Annual Ammonia Emissions in New York City

As noted above, Con Edison has projected that the ERRP could cause annual ammonia emissions of 101.4 tons at the maximum ammonia emissions rate in the draft permit for the ERRP (analysis dated April 4, 2001). The U.S. Environmental Protection Agency (EPA) has just completed a 1999 ammonia emission inventory (ftp://ftp.epa.gov/EmissionInventory/net_99/) and Table 1 shows EPA's estimated ammonia emissions for the five counties of New York City. EPA estimates total ammonia emissions for New York City to be 9771 tons/yr. Therefore, the projected ERRP ammonia emissions represent only one percent of the current estimated ammonia emission levels for New York City.

Table 1. Annual ammonia emissions for New York City from EPA's 1999 emission inventory.

1999 Ammonia Emissions	
County	(tons/yr)
New York	2128
Queens	3508
Bronx	1229
Kings	2453
Richmond	454
NYC Total	9771

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1 BY MR. KARMEL:

2 Q. Dr. Yarwood, I believe there were two
3 exhibits attached to your rebuttal testimony, the
4 first of which is a copy of your resume.

5 Do you have a copy of that in front
6 of you?

7 A. Yes, I do.

8 Q. Is this a true and correct copy of
9 your resume?

10 A. Yes, it is.

11 MR. KARMEL: I would request that
12 this be marked for identification.

13 JUDGE MOYNIHAN: We will mark it
14 Exhibit 37 for identification.

15 (Exhibit 37 was so marked
16 for identification.)

17 Q. The second exhibit was a memorandum
18 from you to Steven Kurtz dated April 10, 2001. Is
19 this a memorandum that you prepared in connection
20 with this proceeding?

21 A. Yes, it is.

22 MR. KARMEL: I would request that
23 this be marked as the next exhibit.

24 JUDGE MOYNIHAN: We will mark
25 Exhibit 38 for identification.

1 (Exhibit 38 was so marked
2 for identification.)

3 MR. KARMEL: Thank you. We will now
4 make Dr. Yarwood available for
5 cross-examination.

6 JUDGE MOYNIHAN: Who from EREC will
7 be cross-examining?

8 MR. STANISLAUS: Can we ask whether
9 the agencies want to go first before we do?

10 JUDGE MOYNIHAN: I was trying to go
11 in the same order --

12 MR. STANISLAUS: I know.

13 JUDGE MOYNIHAN: -- all the time.
14 Makes it easier for me.

15 You should be able to do it from --
16 is there a reason why you want to go after
17 the Agencies?

18 MR. STANISLAUS: Well, quite
19 frankly, the Agencies' cross-examination is
20 going to be friendly cross-examination and
21 gives them a second opportunity to
22 rehabilitate the witness, so --

23 JUDGE MOYNIHAN: Yes, good point.

24 Mr. Little, do you have any cross?

25 MR. LITTLE: I do not, your Honor.

1 JUDGE MOYNIHAN: Mr. Lang, do you
2 have any cross-examination?

3 MR. LANG: None for this witness,
4 your Honor.

5 JUDGE MOYNIHAN: Who will be
6 handling it, Mr. Gutman?

7 MR. GUTMAN: It appears so.

8 CROSS-EXAMINATION

9 BY MR. GUTMAN:

10 Q. Well, Mr. Yarwood, I guess the first
11 point you make in your testimony here is that
12 there is a certain amount of ammonia that combines
13 with sulfuric acid aerosols; is that right?

14 A. Yes, that can occur.

15 Q. And then you essentially say that
16 because the sulfuric acid aerosols are already a
17 particulate, you don't -- wouldn't count that, the
18 sulfate part of that aerosol as added to the
19 ammonia as particulate; is that right?

20 A. Yes, that's correct. I attempted to
21 evaluate the net impact of the facility on ambient
22 particulate matter levels.

23 Q. Could you explain now what your
24 criticism of Mr. Halterman's calculations are?

25 A. There are several differences. Do

1 you wish me to go ahead?

2 Q. Well, just the first one with regard
3 to the question of whether the sulfate should be
4 added, the sulfate weight should be added to the
5 ammonia weight.

6 A. I would simply say that when
7 Mr. Halterman made a calculation of impacts on
8 secondary particulate matter, he attributed the
9 sulfate to the facility. The difference is that
10 in my analysis, I assumed that that sulfate is
11 already in the atmosphere as particulate matter,
12 so the net impact of the facility emissions is
13 simply the ammonia that is bound up with that
14 sulfate.

15 Q. Okay. So what happened was
16 Mr. Halterman added the sulfate to the ammonia to
17 get a total weight of particular matter, correct?

18 A. That's correct.

19 Q. And did you not add the weight of the
20 sulfate to the ammonia because you say that the
21 sulfate was already in a particulate and,
22 therefore, it was in the atmosphere to start with?

23 A. That's right.

24 Q. All right. Now, can you turn to page
25 3 of your memorandum?

1 A. Yes.

2 Q. All right. In the middle of this
3 page, you discuss a calculation in which sulfur
4 dioxide is converted into a particulate. Sulfur
5 dioxide is a gas, isn't it?

6 A. That's correct.

7 Q. And your argument here is that
8 because there would be a reduction in emissions of
9 sulfur dioxide as a result of the project, there
10 would be a reduction in the particulate formation,
11 correct?

12 A. That's the argument.

13 Q. All right. Now, can you describe how
14 the sulfur dioxide converts into particulate
15 matter?

16 A. There are several chemical pathways
17 that can oxidize sulfur dioxide gas to sulfate
18 particulate including gas phase reactions,
19 reactions that take place in water droplets in the
20 atmosphere, those are the main pathways.

21 Q. And which ones are -- which is the
22 more important, the gas phase or the aqueous
23 phase?

24 A. Well, it would depend upon the
25 ambient conditions at that time. So, really, to

1 look over a whole year, a representative year, you
2 would have to consider basically what the weather
3 was like over the year in that area.

4 Q. Well, have you considered the weather
5 in the New York area?

6 A. Well, the analysis performed here
7 makes the conservative assumption that all of the
8 SO₂ that is emitted would end up as sulfate.

9 Q. So you say that is conservative; in
10 what sense is that conservative?

11 A. That is the most amount of sulfate
12 that you could produce.

13 Q. All right. But are you counting this
14 as a reduction in -- you are subtracting it and
15 that's why you are considering it a conservative
16 assumption, you are subtracting it from an
17 existing total of sulfate and are you saying --

18 A. Maybe the word "conservative" is
19 misleading in that context. All I meant is that
20 it is -- I believe that is a reasonable assumption
21 for the fate of SO₂ in the atmosphere, that most
22 SO₂ that is emitted does ultimately form sulfate.

23 Q. All right. All right. You say "most
24 SO₂." Is there an equilibrium between the gas and
25 the particulate phase?

1 A. No. It's essentially a one-way
2 street that once it's reacted to sulfate, it stays
3 there. Therefore, other possible fates for sulfur
4 dioxide, such as deposition, but most SO2 would be
5 reacting to sulfate.

6 Q. Are you saying in your opinion it
7 doesn't, there is not an equilibrium situation?

8 A. Not for sulfate. There are -- there
9 is a lot of chemistry that we could be talking
10 about here, so perhaps we should sharpen what it
11 is we are talking about. I am talking about the
12 reaction of sulfur dioxide gas to sulfate
13 particulate.

14 Q. To hydrogen, to sulfur as it becomes
15 an aerosol; is that correct?

16 A. That would be the initial form of the
17 sulfate, yes.

18 Q. Is that part of it, an equilibrium?

19 A. No.

20 Q. All right. Are you familiar with the
21 EPA criteria document on particulate matter? This
22 is the 1996 Air Quality Criteria for Particulate
23 Matter issued by EPA.

24 A. Yes.

25 Q. All right. Can I show you this and

1 ask you whether you agree with what it says here,
2 where it seems to say that there is an
3 equilibrium?

4 A. Yes.

5 JUDGE O'CONNELL: Mr. Gutman, what
6 page are you referring the witness to,
7 please?

8 MR. GUTMAN: This is page 3-47.

9 MR. LANG: Your Honor, what document
10 is the witness being asked to review? Is
11 it the application or some other document?

12 MR. GUTMAN: It's some other
13 document, an EPA criteria document issued
14 in 1996.

15 MR. LANG: Then I would object and
16 ask the exhibit be identified and marked as
17 an exhibit before the witness is asked to
18 comment on it, review it and state whether
19 of not he agrees or disagrees with it.

20 MR. GUTMAN: Could we mark that as
21 an exhibit?

22 JUDGE MOYNIHAN: We really don't
23 want it marked at this point. If it
24 becomes necessary, we will. Just have him
25 review it, we don't know where it is going

1 yet.

2 MR. LANG: He asked the witness to
3 comment on it and say whether he agrees or
4 disagrees with it.

5 JUDGE MOYNIHAN: My understanding is
6 it is a widely available publication and we
7 can take official notice of it. We don't
8 want to burden the record with it, a
9 document that size, for just a page.

10 MR. LANG: Could we have it formally
11 identified, what it is and what page and
12 what section, et cetera.

13 JUDGE MOYNIHAN: Could you do that,
14 Mr. Gutman? If you would just read the
15 title and give us the exact page number,
16 whatever it is.

17 MR. GUTMAN: This is called Air
18 Quality Criteria for Particulate Matter,
19 document number 6/P95/00-AF, April 1996.
20 This was the document that led to the
21 recent revision in the particulate matter
22 in the air quality standard.

23 JUDGE MOYNIHAN: Page 3-47.

24 MR. LITTLE: Could I have the name
25 of that again, the title of the document?

1 MR. GUTMAN: I believe you appended
2 it. Air Quality Criteria for Particulate
3 Matter, Volume One.

4 THE WITNESS: I have looked at it.

5 BY MR. GUTMAN:

6 Q. Do you agree with this or disagree
7 with this?

8 A. I agree with the chemical reactions,
9 but I don't agree that in the discussion we are
10 having that that should be interpreted as saying
11 that sulfate would return to SO₂. I think that is
12 more -- that is more talking about how SO₂ gas
13 partitions into and phases -- when it partitions
14 into the aqueous phase, which is just part of a
15 multistep process between SO₂ gas and sulfuric
16 acid aerosol.

17 Q. Each of these steps is shown as being
18 an equilibrium. Do you agree with each of the
19 steps as being an equilibrium?

20 A. You better -- I have no disagreement
21 with the reactions as they are written there.

22 Q. Well, the reactions show that sulfur
23 dioxide is an equilibrium with SO₂ and water, and
24 then it shows that SO₂ and water are an
25 equilibrium with HSO₃ and hydrogen, and then it

1 shows that HSO_3 is an equilibrium with SO_4 and
2 hydrogen.

3 Do you agree that each of those
4 equations would be an equilibrium?

5 MR. KARMELE: Your Honor, I will
6 object for lack of foundation. Also, that
7 I think it is unfair for the witness to be
8 asked about what this document shows with
9 respect to all these reactions when the
10 document is no longer in front of the
11 witness. I think the document should be
12 returned to the witness and I would object
13 to the question.

14 MR. LANG: I would also object. It
15 sounded like the examiner was doing the
16 testifying there, rather than the witness.

17 JUDGE MOYNIHAN: He asked him "would
18 you agree." I will allow the question.

19 MR. GUTMAN: Well, I guess the first
20 question is --

21 JUDGE MOYNIHAN: One moment. Let's
22 get an answer before we ask the next
23 question.

24 A. So, the equations we are discussing
25 are equations 3-12 through 3-15 on page 3-47, and

1 I don't have any problem with the criteria
2 document. And, yes, these are written as
3 equilibrium; however, I think what we are talking
4 about here are equilibrium on sulfur 4 species,
5 and the oxidation of SO₂ to sulfuric acid is the
6 oxidation from sulfur 4 to sulfur 6, and what we
7 should really talk about is how that system
8 behaves as a whole and that when sulfur 4 has been
9 oxidized to sulfur 6, it doesn't come back.

10 Q. And sulfur 6 would be which chemical,
11 which compound are we talking about?

12 A. Sulfuric acid aerosol is a part of
13 sulfur 6. The exact chemical form depends upon
14 the other compounds that are present in the
15 atmosphere at that time. So, for instance, the
16 sulfuric acid aerosol could be neutralized by
17 ammonia or it could be neutralized by crystal
18 material that is present in the atmosphere,
19 calcium sulfates. So you are talking about
20 potentially a mix of compounds, which is why
21 people use the term "sulfur 6," to catch that as a
22 whole.

23 Q. All right. Well, are any of the
24 species that are in those three equations sulfur
25 6?

1 A. If you look on the next page, in
2 equation 3-16, there is a definition of what they
3 are considering sulfur 4 for this purpose, and the
4 equilibrium shown in 3-15 are most sulfur 4
5 species.

6 JUDGE O'CONNELL: Could you identify
7 that, please. Sulfur 4 compounds or, I
8 mean, I don't know what the equation says,
9 so --

10 THE WITNESS: So, the equation 3-15
11 are between SO_2 , HSO_3 minus and SO_4 two
12 minus.

13 JUDGE O'CONNELL: Thank you.

14 Q. Sulfur 4 would be what compound?
15 Sulfur 6 would be what compound?

16 A. In equation 3-20 on page 3-49, the
17 document describes sulfur 6 as sulfuric acid,
18 H_2SO_4 plus HSO_4 minus, plus SO_4 two minus.

19 Q. All right. And those equations are
20 not equilibrium equations?

21 A. What I just read out was simply a
22 description of the species that they are
23 considering as sulfur 6 here.

24 Q. So your testimony is that the ammonia
25 would only react with the sulfur 6 and not with

1 the sulfur 4?

2 A. Without reviewing it, my testimony
3 would be that when you find ammonia associated
4 with sulfur particulates in the atmosphere, what
5 you find are ammonium sulfate type compounds, so
6 ammonia associated with sulfur 6, there is a very
7 wide range of chemistry that can occur between
8 ammonia and sulfur -- oxidized sulfur compounds,
9 but only a subset of those compounds are found in
10 the atmosphere, and only a subset of the reactions
11 turn out to be really important in the atmosphere.

12 Q. So your testimony is that virtually
13 all the ammonia that reacts with sulfates is
14 reacting with sulfur 6?

15 A. Yes. When you find ammonium sulfate
16 type compounds in the atmosphere, ammonium
17 sulfate, ammonium bisulfate, yes, those are
18 compounds with sulfur 6.

19 Q. And the reaction, that transformation
20 between sulfur 4 and sulfur 6, is a one-way
21 reaction?

22 A. It's a sequence of steps, but if you
23 consider it as the whole, yes, it is a one-way
24 street.

25 Q. Okay. Now, the other, at the end of

1 your memo, you have a list of an emission
2 inventory of ammonia emissions for New York City,
3 which adds up to 9,771 tons of ammonia per year.
4 Now, when EPA does emission inventory, it's
5 usually broken down into categories. Do you know
6 what the amounts are for the various categories
7 here?

8 A. I have that information. I don't
9 have it with me.

10 Q. Do you know what most of the ammonia
11 is coming from?

12 A. I think it would be better for me to
13 give you accurate figures, if that is what you are
14 interested in and that is not something that I
15 have with me right now.

16 Q. Okay. Well, could you supply that
17 for the record, I guess.

18 A. Sure.

19 Q. A breakdown by categories as to how
20 much is in each, out of this 9,771 tons, how much
21 is in each category?

22 A. Such as, perhaps, broken down by
23 motor vehicles, area, sources, point sources?

24 MR. KARMELE: Your Honor, I would
25 object to have supplementation of the

1 record in the fashion that is being
2 requested. I believe the witness's source
3 of information, as the memorandum itself
4 references, is information he downloaded
5 from a website which contains the ammonia
6 survey for New York City. That information
7 is no more available to Dr. Yarwood than it
8 would be to Mr. Gutman or anyone else who
9 can visit the EPA website. I see no need
10 for homework assignments for Dr. Yarwood to
11 follow up on testimony with respect to this
12 type of matter.

13 MR. GUTMAN: I'm sorry. I withdraw
14 the question.

15 JUDGE MOYNIHAN: Yes, we agree. If
16 it is EPA available material, we won't
17 require this witness to supply it.

18 BY MR. GUTMAN:

19 Q. All right. Could -- I mean, without
20 classifying, specifying the exact numbers, do you
21 have any recollection as to, in general, the City,
22 what category would be predominant?

23 A. I could tell you from my recollection
24 of these data and my experience in general what
25 categories I expect to be important in ammonia

1 emission inventory for an urban area, and on those
2 motor vehicles is certainly an important source
3 category. In an urban area there is -- industrial
4 uses are likely to be important. Beyond that, I
5 wouldn't want to go from memory with regard to the
6 information that is available from the website.

7 MR. GUTMAN: This is something that
8 we could use, cite to, or is this something
9 that we would have to enter into the record
10 ourselves?

11 JUDGE MOYNIHAN: Well, you should
12 have, if you wanted it in the record, you
13 should have had it available. But as far
14 as offering it, you can make the offer, we
15 will see if there are objections. I don't
16 know.

17 MR. STANISLAUS: Can I speak?

18 JUDGE O'CONNELL: For what purpose
19 would you be offering this information?

20 MR. GUTMAN: Well, I will ask a
21 couple more questions and then we will see
22 what the -- all right.

23 Q. Well, I think there are several
24 categories that you, as you have said, of
25 emissions of ammonia, and you compare the ammonia

1 emissions of this project to the entire total,
2 right?

3 A. I provide it as a context.

4 Q. Right. Well, do you think it's
5 relevant whether one of these categories is
6 increasing at a very fast rate as compared to, for
7 example, the total? If this source was in the
8 category in which the emissions were increasing,
9 would that be a concern?

10 A. I don't think the atmosphere
11 distinguishes where the ammonia came from.

12 Q. No. But if one were worried about
13 the increase in ammonia in the future in general,
14 would one be concerned about a particular category
15 increasing much faster than other categories?

16 A. If one was trying to develop an air
17 quality management plan for ammonia, I think you
18 would be sensitive to the total amount, rather
19 than one particular category.

20 Q. If you wanted to, for example, decide
21 where to, you know, where you would allocate your
22 resources toward enforcement or control, you might
23 be concerned about which category was increasing
24 faster than others, wouldn't you?

25 MR. KARMEL: Objection, speculation,

1 and irrelevant.

2 JUDGE MOYNIHAN: Sustained.

3 MR. GUTMAN: Okay. Well, your
4 Honor, the reason we want to put this in is
5 to show that -- so that we could make the
6 comparison between the ammonia emissions of
7 this power plant as compared to the sector
8 that involves power plants rather than the
9 entire total.

10 JUDGE MOYNIHAN: I have already
11 sustained the objection.

12 MR. GUTMAN: This isn't with regard
13 to the question, it is with regard to why
14 we would want this information in the
15 record and whether we could obtain the
16 information and put it in the record.

17 JUDGE O'CONNELL: He is responding to
18 my question.

19 I believe that the presiding
20 examiner's ruling was that if you wanted to
21 get that together and offer it, then we
22 would have to consider it and the parties
23 would have an opportunity to raise any
24 objections against that. I think that is a
25 fair summary of Judge Moynihan's ruling.

1 MR. GUTMAN: All right. I was
2 asking questions in general about
3 atmospheric chemistry and Mr. Halterman is
4 here, it was his testimony that was
5 criticized and I would like him to ask the
6 questions specifically about the
7 calculations that he made.

8 MR. KARMEL: Your honor, we would
9 object to that. Mr. Halterman will take
10 the stand and testify at that time. I see
11 no basis for a second round of questioning
12 from a different representative from
13 EREC/CB3 at this time.

14 JUDGE MOYNIHAN: I am concerned
15 about what I stated at the outset was that
16 I want -- if you are going to break it down
17 by subject matter, have one individual
18 cross-examine on that subject matter. And
19 I don't want multiple cross-examiners for
20 any one subject matter from one party, so I
21 will sustain the objection.

22 MR. STANISLAUS: Can we take a break
23 for a second?

24 JUDGE MOYNIHAN: Yes, we will go off
25 the record for a moment.

1 (Discussion held off the record.)

2 JUDGE MOYNIHAN: Back on the record.

3 MR. GUTMAN: Can the witness take a
4 look at Exhibit 2.

5 JUDGE O'CONNELL: I have a copy for
6 the witness. Everybody has copies today.

7 MR. GUTMAN: We don't have any more
8 questions, your Honor.

9 JUDGE MOYNIHAN: Is there any other
10 cross-examination? I believe I asked -- I
11 asked the two agencies. There are no other
12 parties.

13 JUDGE O'CONNELL: I do.

14 EXAMINATION BY JUDGE O'CONNELL:

15 Q. Dr. Yarwood, I have just a few
16 questions about clarification of your memorandum,
17 which is marked as Exhibit 38. You are talking
18 about here secondary PM, particulate matter,
19 that's what I presume the "PM" stands for?

20 A. Yes, that is correct.

21 Q. Could you please explain how you are
22 using the term "secondary PM," what you mean by
23 that?

24 A. Yes. What I mean by "secondary" is
25 that the particulate matter is formed in the

1 atmosphere by reactions that convert a gas into
2 particles.

3 Q. And then referring to page 2 of your
4 memorandum, in about the middle of the page you
5 refer to monitoring data obtained from the Mabel
6 Dean Bacon Station.

7 Would you clarify, please, whether
8 this station can actually distinguish the chemical
9 properties of the particulates that it measures,
10 that you are aware?

11 A. Yes, sir. They do chemical analysis
12 of the filtered samples they collect. That is
13 relatively recent.

14 Q. Now, on page 3, under the topic
15 "secondary PM impact of decreased sulfur dioxide
16 emissions," you have a term over here on the side,
17 "sulfate reduction."

18 Now, it's been a while since I took
19 chem class. Whenever I see "reduction," I think
20 oxidation reduction. Is that the meaning of the
21 word "reduction" here that you are using or is
22 there some other meaning to it?

23 A. Yes. In this context I did not mean
24 chemical reduction, I merely meant reduction in
25 the mass of sulfate in the atmosphere.

1 Q. Now, on page 4, I just want to make
2 sure I understand this correctly, this is under
3 the topic "Comparison to Mr. Halterman's
4 evaluation." If I read the first paragraph
5 correctly, what I understand it to mean is that
6 sulfates and oxides of nitrogen are converted to
7 acids through reaction with ammonium and form the
8 salts, and then it is the salts that are
9 considered to be the particulates; is that a fair
10 summary?

11 A. Yes, that is a fair summary.

12 Q. Is it your position that the acids,
13 sulfuric acid, nitrous or nitric acid are also
14 considered particulates?

15 A. No. There is a difference there
16 between sulfur species and the nitrogen species.
17 Nitric acid would be a gas unless it reacts with
18 something that will form a salt and cause it to be
19 a particle.

20 Q. It's the neutralization of the acid
21 by the ammonium that causes the precipitation and
22 the particulate to form; is that a fair
23 understanding?

24 A. Yes, that is correct.

25 Q. Okay. Now, in bullet 3 at the bottom

1 of that page, of page 4, do I understand this
2 correctly that you are considering sulfate to also
3 be a particulate?

4 A. Yes. So to be specific, sulfuric
5 acid will enter the particle phase one way or
6 another, either just by condensing to an acid
7 aerosol or if it finds ammonia, then forming
8 ammonium salts.

9 Q. Okay. I have just a few more
10 questions here.

11 I think the record needs to be clear
12 about what we are talking about, S4 and S6. You
13 are referring to the valences of the sulfur atom;
14 is that correct?

15 A. Yes. Sometimes it would be called
16 valence or oxidation state.

17 Q. Is it fair to state that we are
18 identifying the number of electrons present in
19 the -- I am trying to recall the appropriate
20 vocabulary.

21 A. May I help?

22 Q. -- the valence electrons?

23 A. It is something like that. It is the
24 number of electrons that are considered to be
25 associated with the sulfur atom.

1 Q. Okay, maybe this will help me figure
2 out this later.

3 Do you recall from the periodic table
4 what the molecular weight of sulfur is?

5 A. 32, I think.

6 JUDGE O'CONNELL: Thank you. I
7 didn't mean to put you on the spot. I'm
8 sorry. I have no other questions.

9 Thank you.

10 JUDGE MOYNIHAN: Redirect?

11 MR. KARMEL: Nothing, your Honor.

12 JUDGE MOYNIHAN: Thank you,
13 Dr. Yarwood. You are excused.

14 THE WITNESS: Thank you.

15 (Whereupon, the witness was excused.)

16 JUDGE MOYNIHAN: We have Exhibits 37
17 and 38.

18 MR. KARMEL: We would move that they
19 be entered into evidence, your Honor.

20 JUDGE MOYNIHAN: Are there any
21 objections?

22 They are in evidence.

23 (Exhibits 37 and 38 were
24 received in evidence.)

25 JUDGE MOYNIHAN: And who is our next

1 witness?

2 MR. LANG: I believe it is up to us,
3 your Honor.

4 I'm sorry. I think it is unless,
5 unless you had someone else that you were
6 putting -- are you going to put on Steve or
7 are we putting on Matt?

8 MR. KARMELE: Mr. Kurtz would be our
9 next SCONOX witness. As we discussed
10 previously, we are going to pass on that
11 for scheduling sake and put him on after
12 the out-of-town witnesses have come on.

13 JUDGE MOYNIHAN: That would then
14 bring us to Mr. Cinadr.

15 Whereupon,

16 MATTHEW CINADR,
17 having been first duly sworn, was examined and
18 testified as follows:

19 JUDGE MOYNIHAN: Please be seated
20 and state your name for the court reporter.

21 THE WITNESS: My name is Matthew,
22 two T's, Cinadr.

23 DIRECT EXAMINATION

24 BY MR. LANG:

25 Q. Mr. Cinadr, do you have before you a

1 document entitled "The Prepared Testimony of
2 Matthew Cinadr" --

3 A. Yes, I do.

4 Q. -- dated March 2001?

5 A. Yes.

6 Q. Do you have any corrections to make
7 to this document, sir?

8 A. I have no corrections.

9 Q. If you were asked the same questions
10 that are in your testimony this morning, would
11 your answers be the same as they are in this
12 document?

13 A. Yes, they would.

14 MR. LANG: Your Honor, I ask that
15 Mr. Cinadr's testimony be moved into the
16 record.

17 JUDGE MOYNIHAN: Are there any
18 objections?

19 Motion granted.
20
21
22
23
24
25

BEFORE THE
STATE OF NEW YORK
BOARD ON ELECTRIC GENERATION SITING AND THE ENVIRONMENT

In the Matter of the Application of
Consolidated Edison Company of New York, Inc.
for a
Certificate of Environmental Compatibility and Public Need
to Repower the East River Generating Station
to Replace the Waterside Generating Station
in Manhattan, New York County, New York.

Case 99-F-1314

In the Matter of Applications for:
(1) a State Pollutant Discharge Elimination System
permit pursuant to Environmental Conservation Law Article 17
and Title 6 of the Official Compilation of Codes, Rules and
Regulations of the State of New York (6 NYCRR) Parts 750 et
seq., (2) a pre-construction Air State Facility permit
pursuant to ECL Article 19, and 6 NYCRR Part 201 and Subpart
231-2, and (3) a Prevention of Significant Deterioration
permit pursuant to Title 40 of the US Code of Federal
Regulations (40 CFR) 52.21 by
Consolidated Edison Company of New York, Inc.

DEC Project # 2-6206-00012/000021

March 2001

Prepared Testimony of:

Matthew F. Cinadr
Power Systems Operations
Specialist
Office of Electricity and
Environment
State of New York
Department of Public Service
Three Empire State Plaza
Albany, New York 12223-1350

1 Q. Please state your name, business address, and
2 title.

3 A. My name is Matthew F. Cinadr. My address is NYS
4 Department of Public Service, Three Empire State
5 Plaza, Albany, NY 12223. My title is Power
6 Systems Operations Specialist.

7 Q. Please describe your experience regarding
8 electric-generating facilities.

9 A. I have worked in the field of power systems and
10 electric-generating facilities for over 30
11 years. I am employed by the Office of
12 Electricity and Environment's Distribution
13 Systems and Generation Section. I have
14 testified in numerous administrative hearings
15 before the Commission. As a staff member of the
16 Department of Public Service, I have provided
17 testimony on power plant performance, operation,
18 and maintenance.

19 Q. Please state your professional qualifications,
20 work experience, and educational background.

21 A. I received a bachelor degree in mechanical
22 engineering from Cleveland State University.
23 After graduating, I began my engineering career
24 as a field engineer with General Electric's

Case 99-F-1314

CINADR

1 Installation and Service Engineering Department.
2 Various field assignments led to promotions to
3 the Schenectady Large Steam Turbine Department
4 and to the Apparatus Service Business Division
5 where I was Manager of the Mechanical-Turbine
6 Unit at the Charlotte, North Carolina Service
7 Shop. I left General Electric to become the
8 Manager of the Service Department for Stock
9 Equipment Company. Power plant equipment
10 startup and service was the main responsibility
11 for the 12 graduate engineers in my department.
12 In this capacity, I reported to the Manager of
13 Engineering and thus became involved with design
14 improvement projects and new project designs. I
15 was promoted and joined Stock's Sales Department
16 with responsibilities for a seven-state sales
17 territory. I joined Stone & Webster's
18 Operations Services Division and for over two
19 years was responsible for a variety of tasks.
20 As an engineer at Stone & Webster, I was
21 responsible for evaluating, selecting, and
22 applying standard engineering techniques,
23 procedures, and criteria. I served as a
24 Principal Engineer on a project for a 670 MW

1 nuclear plant and was Division Specialist in
2 coal handling. I joined the Department of
3 Public Service, System Operations Section, in
4 March 1982 and have been assigned a variety of
5 work related to the operation and performance of
6 generating stations and the siting of new ones.

7 Q. Have you previously submitted testimony before
8 the Commission?

9 A. I have prepared testimony before the Public
10 Service Commission for the Consolidated Edison
11 Company of New York, Inc. (Con Edison) Rate Case
12 28211; Rochester Gas and Electric Corporation
13 Rate Cases 28313 and 29426; Niagara Mohawk Power
14 Corporation Rate Cases 29327 and 29728; and in
15 Central Hudson Gas & Electric Corporation Case
16 29433.

17 Q. What issue does this testimony address?

18 A. This testimony addresses some of the
19 uncertainties arising from the use of SCONO_x
20 emissions control technology.

21 Q. Why is this testimony being sponsored?

22 A. This testimony responds to the Hearing
23 Examiners' March 15, 2001 Ruling with respect to
24 adjudicating issues related to the use of SCONO_x

1 technology.

2 Q. What is your position regarding the substitution
3 of SCONO_x technology in place of SCR?

4 A. It is my understanding that the Lowest
5 Achievable Emission Rate (LAER) requires the
6 most stringent emission limitation achieved in
7 practice, or which can reasonably be expected to
8 occur in practice for a category of emission
9 sources taking into consideration each air
10 contaminant which must be controlled. The
11 emphasis in this definition should be placed on
12 the words "in practice". To my knowledge, no
13 SCONO_x units with large dual-fueled, combustion
14 turbine generators (CTG), duct-fired technology
15 are being tested nor are any units operational.
16 Therefore, in the case of East River, scaling up
17 the existing SCONO_x technology for use with the
18 proposed GE Frame 7FA CTG gas turbines is
19 uncertain and not without risk at this time.

20 Q. Are you aware of any proposed scale-up of SCONO_x
21 technology?

22 A. Yes, in California a subsidiary of PG&E
23 Generating Company has proposed SCONO_x
24 technology for its 520 MW Otay Mesa Generating

- 1 Project. In March 2001, the California
2 Certification Committee issued its Presiding
3 Member's Proposed Decision in Docket
4 No. 99-AFC-5, which included, among other
5 things, a discussion of the use of SCONO_x
6 technology for the proposed power plant.
7 Recognize, however, that this matter has not
8 been decided by the California Energy Commission
9 and is not considered a final decision.
- 10 Q. Please explain.
- 11 A. The Presiding Member's Proposed Decision states,
12 at page 3, that "If SCONO_x is successful, the
13 project will achieve a NO_x emission level of
14 1.0 ppmvd (at 15% O₂) over a 24-hour period."
15 Note that the operative word in this statement
16 is "if."
- 17 Q. Please explain how this applies to the
18 East River project.
- 19 A. Unlike the East River project, the Otay Mesa
20 Project has extensive acreage available to site
21 the facility. Additionally, the major
22 mechanical features of the Project include two
23 natural gas F-class 170 MW combustion turbine
24 generators (CTG), two heat recovery steam

1 generators (HRSG), and is being permitted using
2 a design for either one or two conventional 90
3 MW steam turbine generators (STG). This project
4 is basically two power islands each of which
5 would include a CTG, HRSG, and either one or two
6 STG's for the 510 MW facility.

7 At East River, there is very limited space
8 available because the new facilities will be
9 constructed inside an existing building. Also,
10 at East River, no STGs are proposed to be
11 constructed because it is believed that the use
12 of East River cooling water would be prohibited.

13 Q. What relevance does the availability of space at
14 the East River site have to the use of SCONO_x
15 technology?

16 A. In the past year at the Department of Public
17 Service, principally during my involvement in
18 this proceeding, I have reviewed engineering
19 information on SCONO_x technology, including
20 design drawings and construction specifications.
21 I have also discussed its use and installation
22 with employees of Goal Line Environmental
23 Technologies, the developer of SCONO_x
24 technology. SCONO_x must be installed directly

1 in the path of the exhaust gases, and it is
2 likely that significant space will be required.
3 At the Otay Mesa Project, there is sufficient
4 space to construct the SCONO_x equipment.

5 However, because of the space limitations within
6 the East River building, I do not believe the
7 SCONO_x equipment can be accommodated.

8 Q. Please continue with your discussion of the
9 California Presiding Member's Decision.

10 A. The Decision, at page 122, indicates that SCONO_x
11 has only been demonstrated on smaller
12 aero-derivative turbines and will require
13 significant scale-up for application to the
14 large F-type turbines. More importantly, the
15 Decision, at page 81, states that "Applicant's
16 proposal to use SCONO_x technology to control gas
17 turbine NO_x emissions has not demonstrated
18 adequate reliability on a scaled-up basis
19 compatible with the design requirements of [the
20 Project]. (Ex. 64, p. 324.) The evidentiary
21 record indicates that Applicant will employ SCR
22 and dry low-NO_x combustors if SCONO_x is
23 unavailable. (Ex. 1, //1.5.2, 3.4.1, 3.4.10.1.1)
24 SCR and dry low-NO_x combustors are proven

1 technologies that pose no reliability concerns.

2 (Ex. 64, p. 324.)" Again, the emphasis should
3 be on the word "if."

4 Q. Please explain the relevance of these
5 statements.

6 A. These statements demonstrate that SCONO_x
7 technology has not been proven to be a viable
8 method of controlling emissions from large-scale
9 power plants. They also indicate that the use
10 of SCONO_x technology may pose reliability
11 concerns in the operation of the plant. For
12 this reason, the Applicant and the state entity
13 reviewing the Application reserved the option of
14 retrofitting the plant for use of SCR
15 technology.

16 Q. What bearing does the California decision have
17 in this proceeding?

18 A. That decision demonstrates that neither the
19 Applicant nor the California Committee assigned
20 to review the Application were willing to rely
21 exclusively on SCONO_x technology because neither
22 was convinced it would work. The same argument
23 applies in this proceeding. Because the SCONO_x
24 technology is unproven in a power plant of the

1 size of the East River Project, the Siting Board
2 should not require its use and prohibit the use
3 of the proven SCR technology.

4 Q. Do you believe that Con Edison should take the
5 same risk at East River as the PG&E subsidiary
6 did at Otay Mesa and consider the application of
7 SCONO_x technology?

8 A. No, there is too much at stake at this point in
9 time, due to the uncertainty associated with
10 SCONO_x technology. I do not believe it would be
11 a prudent decision for Con Edison to install
12 SCONO_x.

13 Q. Please explain.

14 A. The East River Repowering Project is a major
15 investment in Con Edison's regulated steam.
16 system. The Project is designed to produce
17 approximately three million pounds of steam per
18 hour, steam that is needed year-round by
19 Con Edison's steam customers for heating and
20 cooling commercial and residential buildings
21 throughout Manhattan. If the plant has to be
22 shut down due to a failure of the SCONO_x
23 technology, approximately 25-30% of the steam
24 system's capacity would be curtailed. The added

1 risk of such a major uncertainty in the overall
2 reliability of a major steam production facility
3 in New York City cannot be tolerated at any
4 time. In addition, 360 MW of much-needed
5 electric generation would likewise be lost to
6 the in-City generation capability and
7 requirement. Beyond the immediate effects on
8 energy prices, ratepayers could endure much more
9 serious consequences when one considers the
10 forecasted need for in-City generating capacity
11 over the next few years.

12 Q. What consequences are you referring to?

13 A. Demand for electricity is outstripping supply in
14 New York City. The electricity to be produced
15 by the East River Repowering Project will help
16 meet that demand. Therefore, if East River's
17 capacity is needed for reliability and the plant
18 cannot operate because of a failure of the
19 SCONO_x technology, it could also jeopardize the
20 reliability of New York City electric supply.
21 In contrast, because SCR technology has been
22 proven in numerous power plants, the use of such
23 technology would minimize the potential for a
24 similar failure.

1 Q. Does this conclude your testimony?

2 A. Yes, for the time being, this concludes my
3 testimony. Because new information on emissions
4 control technologies, including SCONO_x, may
5 become available, I reserve the right to
6 supplement my testimony should new facts warrant
7 doing so. Additionally, I reserve the right to
8 submit rebuttal or rejoinder testimony, as the
9 case may be, to respond to testimony submitted
10 by other parties.

1 MR. LANG: Your Honor --

2 JUDGE MOYNIHAN: Did you provide the
3 reporter with a copy?

4 MR. LANG: Your Honor, Mr. Cinadr,
5 in his testimony, refers to presiding members'
6 proposed decision on the Otay Mesa generating
7 project in California. This is an official
8 document of the California Energy Commission. My
9 question to you is would you like to just take
10 judicial notice of it or would you like me to have
11 it marked as an exhibit?

12 JUDGE MOYNIHAN: We can mark it as
13 an exhibit and I will give it the same treatment
14 as I did with the Commission decision. We will
15 leave it marked for identification. Obviously,
16 the official document will be the primary source,
17 right.

18 MR. LANG: Very good.

19 JUDGE MOYNIHAN: We will mark it
20 Exhibit 39 for identification.

21 (Exhibit 39 was so marked
22 for identification.)

23 MR. LANG: Your Honor, at this time
24 I would offer Mr. Cinadr for
25 cross-examination.

1 JUDGE MOYNIHAN: Who from EREC will
2 be cross-examining?

3 Mr. Stanislaus?

4 CROSS-EXAMINATION

5 BY MR. STANISLAUS:

6 Q. Good morning, Mr. Cinadr.

7 A. Good morning.

8 Q. If you can refer to page 4 of your
9 testimony, beginning with your answer starting
10 from 4, I'm sorry, line 4.

11 MR. LANG: Could you speak up?

12 MR. STANISLAUS: Sure.

13 Q. Page 4, line 4, that answer there.

14 A. Yes.

15 Q. If you could quickly read that and
16 familiarize yourself with that?

17 A. I'm familiar.

18 Q. In identifying LAER, what is the
19 Lowest Achievable Emission Rate? You state that
20 LAER would be the emission limitation which is
21 achieved in practice or which can be reasonably
22 expected to occur in practice. Then you go on
23 with an emphasis on the words "in practice." Can
24 you give an understanding of the phrase
25 "reasonably expected to occur in practice" as it

1 relates to the determination of LAER?

2 A. I am not an expert on LAER. It is my
3 understanding that the requirements of LAER are as
4 I have testified.

5 Q. Okay.

6 A. I think further in my testimony you
7 will find that I did discuss what I think is
8 reasonable to expect, is all I can give you.

9 Q. Do you understand that phrase to mean
10 that there could be technologies that aren't
11 actually achieved for the particular proposed
12 facility, but a regulator could determine that
13 technology to be applied?

14 A. Okay. Absolutely.

15 Q. Okay. Mr. Cinadr, isn't it correct
16 that air control technologies have, in fact, been
17 scaled up in other circumstances from a smaller
18 facility to a larger facility?

19 MR. LANG: Object to the form. I
20 don't know what kind of control
21 technologies he's referring to.

22 MR. STANISLAUS: Air pollution
23 control technologies.

24 MR. LANG: Do you have one in
25 particular you are referring to?

1 MR. STANISLAUS: This witness is
2 testifying on his familiarity with air
3 pollution control devices.

4 JUDGE MOYNIHAN: I will allow the
5 question.

6 A. So as I understand your question, it
7 is, am I familiar with the scale-up of other air
8 pollution control technologies? Yes, I can well
9 remember the industry's growing pains, if you
10 will, with scrubbers. Sulfur is now being
11 scrubbed successfully.

12 In the initial stages of scrubber
13 development, my recollection is that there were a
14 number of problems. I expect my experience with
15 scaling up on other pieces of equipment would have
16 some bearing on the scaling up of any such air
17 pollution control equipment, and I can speak with
18 some experience. There are ongoing developmental
19 efforts with, for example, SCONOx, that really and
20 truly will bring the SCONOx technology a step
21 further in being reasonably expected to perform.
22 So I am familiar with scale-ups, growing pains, if
23 you will, industry problems, yes.

24 Q. Mr. Cinadr, are you familiar with the
25 term BACT or Best Available Control Technology?

1 A. I am generally familiar with the
2 term.

3 Q. Are you familiar with the differences
4 between a BACT technology and a LAER technology?

5 A. I am not experienced in that subject.

6 Q. Okay. Based on your understanding of
7 that, do you have any understanding of what
8 factors are considered in a BACT technology that
9 cannot be considered in a LAER technology?

10 A. I think one of them might be
11 economics, but I am not certain.

12 Q. Okay. Do you understand LAER to be a
13 technology forcing standardization of pollution
14 control devices?

15 A. As I stated, I think the term is
16 "reasonably expected to occur in practice," that
17 is the extent of my understanding. It is to that
18 extent it is technology forcing, if it can be
19 reasonably expected to produce the sought-after
20 reductions.

21 Q. Okay. And just so I understand your
22 prior comment, with respect to BACT, you believe
23 costs can be considered; with respect to LAER,
24 costs cannot be considered in determining --

25 A. I would like to once again remind you

1 I am not an expert on these terms of art, so to
2 speak.

3 Q. Okay.

4 A. I looked at fellow staff members'
5 work with respect to LAER, and came to the
6 understanding that I have testified to.

7 Q. Okay.

8 A. And I will just refer you to that.

9 Q. Well, I guess, are you aware of costs
10 ever being considered in a LAER determination?

11 A. No. I am not aware of LAER-impacted
12 matters to that extent.

13 MR. STANISLAUS: Just a question for
14 your Honors. Since the witness is relying
15 on other staff work and other staff
16 understanding of pollution control devices
17 which this witness is testifying on, I am
18 kind of trying to figure out how to proceed
19 with that issue.

20 MR. LANG: Mr. Cinadr did not say he
21 is relying on other staff's work on
22 pollution control devices. I believe he
23 said he is relying on other staff for BACT
24 and LAER.

25 MR. KARMEL: Your Honor, if I may

1 speak also.

2 What is LAER and what is BACT is a
3 question of law. It is not a question of
4 fact. In terms of what the legal standard
5 is, whether costs may be considered in LAER
6 versus BACT is a question of law, so I
7 don't believe that it is appropriate
8 subject for testimony in any event, and I
9 don't see any basis for further inquiry to
10 PSC staff nor anyone else on that topic.

11 MR. LANG: I would agree the
12 definition of LAER and BACT are legal
13 standards. The determination of LAER is a
14 factual process and a technical process.

15 JUDGE MOYNIHAN: Well, just a
16 moment.

17 MR. STANISLAUS: Before you make a
18 decision, let me just withdraw. I will
19 forget the line of questioning.

20 JUDGE MOYNIHAN: Okay. We weren't
21 sure what you wanted to know, and we were
22 trying to figure it out.

23 BY MR. STANISLAUS:

24 Q. Mr. Cinadr, isn't it correct that the
25 application of any control technology to a new

1 facility has some risk?

2 A. I'm sorry. Any new technology or any
3 technology?

4 Q. Any designing and implementing any
5 air control technology to a facility has some risk
6 associated with that?

7 MR. KARMEL: Objection, to the form.

8 MR. STANISLAUS: If I can point to
9 the witness's testimony, the witness
10 testifies on page 4 that SCONOX is
11 uncertain and not without risk at this
12 time. So I am asking the witness whether
13 the installation of an air pollution
14 control device on a facility as a general
15 concept occurs with some risk.

16 JUDGE MOYNIHAN: I will allow the
17 question.

18 A. I would have to say my experience
19 with equipment in the power industry has led me to
20 believe that there are many risks with any
21 equipment; that is certainly the case.

22 Q. Okay. And those risks basically
23 translate into design specifications and
24 performance standards versus what actually occurs
25 once you actually install this equipment; is that

1 correct?

2 A. I am sorry. I would ask you to
3 repeat that.

4 Q. Maybe I can rephrase that.

5 When you are designing air pollution
6 control devices, you design it based on certain
7 design specifications. When you actually install
8 it, there is a period of time where the actual
9 performance does not meet your design
10 specifications, and those are one of the
11 difficulties that are encountered in all new
12 facilities?

13 A. That could be one of them, one of the
14 difficulties, certainly.

15 Q. And, typically, the facilities go
16 through an initial start-up process known as a
17 shake-down process during which these corrections
18 may be made?

19 A. Not necessarily. It's my experience
20 that start-up problems correct many, many things,
21 not necessarily design problems. It could be
22 construction misunderstandings, interferences. At
23 any rate, among the things that would be corrected
24 at start-up would be some of the problems that
25 surface early in that piece of equipment's life.

1 So to say that, for example, the
2 specifications in your example weren't fully
3 complied with, it's not necessarily the case that
4 the specifications were right in the first place.
5 So things could be corrected where you are
6 focusing on one, you know, facet of the things you
7 correct in the life of the piece of equipment.

8 Q. And you previously testified about
9 the example of scrubbers, and your experience has
10 been that when scrubbers were initially installed,
11 there were some problems that the industry had to
12 work through?

13 A. Yes.

14 Q. Okay. And that would generally be, I
15 guess, characterized -- how would you characterize
16 that process between the scrubbers' design
17 performance versus what actually occurred and then
18 what efforts the industry made in order to achieve
19 the emission standards?

20 A. I would characterize it as an
21 evolutionary process, a lengthy evolutionary
22 development process, that is generally how I would
23 say it.

24 Q. I guess maybe you can focus the
25 question. My question was focused on a particular

1 facility, if you can describe the process that a
2 facility had gone through in the scrubber example.

3 MR. LANG: Object to the form. What
4 facility are we referring to here? Any
5 facility is so broad and vague.

6 MR. STANISLAUS: Well, the witness
7 testified as to his experience regarding
8 the use of scrubbers in the industry. He
9 could talk about -- I will offer the
10 witness to speak about -- my question in
11 terms of the industry as a whole, and his
12 experience regarding particular facilities
13 that he has been involved in.

14 JUDGE MOYNIHAN: I will allow the
15 question.

16 A. My previous comments about scrubbers
17 pertained to my understanding of the scrubbers
18 primarily, my specific understanding of the
19 scrubbers at a plant called Brucemans Field.

20 I think one of the most serious
21 design or redesign steps that had to be taken was
22 when the flue gas was reheated, so that it might
23 pass through the rest of the duct, the stack.
24 That seemed to be a major thermal cost to me, and
25 a serious process change in the big picture of

1 that scrubber and scrubbers in general. So that
2 is an example.

3 MR. STANISLAUS: Just to clarify,
4 you are going to provide the California
5 decision into the record, is that right, it
6 is going to be identified for the record?

7 JUDGE MOYNIHAN: We identified it,
8 that's correct.

9 MR. STANISLAUS: I'm sorry.

10 Q. Mr. Cinadr, am I pronouncing that
11 correctly?

12 A. "Cinder" is the way I say it. It's
13 quite understandable.

14 Q. Page 6 of your testimony, I refer you
15 to line 7.

16 A. Yes.

17 Q. You are talking about the East River
18 Plant being very limited in space because of
19 certain new facilities; is that correct?

20 A. Because of the project, I am speaking
21 of, yes, the new equipment from the project.

22 Q. Okay.

23 MR. STANISLAUS: Is there an
24 objection?

25 JUDGE MOYNIHAN: I'm sorry. I

1 didn't hear.

2 MR. LANG: I objected to the form,
3 your Honor. That is not what this sentence
4 says.

5 MR. STANISLAUS: I will literally
6 read the sentence.

7 JUDGE MOYNIHAN: Okay.

8 Q. You state, starting at line 7, "At
9 the East River, there is very limited space
10 available because the new facility would be
11 constructed inside an existing building"; is that
12 correct?

13 A. Yes.

14 Q. You are not saying that there
15 could -- that there could not be some engineering
16 solutions within those space constraints, that
17 there could be some engineering-based solutions to
18 that space limitation?

19 A. No. I am saying that at East River,
20 there is very limited space basically available
21 because the new facilities will be constructed
22 inside the existing building.

23 Q. Okay.

24 A. The existing building is the boundary
25 in this.

1 Q. And --

2 A. I mean, within that space it's
3 bounded, that is the only thing that says.

4 Q. You are not saying simply because of
5 the new equipment proposed in this project, and
6 the size associated with that, that necessarily
7 precludes the possibilities of installation of
8 SCONOX, all you are saying -- well, let's just
9 leave it at that.

10 A. Would I agree with that?

11 Q. Yes.

12 MR. KARMELE: I would object to the
13 form of the question. I didn't understand
14 it.

15 JUDGE MOYNIHAN: You cut it off in
16 the middle. Could you rephrase it?

17 MR. STANISLAUS: Sure.

18 Q. Mr. Cinadr, you are not saying that
19 based on the project equipment that is contained
20 in the application, that that in itself would
21 preclude the possibility of the installation of
22 SCONOX?

23 A. I think if you look in the context of
24 what I have said, maybe I didn't say it as I could
25 have, but it is my understanding that the Otay

1 Mesa facility is in an agricultural part of the
2 state, that there is many acres of space
3 available, and in contrast, this is the middle of
4 Manhattan in a plant that exists.

5 There are some problems that I see
6 with the available space as contrasted with Otay
7 Mesa. That is what I am saying. What I am not
8 saying -- there are a number of things that I am
9 not saying, but I couldn't begin to cover them
10 all.

11 Q. Okay. Mr. Cinadr, scaling up is an
12 accepted engineering practice; is that correct?

13 A. I would say so, yes.

14 Q. In fact, SCR, Selective Catalytic
15 Reduction, at one point was scaled up initially
16 from laboratory studies; is that correct?

17 A. I would imagine, yes. I am not
18 familiar with those studies.

19 Q. And subsequently from smaller-sized
20 generation facilities to larger-sized generation
21 facilities?

22 A. I am sure.

23 Q. Mr. Cinadr, I refer you to page 9 of
24 your testimony, specifically your answer beginning
25 on line 14.

1 A. Yes.

2 Q. On line 21 you state that if the
3 plant has to be shut down due to the failure of
4 SCONOX, and you go on from there?

5 A. Yes.

6 Q. Now, theoretically, a plant could be
7 shut down for a number of reasons associated with
8 the plant's operation; would that be correct?

9 A. Certainly.

10 Q. Okay. And that could be shut down
11 due to a rupture of a gas main, theoretically?

12 A. Certainly.

13 Q. It could be shut down due to
14 potential design flaw; is that correct?

15 A. Yes.

16 Q. Okay. And there is no specific
17 scenarios of shut-down that you presented in your
18 testimony associated with SCONOX; is that correct?

19 A. No. But I will say that there are a
20 number of important reliability experiments that
21 we require applicants to review and publish in
22 their applications. There are many, many problems
23 that can go wrong with a power plant.

24 My point here is to say that for us
25 to begin this phase, this next step, and switch to

1 SCONox would require, at a minimum, the
2 consideration that the Siting Board in California
3 has, and that is stand by to replace the system
4 with SCR if SCONox doesn't work out in California.
5 So my point is this location is ill-suited for
6 such questionable arrangements.

7 Q. Mr. Cinadr, are you aware whether the
8 same concerns were raised regarding SCR at the
9 point that it was being proposed as LAER for power
10 generation facilities?

11 MR. LANG: Object to the form.

12 Where, when?

13 JUDGE MOYNIHAN: I will sustain the
14 objection.

15 Could you be more specific?

16 Q. Based on your familiarity with the
17 power industry and generation facilities, and its
18 installation of SCR or as LAER, are you familiar
19 with when SCR's were initially installed at power
20 generation facilities?

21 A. About all I can say is I am aware
22 that they evolved in current practice.

23 Q. Okay.

24 A. I am sorry. I don't have a date for
25 you.

1 Q. Okay. Well, if you are aware of that
2 evolution process, are you aware of the concerns
3 noted with reliability of SCR at the time that
4 this was being evolved and transitioned?

5 A. I couldn't say one way or the other.
6 I am sorry.

7 Q. Mr. Cinadr, I refer you to page 10 of
8 your testimony beginning with your answer to line
9 13.

10 A. Yes.

11 Q. Are you aware of whether the Con Ed
12 project in this proceeding is designed to address
13 reliability in the overall New York City electric
14 supply?

15 A. Yes. I am aware.

16 Q. So it is your understanding that this
17 project is proposed in part to address New York
18 City's electric supply as a whole?

19 A. There could be some easily
20 misunderstood views here. I would say that this
21 project is a steam project, the byproduct of which
22 generation is electricity, right. I would say
23 that the electricity needed in New York City that
24 will come from this, some of which will come from
25 this project, has been integrated into the City in

1 a very reliable way, and in a locational study and
2 grid connections, and all of the interconnection
3 studies that must go on.

4 Q. In your answer beginning on line 13,
5 you relate to, I presume, the current state of
6 electric supply in New York City, and there is a
7 potential of future demand outstripping supply.
8 Are you aware whether that is an issue in this
9 proceeding?

10 A. Well, in a general sense, Article X
11 brings a process to site needed electric
12 generation stations. So we are trying to
13 introduce competition to the extent that we can
14 get a number of new, lower priced, reliable, clean
15 generating stations built.

16 Q. Now, I presume you are familiar with
17 the primary reason that the applicant has cited
18 for this project, that is to shift the steam
19 production capacity from Waterside --

20 A. That's right.

21 Q. -- to this proposed plant?

22 MR. LANG: Objection. Your Honor,
23 the basis for the application is set forth
24 in the application. I believe that
25 application speaks for itself as to

1 Con Ed's reason for it. There is also in
2 terms of the issue of need defined under
3 the Public Service Law, and what must be
4 decided in Article X is a matter of law.

5 MR. STANISLAUS: If I can address
6 that.

7 JUDGE MOYNIHAN: Yes.

8 MR. STANISLAUS: The witness's
9 testimony relates to the reliability
10 question and he ties that into statements
11 about New York City's supply. I think it
12 is fair game that I be allowed to ask those
13 questions.

14 JUDGE MOYNIHAN: I have no problem
15 with you asking the questions with respect
16 to what he has testified to, but you are
17 jumping back to the application, and asking
18 him about Con Ed's application outside of
19 his testimony, and I will sustain the
20 objection.

21 MR. STANISLAUS: Okay.

22 Q. Mr. Cinadr, are you familiar with the
23 reasons that the applicant has cited for this
24 project?

25 A. Yes.

1 Q. And what are those reasons?

2 A. The primary reason is to ensure safe
3 and adequate supply of steam to the Con Ed steam
4 system --

5 Q. And are you familiar --

6 A. -- at just and reasonable rates.

7 Q. Are you familiar with specifically in
8 this project why that is an issue? Well, let me
9 rephrase it.

10 Is it your understanding that this
11 project is to provide the equivalent replacement
12 for Waterside steam production?

13 A. Yes.

14 Q. Now, are you aware of any statements
15 made by the applicant in the application that the
16 project is designed to fulfill reliability needs
17 in the New York City electric supply market?

18 A. I am familiar with the requirement
19 for interconnecting the electric supply from this
20 project to the grid, and I can say that that is a
21 very, very serious reliability issue, if that
22 is -- that's, perhaps, one of the most important
23 reliability concerns that we would ever have,
24 aside from the equipment reliability that we look
25 into on a component basis.

1 Q. I am trying to understand what you
2 just said.

3 You are relating to the reliability
4 of the interconnection, the electricity produced
5 by this project into the grid, that's what you are
6 referring to?

7 A. Yes. You asked about reliability
8 matters that I was familiar with, I think.

9 Q. Okay. Well, actually, I was
10 specifically referring to your testimony, where
11 you relate reliability of New York City's electric
12 supply.

13 A. Yes.

14 Q. And I was asking whether you are
15 aware of any other information that the applicant
16 has submitted that's designed, at least in part,
17 to achieve that end?

18 A. Certainly. They selected SCR, for
19 example, as a proven reliable means of keeping the
20 plant on line and that is the point of my
21 testimony, is that we are interested in those
22 pieces of equipment that we believe can be relied
23 upon to keep the plant on line.

24 Q. Mr. Cinadr, are you aware that the
25 use of SCR requires ammonia?

1 A. Yes, I am.

2 Q. Are you familiar with the potential
3 for secondary reactions associated with ammonia?

4 MR. LANG: Objection, your Honor.
5 Way outside the scope of his testimony.

6 JUDGE MOYNIHAN: Sustained.

7 MR. STANISLAUS: Your Honor, this
8 witness is testifying about SCONOX as it
9 relates to SCR. One of the issues that is
10 required in making a determination of LAER
11 is other impacts, so I think it's proper
12 that I be able to ask the witness of other
13 impacts that he is aware of with respect to
14 SCR versus SCONOX.

15 MR. LANG: Your Honor, if I may
16 respond?

17 JUDGE MOYNIHAN: Yes.

18 MR. LANG: This witness is
19 testifying to technical capabilities of
20 SCONOX versus SCR. He is not testifying to
21 LAER or the broader air quality issues that
22 are the subject of testimony by many other
23 witnesses by a number of parties in this
24 proceeding.

25 Mr. Cinadr's testimony was

1 specifically limited to those areas which
2 are his expertise, which are technical
3 engineering-type issues.

4 JUDGE MOYNIHAN: Yes. I agree with
5 counsel. This testimony is limited to the
6 technical aspects of it and not into the
7 other more broad emission problems.

8 Q. Mr. Cinadr, if the performance and
9 installation of SCR and SCONox were equal, are you
10 aware whether the Department of Public Service
11 would prefer a technology because it would avoid
12 certain impacts?

13 MR. LANG: Object to the form.

14 If you understand the question, I
15 didn't.

16 MR. STANISLAUS: Let me rephrase.

17 Q. Do you want me to rephrase or --

18 MR. LANG: If you understood it,
19 feel free, but I found the question
20 confusing.

21 A. As I understand your question, within
22 a hypothetically equivalent reliability
23 evaluation, are there other parameters that would
24 go into an engineering evaluation of a technology?

25 Q. I guess my question was confusing

1 then. I guess what I asked is, assuming that the
2 engineering is equivalent, the installation issues
3 are equivalent, and the performance issues are
4 equivalent, and let's assume that there is one
5 technology that has a certain impact that is not
6 equivalent with the other technology.

7 A. From my point of view, the premise is
8 that the engineering evaluations would be the
9 same, and that's not a premise that I can
10 calculate, you know, from --

11 Q. I guess I am asking you to accept
12 that as a hypothetical; that there would be two
13 potential pollution control devices where
14 everything else is equal, the engineering, the
15 installation, and performance, and let's say
16 technology X has an impact that technology Y does
17 not. In your view, would the Department of Public
18 Service prefer the technology that does not have
19 that impact?

20 MR. LANG: Object to the form. Your
21 Honor, this witness is an engineer with the
22 Department. They're asking a question that
23 bases the assumption that the engineering
24 is the same, that is the scope of this
25 witness's work, the scope of this witness's

1 knowledge.

2 JUDGE MOYNIHAN: And are you asking
3 for the opinion of the Commission on his
4 opinion? I will sustain the objection.

5 Do you have much more? Okay. I want
6 to take a break.

7 If you want to finish up, finish up.

8 MR. STANISLAUS: Just to clarify, I
9 believe this witness has been proffered to
10 offer the Department's view on pollution
11 control devices, and within that view, I'm
12 sorry, within that deliberation, I am
13 asking the witness in the determination of
14 an advocacy for a particular technology,
15 whether implementing the Department's
16 charge to him, they would consider other
17 issues.

18 MR. LANG: Your Honor, this witness
19 is one of many staff people that work on
20 Article X projects. That decision would be
21 made by the Department, but not necessarily
22 by this individual.

23 JUDGE MOYNIHAN: You can ask him his
24 opinion, but he can't give you the
25 Commission's opinion.

1 MR. STANISLAUS: Well, I presume
2 this witness --

3 JUDGE MOYNIHAN: There is a
4 distinction between the Department of
5 Public Service and the Commission.

6 MR. STANISLAUS: Just let me further
7 clarify then. I presume Mr. Cinadr has a
8 number of staffers working underneath him,
9 in terms of enabling him to provide advice
10 as to selection of pollution control
11 devices.

12 MR. LANG: That would be an
13 incorrect assumption. He doesn't have a
14 number of people working underneath him.
15 You can inquire of him and he can explain
16 how he works, but he does not have a number
17 of people underneath him. Maybe that would
18 be helpful to have Mr. Cinadr explain how
19 we approach the process.

20 JUDGE MOYNIHAN: I am going to let
21 Mr. Stanislaus conduct his
22 cross-examination as he sees fit.

23 BY MR. STANISLAUS:

24 Q. Mr. Cinadr, how does the Department
25 evaluate pollution control devices?

1 A. The Department evaluates Article X
2 applications and we have a team working under a
3 project manager, we work with the other state
4 agencies, other parties. You are not unfamiliar
5 to me.

6 Q. Oh.

7 A. We work as interested parties in
8 settlement and as a team, staff members are
9 assigned different responsibilities. Mine is the
10 engineering and technical evaluation of the
11 project overall. Other team members will, for
12 example, evaluate noise. If there is a question
13 about this or that, what equipment is what, they
14 will come to me, and talk to me about the
15 particular engineering and design features they
16 are interested in.

17 So, you know, we have a number of
18 applications before us, and I am generally
19 familiar with the ones that are assigned to me,
20 from an engineering and technical design
21 perspective, that is my assignment.

22 Q. Okay. So as I understand it, what
23 your role would be is to look at the engineering
24 questions, but you don't make the ultimate
25 determination of the pollution control device

1 that --

2 A. I make recommendations.

3 Q. Okay.

4 A. That's my business. The
5 recommendations, for example, with all things
6 being equal, which would be interesting, but if
7 that is hypothetically true, the least expensive
8 technology would certainly get my vote.

9 Q. So your recommendations from a
10 pollution control device perspective is that from
11 a cost and engineering perspective, you would be
12 recommending a particular pollution control
13 device; that is your role?

14 A. From a cost and reliability
15 perspective, we want to have safe and adequate
16 energy at just and reasonable rates.

17 Q. So within your -- the Article X
18 responsibilities, who made the determination
19 regarding other impacts that should be considered
20 in the decision of a pollution control device?

21 MR. LANG: Objection, your Honor.

22 This witness isn't being proffered to
23 elaborate on the staff decision-making
24 process and how it approaches an Article X,
25 and I am not clear that that is even an

1 appropriate line of inquiry to get into our
2 work product and how we do our evaluation
3 and our analysis of the project.

4 MR. STANISLAUS: Your Honor, this
5 witness is being offered with respect to
6 pollution control devices and has provided
7 testimony criticizing SCONox and favoring
8 SCR. I am asking the witness who, if it is
9 not him, who in the Department makes that
10 decision. He's advocating a particular
11 pollution control device, his advocacy is
12 based on their view of LAER.

13 MR. LANG: Objection, your Honor.
14 It is not.

15 JUDGE MOYNIHAN: You have to stick
16 to his testimony.

17 MR. STANISLAUS: His testimony, if I
18 can refer to his testimony --

19 JUDGE MOYNIHAN: Yes, please do.

20 MR. STANISLAUS: On page 4,
21 Mr. Cinadr talks about LAER, and what it is
22 designed to do, and criticizes SCONox as
23 not achieving that level within the LAER
24 determination, and within Article X, the
25 requirements regarding various kinds of

1 impacts, public health impacts,
2 environmental impacts. With respect to the
3 witness's offering testimony regarding
4 pollution control devices, it seems to be
5 proper that I be able to ask the Department
6 witness that area of his testimony as to
7 the Department's position of other impacts
8 that they may consider in their ultimate
9 determination of support for a pollution
10 control device.

11 MR. LANG: Your Honor, the
12 Department can raise whatever issues,
13 whatever information it wants. The
14 Department read your Honor's March 15th
15 ruling as raising a fundamental issue
16 specifically relating to SCONox and whether
17 it is a viable technology. Mr. Cinadr was
18 used solely on the Department's position of
19 whether SCONox is a viable technology for
20 the purpose of this proceeding. Mr. Cinadr
21 referred to the LAER definition solely to
22 put it into context of his testimony. His
23 testimony is solely related to the
24 technical engineering details of whether
25 SCONox would work in this project in

1 response to the issue raised in the March
2 15th ruling. The Department has not
3 proffered any witnesses in relation to the
4 general proposition of LAER in this case,
5 nor does it intend to do so.

6 JUDGE MOYNIHAN: This testimony
7 deals with the engineering and technical
8 aspects. To try to make him into a LAER
9 expert or emission expert really goes
10 beyond the scope of the direct testimony
11 and I will sustain the objection.

12 BY MR. STANISLAUS:

13 Q. Mr. Cinadr, in your evaluation of SCR
14 versus SCONOx, did you consider issues like the
15 use of ammonia with SCR?

16 A. I considered it.

17 Q. Okay. Did you consider the impact
18 associated with the use of ammonia with SCR?

19 MR. LANG: Objection, your Honor.

20 Again, this is outside the scope of his
21 testimony. Whether he considered it in the
22 review of the application or not is a
23 different issue. The issue on which he is
24 testifying is the engineering and technical
25 issues associated with SCONOx versus SCR,

1 and whether or not SCONOX would work in
2 this particular project. His consideration
3 as far as the evaluation of the project is
4 not an issue for which he has been
5 proffered.

6 MR. STANISLAUS: Again, that is all
7 I am asking, is whether he considered it or
8 not. I just want the record to reflect
9 that this witness considered certain
10 factors and not other factors, that is all.
11 I am not probing beyond that.

12 JUDGE MOYNIHAN: If you don't go
13 beyond that, I will allow the question. If
14 we are going to get off on a big discussion
15 of the impacts of ammonia, I'm going to
16 stop you.

17 MR. STANISLAUS: Within, whatever
18 the witness considered, just asking what he
19 considered.

20 JUDGE MOYNIHAN: All right. I will
21 allow it.

22 MR. STANISLAUS: I will rephrase
23 that question.

24 BY MR. STANISLAUS:

25 Q. Did you consider the impacts

1 associated with the use of ammonia in SCR?

2 A. I considered them.

3 Q. How did you consider them?

4 A. I find it technically very
5 interesting when you can avoid the use of ammonia.
6 Stopping there, I find it promising that you could
7 use the SCONox technology. Now, I said to myself,
8 what can be done on East River and what will be
9 reasonable. And you have my testimony. Not
10 stated in the testimony is what I understand to be
11 quite an additional expense for the installation,
12 you know, the purchase price, the capital cost of
13 the SCONox system. I am not firsthand familiar
14 with it, but I understand it is quite a bit more
15 expensive.

16 If these LAER understandings of mine
17 are correct, the standards are set, and equivalent
18 technologies are brought into competition and
19 selected to be able to deliver to the standard.
20 So my testimony has to do with my belief that
21 SCONox isn't ready for this project.

22 Q. Okay. So let me go back to my
23 hypothetical then. Assuming everything else being
24 equal, would you prefer a technology that doesn't
25 use ammonia?

1 A. Everything else being equal, I would
2 have to say yes.

3 MR. STANISLAUS: That's all I have,
4 your Honor.

5 JUDGE MOYNIHAN: Thank you.

6 Mr. Little.

7 MR. LITTLE: I don't have any
8 cross-examination for this witness.

9 JUDGE MOYNIHAN: Mr. Karmel, are you
10 conducting the cross?

11 MR. KARMEL: Yes, your Honor. Could
12 I consult briefly with my client?

13 JUDGE MOYNIHAN: Why don't we take a
14 ten-minute recess and come back and we will
15 begin.

16 (Recess taken.)

17 JUDGE MOYNIHAN: Can we come to
18 order, please.

19 Mr. Karmel.

20 MR. KARMEL: Thank you, your Honor.
21 We have no cross-examination.

22 JUDGE MOYNIHAN: Excuse me. One
23 minute before you start.

24 JUDGE O'CONNELL: I don't have any
25 questions.

1 CROSS-EXAMINATION

2 BY MR. LANG:

3 Q. Turning to your testimony on page 4,
4 I believe it is lines 16 through 19, do you recall
5 Mr. Stanislaus asking you some questions about
6 risk?

7 A. Yes.

8 Q. The risk that you referred to in line
9 19, could you explain what kind of risk that is in
10 comparison to the risk you were describing in
11 response to Mr. Stanislaus's questions?

12 A. Yes. Earlier this morning, we talked
13 about the risk that would generally be associated
14 with any power plant equipment. Here in my
15 testimony I am referring to those risks associated
16 with the scaling up of the prototypical
17 development phase of the SCONox technology.

18 Q. Thank you.

19 Now, with respect to SCR, do you
20 recall being asked a number of questions regarding
21 scaling up SCR to certain sizes?

22 A. Yes, I do.

23 Q. At this point in time, would any
24 scaling up of an SCR technology be needed for the
25 East River Power Plant Project?

1 A. No, it would not.

2 Q. Is it fair to say that SCR is an
3 established, reliable technology?

4 A. It is my belief that it is.

5 MR. LANG: That's all I have, your
6 Honor.

7 MR. STANISLAUS: That's all.

8 JUDGE MOYNIHAN: Thank you,
9 Mr. Cinadr. You are excused.

10 (Whereupon, the witness was excused.)

11 JUDGE MOYNIHAN: Okay. Who is our
12 next witness?

13 MR. STANISLAUS: I'm sorry?

14 JUDGE MOYNIHAN: Our next witness?

15 MR. STANISLAUS: It's up to us.

16 JUDGE MOYNIHAN: I think we are --

17 MR. STANISLAUS: -- calling Elwood
18 Halterman.

19 JUDGE MOYNIHAN: Mr. Halterman,
20 please take a seat.

21 Whereupon,

22 ELWOOD HALTERMAN, JR.,
23 having been first duly sworn, was examined and
24 testified as follows:

25 JUDGE MOYNIHAN: Please be seated

1 and state and spell your name for our
2 reporter.

3 THE WITNESS: Elwood Halterman,
4 H-A-L-T-E-R-M-A-N.

5 DIRECT EXAMINATION

6 BY MR. STANISLAUS:

7 Q. Mr. Halterman, did you file prefiled
8 testimony in this case dated March 26, 2001?

9 A. I filed testimony. I don't know
10 about the date. According to what I did, I did it
11 on February 1st.

12 Q. Okay. Do you have any changes to
13 that testimony that you prefiled?

14 A. The testimony that I filed was
15 correct at the time. Since that time, I have
16 gotten many other documents that impacted what
17 would be in that testimony. For example, when
18 this was done, I did not have a copy of the draft
19 permit and I believe that has been brought up in
20 rebuttal testimony.

21 Since that time, I have not been able
22 to substantiate the 262 megawatt unit that was
23 supposed to be four units built in La Paloma,
24 California, and one of those was supposed to be
25 SCONOX. I got that from a news release from May

1 of '99. I contacted EPA and State of California,
2 and I have not been able to get that application.
3 I believe others have looked at that and have
4 comments on that. So, if you look at the numbers,
5 the tonnage numbers that I have in there, you
6 know --

7 Q. What page are you referring to?

8 A. Excuse me. On page 6, where I am
9 saying like 365.7 tons per year of ammonia, that
10 potential would be half that.

11 MR. LITTLE: I'm sorry. Where are
12 you?

13 A. Page 6. I make reference to what the
14 application says. I am just correcting things
15 that I am assuming that the draft permit has five
16 parts per million; if I were preparing that
17 testimony now, it would be based on five parts per
18 million, not the ten that the application had in
19 it.

20 JUDGE MOYNIHAN: The new number
21 would be?

22 THE WITNESS: 182.5, I believe.

23 JUDGE MOYNIHAN: And you are
24 changing your testimony to that number?

25 THE WITNESS: Yes, sir.

1 A. And then based on the assumptions I
2 made, the suppliant potential generation of
3 particles would be half of the 1,518.7, which
4 would be about 759 tons per year.

5 BY MR. STANISLAUS:

6 Q. Mr. Halterman, subject to those
7 modifications, do you adopt your prefiled
8 testimony as if given here today?

9 A. Yes.

10 MR. STANISLAUS: Your Honor, I move
11 that the testimony be moved into the
12 record.

13 MR. LANG: Voir dire, your Honor?

14 JUDGE MOYNIHAN: Yes.

15 VOIR DIRE EXAMINATION

16 BY MR. LANG:

17 Q. Mr. Halterman, do you know when your
18 testimony was filed?

19 A. No, I do not.

20 Q. Do you not -- would you accept,
21 subject to check, that it was filed on or about
22 March 28th of this year?

23 A. I have no reason to dispute that if
24 that is what you are saying. I do not know.

25 Q. The information that you said changes

1 your testimony, was that information that came
2 into your possession between February 1st and the
3 end of March of this year?

4 A. That information I received after
5 February 1st, yes.

6 Q. Was it before the end of March?

7 A. Yes.

8 Q. Is there a reason why your testimony
9 was not modified before it was submitted to
10 reflect the true nature of your knowledge?

11 A. I was not aware that I needed to do
12 that, nor was I requested to do that.

13 MR. LANG: That's all on voir dire.

14 JUDGE MOYNIHAN: Are there any
15 objections?

16 MR. LITTLE: Your Honor, if I could
17 be heard.

18 JUDGE MOYNIHAN: Yes.

19 MR. LITTLE: I have a question about
20 the utility or validity of this. On page 4
21 of the testimony, it's the second answer,
22 it indicated that the testimony is covering
23 SCONOX for requirements under the federal
24 PSD program, that stands for Prevention of
25 Significant Deterioration. I think we have

1 on the record already in this proceeding
2 the fact that the PSD program is not
3 subject to adjudication in this proceeding,
4 and --

5 JUDGE O'CONNELL: I'm sorry,
6 Mr. Little. I don't see it.

7 MR. LITTLE: I'm sorry, your Honor.
8 My printout may be different. Perhaps it
9 is page 3.

10 Yes. The question is: "Please
11 describe your role in the evaluation of
12 Article X application."

13 And the answer starts out, "My
14 testimony covers the SCONOX Emission
15 Control Technologies." There is indication
16 that it's supplied for purposes of
17 discussing further PSD program, and as I
18 was indicating, I think that we are not
19 dealing with PSD in this proceeding, and
20 with respect to any of these remarks in
21 this testimony as to the PSD program, they
22 are inappropriate.

23 JUDGE O'CONNELL: Do you have a
24 comment, Mr. Stanislaus?

25 MR. STANISLAUS: That's fine.

1 JUDGE MOYNIHAN: You will accept
2 that modification?

3 MR. STANISLAUS: I believe what
4 counsel is asking is that his testimony be
5 limited to the issues of non-attainment,
6 and not PSD; is that right?

7 MR. LITTLE: I'm sorry. Would you
8 repeat yourself?

9 MR. STANISLAUS: I believe that
10 counsel is asking that his testimony be
11 read as being limited to the issues of this
12 proceeding and not the PSD issue, which was
13 excluded.

14 MR. LANG: Yes.

15 JUDGE O'CONNELL: It's not clear to
16 me, Mr. Little. Do you wish to have this
17 term stricken then?

18 MR. LITTLE: What I would like is an
19 instruction that if any of the testimony in
20 here concerns the PSD program or the PSD
21 review or the PSD permit or draft permit,
22 that it be disregarded or stricken.

23 If the witness will state there is
24 none other than this particular reference
25 that I have already made, that will

1 probably take care of it.

2 MR. STANISLAUS: Can I just confirm
3 with the witness?

4 JUDGE MOYNIHAN: Yes, please do.

5 MR. STANISLAUS: Mr. Halterman,
6 would your testimony be modified in any way
7 with that limitation?

8 THE WITNESS: I don't believe so.

9 JUDGE MOYNIHAN: So if we merely
10 strike the words "requirements under the
11 federal PSD program," would that be
12 acceptable, Mr. Stanislaus?

13 MR. STANISLAUS: Yes.

14 JUDGE MOYNIHAN: So we will just
15 strike those words and the sentence will
16 end with "the BACT."

17 Is there anything else?

18 MR. LANG: Yes, your Honor. I would
19 just like to make two objections; first,
20 being that this testimony, while it was
21 sent to us via e-mail, was never actually
22 served on the Department and the testimony
23 refers to an Exhibit 1. To this date, that
24 exhibit has never been served or otherwise
25 provided to staff.

1 Number two, the testimony is not in
2 conformance with the Commission's rules or
3 the Board's rules, specifically Section
4 4.5(a)(3), and I will not argue prejudice,
5 but I would like to get a ruling from your
6 Honors as to how you plan on treating this
7 testimony because it is not in conformance
8 with the rules and regulations.

9 JUDGE MOYNIHAN: Is that the rule
10 that says the lines should be numbered?

11 MR. LANG: Yes. I would just like
12 to know how we are supposed to be referring
13 to this.

14 MR. STANISLAUS: Can I clarify what
15 the first objection was?

16 MR. LANG: It was never served. The
17 rules require testimony to be served on the
18 parties. It was never served on us. We
19 never received the exhibit.

20 MR. STANISLAUS: Are you saying you
21 never received a copy of this?

22 MR. LANG: I'm saying it was never
23 served. There is a difference between
24 receiving a courtesy copy and we never
25 stipulated to service by e-mail. We agreed

1 to accept a copy for courtesy and to send
2 out copies by e-mails so parties could have
3 them instantaneously. Every other party in
4 this proceeding followed up with service by
5 first class mail. That was not done, and
6 we object because we never even got the
7 exhibits that were referred to in this
8 because the document, itself, was never
9 actually served on us.

10 MR. STANISLAUS: I'm going to deal
11 with the exhibit issue for a second.

12 What page are you referring to?

13 MR. LANG: Well, he says --

14 JUDGE MOYNIHAN: Are you thinking of
15 Mr. Aziz's testimony?

16 MR. LANG: Actually. I apologize.
17 I am thinking of Mr. Aziz's testimony. I
18 will withdraw that portion of my objection.
19 I will have the record noted this testimony
20 was never actually served on the
21 Department.

22 JUDGE MOYNIHAN: You did receive the
23 e-mail copy?

24 MR. LANG: We received it, but it
25 was never served.

1 MR. STANISLAUS: My understanding of
2 your Honor's ruling was that parties who
3 required actual hard copies could notify us
4 to do so.

5 MR. LANG: Please refer to the
6 ruling. I just checked, it doesn't say
7 that anywhere.

8 JUDGE MOYNIHAN: That was for the
9 discovery requests we have that. The
10 testimony, we did say you could meet the
11 deadline by putting it in through e-mail,
12 but that you'd have to follow it up with
13 hard copies.

14 MR. STANISLAUS: Let the record
15 reflect that the company did and Department
16 did receive it in a timely fashion.

17 JUDGE MOYNIHAN: By e-mail.

18 MR. STANISLAUS: By e-mail, that's
19 right.

20 JUDGE MOYNIHAN: But there had to be
21 follow-up hard copy.

22 In view of the fact that you did
23 receive it by e-mail, and I understand
24 there is a violation here, but I am going
25 to overrule your objection. You have it.

1 I don't believe there has been much harm
2 done.

3 MR. LANG: We would just like it
4 noted for the record, your Honor, as to the
5 issue. I would like a clarification how we
6 should refer to this without the line
7 numbers.

8 JUDGE MOYNIHAN: With respect to the
9 technical violation of not having the lines
10 numbered, which I believe you also
11 raised --

12 MR. LANG: We're not objecting on
13 the grounds of prejudice. We would like a
14 ruling from the bench as to how we should
15 treat this. That is all.

16 JUDGE MOYNIHAN: What I would
17 suggest we do is go by page number and
18 question, and we can deal with it that way.

19 MR. LANG: That's fine.

20 JUDGE MOYNIHAN: Okay.

21 Are there any other objections?

22 MR. LITTLE: Your Honor, this is not
23 an objection. Just to point out that a
24 moment ago we were crossing out a portion
25 of Mr. Halterman's testimony. I think,

1 perhaps, I wanted to show you, if I could,
2 where some line ought to be drawn.

3 There is a reference to the Best
4 Available Control Technology, and I think
5 that can be crossed out as well in page 3,
6 second question, second answer. Third line
7 says, "and the best available control
8 technology," continues on the fourth line,
9 "BACT required under the federal PSD
10 program."

11 JUDGE MOYNIHAN: Oh, the entire
12 piece. Well, let me check with the witness
13 and make sure he has no objection to that.

14 Would you show that to the witness?

15 MR. LITTLE: Yes, thank you.

16 JUDGE MOYNIHAN: So then we are
17 ending the sentence with "new source
18 review," period?

19 MR. LITTLE: Yes, your Honor. Thank
20 you.

21 JUDGE MOYNIHAN: And we'll strike
22 "and the Best Available Control Technology,
23 (BACT), requirements under the federal PSD
24 program."

25 MR. LANG: Just a question of

1 clarification.

2 The witness described he didn't have
3 documents related to the 262 megawatt unit
4 in LaPaloma, California. Is he striking
5 that portion of his testimony or what is he
6 doing with that portion of his testimony?
7 It's on page 3 on my copy, the last
8 question on the page, about halfway down
9 the answer.

10 MR. STANISLAUS: I believe, maybe
11 you can clarify that. You were clarifying
12 your source of information, you weren't
13 striking it; is that correct?

14 THE WITNESS: I was not striking. I
15 have a document that says that a permit has
16 been issued. That's what I use for basing
17 this. Since this has come up, I have gone
18 back and tried to find an independent
19 source of confirmation for what I said.

20 JUDGE MOYNIHAN: Could I ask you to
21 get a little closer to the microphone?

22 THE WITNESS: I referred to
23 situations that had changed since I wrote
24 my testimony, the things that I knew about.
25 I was not stating that I was deleting that;

1 I am merely stating that I have not been
2 able to get a second confirmation on that.
3 I still have a document that says a permit
4 was issued for it.

5 JUDGE MOYNIHAN: So there is no
6 change to the testimony?

7 THE WITNESS: No change in the
8 testimony. I am merely stating I cannot
9 find --

10 JUDGE MOYNIHAN: Anything else?

11 We'll copy it into the record as if
12 given today.

STATE OF NEW YORK
THE NEW YORK STATE BOARD ON ELECTRIC
GENERATION SITING AND THE ENVIRONMENT

-----X
In the Matter of the Application of)
Consolidated Edison Company of)
New York, Inc. for a Certificate of)
Environmental Compatibility and)
Public Need Pursuant to Article X of) Case No. 99-F-1314
the New York State Public Service)
Law to Repower its East River)
Generating Station in Manhattan,)
New York County, New York)
-----X

DIRECT TESTIMONY OF
S. ELWOOD HALTERMAN, JR.

ON BEHALF OF
EAST RIVER ENVIRONMENTAL COALITION
AND MANHATTAN COMMUNITY BOARD NO. 3

FEBRUARY XX, 2001

Q: Please state your name, occupation and business address.

A: I am S. Elwood Halterman, Jr. I am the Senior Vice President of Enviro-Sciences, Inc.
My business address is 9515 Sotherloch Lake Drive, Spring, Texas 77379.

Q: On whose behalf are you testifying?

A: My testimony and appearance are on behalf of Manhattan Community Board 3 and East River Environmental Coalition.

Q: Please summarize your professional education and experience.

A: I am a chemical engineer with over 30 years of experience. My primary area of expertise is in Air Quality dealings with both clients and regulatory agencies. My industrial experience is in the pollution control equipment, pulp & paper, chemical, and food industries. My consulting experience also includes air separation, oil & gas, transportation, petrochemical, refinery, power generation, and hazardous waste industries. In addition to environmental regulations, my experience includes working with food & drug, minerals management, energy, transportation, safety, public service commissions, and labor regulations and agencies in all fifty states plus Puerto Rico. International experience includes projects in fifteen countries.

I graduated from Louisiana Tech University with a B.S. in Chemical Engineering in 1971. I am certified as a Professional Engineer, certified as a visible emissions evaluator, and registered to perform Corrective Action Services by the state of Texas. I am an active in the Air & Waste Management Association and the American Institute of Chemical Engineers.

Q: What is the purpose of your testimony in this proceeding?

A: My testimony addresses the application by the Consolidated Edison Co. of New York ("Con Edison") to construct new steam- and electric-generating facilities in the form of the East River Repowering Project ("ERRP") at its East River Complex on the lower east side of Manhattan in New York City.

Q: Please describe your role in the evaluation of Article X Application for East River Repowering Project?

A: My testimony covers the SCONOx Emission Control Technologies applicability to ERRP pursuant to the Lowest Achievable Emission Rate (LAER) requirements in the state's nonattainment new source review and the Best Available Control Technology (BACT) requirements under the federal PSD program. For reference see L5.1.2 and L-F.5. Volume III of III Appendix L Air Permit Application dated May 2000 from the Application for Certification of a Major Electric Generating Facility under Article X of the New York State Public Service Law.

Q: What are your conclusions concerning Control Technologies review?

A: I find that:

- The NOx and CO BACT/LAER analysis does not comply with 40 C.F.R. 52.21, because it did not consider all available control technologies required in a "top-down" approach. Specifically, the applicant rejects SCONOx because Vogt-NEM, the supplier of the Project's HRSGs has recommended against this technology due to the technology's lack of a proven track record. Con Edison and Vogt-NEM have failed to consider alternative arrangements in the placement of the SCONOx which is not bound to a specific location as the SCR unit is. There has been issued a permit to construct a 262 mW system using SCONOx to PG&E LaPaloma, CA announced by Goalline in June 1999. This plant will be located near Bakersfield in the San Joachin Valley Air Quality Management District. Current application pending approval using SCONOx include the 510 mW PG&E Otay Mesa plant in

San Diego, CA and the 510 mW Sunlaw Energy Neuva Azalea in Los Angeles, CA. Furthermore in February 2000, the EPA rejected the air permit applications for two 500 mW plants in California proposed for Elk Hills and Three Mountains not properly considering SCONOx.. Both permit application analysis "improperly rejected SCONOx as an available control technology". For reference see MODERN POWER SYSTEMS March 2000.

- A review of Dwg. No. 323002-A, 323003-A, 323004-A and 323010-A provided by Con Edison show enough latitude in the layout that the purported limit of 33 feet is not necessarily the case and there appear to be several alternatives that can provide the 45 feet of width for optimizing the SCONOx pressure drop as well as other considerations in placing the equipment...
- The applicant only mentions the increased pressure drop over the SCR unit and fails to clarify if the pressure drop reduction that will occur by the elimination of the CO catalyst unit is considered. Also the applicant does not provide information to determine if the SCR and SCONOx were evaluated at equivalent worst case conditions (i.e., -10 deg F and 100% load is the number used for SCONOx.) This information was developed in a telephone conversation with Rick Oegema of Alstom Power on January 23, 2001.
- The applicant has incorrectly identified the cause of sulfur masking the SCONOx catalyst in their SCONOx Report. The deliberate improper adjustment of the SCONOx unit at Genetics during an extended #2 fuel oil firing of approximately five days due to turbine problems can hardly be the basis of comparison of a 4 hour #2 fuel oil firing of the ERRP units.
- Con Edison has stated maintenance problems from operational complexity of the system that have been corrected. Such as the replacement of electric motors with pneumatics to operate the louvers. Design changes for new seals and a central pivot Louvers have been incorporated into the units since the Genetics unit was installed. This comment is based on a site visit to a 32 mW unit that has been operating since 1996 at 4151 E. Fruitland Avenue (AKA, Federal Unit) in Vernon (Los

Angeles area) and discussions with Cary Seabaugh who has experience at both the Genetics and Fruitland sites.

- I have been unable to establish the excessive external "washing" as frequently as every six weeks to restore design basis efficiency even when firing solely natural gas. It is my understanding that it has been over three months since the external washings after fuel oil firing and that the unit continues to operate within the normal parameters. This comment is based on a telephone conversation with Ron Devan of Alstom Power on 1/31/01 who accompanied Kathleen Keane of Con Edison on the visit to Genetics on or about December 1, 2000. The operating temperature range (~550 deg F) for the Genetics unit typically has an external "washing" on an annual basis. A low temperature unit (~300 deg F) such as the Federal Unit generally has an external washing of 700 hours. The reasons for the washings are that the unit is being operated at a 1 ppm NOx actual emission rate rather than at the 2.5 ppm design. At this time the unit is only required to operate 16 hours per day for six days per week. Information gathered at the site and conversation with Ronnie McCray, Plant Manager at the Federal plant is the basis for the summary of the washing frequency differences between the Genetics and the Federal Unit.
- The applicant has failed to realistically perform a cost comparison in their technology review. It merely states that SCONox is \$16 million per HRSG as compared to \$1.25 million for a conventional SCR system. Additionally the SCONox can be leased and this cost is considerably less than the \$16 million quoted by Con Edison. The SCONox system performs both the functions of the SCR and the CO catalyst at a much-reduced operating cost. In a comparison of SCONox versus SCR by the South Coast Air Quality Management District SCONox cost per ton reduced \$3,585 versus a cost for SCR of \$4,942. These figures are based on a lifetime cost of 10 years. Another source for these numbers was downloaded from the EPA bulletin board.
- SCONox does not have ammonia emissions that are particulate precursors. The application fails to address the potential impact of secondary particulate emissions

that may be formed as a result of ammonia slip from the SCR. The application needs to assess the potential for the unreacted ammonia passing through the stack (ammonia slip) to react with gaseous emissions of sulfur oxides and NOx to form ammonium sulfates and ammonium nitrates. Per the application the units have a potential to emit 365.7 TPY of ammonia slip as particulate precursor emissions. Assuming an equimolar split between sulfate and nitrate conversion, this results in the potential generation of 1,518.7 YPY of inhalable particulate in the atmosphere. We have been unable to determine where a health impacts analysis has considered this effect on human health and the environment. This analysis should also address impacts of rainfall on reducing the ammonia from the atmosphere as well as its potential to effect vegetation, aquatic life, and water bodies.

- The BACT/LAER review failed to adequately evaluate the potential particulate reductions that occur from a SCONOx unit.
- The applicant has failed to consider the cost impacts of the lower potential emissions from a SCONOx unit as far as ERCs and emission fees are concerned.

Q: What conclusion you have reached on SCONOx?

A: I have reached following conclusions - The applicant should revise their BACT/LAER analysis to realistically take into account all operational, environmental and cost impacts associated with NOx, CO, and PM10 control technologies comparing the SCONOx system against the proposed SCR and CO Catalyst systems. There appear to be potentially added benefits to human health and the environment at a reduced cost using the SCONOx technology.

Q: Does this conclude your testimony at this time?

A: Yes

1 MR. STANISLAUS: The witness is
2 available for cross.

3 JUDGE MOYNIHAN: Mr. Little?

4 MR. LITTLE: Bear with me for a
5 moment, since I have discovered all my page
6 references are one page off. Thank you.

7 CROSS-EXAMINATION

8 BY MR. LITTLE:

9 Q. Mr. Halterman, I would like to ask
10 you to, perhaps, put on a slightly different hat
11 in this instance, the hat of a developer's
12 contractor.

13 If a developer were not able to
14 obtain a manufacturer's guarantee for SCONOX as to
15 its incorporation into a developer's proposed
16 facility, would you recommend that the developer
17 incorporate that product into his design?

18 MR. STANISLAUS: I object.

19 JUDGE MOYNIHAN: On what grounds?

20 MR. STANISLAUS: His testimony is
21 very specific for the purpose that it's
22 provided for this project on behalf of EREC
23 CB-3. Counsel is asking a question --
24 asking the witness to provide testimony in
25 a different capacity.

1 MR. LITTLE: Your Honor, this
2 witness --

3 MR. STANISLAUS: Specifically as a
4 developer.

5 MR. LITTLE: Your Honor, the witness
6 has indicated over 30 years of experience.
7 He's worked for different clients, some of
8 whom I take it to be developers. I think
9 it's clear from page 2, although we don't
10 have --

11 JUDGE MOYNIHAN: I'm going to
12 sustain the objection.

13 MR. LITTLE: I'll rephrase.

14 Q. I'm not going to ask you to put any
15 hat on at the moment, Mr. Halterman. I am going
16 to ask pretty much the same question of you.

17 Would you recommend, if a developer
18 is unable to get a manufacturer guarantee, whether
19 or not it's appropriate to obtain that equipment?

20 A. Do you mean if I was building a
21 project, and I was purchasing a piece of
22 equipment, and I did not get a manufacturer's
23 guarantee that it was performance specified, would
24 I put it in the project?

25 Q. Yes.

1 A. I would not put it in the project.

2 Q. Thank you.

3 On page 4 of your testimony you refer
4 to the -- forgive my mispronunciation, but I think
5 it's Otay Mesa and a Sunlaw project.

6 Are you familiar with those projects?

7 A. Page 4?

8 Q. Excuse me. Page 4.

9 MR. STANISLAUS: I'm sorry.
10 Referring to page 4?

11 MR. LITTLE: Yes, page 4.

12 A. Mine starts on page 3.

13 Q. Well, again, forgive my printout's
14 pagination then.

15 The question was: "What are your
16 conclusions concerning Control Technologies
17 review?"

18 And your answer starts out: "I find
19 that" and there are a series of bullets. I am
20 dealing with the first bullet, the bottom of that
21 paragraph. We talk about current applications
22 pending. One is the Otay Mesa plant, the other is
23 the Nueva Azalea plant?

24 A. Yes.

25 Q. I simply want to know, are the plants

1 being constructed for these facilities new
2 structures?

3 A. It's my understanding these are new
4 power plants.

5 Q. Are there any structures on the
6 premises at all, do you know?

7 A. I do not have that knowledge.

8 Q. You also reference, I believe they're
9 called the Elk Hills and Three Mountains
10 facilities?

11 A. That's correct.

12 Q. I would ask you the same question.
13 Are there facilities there today into which the
14 technology would be installed or are there no
15 facilities, no structures there today?

16 A. I believe those are green fields
17 plants, but I am not sure. In other words, to my
18 knowledge, there is nothing there. These are new
19 facilities that are being built, vacant field.

20 Q. Do you happen to have with you today
21 the determinations you are citing as to the Elk
22 Hills and Three Mountains, the rejection of SCONOX
23 technology?

24 A. I don't know. I do not have them
25 with me.

1 Q. Would it be possible for you to
2 provide those?

3 A. Sure.

4 MR. STANISLAUS: Just clarify what
5 facilities you want?

6 MR. LITTLE: That was the Three
7 Mountains facility and the Elk Hills
8 facility.

9 MR. STANISLAUS: Okay.

10 Q. Have you reviewed these decisions in
11 preparing your testimony?

12 A. Pardon me?

13 Q. Have you reviewed those two decisions
14 in preparing your testimony?

15 A. I reviewed the information that I
16 had, the California letter sending those two back
17 for further consideration; that is all I have
18 done. I believe --

19 Q. This is the -- you mean the Modern
20 Power Systems March 2000 publication; is that what
21 your reference is to?

22 A. No. I believe that these
23 applications, I have letters actually from the EPA
24 to the people requesting the permit, but I do not
25 have that with me.

1 Q. I just want to check my pagination
2 again so I can get you all to the right part of
3 your testimony, and I want to get to that part
4 where you are talking about the South Coast Air
5 Quality Management District. For me it's page 6.
6 It may be page 5 to page 6.

7 JUDGE MOYNIHAN: Yes, it is.

8 Q. You were stating in your testimony
9 that the South Coast Air Quality Management
10 District compared SCONOX to SCR. Was that for an
11 installation at a 360 megawatt or larger facility,
12 do you know?

13 A. I do not know at this time. I can
14 get that information.

15 Q. At the time you were --

16 A. Excuse me, excuse me. That is for a
17 typical 270 megawatt plant.

18 Q. Is that reference in your testimony
19 or am I just not reading that correctly?

20 A. No, that is not in the testimony.
21 It's on a spreadsheet I have here. After you
22 asked the question I looked, and it says right up
23 at the top, 270 megawatts.

24 Q. The document you have before you, has
25 that been supplied to the parties here today?

1 A. No.

2 Q. Was that used in preparation of your
3 testimony?

4 A. I don't know if this particular piece
5 was. I have other documentation that was, yes, to
6 some extent. These numbers are the same as in my
7 testimony, yes.

8 MR. LITTLE: I guess I would ask if
9 we could have a copy of that to review for
10 purposes of better understanding of the
11 testimony. I think the witness has
12 something that nobody else has, and we
13 would like to see if it is pertinent to the
14 testimony.

15 MR. STANISLAUS: If we could just
16 ask the witness to recite, it is -- it's
17 just a table with numbers on it, right, the
18 numbers are in your testimony; is that
19 correct?

20 MR. LITTLE: Apparently not.

21 MR. STANISLAUS: I'm sorry?

22 THE WITNESS: I just made a
23 statement to the numbers in my testimony,
24 and --

25 MR. LITTLE: Your Honor, I think it

1 would be appropriate if the parties could
2 have what the witness is relying upon in
3 this case.

4 JUDGE MOYNIHAN: Are there any
5 objections?

6 MR. STANISLAUS: No.

7 MR. LITTLE: I'm not asserting any
8 prejudice.

9 Thank you.

10 MR. STANISLAUS: Do you want it now?

11 MR. LITTLE: I just have one or two
12 more questions for the witness. If I could
13 have it afterwards and, perhaps, the
14 opportunity to recross.

15 JUDGE MOYNIHAN: On that particular
16 item?

17 MR. LITTLE: Yes, just that item.
18 Thank you.

19 THE WITNESS: Can I ask him a
20 question what he wants?

21 JUDGE MOYNIHAN: I'm sorry?

22 THE WITNESS: May I ask him a
23 question exactly what he wants?

24 MR. LITTLE: I'm not sure what he
25 has in front of him.

1 THE WITNESS: I have with me a table
2 that summarizes things. Independent of
3 this, I have gone to the EPA website and
4 downloaded a lot of stuff about carbon
5 monoxide control with different
6 technologies, NOx control, and they wound
7 up being the same numbers as in this table
8 that sources state is the South Coast Air
9 Quality Management District. I am
10 questioning what you would like, just this
11 table?

12 MR. LITTLE: I think that table
13 would be appropriate as this point. I
14 think we have already established that
15 things that can be downloaded off a web
16 page are available to everybody.

17 THE WITNESS: This was downloaded
18 off a web page, also.

19 MR. STANISLAUS: Just to clarify, I
20 just want to mark that table as an exhibit,
21 so I don't know whether you want to do it
22 now or do it on my redirect, just to make
23 things easier and put it into the record.

24 JUDGE MOYNIHAN: Do you have copies?

25 MR. STANISLAUS: We'll have it

1 copied at a break sometime.

2 JUDGE MOYNIHAN: We can do it --

3 MR. STANISLAUS: On the redirect.

4 JUDGE MOYNIHAN: -- later.

5 BY MR. LITTLE:

6 Q. On page 6 of your testimony, I think
7 it is page 6, you discuss particulate matter
8 resulting from ammonia slip, and in regard to
9 that, did you determine that this would not allow
10 Con Ed to claim that the emission would have an
11 insignificant impact?

12 A. No, I have not.

13 MR. LITTLE: I don't have any more
14 questions.

15 JUDGE MOYNIHAN: Thank you.

16 Mr. Lang?

17 CROSS-EXAMINATION

18 BY MR. LANG:

19 Q. Mr. Halterman, on page 3, the third
20 question, that question simply asks you for your
21 conclusions, correct?

22 A. That's correct.

23 Q. And turning to page 6, the first
24 question is on my page 6, again, simply is asking
25 you for your conclusions, correct?

1 A. That's correct.

2 Q. Is any of your analysis according to
3 these conclusions anywhere in your testimony?

4 A. No.

5 Q. Is it common in your 30 years of
6 experience when you have done projects for
7 clients, regulatory agencies or anyone else, that
8 you simply provide conclusions without any of your
9 support?

10 A. Yes, it is. My task in this project
11 was to look at the application and see areas that
12 needed further review by the Agency, and that was
13 the purpose of looking at this. My task was not
14 to do engineering analysis and provide engineering
15 on these questions.

16 Q. You are not actually offering any
17 affirmative testimony, you are just suggesting
18 that the applicant needs to do further review?

19 A. I'm suggesting that the applicant
20 needs to do further study of SCONOX as a
21 technology or the DEC or someone needs to address
22 two specific issues, is SCONOX an applicable
23 technology, and what is the impact of the ammonia
24 of the new chemical that will be introduced as a
25 result of the project, and have those impacts been

1 reviewed. That is basically what my testimony is
2 saying.

3 Q. All right. Are you offering any
4 opinion as to whether SCONOX is a viable
5 technology in this case?

6 A. I am saying that further study is
7 needed based on the application I looked at.

8 Q. I will ask the question again.
9 Are you offering an opinion as to
10 whether SCONOX is a viable option in this case?

11 A. No, I am not.

12 Q. Are you offering any opinion related
13 to the issue of ammonia in this case?

14 A. I am stating that I have not seen
15 where the ammonia emissions have been addressed in
16 the permit application.

17 Q. Again, are you offering any opinion
18 as to the use of ammonia in this case?

19 A. I am trying to figure out a response.
20 Give me a minute.

21 Q. It's a "yes" or "no" question, sir.

22 Are you offering an opinion of your
23 own affirmatively as to the use of ammonia by this
24 project?

25 A. I guess I am not.

1 Q. Is that a "no," sir?

2 A. That is a "no."

3 MR. LANG: Your Honor, at this time,
4 I am not sure that this testimony has any
5 probative value. He is not offering any
6 opinions. I am not -- he's simply pointing
7 out his review of the application. But
8 this witness, it is my understanding was
9 being offered to support EREC's position
10 and to offer opinions on behalf of EREC.
11 The witness just stated he's not actually
12 offering any opinions.

13 MR. STANISLAUS: Your Honor, this
14 witness is being provided to raise issues
15 regarding the use of an alternative
16 technology and the rationale for evaluating
17 that within the permitting process and
18 within the Article X process. The witness,
19 he has made clear, has not conducted an
20 engineering feasibility analysis. What
21 he's doing is providing opinions about
22 where things could have or should be
23 analyzed with respect to the use of an
24 alternative pollution control technology.
25 For that limited purpose, his testimony is

1 relevant to this proceeding.

2 MR. LITTLE: Your Honor, the purpose
3 of the hearing isn't to raise questions;
4 it's to answer and address the issues that
5 have already been found to be in dispute in
6 this case.

7 JUDGE MOYNIHAN: Thank you.

8 With respect to your concern that the
9 material does not contain an analysis of
10 evidence for purposes of this hearing, we
11 tend to agree with you, Mr. Lang, and I
12 will point out to EREC and CB3 that they
13 received a substantial amount of funds so
14 that they could address the issues and not
15 merely raise them. Having said that,
16 though, we are not going to strike his
17 testimony. We understand its limits and we
18 will consider it within those limits.

19 MR. LANG: Then I will proceed with
20 cross on that basis, your Honor.

21 Q. Mr. Halterman, turning first to page
22 2 of your testimony, I would just like a
23 clarification. You state in your third question
24 on your professional education and experience, if
25 I am reading it right, that you have worked with

1 public service commissions in all 50 states.

2 Have you ever been retained by the
3 New York Public Service Commission?

4 A. Where did I state that I have worked
5 with public service commissions in all 50 states?

6 Q. It's the second-to-the-last sentence.
7 Thank you.

8 MR. STANISLAUS: Wait. What page?

9 MR. LITTLE: I have it on page 2,
10 question 3.

11 A. That statement is that I have worked
12 with all those agencies in 50 states.

13 Q. My question to you specifically, have
14 you worked with the New York State Public Service
15 Commission?

16 A. I have not.

17 Q. So that is not an accurate statement
18 then, is it?

19 MR. STANISLAUS: Well, I mean, your
20 Honor --

21 A. That statement is accurate. You are
22 implying -- are you implying that I have worked
23 with food & drug in 50 states, minerals management
24 in 50 states, energy in 50 states, transportation
25 in 50 states, safety in 50 states, public service

1 commissions in 50 states, labor regulations in all
2 50 states; is that the basis of your question?

3 Q. I'm trying to understand what it is
4 you have said. Are you suggesting that you have
5 simply worked with various entities across the
6 country or that you have worked with these types
7 of entities in each and every state?

8 A. I have worked with various entities
9 across the 50 states. I have not worked with
10 public service commissions in all 50 states nor in
11 New York.

12 Q. Turning to page 3 of your testimony,
13 you refer to the LaPaloma, California, plant.
14 Where did you obtain your information related to
15 this plant?

16 A. I have a downloaded news release that
17 I got off the Internet. It states that on May
18 29th, U.S. EPA, Region 9, the San Joaquin Valley
19 Air Pollution Control District issued formal
20 authority to construct with SCONox, a 262 watt
21 power generation facility in Bakersfield,
22 California.

23 Q. Is it common in your profession that
24 you simply rely upon news articles as sources of
25 information?

1 A. Yes, it is, when I am doing a cursory
2 review of what I consider items that need further
3 addressing in an application.

4 Q. Do you know any of the details
5 related to the PCG&E plant in LaPaloma,
6 California?

7 A. No, I do not.

8 Q. Did you feel that it was important
9 when you were commenting on their ability to use
10 SCONOX to actually know the details of that
11 proposal?

12 A. No, I did not.

13 Q. Why not, sir?

14 A. Because I am interpreting this news
15 release as being correct and it is being stated
16 that they have a permit application to install it.

17 Q. On what basis do you know that news
18 release to be correct and accurate?

19 A. I don't. As I previously stated in
20 my testimony, I have not been able to confirm
21 that.

22 Q. Are you familiar with Internet
23 searching, sir?

24 A. Yes, I am.

25 Q. Are you familiar with the California

1 Energy Commission?

2 A. Yes, I am.

3 Q. Have you ever been able to get onto
4 their website?

5 A. I believe I have.

6 Q. Have you noticed that they have an
7 entire portion of their website related to siting
8 of major electric generating facilities in the
9 State of California?

10 A. Yes.

11 Q. Did you per chance go to that site
12 and look to see what kind of information they have
13 related to the LaPaloma project?

14 A. I was not able to find anything on
15 the Internet for the LaPaloma site.

16 MR. LANG: Your Honor, I would like
17 to mark -- I guess it is Exhibit 40.

18 Q. Sir, I was able, in about a minute
19 and a half this morning, to find the site and find
20 the Commission's actual decision.

21 JUDGE MOYNIHAN: 40.

22 MR. STANISLAUS: I'm not sure
23 extraneous comments of counsel are
24 relevant.

25 JUDGE MOYNIHAN: We did not assign a

1 number to it. I thought Mr. Stanislaus
2 indicated he would introduce it on
3 redirect.

4 MR. LITTLE: All right.

5 JUDGE MOYNIHAN: We'll mark this
6 Exhibit 40 for identification.

7 (Exhibit 40 was so marked
8 for identification.)

9 MR. LANG: Your Honor, as this is a
10 Commission order, as with others, it's
11 being offered for identification. It won't
12 be offered into evidence. The actual order
13 will speak for itself.

14 Q. Sir, would you accept, subject to
15 check, that this is the Commission order
16 certificating the LaPaloma generating project
17 issued by the State of California Energy Resources
18 Conservation Development Commission?

19 A. Yes, I will.

20 Q. Have you ever seen this document,
21 sir?

22 A. No, I have not.

23 Q. I would ask you to turn -- it's
24 actually about ten or so pages in, but on the
25 bottom it is denoted page 1; at the top it states

1 "Introduction"?

2 MR. STANISLAUS: Your Honor, the
3 document speaks for itself. I don't
4 understand why counsel is asking the
5 witness to examine this document.

6 MR. LANG: I'm trying to probe the
7 basis of the witness's testimony.

8 MR. STANISLAUS: The witness already
9 testified he's not familiar with this
10 document.

11 MR. LANG: Your Honor, the witness
12 testified -- I'm going to ask him questions
13 about the project, and the basis of his
14 conclusion related to this generating
15 facility on which he apparently relied
16 solely upon a newspaper article. I would
17 like to probe the real basis of the
18 witness's knowledge.

19 MR. STANISLAUS: And the record
20 reflects that.

21 JUDGE MOYNIHAN: I'm going to allow
22 the questions. Go ahead.

23 BY MR. LANG:

24 Q. Sir, do you find the page entitled
25 "Introduction" on page 1?

1 A. Yes, I do.

2 Q. Do you see in the second paragraph it
3 identifies the project as being a 1048 megawatt
4 project?

5 A. Yes, I do.

6 Q. Does that have any bearing on our
7 conclusion that SCONOX has only been permitted for
8 262 megawatts out of a thousand megawatt project?

9 A. I believe this project consists of
10 the four 262 megawatt units. That is my
11 understanding.

12 Q. Do you know whether there are any
13 operational problems in using SCONOX on a unit of
14 this size?

15 A. Pardon?

16 Q. Do you know whether there are any
17 operational problems in using SCONOX on a unit of
18 this size?

19 A. I don't know of any that have been
20 used on a unit of this size at any time.

21 Q. Sir, turn to page 93 of the document
22 they handed you, Exhibit 40. I would ask you to
23 simply review this page and onto the next page.

24 Have you reviewed it, sir?

25 A. You asked me to review the paragraph

1 that starts on 93?

2 Q. 93 and the top of 94.

3 A. Yes, I have.

4 Q. Do you see, sir, where it says, "In
5 fact, what has been certificated and licensed is
6 the ability of PG&E to use either SCONOX or SCR on
7 the unit"?

8 Do you see where it says that on the
9 top of page 93?

10 A. On the top of page 93?

11 Q. Yes.

12 A. That is what it says, yes.

13 Q. And do you see at the bottom of page
14 93, where it states that "SCONOX is still
15 undergoing evaluation and testing and will depend
16 upon a determination as to its commercial
17 availability of the project, the ability to use
18 it"?

19 A. That's correct.

20 MR. STANISLAUS: Your Honor --

21 MR. LITTLE: I'm going to my
22 question right now. I am trying to make
23 sure he understands the basis of my
24 question.

25 Q. Does it change your conclusion at

1 all, looking at the actual decision and the fact
2 that what was actually certificated was a choice
3 of either SCONOx and SCR, and that the decision
4 itself reflects that SCONOx is not a proven
5 technology, does that change your conclusion at
6 that page 3 of your testimony?

7 A. No, it doesn't. They can still
8 potentially put that unit in there on the fourth
9 unit.

10 Q. So you would consider SCONOx, even
11 though this decision determines it not to be
12 demonstrated to be commercially viable, to be an
13 available control technology?

14 A. I consider SCONOx to be an available
15 control technology.

16 Q. I'm asking, sir, with respect to this
17 decision, with respect to this project, in which
18 you are relying in part on your decision, the fact
19 that it was not found to be a viable control
20 technology at this time, does that have any
21 bearing on your decision?

22 MR. STANISLAUS: I think it is asked
23 and answered.

24 JUDGE MOYNIHAN: I am going to allow
25 the question.

1 A. The way I read this document, it is
2 still being evaluated and tested and a
3 determination as to commercial availability of the
4 technology will decide whether they will put it on
5 one of the four units or not.

6 Q. It doesn't change your conclusion,
7 that is what I am trying to understand?

8 A. No.

9 Q. Is that a "no," sir?

10 A. No.

11 Q. I would like to now show you Exhibit
12 39, which has already been marked for
13 identification.

14 Actually, before I do that, on page 3
15 of your testimony, you also refer to the Otay Mesa
16 project.

17 A. It starts on page 3, yes.

18 Q. Where did you get your information
19 related to the Otay Mesa project?

20 A. I believe the Otay Mesa project I got
21 out of a technical publication.

22 Q. Did you go to the California website
23 and look for any information related to Otay Mesa?

24 A. I did not.

25 Q. Do you know whether that project has

1 received any kind of certificate of approval from
2 the California Commission?

3 A. I believe there is rebuttal testimony
4 that says that provided by Mr. Kurtz.

5 Q. That says what, sir?

6 A. I don't recall.

7 Q. Well, I will show you what has
8 already been marked --

9 A. I believe, if I could review his
10 testimony, I could answer that question.

11 Q. Well, no, sir. I would like to know
12 from your knowledge what you know about the
13 project.

14 A. I don't know.

15 Q. I would like to show you Exhibit 39,
16 that has already been marked for identification,
17 and ask you if you have ever seen this document
18 before?

19 A. No, I have never seen this document.

20 Q. Are you familiar with what is
21 actually being proposed at the Otay Mesa project
22 with regard to SCONOX?

23 A. The only information I put in here is
24 it was going to be a 510 megawatt unit.

25 Q. Well, you also state that it is a

1 current application pending approval using SCONOx;
2 correct?

3 A. That was me understanding, yes.

4 Q. Could you turn to page 122 of Exhibit
5 39.

6 MR. STANISLAUS: What page?

7 MR. LANG: Page 122 of Exhibit 39.

8 Q. And I ask you to please review that
9 page.

10 A. The entire page or a specific
11 paragraph?

12 Q. The entire page.

13 Sir, do you notice on this page that
14 it explains that the applicant has not
15 specifically selected SCONOx, but it has that
16 alternative and that if SCONOx is not available,
17 the applicant will use SCR, which it refers to as
18 an industry standard?

19 A. Yes, that's what it states.

20 Q. Does knowing this information in any
21 way change your conclusion as to whether and how
22 this facility may be cited?

23 A. No.

24 Q. So, the fact that you are stating
25 that it's approved using SCONOx, that conclusion

1 doesn't change when you know now that it's either
2 SCONOX --

3 A. Excuse me. You are stating that I
4 say what?

5 Q. The bottom of what I have as page
6 3 --

7 A. Okay.

8 Q. -- where you concluded that the
9 application is pending approval using SCONOX at
10 Otay Mesa. Now, that it is actually a proposal to
11 use either SCONOX or SCR, that doesn't change your
12 conclusion?

13 A. No. There is still a current
14 application pending approval of SCONOX, which is
15 what I stated.

16 Q. To your knowledge, sir, have either
17 of those plants been sited?

18 A. Not to my knowledge.

19 Q. Do you know if they will be sited?

20 A. No, I do not.

21 Q. Do you know if they actually are
22 going to use SCONOX in the construction?

23 A. No, I do not.

24 Q. On page 4 you have a reference to
25 Modern Power Systems, March 2000. What is that

1 referring to? And the reason I ask that is in
2 response to Mr. Little's questioning, you stated
3 that the information you got related to Elk Hills
4 and Three Mountains was from some EPA document. I
5 would just like to understand what you are
6 referring to Modern Power Systems for.

7 A. Reading this, I was saying that
8 everything in that bullet came out of a Modern
9 Power Systems March 2000 article.

10 Q. You already stated that, in fact, the
11 information in that bullet didn't come out of
12 that, but that you got the information from the
13 EPA website. Do you know what you are relying on
14 Modern Power System March 2000 for?

15 A. No, I do not. I stated that I also
16 got additional information off the website; not
17 exclusively.

18 Q. Do you have a copy of this Modern
19 Power Systems for March 2000 that I could review?

20 A. I did not bring it with me. I have a
21 copy.

22 Q. In the next bullet, page 4, that
23 starts with "A review of drawing numbers" --

24 A. Um-hmm.

25 Q. -- in the third line, you say "There

1 appear to be several alternatives that can provide
2 the 45 feet of width." Do you see where you say
3 that?

4 A. Yes.

5 Q. You stated previously in responses to
6 my questions that you didn't do any engineering
7 analysis. What are you referring to here?

8 MR. STANISLAUS: What are you
9 referring to?

10 MR. LANG: It's what he's referring
11 to.

12 A. There are other alternatives that can
13 be used that would provide more room than is
14 stated here. I believe that Con Ed has provided a
15 document on what it would take to be able to make
16 this facility. Modifications would have to be
17 made internally at the unit.

18 Q. Did you do an engineering analysis or
19 not?

20 A. No, I have stated from the very
21 beginning, I am an environmental consultant and
22 reviewed the completeness of the application, and
23 my questions are asking for additional study on
24 items; that is the basis of my testimony.

25 Q. Sir, you state here that there appear

1 to be several alternatives. Can you identify
2 those alternatives?

3 A. No. That was not my task.

4 Q. Did you review those alternatives to
5 determine whether they were viable?

6 A. That is a general statement. I have
7 built many plants from grass roots as well as had
8 to retrofit and revamp plants. Just because there
9 is a drawing that someone makes a statement that
10 it won't fit in an area, that doesn't mean that it
11 can't be fitted in an area. Is it practical? Not
12 necessarily. I am not making that claim, that
13 it's practical to modify this building.

14 Q. Sir, I am trying to understand. You
15 just said you built plants from the ground up,
16 that you can look at drawings and discern
17 information, but then you said to me that you
18 didn't do any such analysis in this case. I am
19 trying to understand, you have made conclusions
20 here, what the basis of your conclusion is?

21 Do you believe -- I will ask the
22 question differently. Do you believe that there
23 are viable alternatives that would allow SCONox to
24 be used at this site?

25 A. Is your question in regard to

1 physically put it in there, that is a very general
2 question that you ask. It can have many answers.

3 Q. You have a very general conclusion.
4 I can't understand, because there is no
5 information in your testimony, that suggests how
6 you developed that conclusion. I would like you
7 to answer what the basis of this statement was,
8 what information, what analysis did you use that
9 led you to the conclusion that there appear to be
10 several alternatives that can provide the 45 feet
11 of width?

12 A. As I have previously stated, I did
13 not do an analysis. I looked at the drawing, and
14 look at the placement where this equipment could
15 go, and it could be fitted in there.

16 Q. Well, in that an analysis, sir, you
17 looked at the things, and you determined that it
18 could be fit in there?

19 A. I wouldn't consider that analysis.
20 An analysis to me would be doing the technical
21 analysis that Con Ed has done, showing what
22 columns have to be moved, the load and stuff like
23 that; that is what I consider an analysis.

24 Q. Sir, can I ask what you were paid by
25 EREC to do in this case?

1 A. Pardon me?

2 Q. What were you paid to do in this
3 case?

4 MR. STANISLAUS: Your Honor, I have
5 to object to this. The witness has made
6 clear the work that he has done and what
7 he's testifying to. His questions are
8 irrelevant.

9 MR. LANG: Your Honor, he hasn't
10 made it clear. He said he is looking at
11 drawings and making conclusions, it's not
12 clear what it was he's done; that's what I
13 am trying to find out, what has he done.

14 JUDGE MOYNIHAN: We'll allow the
15 question.

16 A. What I have done is I have looked at
17 the application that was submitted on May 20th, I
18 have looked at some preliminary drawings, the
19 application that I looked at, made the comment it
20 would be unacceptable to use a technology that has
21 not been implemented on other large scale systems.
22 In addition, the HSRG manufacturer for the project
23 has indicated that they do not recommend the
24 installation of SCONOX for the project; therefore,
25 SCONOX cannot be considered technically feasible.

1 I considered that an inadequate
2 answer in an application, an air permit
3 application, and the basis of my testimony is that
4 further studies should be made, as I have
5 previously made, not by me because I am not the
6 applicant. I was merely asked to look at it and
7 provide some areas that need further study.

8 Q. I will move on.

9 On the next line down you refer to
10 other considerations in placing the equipment. Do
11 you know what kind of other considerations you
12 were referring to?

13 A. Where you put this unit, where you
14 put this unit in the power train. It can be in
15 several locations. There is an optimal location,
16 it can also be located after the HRHD.

17 Q. But you did not look in this case to
18 determine whether any of those other options are
19 technologically feasible in this particular
20 situation?

21 A. I did not look at those in this
22 particular situation; that is correct.

23 Q. And you did not look to see from an
24 engineering perspective whether those other
25 options were even possible?

1 A. As I have stated, I have not done an
2 engineering analysis.

3 Q. Sir, just so that we are clear, as
4 you have based your answer a few questions ago,
5 you do possess the technical ability to do such an
6 analysis, correct?

7 A. Yes, I can do the analysis.

8 Q. The next bullet down, you say that
9 applicant does not provide information to
10 determine if the SCR and SCONOX were evaluated at
11 equivalent worst case conditions. Do you see that
12 in your next bullet?

13 A. What page are you on, page 4?

14 Q. Page 4.

15 A. Yes.

16 Q. And you say this information was
17 developed through a phone conversation. What does
18 that mean, it was developed through a phone
19 conversation?

20 A. That information in there is based on
21 a telephone discussion for the worst case scenario
22 for the SCONOX unit.

23 Q. I will restate my question to make it
24 clearer. Is this specific information that the
25 gentleman from Alstom Power provided you or is

1 this information that you have since interpreted
2 or did something else, based on the information
3 that Mr. Oegema, O-E-G-E-M-A, provided to you?

4 A. That is information he provided to
5 me.

6 Q. In the next bullet down you refer to
7 a deliberate improper adjustment at the Genetics
8 plant.

9 A. Yes.

10 Q. On what do you base your conclusion
11 that it was a deliberate improper adjustment?

12 A. That was based on a discussion I had
13 with the plant manager at Sunlaw when I was out
14 visiting that facility.

15 Q. And what, specifically, did the plant
16 manager tell you?

17 A. That unit was operated firing number
18 two fuel oil to do the performance test for the
19 turbine and that proper adjustments were not made
20 to the SCONOX unit. The people doing the test
21 were aware of that and decided to go ahead and
22 demo the generators.

23 Q. Did he explain to you the rationale
24 why?

25 A. I did not ask the rationale why.

1 Q. Wouldn't it have been important to
2 you in your analysis or even in your reaching a
3 conclusion here to know the reason why they knew
4 that things were out of adjustment and yet did
5 nothing about that?

6 A. No. And I need to correct something
7 that I just said. I believe that the time was
8 running out for the turbine generator to do his
9 performance warranty and they went ahead and did
10 the performance warranty on the generator and they
11 elected not to make the changes to the SCONOX
12 unit.

13 Q. Do you know that, sir?

14 A. That is based on speaking with the
15 plant manager. I physically was not there and did
16 not observe the test.

17 Q. Sir, you stated that you spoke to the
18 Sunlaw manager related to the Genetics plant. Are
19 they the same plant?

20 A. I spoke with the Sunlaw at the
21 California plant. Everyone I spoke with out at
22 the California plant had work at the Genetics
23 plant and were aware of that. I'm not sure
24 exactly of the relationship between Sunlaw and
25 Genetics.

1 Q. But this person that you spoke to,
2 did he have firsthand knowledge of what happened
3 at the Genetics plant or is that what he had
4 heard?

5 A. That is what he and the senior
6 project manager led me to believe, that they were
7 involved in this, and they had firsthand knowledge
8 of it.

9 Q. But you don't know that, do you, sir?

10 A. I do not know that.

11 MR. LANG: I move to strike the
12 conclusion on the basis that it sounds like
13 double hearsay. There is no basis that in
14 fact it was firsthand knowledge that was
15 conveyed, which would only be single
16 hearsay, which information I would object
17 to in most forums; in this forum I
18 wouldn't. Now it sounds like double
19 hearsay. I will object and ask it be
20 stricken.

21 MR. STANISLAUS: Which conclusion?

22 MR. LANG: On my copy, page 4, the
23 third bullet.

24 JUDGE MOYNIHAN: Would you like to
25 be heard, Mr. Stanislaus?

1 MR. STANISLAUS: Yes.

2 The witness has testified based on
3 his understanding, that is what he's
4 testifying to, his understanding, based on
5 his conversations about the problems there,
6 based on his understanding he is testifying
7 that the applicant has incorrectly
8 identified the sulfur issue.

9 MR. LANG: Your Honor, what the
10 witness stated is he has no foundation for
11 his conclusion. This is what someone told
12 him. He doesn't know whether that person
13 knew it or not.

14 MR. STANISLAUS: It is the witness's
15 expert opinion, based on his discussion
16 with technical individuals that he
17 understood to be involved with the project,
18 and based on that, he came to his own, his
19 own independent judgment as to this issue.

20 MR. LANG: I will object. He never
21 came to an independent judgment. This is
22 what he was told. There was no judgment
23 there.

24 JUDGE MOYNIHAN: Just a minute.

25 (Judges Moynihan and O'Connell

1 confer.)

2 JUDGE MOYNIHAN: We won't knock it
3 out, but obviously we will give it
4 appropriate weight.

5 MR. LANG: Thank you, your Honor.

6 Q. Mr. Halterman, are you aware that
7 Sunlaw Energy is a part owner of Goal Line?

8 A. Yes, I am.

9 Q. Do you believe that the fact that
10 Sunlaw owns Goal Line that produced SCONOX would
11 in any way influence their decision to use their
12 affiliate technology?

13 A. Absolutely.

14 Q. Turning to the last bullet on page 4,
15 this is related to maintenance problems and you
16 discuss in the second sentence replacement of
17 electric motors with pneumatics. What is the
18 result of that change in your view?

19 A. That is to reduce the downtime of the
20 unit is my understanding.

21 Q. What is your understanding based on?

22 A. That was based on speaking with the
23 project manager on things that they had done and
24 this question is in response to a document from
25 Con Ed where it says the operational complexity of

1 the system also manifested itself in numerous
2 maintenance problems, such as the failure to work,
3 to operate.

4 Q. So this response of replacing
5 electric motors with pneumatics was specific to
6 the site or was this meant as a general conclusion
7 that anybody could do it?

8 A. My comment is specifically to this
9 site. A statement was made, a statement was made
10 as to a problem with the motors and that change
11 has been made at this site.

12 Q. Well, could I ask you to review your
13 first and second sentences of this bullet. Did
14 you read those two sentences, sir?

15 A. Yes, I did.

16 Q. Am I misinterpreting those two
17 sentences, when read together in context with each
18 other, that you are trying to make a conclusion as
19 to how to overcome the maintenance problems that
20 Con Ed has reported?

21 A. This comment refers specifically to
22 the Louver maintenance/reliability issue.

23 Q. And the first two sentences when read
24 together, isn't that your conclusion, and your
25 response to Con Edison's identified problem?

1 A. That is my conclusion, correct.

2 Q. So, do you know, sir, it being your
3 conclusion, that in fact pneumatics will work in
4 the East River project?

5 A. No, I do not know that.

6 Q. So, what is the basis then of your
7 conclusion, as you have just stated it, that the
8 pneumatics will work at the East River project?

9 A. My comment has to do with the
10 operational problems associated with the SCONOX
11 unit. An operational problem was identified by
12 Con Ed, they gave the specific answer. I talked
13 with the Sunlaw people, and they told me the fix
14 that they had put in for that specific problem.

15 Q. But again, sir, you don't know that
16 that fix will work at the East River project?

17 A. No, I do not know that. That is
18 correct.

19 MR. LANG: Your Honor, I apologize
20 for belaboring this. I would again move to
21 strike this conclusion as having no
22 foundation.

23 MR. STANISLAUS: Your Honor, I guess
24 we went over this before, is that correct,
25 the witness has testified to his role in

1 this proceeding. His testimony relates to
2 that role. He did not perform and he has
3 testified he did not perform engineering, a
4 specific engineering study.

5 MR. LANG: Your Honor, he just
6 stated he concluded as to East River that
7 pneumatics would work, but he's got no
8 basis for that conclusion. She can read
9 the testimony back; that's what he said.

10 JUDGE MOYNIHAN: We are not going to
11 strike it. We'll rule the same as we ruled
12 before. We'll take it into consideration
13 in weighing the evidence.

14 BY MR. LANG:

15 Q. Sir, moving on to page 5, you say in
16 the first bullet that I have on page 5, where you
17 say you have been unable to establish excessive
18 external "washing" as frequently as every six
19 weeks -- do you see that bullet?

20 A. Yes.

21 Q. Did you mean to qualify that, sir,
22 based upon the operating temperature range for a
23 unit firing natural gas?

24 A. No. The washing frequency has
25 specifically to do with the Genetics unit.

1 Q. So you weren't able to establish it
2 only for the Genetics unit, but are you not saying
3 as a general matter that there is excessive
4 external washing as frequently as every six weeks?

5 A. I don't understand your question.

6 Q. Well, the sentence starting out at
7 the beginning of your conclusion suggests that
8 it's a general kind of conclusion. And I am
9 asking you, are you trying to make a general
10 conclusion that you don't need washing every six
11 weeks or are you simply stating at the Genetics
12 unit and only at the Genetics unit that they did
13 not need external washing every six weeks?

14 A. The statement was made by Con Ed that
15 they were having to do washings at that frequency.
16 They are not doing washings at that frequency.

17 Q. Who isn't?

18 A. Genetics is not doing washings every
19 six weeks.

20 Q. Would you agree that at the Federal
21 unit they are doing them more frequently than once
22 every six weeks?

23 A. At the Federal unit they are doing
24 external washing at 700 hours.

25 Q. Would agree with me that that is less

1 than 30 days?

2 A. I would have to get my calculator.
3 If 700 divided by 24 is less than.

4 Q. How about we do this. This is an
5 easier way, sir. 72 hours is three days, 72 times
6 ten is 720 hours, ten times three is 30 days.
7 Would you agree with me that 700 hours is less
8 than 30 days?

9 A. Bear with me a minute. That's less
10 than three weeks, yes.

11 Q. So, there is a unit then that is
12 doing washing far more frequently than once every
13 six weeks, correct?

14 A. That is correct.

15 Q. What about the East River project?
16 Do you have any kind of conclusions as to how
17 often the East River project would need to do
18 external washings of SCONOX?

19 A. There is a difference. There is a
20 difference between the Genetics unit and the
21 Sunlaw unit in California as to the placement of
22 the SCONOX unit. That is the reason for the
23 different washing frequencies.

24 Q. Well, applied to the East River
25 project, do you know what the washing frequency

1 would be?

2 A. No, I do not. The washing frequency
3 should be -- the optimal placement of the SCONox
4 unit would be or why the Genetics unit is -- so it
5 would not be the 700 hours. It would be operating
6 more along the six or 700 degree Fahrenheit
7 temperature, as opposed to the 300 degree, like
8 the Sunlaw unit.

9 Q. Do you know whether you could put
10 that SCONox technology in the East River plant at
11 the same place as they put it into the Genetics
12 plant?

13 A. As I have previously stated, if it
14 had to fit in there, it could be made to fit in
15 there; that was several questions ago.

16 Q. It could be made to fit in exactly
17 the same way, in the same manner as it is being
18 fit in the Genetics plant or in a different manner
19 as it is being fit in the Genetics plant?

20 A. I am not really understanding your
21 question.

22 Q. Well, I believe you stated previously
23 there are a number of different alternatives where
24 to place the SCONox?

25 A. That's correct.

1 Q. You said you don't need six weeks
2 washing at the Genetics plant because of the
3 specific place where they placed the SCONOX unit.
4 My question to you is, at the East River project
5 could they place the SCONOX unit in the precise
6 relative location as they were able to do in the
7 Genetics plant?

8 A. Did I understand you to say that the
9 Genetics plant -- what did, where did you say it
10 was in the Genetics plant?

11 Q. I didn't say where. You said it was
12 in the optimal location in the Genetics plant.

13 A. Okay.

14 Q. My question is, excuse me, can Con
15 Edison place the SCONOX unit at the East River
16 Repowering project in the exact same location as
17 the people that own the Genetics plant placed it
18 in their plant?

19 A. I do not know of any reason that they
20 can't.

21 Q. But you didn't study it?

22 A. No, I did not.

23 Q. And you don't know whether they can
24 put it in that location or not?

25 A. That is correct.

1 Q. So would it be fair to say that you
2 don't know whether Con Edison will have to do
3 washing at any frequency without knowing where,
4 specifically, the SCONOX unit would be located?

5 A. I am not in position or have the
6 information to say how often this unit would have
7 to be washed.

8 Q. So you don't have any basis to say
9 that Con Edison's information that it would be as
10 frequently as every six weeks is incorrect. You
11 just don't know; is that right?

12 A. My statement says that Con Edison
13 went and looked at the Genetics unit and stated
14 that it had to be washed every six weeks, and that
15 is not a correct statement.

16 Q. My question to you is --

17 A. What is your question?

18 Q. Do you know whether Con Edison will
19 have to wash their SCONOX unit as frequently as
20 six weeks or perhaps more frequently or less
21 frequently?

22 MR. STANISLAUS: That's been asked
23 and answered.

24 A. I stated I don't know that.

25 MR. LANG: I will move on.

1 Q. In your next bullet down you explain
2 that the SCONOx unit could be leased and that this
3 cost is considerably less than \$16 million quoted
4 by Con Edison; do you see that?

5 A. That's correct.

6 Q. What is the lease cost?

7 A. I do not know that.

8 Q. How do you know it is less than
9 \$16 million?

10 A. Because I was told that by the people
11 at Alstom Power.

12 Q. Is that an annual cost of less than
13 six million or cumulative cost over the life of
14 the facility?

15 A. I believe that is capital cost.

16 Q. Well, is a lease cost a capital cost
17 or is it an annualized cost.

18 A. What number are you talking about?
19 I'm confused.

20 Q. You have said SCONOx can be leased
21 and this cost is considerably less than
22 \$16 million. That lease, is it a one-time payment
23 for the lease or is it an annual payment for the
24 lease?

25 A. I do not know that.

1 Q. Do you know what the cumulative total
2 of the annual payments, if there are annual
3 payments, would be?

4 A. I do not know that.

5 Q. Do you have any basis for saying that
6 it can be leased for a cost considerably less than
7 \$16 million?

8 A. As I have stated to you, based on
9 what Alstom Power told me, that is the basis of my
10 statement.

11 Q. You didn't get clarification from
12 Alstom Power as to what they were telling you, did
13 you, sir?

14 A. Alstom Power is still having
15 continuing talks with Con Edison, and has been
16 unwilling to provide a lot of technical
17 information as well as cost estimates.

18 Q. What I am asking you, sir, is you did
19 not get specific information that over the life of
20 this project, a lease cost would be less than the
21 \$16 million capital costs for buying it outside?

22 A. I did not do the economic analysis of
23 it.

24 Q. I'm not asking for an economic
25 analysis. Did you get the specific information

1 from Alstom Power that over the license of the
2 unit, the lease cost would be less than the
3 capital cost of \$16 million?

4 A. No, I do not.

5 MR. LANG: I believe you are
6 probably going to overrule. I would move
7 to strike this response as, well, as having
8 no foundation.

9 JUDGE MOYNIHAN: I will rule
10 consistently with my other rulings. We
11 will not strike it, but we will consider
12 the weight of the testimony.

13 Q. Further down in that same bullet you
14 talk about the SCONox versus SCR cost per ton and
15 the figures are based on a lifetime cost of ten
16 years. Will those figure change if the lifetime
17 increases beyond ten years?

18 A. I did not do that analysis. I got
19 that analysis from South Coast Air Quality
20 Management District and from the EPA.

21 Q. Do you know whether those cost
22 figures would change if the life exceeds ten
23 years?

24 A. I thought I said no, I did not know
25 that.

1 MR. LANG: I would just like my
2 objection to this noted as well, your
3 Honor.

4 JUDGE MOYNIHAN: It is noted.

5 BY MR. LANG:

6 Q. Turning to your next bullet, which
7 actually on my page goes over onto page 6, you
8 state at the top, the first full sentence at the
9 top of what's my page 6, "The application needs to
10 assess the potential for unreacted ammonia." Do
11 you see that sentence?

12 A. Yes.

13 Q. And you explain that it needs to
14 react with gas emissions, gaseous emissions of
15 sulfur oxides and NOx to form ammonia sulfates and
16 ammonia nitrates?

17 A. Yes.

18 Q. Are sulfur oxides and NOx the same
19 thing as sulfuric and nitric acid aerosols?

20 A. Excuse me?

21 Q. Are sulfur oxides and NOx the same
22 thing as sulfuric and nitric acid aerosols?

23 A. I consider sulfur oxides are SO2 and
24 SO3, nitrous oxides are NOx and NO2.

25 Q. Sulfur, if I recall my chemistry, is

1 S?

2 A. That's correct.

3 Q. Nitrogen is N?

4 A. Correct.

5 Q. Are those the same things?

6 A. No. Those are not the same things.

7 MR. LANG: Your Honor, at this time
8 I would like to get marked 41. This is
9 EREC's petition for full-party status in
10 the DEC permitting proceedings.

11 JUDGE MOYNIHAN: Mark it Exhibit 41
12 for identification.

13 (Exhibit 41 was so marked
14 for identification.)

15 Q. Mr. Halterman, have you ever seen
16 this document?

17 A. No, I haven't.

18 Q. Did you contribute any information to
19 EREC and CB3 in the preparation of their petition
20 for full-party status?

21 A. No, I did not.

22 Q. I would ask you to turn to page 22 of
23 the document.

24 Do you see section that says "the
25 Alternative Control Techniques"?

1 A. Yes, I do.

2 Q. The second paragraph, the
3 second-to-the-last line.

4 A. Yes, I do.

5 Q. Do you see in that second-to-the-last
6 line where it says that ammonia slip combines with
7 sulfuric acid and nitrous acid aerosols?

8 A. Yes, I do.

9 Q. Who was correct, EREC, CB3 or
10 yourself in describing the process that will
11 occur?

12 A. There will be -- I believe that there
13 will be many competing reactions between ammonia
14 and SO₂ and ammonia and SO, and there will be
15 reactions also between ammonia sulfate, as well as
16 ammonium nitrate.

17 Q. Your answer on page 6 of your
18 testimony is an incomplete answer; is that what
19 you are explaining?

20 A. My answer is a hypothetical mechanism
21 on what could occur because ammonia is coming out
22 of the stack. I have not made any attempt to go
23 through all the atmospheric chemistry of what all
24 was involved.

25 Q. Because that was outside the scope of

1 what you were retained to do in this case?

2 A. That was outside the scope of what I
3 was retained to do. That is also a very laborious
4 and complicated process, as Dr. Yarwood, I think,
5 demonstrated when he was up here answering
6 questions.

7 MR. LANG: Your Honor, I guess this
8 is really directed to Examiner O'Connell as
9 it relates to the DER permitting procedure.

10 EREC, in their petition, identified
11 an issue that the application did not
12 evaluate or discuss, and what we have here
13 is testimony that is supposed to be
14 responsive to that, but there is no
15 evaluation of that. I apologize if I am
16 not 100 percent familiar with the DEC
17 proceedings.

18 Is it appropriate from the DEC
19 permitting process to include this
20 discussion when there was no analysis done
21 and it's not actually consistent with what
22 their petition says and is not, in fact,
23 responsive to the DEC permit?

24 JUDGE O'CONNELL: I think that your
25 statement goes more to the weight of the

1 evidence that is being offered.

2 MR. LANG: Okay. Thank you, your
3 Honor.

4 Q. Sir, move further down page 6 of your
5 testimony, I am sorry, there is a sentence that
6 starts, "Assuming an equimolar split." On what
7 did you base your assumption that there would be
8 an equimolar split?

9 A. That was an arbitrary decision.

10 Q. So there is no support for that
11 whatsoever?

12 A. None whatsoever.

13 Q. Were you here during the testimony of
14 Dr. Yarwood?

15 A. Yes, I was.

16 Q. Have you reviewed Dr. Yarwood's
17 testimony?

18 A. Yes, I have.

19 Q. Based on the facts that Dr. Yarwood
20 obtained from the Mabel Dean Bacon monitoring
21 station, would you agree that your arbitrary
22 decision is not supported by the actual facts as
23 to the split between the sulfate and nitrate
24 emissions?

25 A. No, I would not.

1 Q. Why not, sir?

2 A. Because as I understood what
3 Dr. Yarwood has, he has actual particulate that
4 was particular to it, but I don't know what
5 happens in the reaction that would be unique to
6 this.

7 Q. You don't know because you didn't
8 study it or you are not familiar with the chemical
9 mechanisms and chemical reactions?

10 A. I have not studied the chemical
11 reactions and the mechanism and the kinetics
12 associated with it; however, I understood that
13 Dr. Yarwood is referring to samples of particulate
14 that have been deposited and they are doing an
15 analysis of that. Those are two separate things.
16 There is much ammonia around here and many
17 sulfates.

18 Q. Sir, it's not that you don't know
19 whether his analysis is right or wrong or you
20 agree or disagree with it, you haven't done your
21 own analysis and compared it to what he has done?

22 A. That is correct.

23 Q. At the bottom of that bullet you talk
24 about the effect on vegetation and aquatic life
25 and water bodies.

1 What vegetation are you referring to
2 with respect to this project?

3 A. That would be any vegetation in the
4 area of impact around the plant.

5 Q. Such as?

6 A. I don't know of any. It is typical
7 when a health effect study is done, that is one of
8 the things that they do.

9 Q. Have you ever seen the East River
10 project, sir?

11 A. Have I ever seen the East River
12 project? I visited the facility.

13 Q. You don't know whether there is any
14 vegetation or you don't know if there would be any
15 impact on the vegetation?

16 A. I do not know if there would be
17 impact on the vegetation.

18 Q. Do you know whether there would be
19 any impact on aquatic life?

20 A. No, I do not.

21 Q. Do you know whether there would be
22 any impact on water bodies?

23 A. No, I do not.

24 Q. Your last bullet on the preceding
25 question from page 6, the applicant failed to

1 consider cost impacts. Of what relevance is that
2 conclusion?

3 A. I believe we struck the PSD analysis,
4 which includes the BACT analysis.

5 Q. So should this bullet then be struck
6 in accordance with striking the reference to the
7 PSD analysis?

8 A. No, I don't believe it should be
9 struck, because I think it's still applicable.

10 Q. In what way?

11 A. The cost of the project. No, excuse
12 me, it needs to be struck because there would be
13 no direct emission reduction credit, emission fees
14 associated with this.

15 MR. LANG: We'll ask that it be
16 struck in accordance with what the
17 witness's statements are.

18 JUDGE MOYNIHAN: That would be the
19 entire last bullet?

20 MR. LANG: Yes.

21 JUDGE MOYNIHAN: We'll strike it.

22 That's on page 6, the last bullet of
23 the page.

24 MR. LANG: For that question, yes.

25 JUDGE MOYNIHAN: I think that is the

1 only question.

2 MR. LANG: I have two more questions
3 on page 6 on mine.

4 JUDGE MOYNIHAN: You have more
5 bullets?

6 MR. LANG: Okay. Never mind.

7 Q. Sir, moving on to your next question,
8 "What conclusion have you reached on SCONOX," you
9 state in your last sentence, "There appear to be
10 potentially added benefits."

11 What does that mean "potentially"?
12 Are they there or aren't they there?

13 A. I do not know the answer to that
14 question. The potential benefit would be not
15 having the ammonia go into the atmosphere;
16 however, there has been no study done, so I don't
17 know if those emissions are detrimental or not.

18 Q. You have made a conclusion, but you
19 have no basis for your conclusion?

20 A. I have made a suggestion that the
21 study be made.

22 Q. No, sir. The question states "What
23 conclusions have you reached?" Are you saying
24 that this is a nonresponsive answer to the
25 question that was asked?

1 MR. STANISLAUS: Your Honor, the
2 answer speaks for itself. His answer is
3 potential added benefit.

4 MR. LANG: I have asked about his
5 question and his conclusion. He said he
6 didn't make conclusions. He said studies
7 should be done. That makes this answer
8 nonresponsive to the question that was
9 asked.

10 MR. STANISLAUS: The conclusion
11 is --

12 JUDGE MOYNIHAN: Well, there is a
13 response there. Whether you like it or
14 not, it is there.

15 MR. LANG: Your Honor, the question
16 "Was what conclusion have you reached?"
17 He's just testified these aren't
18 conclusions.

19 JUDGE MOYNIHAN: I think he answered
20 that there were potential conclusions. I'm
21 going to allow it to stand.

22 Excuse me, potential benefits.

23 BY MR. LANG:

24 Q. Sir, turning back to what's been
25 marked as -- turning to what's been marked as

1 Exhibit 41, on page 25, excuse me, 24.

2 A. I don't have 41.

3 Q. 41, it is the petition for full-party
4 status.

5 A. Oh, okay. This is the front of
6 Exhibit 45.

7 Q. Exhibit 41, page 24. Do you see
8 right above where it says "Issue D2, ammonium
9 emission," it describes what your testimony will
10 do.

11 A. Yes, I do.

12 Q. Do you agree with what is described
13 here that your testimony will review large scale
14 applications of SCONOX? Has your testimony done
15 that?

16 A. To a limited degree, yes.

17 Q. With respect to the documentary
18 evidence, was this a reference to you that you
19 would be submitting this documentary evidence from
20 Goal Line Environmental Technologies?

21 A. Excuse me?

22 Q. Well, the next sentence on page 24?

23 A. It was not my understanding I would
24 be doing that. I did not have, I did not prepare
25 this document and, to my knowledge, this is the

1 first time I have seen this document.

2 Q. I just, I would like to ask one other
3 thing that has been attributed to you. However,
4 if you turn to the next page, actually -- I'm
5 sorry. Starting at the bottom of page 24 and onto
6 the top of page 25. Do you see where it describes
7 Mr. Halterman's testimony will provide?

8 A. Yes, I see that.

9 Q. Did you provide those calculations?

10 A. No, I did not.

11 Q. And finally, right above where it
12 says "environmental justice," it states that
13 Mr. Halterman's testimony will address a condition
14 known as "blue haze." Did you address blue haze,
15 sir?

16 A. No, I did not.

17 Q. Sir, do you know why EREC explained
18 in this document that you would have done all
19 these things that you were never asked to do?

20 A. No, I do not.

21 Q. Did EREC ever consult with you before
22 advising the DEC and the siting board what you
23 would be doing, as to what you would actually be
24 doing?

25 A. I don't believe I have ever met EREC

1 and I don't know what you are talking about.

2 Q. Do you know what I mean when I say
3 "EREC"?

4 A. Excuse me. Go back. You are not
5 talking about a person, are you talking about
6 E-R-E-C?

7 Q. Yes.

8 A. Okay.

9 Q. Have you ever talked to EREC before
10 today, sir?

11 A. I am assuming that Mathy is part of
12 EREC; is that correct?

13 Q. Yes.

14 MR. LANG: Your Honor, we are done
15 with this witness.

16 JUDGE MOYNIHAN: Shall we go to
17 lunch? Do you have much?

18 MR. KARMEL: No, I have, I think,
19 brief.

20 JUDGE MOYNIHAN: Okay. Can we
21 finish it before lunch or should we break
22 for lunch?

23 MR. KARMEL: I think we can do it
24 now. I will try to be quite brief.

25 CROSS-EXAMINATION

1 BY MR. KARMEL:

2 Q. Mr. Halterman, may I take a look at
3 the document that you read, I think pertaining to
4 the LaPaloma plant. I think it was a news release
5 of some kind? I think you read a portion of it
6 into the record.

7 A. Oh, yes.

8 Q. Is this a document you obtained from
9 Goal Line Environmental Technologies?

10 A. Yes, off the Internet.

11 Q. Is this a Goal Line Environmental
12 Technologies press release pertaining to the
13 LaPaloma plant?

14 A. That's the way I interpret it, yes.

15 Q. Is Goal Line Environmental
16 Technologies the licensee of this SCONOX
17 technology?

18 A. That's my understanding.

19 Q. You used a phrase in your testimony
20 in response to one of Mr. Lang's questions and I
21 believe your phrase was, quote, available control
22 technology, unquote. You may not recall the
23 question in which that was used, but do you recall
24 that phrase "available control technology"?

25 A. Yes. I am familiar with that phrase.

1 Q. Could you explain what that means,
2 please?

3 A. To me, available control technology
4 is a technology that has been proven to work and
5 it's a technical process.

6 Q. In the concept of available control
7 technology, there is a distinction between whether
8 something is available in general as a pollution
9 control technology for a project, and whether that
10 technology would actually be technically feasible
11 for a specific project?

12 A. Ask that again.

13 Q. Sure.

14 Is there a distinction between
15 whether a pollution control technology is
16 available in general as something to be considered
17 as a possible pollution control technology for a
18 project, and whether or not that technology is
19 actually technically feasible for a specific
20 proposed project?

21 A. Is there a difference between those
22 two?

23 Q. Yes.

24 A. Yes, I believe there is a difference
25 between those two.

1 Q. Could you explain what the difference
2 is, please?

3 A. To me an available control technology
4 is a process that works. For something to be
5 technically feasible would mean will it work in
6 that particular application.

7 Q. Thank you.

8 And it is your testimony, if I
9 understand it, that you have concluded that SCONOX
10 is an available control technology in general,
11 rather than the more specific determination as to
12 whether or not it is technically feasible with
13 respect to the East River repowering project?

14 A. That's true.

15 Q. Would that be fair?

16 A. That is correct.

17 Q. Thank you.

18 There is a figure in your testimony,
19 on my copy it is on page 4. It is the first
20 bullet in response to the question "What are your
21 conclusions concerning Control Technologies
22 review?" I apologize, actually it's the second
23 bullet. The figure is 45 feet of width.

24 Do you see that portion of your
25 testimony that I am referring to?

1 A. Yes.

2 Q. The 45 feet that you mention in your
3 testimony, what are you describing by that width?

4 A. This is an item that I did not
5 mention that has changed since I provided this
6 testimony, because the SCONOX unit, to have the
7 pressure drop required, it's greater than 45 feet.
8 I believe it's like 60 feet. So I don't know if I
9 am answering. Excuse me.

10 Q. That's okay.

11 A. Let me be quiet and listen to your
12 question.

13 Q. So, based upon information that you
14 have received after February 1st when you
15 completed your drafting of this testimony, you
16 would conclude that instead of 45 feet of width, a
17 more accurate estimate would be 60 feet?

18 A. That's correct.

19 Q. And the 60 feet number, what does
20 that refer to, what piece of equipment are you
21 referring to?

22 A. That would actually be the width of
23 the SCONOX unit.

24 Q. When you say "the width of the SCONOX
25 unit," are you referring to the case of the unit?

1 A. That is my understanding, yes.

2 Q. In order for SCONOx to actually be
3 installed at a power plant, in addition to the
4 SCONOx equipment itself, with its casing, which
5 you now estimate as about 60 feet in width for
6 this particular application, would it also be
7 necessary to have associated platforms to service
8 the SCONOx equipment?

9 A. Yes.

10 Q. Would you be surprised to be told
11 that the engineer responsible for the East River
12 Repowering project at Con Edison has estimated
13 that that platform be approximately 30 feet in
14 width?

15 A. I would not consider that
16 unreasonable.

17 Q. So, if the 30 feet is considered
18 together with the 60 feet, would it be a fair
19 approximate estimate that the contiguous feet of
20 open space that would be required for each SCONOx
21 unit would be 90 feet?

22 A. It would actually be larger than
23 that. I am assuming you would be looking at the
24 unit and then the walls, so you would have to have
25 more space than that.

1 Q. Can you approximate how many more
2 contiguous feet of open space would be required,
3 more than 90 feet?

4 A. Is your question would it require
5 more than 90 feet or are you asking me to
6 estimate?

7 Q. How much more than 90 feet?

8 A. I don't know the answer to that
9 because I do not know the design criteria that Con
10 Edison has for their construction. I can only
11 answer that question based on what I would do and
12 how I would do it and I don't think that is
13 relevant to this.

14 Q. Okay.

15 MR. KARMEL: Nothing further, your
16 Honor.

17 JUDGE MOYNIHAN: Will you be having
18 redirect? Do you want to wait until after
19 lunch?

20 MR. STANISLAUS: Yes.

21 JUDGE MOYNIHAN: We'll take a
22 luncheon recess until 1:30.

23 (Luncheon recess taken.)

24 JUDGE MOYNIHAN: We will go back on
25 the record.

1 MR. STANISLAUS: I would like to
2 mark for identification Exhibit 42, which
3 is an exhibit that Mr. Halterman provided,
4 which is a table from Goal Line
5 Environmental Technology reflecting some
6 information from the South Coast Air
7 Quality Management District.

8 (Exhibit 42 was so marked
9 for identification.)

10 MR. STANISLAUS: I'm ready to do
11 redirect.

12 MR. LANG: Before we do that, I have
13 one other thing on the record.

14 I would like to have, I apologize, I
15 should have done this earlier, it is
16 nothing I need for cross-examination, but I
17 would like the report -- I would like to
18 have an exhibit marked for identification
19 that we would not move into evidence. It
20 is also from the California website;
21 therefore, it is an official document,
22 that's why we are not moving it into
23 evidence. But I asked that the Court take
24 notice that the Nueva Azalea Power Plant
25 project referred to by Mr. Halterman, the

1 applicant has requested that the project be
2 suspended, and as a suspended project, I
3 don't believe it should be included in
4 consideration in this case for that reason
5 because it is no longer a viable project.

6 JUDGE MOYNIHAN: We'll mark it
7 Exhibit 43 for identification.

8 MR. LANG: Thank you.

9 (Exhibit 43 was so marked
10 for identification.)

11 JUDGE MOYNIHAN: Okay. You may
12 proceed.

13 REDIRECT EXAMINATION

14 BY MR. STANISLAUS:

15 Q. Mr. Halterman, there was a series of
16 questions to you this morning about the level of
17 your activities on this project and you had
18 referred to the application, discussing SCONOX,
19 specifically, page L5-9, section L5.2.3.2, and you
20 had referred to the last sentence in that section,
21 that states SCONOX cannot be considered
22 technically feasible for this project. Based on
23 that, how did you understand your role with
24 respect to evaluating the company's conclusion as
25 set forth in that section?

1 A. My task at the time was to review the
2 application, and relate to weaknesses that I
3 thought in the application that needed further
4 direction, either by Con Ed or something that DEC
5 or a regulatory agency would ask for additional
6 information.

7 Q. And in doing so, your goal with
8 respect to the application was what?

9 A. I considered the response that was in
10 there not to substantiate rejecting SCONOX and we
11 needed additional information; that was the
12 purpose of my comment.

13 Q. Would it be correct to say that a
14 potential end result of your work could be that
15 the applicant perform an engineering analysis of
16 SCONOX on the proposed project?

17 MR. KARMEL: Objection, leading.

18 JUDGE MOYNIHAN: It is leading but I
19 will allow the question.

20 A. Please ask the question again.

21 Q. In conducting the work that you did
22 and your testimony this morning, was one of the
23 end results, your hoped end results of your work
24 was that it would demonstrate that the applicant
25 should, in fact, conduct an engineering analysis

1 of SCONOx for the proposed project?

2 MR. LANG: Objection, irrelevant.

3 The end result of his testimony is of no
4 moment to the proceeding of what he hoped
5 would happen ultimately. This testimony
6 has been offered for whatever it is, but to
7 say what his ambitions, his goals were for
8 that testimony, I don't believe there is
9 any relevance to this case.

10 JUDGE MOYNIHAN: As I recall, there
11 was quite a bit of cross on this point. I
12 will allow the question.

13 A. Yes.

14 Q. Mr. Halterman, can you provide your
15 estimate of the cost and level of effort to
16 conduct an engineering evaluation of SCONOx for
17 the Con Ed project?

18 MR. LANG: Objection, irrelevant.

19 He didn't perform such an analysis so I
20 don't see why him going through what the
21 cost would be to do that analysis would
22 have any relevance.

23 MR. STANISLAUS: Your Honor, the
24 cost of doing such was raised this morning
25 in testimony. The level of his work was

1 raised in his testimony, so I feel it is
2 absolutely relevant in redirect.

3 MR. LANG: He didn't do the work.

4 JUDGE MOYNIHAN: I am going to
5 sustain the objection. We are --

6 MR. STANISLAUS: Your Honor, the
7 purpose for me to try to put this
8 information on the record is a number of
9 examiners had questioned Mr. Halterman
10 regarding his work. In fact, your Honor
11 had raised the question about the monies
12 provided through intervenor funds and the
13 level of effort. We want to put on the
14 record what would be the necessary effort
15 and cost to do the kind of engineering
16 analysis that not only was cross-examined
17 this morning but is contained in the
18 rebuttal testimonies of a number of
19 witnesses. We want to contrast the level
20 of efforts that Mr. Halterman did with the
21 level of effort that would be necessary to
22 do a full-blown engineering analysis.

23 JUDGE MOYNIHAN: Yes. And my reason
24 for sustaining the objection is we won't do
25 anything with that information. It's

1 irrelevant to this proceeding. The point
2 is this material was not provided. Why it
3 was not provided and how much it costs if
4 it were to be provided really won't be
5 taken into consideration.

6 MR. STANISLAUS: With all due
7 respect, your Honor, there were questions
8 raised regarding the use of intervenor
9 funds, and we believe that the record would
10 be devoid of information pertinent to that,
11 to those statements. That's the purpose,
12 making sure the record is complete on that
13 question.

14 JUDGE MOYNIHAN: But I am going to
15 sustain the objection. Again, we are
16 getting into areas that are one step
17 removed from what we are looking at. We
18 are looking at what was done, what effect
19 it will have on this project. We are not
20 discussing, for example, what was not done
21 and why it was not done and that's what you
22 seem to be getting at. That's why I am
23 sustaining the objection.

24 MR. STANISLAUS: I would like to
25 make a motion that all reference to

1 intervenor funds be stricken from the
2 record.

3 Secondly, a number of witnesses,
4 Steve Kurtz as an example, criticized the
5 testimony and the level of effort conducted
6 by EREC and CB3. In order to fully brief
7 that question, we believe it is pertinent
8 that the witness talk about what would the
9 level of effort be necessary to address
10 that question.

11 JUDGE MOYNIHAN: We are not going to
12 decide the case on material that wasn't
13 presented. So to go into why it wasn't
14 presented or how much it costs to present,
15 would have cost to present, really it
16 doesn't impact us one way or the other and
17 I just -- I don't see a need to go into
18 that.

19 MR. STANISLAUS: Well, let me
20 provide a potential need for that.

21 Under Section 168 of the Public
22 Service Law, the siting board must
23 determine that the project certified, as
24 compared to other reasonable alternatives
25 looking at environmental and economic

1 reasons, that the project certified
2 minimizes environmental impacts. We
3 believe it's pertinent that what the
4 applicant did and did not provide as
5 relates to EREC/CB3's ability to provide
6 that information is relevant to potentially
7 arguing to our examiners and the siting
8 board the need for the applicant to perform
9 such analyses.

10 JUDGE MOYNIHAN: If their record is
11 deficient, you can argue that it's
12 deficient. I am not saying you can't argue
13 that, but that is a different issue than
14 what you are saying here are the reasons
15 why you didn't provide it. And I am just
16 not going to go into -- to me you are
17 really getting off on a tangent, and it is
18 just not probative of the material that we
19 have to decide, so I am just not going to
20 allow those questions.

21 MR. STANISLAUS: Okay.

22 Q. Mr. Halterman, you were asked this
23 morning about a number of facilities that you had
24 cited in your testimony and you were asked whether
25 all those facilities were new facilities; is that

1 correct?

2 A. Yes.

3 Q. Do you recollect?

4 A. Yes.

5 Q. In your view, in the determination of
6 a LAER technology, does it matter whether a
7 facility is new or old with respect to that
8 determination?

9 MR. KARMELO: Objection, your Honor.
10 Calls for a legal conclusion.

11 JUDGE MOYNIHAN: I will have to hear
12 the question again.

13 (Record read.)

14 JUDGE MOYNIHAN: We will allow the
15 question, but I will mention that there is
16 an overlapping here; there is a legal
17 conclusion involved, also expert opinion.
18 We'll limit this answer to the expert
19 opinion end of it.

20 A. As I understand your question, is
21 there a difference between LAER for new or old, I
22 would say no because the interpretation of the way
23 I understood it was "new" referred to a green
24 field plant, whereas I took the interpretation
25 that "old" meant putting a new unit in an existing

1 plant. So to me they would both be new units and
2 they would have to comply with the same standards.

3 Q. If you were to evaluate pollution
4 control technology within an existing facility,
5 would your evaluation of performance change at all
6 between that and a totally new facility, a new
7 building?

8 A. In your question, do you mean I take
9 an existing unit as not being modified and
10 evaluated the same way?

11 Q. Let me rephrase it.

12 A. I don't understand your question.

13 Q. If you were going to install a
14 totally new turbine within an existing shell, an
15 existing building --

16 A. Okay.

17 Q. -- in your evaluation of LAER for
18 pollution control technology, would it make any
19 difference in that scenario versus building a
20 brand-new plant within a totally new building?

21 MR. KARMEL: Objection, leading.

22 JUDGE MOYNIHAN: You know, I have to
23 agree with you. They are leading, but I am
24 going to allow it, and I will tell you why.
25 If we don't, we're going to be here for ten

1 minutes trying to get around the leading
2 aspects of it. So just as a matter of
3 convenience, I'm going to overrule the
4 objections.

5 A. I believe it would be to the same
6 standards.

7 Q. Pull the copy of your direct
8 testimony. You should have that, do you that have
9 there?

10 A. Okay.

11 Q. Let me refer you to page 4, the first
12 bullet. Do you have that?

13 A. The one that starts out "A review of
14 the drawings"?

15 Q. Yes. What was the purpose of your
16 statement there?

17 A. The purpose of that statement was to
18 say that any time you revamp an existing facility,
19 there is more than one way to put something in
20 there.

21 Q. Okay. Thank you.

22 What was your purpose, skipping down
23 to the fourth bullet of your statement there?

24 A. I was responding to a statement made
25 in a document that I got from Con Ed, that was

1 called their SCONOX report, where they had visited
2 the Genetics facility or Genetics.

3 Q. Mr. Halterman, what are some factors
4 in scaling up a pollution control device?

5 A. I am not sure I understand the
6 question.

7 Q. Okay. Mr. Cinadr, this morning he
8 talked about scaling up of a pollution control
9 device --

10 A. Um-hmm.

11 Q. -- from a lower size facility to a
12 larger size facility?

13 A. Yes.

14 Q. How would you evaluate that in terms
15 of scaling up?

16 MR. LANG: Objection. Outside the
17 scope of direct and redirect and cross,
18 excuse me. We did not discuss scaling up
19 with this witness. He did not look at
20 Mr. Cinadr's testimony and did not offer
21 any rebuttals to Mr. Cinadr's testimony.

22 JUDGE MOYNIHAN: One moment. I am
23 just checking my notes.

24 Sustained.

25 MR. STANISLAUS: If I can be heard

1 on that before you make a decision?

2 JUDGE MOYNIHAN: There was no
3 scaling up discussed.

4 MR. STANISLAUS: He did not refer to
5 scaling up at all in his prefiled
6 testimony, but his prefiled testimony does
7 talk about the ability to use SCONOX at
8 various size facilities in the proposed
9 project, and there was cross-examination
10 about the ability to go from, I believe, a
11 32 megawatt facility, and I forget the
12 numbers, which in effect is scale-up
13 cross-examination. That term was not used
14 this morning.

15 JUDGE MOYNIHAN: And that's why I
16 sustained the objection. I was talking
17 about the process of scaling up.
18 Apparently have you a different question in
19 mind than how I interpreted it, so please
20 rephrase the question.

21 Q. Okay. How would you evaluate the
22 viability of using a pollution control device
23 which is currently installed at a smaller size
24 facility to a larger size facility?

25 MR. LANG: Object to form. It's

1 overly vague. If he's referring to some
2 particular facility related to East River
3 or another facility, I think that would be
4 acceptable. In a broad generic term, it is
5 too vague to be responded to.

6 MR. STANISLAUS: It's a
7 hypothetical. I am asking it on redirect.

8 JUDGE MOYNIHAN: I will allow the
9 question.

10 A. Well, in this case, I believe that
11 the SCONOX technology, as I referred to it, is a
12 proven process and that would be taken into
13 consideration, looking at the physical
14 construction and layout of making it larger, such
15 that it would accommodate a unit of this size.

16 Q. I'm going to go to another topic.

17 In your experience in looking at
18 pollution control devices or LAER determinations,
19 are issues regarding environmental impacts and
20 public health impacts relevant from your
21 experience outside of the engineering issues, and
22 looking at the compatibility of the technology
23 itself? I mean, you compare two technologies that
24 may be comparable in performance. From your
25 experience, can and how would you look at impacts

1 of one pollution control device versus another?

2 MR. KARMEL: Objection, your Honor.

3 I believe it goes beyond the scope of
4 cross-examination.

5 JUDGE MOYNIHAN: Sustained.

6 MR. STANISLAUS: I have no further
7 questions.

8 JUDGE MOYNIHAN: Is there anything
9 further of this witness?

10 MR. LANG: One question on redirect
11 your Honor -- on recross, excuse me.

12 RECROSS EXAMINATION

13 BY MR. LANG:

14 Q. Sir, in response to one of
15 Mr. Stanislaus's questions, you just stated that
16 SCONOX is a proven process.

17 A. Yes.

18 Q. Could you please explain where and
19 how SCONOX is a proven process?

20 A. It is a process, it is a chemical
21 process that is working. It's working at the
22 Genetics unit and it's working at the Sunlaw unit,
23 and it is achieving the proper NOx and carbon
24 monoxide emissions.

25 Q. When you say it's working at the

1 Sunlaw unit, you are not referring to the Energy
2 Nueva Azalea?

3 A. I'm referring to the 32 megawatt unit
4 located at 4151 East Franklin Avenue.

5 Q. That is the -- what you call the
6 Federal unit?

7 A. It's at the bottom of my page 4.
8 Yes, also known as the Federal unit.

9 Q. Is it, in your view, a proven process
10 of a project of the size of 360 megawatts or
11 greater?

12 A. I have answered that question before.
13 I am looking at the technology, not the size,
14 scale-up considerations. I am saying SCONox is a
15 proven technology for use in NOx and carbon
16 monoxide, making no claim of the size of the unit
17 or the technical feasibility of installing in the
18 East River.

19 Q. Are you not expressing an opinion as
20 to whether size matters or you are just looking
21 solely at the chemical technology of SCONox?

22 A. I'm looking at chemical technology.
23 I'm making no comments about scale-up, size of the
24 units.

25 JUDGE MOYNIHAN: Do you have

1 anything further?

2 MR. KARMEL: Yes. I would like to
3 ask a few questions about the series of
4 questions that were asked of you on
5 redirect about the application of LAER
6 standards comparing a green fields
7 application to a re-patterning type
8 application.

9 RECROSS EXAMINATION

10 BY MR. KARMEL:

11 Q. Could you describe green fields,
12 please. Did you use the term "green fields" in
13 your testimony?

14 A. I think I used the term earlier, yes,
15 I believe I did.

16 Q. What is your understanding of that
17 term, how, in the respect that you used it when
18 you were testifying?

19 A. Green fields is when you go out and
20 there is a green field, and you build a brand-new
21 facility from the ground up.

22 Q. That is the sense in which I am using
23 that term.

24 A. Okay.

25 MR. KARMEL: And I would just like

1 to preface this by saying when this line of
2 questioning was asked about green fields
3 versus repowering an existing plant, I
4 objected on the grounds that it called for
5 legal conclusion, but since the question
6 was asked and answered, I believe it would
7 be appropriate for me to recross on that,
8 but I still believe that this is a question
9 of law as to which testimony would not be
10 appropriate, and I would hope that my
11 examination on this is not a waiver of my
12 position.

13 JUDGE MOYNIHAN: Right.

14 BY MR. KARMEL:

15 Q. So the line of questioning was how
16 LAER standards would differ in your view between a
17 green fields project and a repowering type
18 project. Do you recall those series of questions
19 and answers?

20 A. Yes.

21 Q. Did I understand you to say that in
22 your view the same standard, the same type of
23 pollution control technology would be required,
24 irrespective of whether or not the power plant was
25 a green fields project or a repowering project?

1 MR. STANISLAUS: That wasn't his
2 testimony.

3 MR. KARMEL: That's what I am trying
4 to clarify.

5 A. My comment was if you build a green
6 fields plant and you put in a new power unit or
7 are in the process of repowering and you put in a
8 new power plant in an existing plant, the same
9 standards would apply to both.

10 Q. Would the application of those
11 standards, in your view, necessarily lead to the
12 same conclusion as to whether a specific type of
13 pollution control technology was appropriate in
14 the two circumstances, green fields and
15 repowering?

16 A. I don't have enough information to
17 answer that question.

18 Q. You would agree, I assume, that the
19 technical feasibility of a proposed pollution
20 control equipment is relevant to a LAER
21 determination?

22 A. Yes, I would.

23 Q. And would you also agree that the
24 space constraints posed by repowering within an
25 existing building are relevant to the issue as to

1 whether or not a pollution control technology is
2 technically feasible for that specific
3 application?

4 A. That would be one of the
5 considerations, yes.

6 MR. KARMELE: Nothing further.

7 JUDGE MOYNIHAN: Mr. Little, I'm
8 sorry I skipped you. I didn't know you
9 were looking at me.

10 MR. LITTLE: That's what happens
11 when you stand in the back. And I am going
12 to move up to the front, since I think my
13 voice carries better from there, if you
14 don't mind.

15 JUDGE MOYNIHAN: Not at all.

16 REXCROSS EXAMINATION

17 BY MR. LITTLE:

18 Q. I would like to bring to your
19 attention, Mr. Halterman, to the table that I
20 believe you had with you --

21 A. Um-hmm.

22 Q. -- when you were on the stand before
23 lunch. Do you have a copy of that with you?

24 A. No, I don't.

25 Q. This has been marked as Exhibit 32.

1 A. 42.

2 Q. 42, excuse me.

3 In the upper left-hand corner, there
4 is a box that indicates 20 PPM, and then there is
5 an arrow, and it says 2.5 PPM. I wonder if you
6 could tell me what that represents, if you know?

7 A. Going from 20 parts per million to
8 2.5 parts per million.

9 Q. Does the arrow represent a reduction?

10 A. That is my understanding, yes.

11 Q. Would the costs that are reflected in
12 this chart be different if the 20 parts per
13 million or the 2.5 parts per million one were
14 different? In other words, if the starting point
15 and the ending point were different, would the
16 costs that are reflected for lifetime costs, ten
17 years lifetime for NOx controlled, those different
18 costs, would they be different?

19 A. Yes, I believe they would.

20 Q. Does this chart represent a generic
21 case? I don't see that it refers to any
22 particular technology.

23 A. That is a generic case, yes.

24 Q. Excuse me. By "technology" I mean
25 the combustion technology itself?

1 A. Yes.

2 Q. Are all combustion turbines producing
3 20 parts per million before they are controlled?

4 A. No, they are not.

5 Q. Have you examined the application in
6 this case for the East River Repowering to
7 determine what would be produced by the proposed
8 combustion technology here as far as NOx
9 discharges, emissions?

10 A. Not recently. I believe that the
11 units are less than -- I believe that the units
12 are being proposed, the GE turbine is less than 24
13 parts.

14 Q. You mentioned GE turbine, are you
15 aware it's a GE 7A turbine?

16 A. Yes.

17 Q. Well, I have got the application
18 here. I will just show you what is probably in
19 its LAER permit application. I think it's a
20 second page of a series of tables.

21 Let me first show you page L5-5,
22 Section L5.2.2, volume 3 of the application, and
23 point a table out to you, and below the table is a
24 text. And I wondered if you could just read the
25 first sentence of that text?

1 A. "The most recent NOx emission limits,
2 for natural gas, listed in EPA's BACT/LAER
3 Clearinghouse (see Appendix L-D) are late 1999
4 decisions: Kissimmee Utilities (BACT at 9 parts
5 per million volume dry using dry low NOx
6 combustion), Tampa Electric (BACT at 10.5 parts
7 per million volume dry using dry low NOx
8 combustion), and Oleander Power (BACT at 9 parts
9 per million volume dry low NOx combustion)."

10 MR. LITTLE: Thank you.

11 Q. And if you were using combustion
12 technology that started before controls such as
13 SCR or SCONox started at 9 PPM, would the dollar
14 figures, the costs on this chart, be reduced?

15 A. Yes, they should be.

16 Q. Would that include the cost per tons
17 reduced, and the lifetime NOx control costs?

18 A. Yes.

19 Q. And are you aware that this is a
20 GE 7A turbine that is proposed for this facility?

21 A. You have asked me that, and it is my
22 understanding that it is.

23 MR. LITTLE: Thank you. No further
24 questions.

25 JUDGE MOYNIHAN: Do you have

1 anything further, Mr. Stanislaus?

2 MR. STANISLAUS: No.

3 JUDGE MOYNIHAN: Thank you,
4 Mr. Halterman. You are excused.

5 (Whereupon, the witness was excused.)

6 JUDGE MOYNIHAN: We have Exhibits 41
7 and 42, I believe. And 41 was introduced
8 by staff.

9 MR. LANG: Yes, your Honor. It was
10 the EREC petition for full-party status.

11 JUDGE MOYNIHAN: That's correct. Do
12 you want it in evidence?

13 MR. LANG: Yes, your Honor. We
14 would like that introduced.

15 JUDGE MOYNIHAN: Are there any
16 objections?

17 It's in evidence.

18 (Exhibit 41 was received in
19 evidence.)

20 JUDGE MOYNIHAN: Exhibit 42 was the
21 table that was sponsored by EREC.

22 MR. STANISLAUS: I would like to
23 move it into evidence.

24 JUDGE MOYNIHAN: Any objections?

25 It's in evidence.

1 (Exhibit 42 was received in
2 evidence.)

3 MR. LITTLE: Your Honor, I don't
4 have an objection. I would like a footnote
5 to that, since it's been identified, that
6 it just be noted as something that is not
7 particularly pertinent to the technology
8 here.

9 JUDGE MOYNIHAN: And you have had
10 your opportunity to cross-examine on that
11 and that brought out the differences.

12 MR. LITTLE: Thank you.

13 JUDGE MOYNIHAN: Okay. Our next
14 witnesses.

15 MR. LANG: Your Honor, just to be
16 clear on the exhibits that staff also
17 marked, 40 and 43, we are not offering
18 those.

19 JUDGE MOYNIHAN: Right. Those are
20 the decisions and we are taking official
21 notice of them.

22 MR. LANG: Right. Thank you.

23 MR. STANISLAUS: I would like to
24 call Kaiser Aziz.

25 JUDGE MOYNIHAN: Mr. Aziz.

1 Whereupon,

2 KAISER AZIZ,
3 having been first duly sworn, was examined and
4 testified as follows:

5 JUDGE MOYNIHAN: Please be seated.
6 State and spell your name for our reporter.

7 THE WITNESS: My name is Kaiser,
8 K-A-I-S-E-R, Aziz, A-Z-I-Z.

9 DIRECT EXAMINATION

10 BY MR. STANISLAUS:

11 Q. Mr. Aziz, did you file prefiled
12 testimony in this proceeding?

13 A. Yes, I did.

14 Q. Are there any modifications to the
15 prefiled testimony you filed in this proceeding?

16 A. The only thing, I would like to
17 remove a sentence from the question 3 answer,
18 because I did not have my resume with me, so I
19 took it out.

20 JUDGE MOYNIHAN: So I take it you
21 are striking the last line in that
22 question, is that, "a summary of my
23 professional experience and activities is
24 attached."

25 MR. STANISLAUS: Let me clarify with

1 the other, other parties' counsel. We are
2 willing to put the resume on the record, he
3 doesn't have it with him today, on the
4 record subsequently. I know that DPS
5 counsel requested that. So we want to do
6 that, so --

7 MR. LANG: It's more important, your
8 Honor, without knowing his experience and
9 his activities as set forth in his resume,
10 what qualifications this gentleman has to
11 testify to the issues he's proposing to
12 testify to. It's stated that it was going
13 to be included. I understand he may not
14 have it today. This was testimony that was
15 put in on March 28th.

16 JUDGE MOYNIHAN: You don't have a
17 copy of it?

18 MR. KARMELE: Your Honor, we would
19 object to including this at a subsequent
20 time because that would -- at that point I
21 would presume Mr. Aziz would have returned
22 to, I believe, Texas, and we would not have
23 an opportunity to cross-examine him about
24 that document. So we would object to that
25 type of procedure.

1 JUDGE MOYNIHAN: All right. The
2 only option we can see is striking the
3 line. I don't know, if that's --

4 MR. STANISLAUS: That's fine, sure.

5 MR. LANG: Your Honor, I would make
6 a proffer. If they could have Mr. Aziz lay
7 out what his experience is, so that we can
8 understand what it is, that would satisfy
9 my objection. Not entirely, but it would
10 be sufficient for purposes of this.

11 I would like to know what it said on
12 here, so we have an idea of what his
13 experience is.

14 JUDGE MOYNIHAN: Is there any
15 objection to that?

16 MR. KARMELO: No, your Honor.

17 JUDGE MOYNIHAN: Strike the line
18 then, the last line of the third answer, "A
19 summary of my professional experience and
20 activities is attached as appendix KA-1."
21 That will be stricken.

22 MR. STANISLAUS: I can have him do
23 it in the form of question and answer.

24 JUDGE MOYNIHAN: What we will do,
25 adopt his testimony, then you can ask him.

1 MR. STANISLAUS: I move his
2 testimony be adopted.

3 MR. LANG: I object still, your
4 Honor.

5 JUDGE MOYNIHAN: What is the
6 objection?

7 MR. LANG: There is still reference
8 in what's been prefiled to Ravenswood to
9 the Manhattan Steam System, that your Honor
10 has excluded from consideration, and I
11 believe his prefiled should be so marked so
12 that that portion of his testimony is
13 excluded.

14 JUDGE MOYNIHAN: That's correct.

15 MR. LANG: The first reference I see
16 to it, at the top of my page 3, that first
17 full sentence.

18 JUDGE MOYNIHAN: Yes. "My testimony
19 also covers the steam pipe size
20 determination to conveyed steam from
21 Ravenswood to the Manhattan system."

22 Yes, that is not in evidence.

23 MR. LANG: Then on page 4, the first
24 full question and answer.

25 JUDGE MOYNIHAN: Yes, that will be

1 excluded also.

2 Is there anything else?

3 MR. LANG: Yes, your Honor. I
4 would, subject to hearing his
5 qualifications and it being established
6 that he's qualified to testify to the
7 subjects in his testimony, I don't think
8 his testimony should be introduced into the
9 record until that showing has been made,
10 since we don't have his qualifications.

11 JUDGE MOYNIHAN: Okay. You may ask
12 the question.

13 BY MR. STANISLAUS:

14 Q. Mr. Aziz, can you provide us your
15 educational background?

16 A. Yes. I have my engineering degree in
17 mechanical engineering and then I did my master's
18 in mechanical engineering.

19 Q. What is your -- I'm sorry. Go ahead.

20 A. And I have professional engineer's
21 license in the States of Florida and Ohio.

22 Q. What is your professional experience
23 particularly as it relates to the subject matter
24 of your testimony?

25 A. Basically, when I graduated, I worked

1 for a company which designed and built air
2 pollution control equipment. Then I moved on to
3 join Maharashtra Pollution Control Board, where I
4 implemented the air pollution laws, and during
5 that time I reviewed the application for a 500
6 megawatt power plant, and one 50 megawatt power
7 plant.

8 Then I migrated to the United States,
9 and I did my master's and I joined a building
10 company in Florida Combustion. After that I moved
11 to Houston, where I worked for, M.W. Kellogg, and
12 they built refineries and chemical plants, and
13 then I worked for Radiant International, which was
14 an environmental consulting company, and then I
15 worked for Jacobson Engineering, which also
16 designs and builds refineries and chemical plants.

17 MR. STANISLAUS: I will now move his
18 testimony be moved into the record.

19 JUDGE MOYNIHAN: Are there any
20 objections?

21 MR. LANG: Unless I didn't hear the
22 testimony right, I did not hear this
23 witness has any experience in designing
24 power plants.

25 Can I just ask the question?

1 Mr. Aziz, do you have any experience
2 in designing and building power plants?

3 THE WITNESS: No, sir.

4 MR. LANG: Your Honor, this
5 witness's testimony is being proffered as
6 to the design and the ability to construct
7 generating facilities and power plants. He
8 has just testified that he doesn't have
9 that experience.

10 MR. STANISLAUS: Can I ask him
11 further questions on that?

12 JUDGE MOYNIHAN: Yes.

13 BY MR. STANISLAUS:

14 Q. Mr. Aziz, are you familiar with the
15 configuration of industrial facilities?

16 A. Yes, sir.

17 Q. And the placement of various
18 equipment in the various industrial facilities?

19 A. Yes.

20 Q. Have you been involved in project
21 teams that are involved in the construction,
22 design and building of industrial facilities?

23 A. Yes.

24 MR. STANISLAUS: Thank you.

25 MR. LANG: Mr. Aziz, have you been

1 involved in the design and construction of
2 power plants?

3 THE WITNESS: No.

4 MR. STANISLAUS: Your Honor, I
5 believe he's qualified for his testimony.

6 JUDGE MOYNIHAN: Yes, I just want to
7 discuss something.

8 (Judges Moynihan and O'Connell
9 confer.)

10 JUDGE MOYNIHAN: We find the witness
11 sufficiently qualified to testify with
12 respect to the layout of the facility. He
13 does have experience in industrial layout.
14 We will allow it.

15 Any other objections?

16 We will copy it into the record as if
17 given orally today.

1 MR. STANISLAUS: I would like to
2 mark as Exhibit 43, the next Exhibit
3 Number --

4 JUDGE MOYNIHAN: I thought he didn't
5 have his exhibit.

6 MR. STANISLAUS: He has his exhibit.
7 He didn't have his resume.

8 -- mark as Exhibit 44 --

9 JUDGE MOYNIHAN: 44, yes.

10 MR. STANISLAUS: -- which is a
11 layout depiction of the proposed Kips Bay
12 facility.

13 I would like to mark this as Exhibit
14 45, which is a layout depiction of the
15 proposed 74th Street plant.

16 JUDGE MOYNIHAN: It may be on here,
17 but the print is so small, I can't read it.
18 Which one is this, 44?

19 MR. STANISLAUS: Kips Bay.

20 (Exhibits 44 and 45 were so
21 marked for identification.)

22 MR. STANISLAUS: Your Honor,
23 Mr. Aziz, is ready for cross-examination.

24 JUDGE MOYNIHAN: I want to explain
25 something. I usually let the applicants go

1 last because I am afraid of friendly cross.
2 Now, in this case it doesn't seem that way.
3 That is my usual practice. If you want to
4 change it, I will change it.

5 MR. LANG: I have no objection.
6 It's your choice.

7 MR. KARMEL: It's fine with me to go
8 first.

9 JUDGE MOYNIHAN: Mr. Karmel.

10 CROSS-EXAMINATION

11 BY MR. KARMEL:

12 Q. Good afternoon, Mr. Aziz.

13 A. Good afternoon.

14 Q. Could you summarize your current job
15 responsibility at your present employer.

16 A. I am the Vice President for
17 Environmental Science's eastern office. We fill
18 out the applications for clients, help them out
19 with compliance, and do the environmental audits.

20 Q. Is Enviro-Science an environmental
21 consulting firm?

22 A. Yes.

23 Q. Is it an engineering design firm that
24 actually designs industrial structures?

25 A. No, not -- no.

1 Q. So your contact with things such as
2 power plants in your current capacity would be to
3 review permit applications or similar types of
4 reviews?

5 A. That is correct.

6 Q. Have you reviewed permit applications
7 for power plants at any point in your career?

8 A. Yes, I have.

9 Q. Have you reviewed a permit
10 application for a truncated combined cycle type
11 facility with a combustion turbine followed by a
12 HRSG type unit such as we have here in the East
13 River Power Plant Project?

14 A. No, I have not.

15 Q. Have you ever performed engineering
16 design work for a water treatment system to
17 demineralize water?

18 A. I have not, but I was part of the
19 team when I was designing the water pollution
20 control, not the demineralization for water
21 treatment.

22 Q. I'm sorry, I missed the last part of
23 your sentence.

24 A. Not part of the water treatment,
25 demineralization.

1 Q. So the answer is that in the course
2 of your career, you have never performed
3 engineering design work for a water treatment
4 system to demineralize water; is that correct?

5 A. That is correct.

6 MR. STANISLAUS: I believe his
7 answer is he was on a team that did that,
8 while he personally didn't do that.

9 MR. KARMEL: You have an opportunity
10 for redirect.

11 JUDGE MOYNIHAN: You will have
12 redirect.

13 BY MR. KARMEL:

14 Q. Exhibits 44 and 45, are these
15 exhibits that you have prepared yourself?

16 A. Yes, sir.

17 Q. And did those provide rough layouts
18 for two combustion turbine HRSG trains at Kips Bay
19 and 74th Street?

20 A. Yes.

21 Q. Did you review any documents or other
22 written materials before you prepared your rough
23 layout?

24 A. Yes. I look at the preliminary
25 agreement that was given to us by Con Ed.

1 Q. Did you review anything else?

2 A. No, that's all.

3 Q. The document that you reviewed, was
4 it a -- could you describe what it was? It's not
5 clear to me.

6 A. Agreement drawing for a
7 recommendation that was proposed for East River
8 Plant.

9 Q. Can you recall when you began your
10 review of that document?

11 A. I believe it was in January or so.

12 Q. January of 2001?

13 A. 2000, yes.

14 Q. And when did you begin preparation of
15 your rough drawings?

16 A. I believe it was about the same time,
17 in January.

18 Q. Did you spend a period of time doing
19 an analysis of some kind before you sat down and
20 began preparing your rough layouts?

21 A. What do you mean by "analysis of some
22 kind"?

23 Q. What type of work -- I withdraw the
24 question.

25 When you looked at the general

1 arrangement drawing that was provided to you, did
2 you attempt to assess the information presented
3 therein?

4 A. Yes. I attempted to look at the
5 general size of the unit.

6 Q. And did you complete that assessment
7 before you began preparation of your rough
8 layouts?

9 A. Yes.

10 Q. Approximately how many hours did you
11 spend on that assessment before you began
12 preparation of your rough layouts?

13 A. I would say roughly two days.

14 Q. Approximately 16 hours?

15 A. Yes -- 16 hours.

16 Q. And are you able to divide how much
17 time you spent in -- I withdraw the question.

18 Does the 16 hours include the
19 assessment work that you did both for Kips Bay and
20 for 74th Street?

21 A. I guess. I take your question to be
22 assessment of your drawings. Once you do it for
23 one thing, that assessment can't be carried to the
24 next one. It's the same assessment.

25 Q. How did you go about assessing the

1 information in the general arrangements drawing?

2 A. Your drawings had the schedule on
3 them, so I took that scale and scaled the
4 increment and planned the size that we needed.

5 Q. I noted in your testimony you also
6 included, in addition to these rough layouts we
7 have been discussing, some cost estimates for
8 certain components of certain projects?

9 A. That is correct.

10 Q. Did the 16 hours of time that you
11 testified to include the work you did necessary to
12 prepare the cost estimate portion our testimony?

13 A. No, that would be additional time.

14 Q. I'm going to ask a series of
15 questions. I want to make sure we are speaking
16 the same language before I begin.

17 A. Sure.

18 Q. I think we can agree that the East
19 River Repowering Project involves two combustion
20 turbine HRSG trains?

21 A. That is correct.

22 Q. And the project will generate 360
23 megawatts of electricity?

24 A. Correct.

25 Q. And it will produce 3 million pounds

1 of steam per hour?

2 A. That's correct.

3 Q. Turning to the document marked for
4 identification as Exhibit 44, which is your rough
5 layout of the Kips Bay plant, is this rough layout
6 a rough layout of the two combustion turbine HRSG
7 trains similar to what I just described for the
8 East River Repowering project or is this the
9 layout for the two combustion turbine trains that
10 EREC/CB3 has proposed for the Kips Bay site?

11 A. This is similar to what is proposed
12 for ERRP.

13 Q. The power plant building that you
14 have provided for the Kips Bay site is 200 feet by
15 330 feet?

16 A. Um-hmm.

17 Q. With respect to its footprint; is
18 that correct?

19 A. That is correct.

20 Q. And that would result in a footprint
21 for the power plant building of 66,000 square
22 feet; is that correct?

23 A. That is correct.

24 Q. I would like to discuss with you the
25 height of some of the pieces of equipment in your

1 rough layout. Let's turn to the SCR first.

2 You have used an SCR pollution
3 control technology for your proposed plan,
4 correct?

5 A. That's correct.

6 Q. And I believe you have stated in your
7 testimony that it is your understanding that the
8 SCR would be approximately 68 feet high; is that
9 correct?

10 A. That is correct.

11 Q. You also have two HRSGs set forth in
12 your rough layout for the Kips Bay plant, correct?

13 A. Yes, correct.

14 Q. Are you aware that the deaerator and
15 steam drum would be placed on top of the HRSGs in
16 this type of plant?

17 A. That is correct.

18 Q. Are you aware that the engineering
19 design for the East River Repowering project
20 indicates that the height of the HRSG together
21 with the deaerator and the steam drum on top of
22 the HRSG is approximately 110 feet?

23 A. I can't say that I know, because I
24 don't have the drawings with me.

25 Q. Do you have any reason to believe

1 that that information is incorrect, sitting here
2 today?

3 A. No, I don't.

4 Q. I have attempted to make out the
5 various pieces of equipment that you have included
6 in your rough layout for the Kips Bay plant.

7 A. Yes?

8 Q. Does this rough layout include a
9 water treatment facility?

10 A. No, it does not.

11 Q. Is a water treatment facility an
12 essential component of a project such as the East
13 River Repowering project?

14 A. Of course, yes.

15 Q. Why is that?

16 A. Why is that? You are trying to
17 produce steam, how would you produce steam?

18 Q. As we discussed earlier, this East
19 River repowering project has been designed to
20 produce 3 million pounds of steam per hour,
21 correct?

22 A. That is correct.

23 Q. So the water treatment system to
24 demineralize the water before it goes into the
25 HRSG must be capable of treating 3 million pounds

1 of water per hour, correct?

2 A. That's correct.

3 Q. Would you accept, subject to checking
4 my arithmetic later, that 3 million pounds of
5 water is approximately 738,000 gallons of water?

6 A. I will accept that.

7 Q. And the water treatment system must
8 be able to treat that volume of water each hour,
9 correct?

10 A. That's correct.

11 Q. Con Edison's project engineer,
12 Mr. Steven Kurtz, has testified that the water
13 treatment system for the East River Repowering
14 project will occupy 31,000 square feet of space;
15 are you aware of that?

16 A. Yes, I am aware of it.

17 Q. Have you performed any engineering
18 analysis that would lead you to believe that a
19 water treatment system of the same treatment
20 capacity as is necessary for the East River
21 Repowering project can take up less space?

22 A. No. I have not done any engineering
23 analysis.

24 Q. We discussed earlier the footprint of
25 your proposed power plant building for Kips Bay,

1 and I think we agreed that it was 66,000 square
2 feet, correct?

3 A. Right.

4 Q. I would like now to draw your
5 attention to a smaller footprint within that
6 66,000 square feet and ask you if I am
7 interpreting your drawing correctly. I see a
8 number of 280 feet in one direction and 140 feet
9 at a right angle to that. Do you see those
10 numbers that I am referring to?

11 A. Yes, I see.

12 Q. And the 280 feet and 140 foot area,
13 if you multiply those two, you get 39,200 feet; is
14 that correct?

15 A. I will accept that.

16 Q. And you have attempted to fit in your
17 rough drawing the two combustion turbine HRSG
18 trains together with certain other equipment that
19 you have indicated within the 39,200 feet area,
20 correct?

21 A. That's correct.

22 Q. And the water treatment system that
23 we referred to earlier is not included within that
24 39,200 feet area, correct?

25 A. That's correct.

1 Q. Is it your testimony that two
2 combustion turbine HRSG trains with the electric
3 and steam output of the project could fit into a
4 power plant building with a footprint of 66,000
5 square feet?

6 A. Yes.

7 Q. If you had more time to analyze the
8 space requirements of this type of project, could
9 you think of any further analysis that you might
10 be able to perform?

11 A. Yeah. There is always room to
12 analyze and make it better.

13 Q. What type of further steps could you
14 perform as a professional engineer to continue to
15 analyze the space requirements of the East River
16 Repowering project?

17 A. It's a very general question. If you
18 ask me a specific, I will answer you.

19 Q. I think we discussed earlier that --
20 I withdraw the question.

21 Am I correct in understanding from
22 your testimony that these rough layouts that you
23 presented as Exhibits 44 and 45 were the results
24 of approximately 16 hours of review; is that
25 correct?

1 A. That is correct.

2 Q. If you had additional time available
3 to you, in addition to those 16 hours, can you
4 think of any additional types of analyses that you
5 would wish to perform to provide you with any
6 greater certainty with respect to your conclusion
7 that the equipment at issue here could fit within
8 a 66,000 square foot power plant building?

9 MR. STANISLAUS: Your Honor, I
10 object. It's calls for speculation. His
11 testimony is what it is.

12 JUDGE MOYNIHAN: I'm going to allow
13 the question.

14 A. Yes. You can always analyze more,
15 like I said, and try to see how you can fit in
16 more equipment.

17 Q. I understand you can always analyze
18 more. How would one conduct such an analysis?

19 A. Depends on the purpose, that's why I
20 am saying.

21 Q. Well, my purpose --

22 A. See, my -- my purpose would be to fit
23 in more equipment in a smaller space.

24 Q. The purpose to which I am referring
25 is if one wanted to obtain greater certainty as to

1 whether or not all of the equipment necessary for
2 the East River Repowering Project could fit within
3 the 66,000 square foot footprint, is there
4 anything in addition that you haven't done that
5 you might be able to do to continue an engineering
6 review of that issue?

7 A. Sure.

8 Q. Please describe what that would be.

9 A. You have got to see that the
10 equipment is there, you are not forgetting any
11 equipment; the sizes are right.

12 Q. You have taken a general arrangement
13 drawing from Con Edison, and you have moved, I
14 take it, large pieces of equipment that are in one
15 configuration at the East River station, to a
16 different configuration at the Kips Bay Power
17 Plant that EREC/CB3 has proposed; is that correct?

18 A. That is correct.

19 Q. Would it be prudent if one were to
20 design such a Kips Bay Power Plant to do any
21 additional engineering analysis than you have
22 performed to determine whether the configuration
23 of the equipment that you have set forth here in
24 your rough layout would work?

25 A. Yes. It needs to be analyzed if it

1 works or not, because my job was only to see if it
2 can fit on there, the equipment can fit on there.
3 And I have to see whether it could work to perform
4 the job, yes.

5 Q. Have you performed any engineering
6 analysis to have made those determinations?

7 A. No, I have not.

8 Q. Have you included in your rough
9 layout lay-down areas for maintenance of
10 equipment?

11 A. I tried to as far as, you know, what
12 I could see on that, on the general drawing, yes.

13 Q. Have you included office space for
14 personnel who operate the plant?

15 A. No, I have not.

16 Q. Have you included a control room?

17 A. No, I have not.

18 Q. Have you included a chemical control
19 room associated with the water treatment plant?

20 A. When I did this drawing, my purpose
21 was to show that the equipment that you have shown
22 on the ground level, I wanted to show that on the
23 ground level. For example, you are referring to
24 the demineralization unit. If you look at your
25 layers, that is at a height of between 70 to 100

1 feet. That can be kept at different levels.
2 That's why you don't see that equipment in here.
3 Same way you can have other equipment at a
4 different level. It doesn't have to be on the
5 ground floor.

6 Q. Could the water treatment facility be
7 placed above the HRSG and deaerator and steam drum
8 portion?

9 A. No, it would be too high.

10 Q. And above the combustion turbine
11 there are air louvers and intake pieces of
12 equipment, correct?

13 A. That's correct.

14 Q. And you wouldn't put the water
15 treatment facility above the combustion turbines
16 for that reason, would you?

17 A. No, I would not.

18 Q. So, if you look at your rough layout
19 for the Kips Bay Power Plant, we should assume
20 that the areas designated here as the areas that
21 are taken up by the combustion turbine and the
22 HRSG are not areas where one would be putting
23 additional equipment above that, correct?

24 A. Right.

25 Q. And you also have a stack indicated

1 on your drawing?

2 A. Um-hmm.

3 Q. I take it there would be no equipment
4 of any kind in that particular footprint, correct?

5 A. Yes.

6 Q. In placing your natural gas
7 compressor areas on your drawing, have you
8 considered the fire safety requirements of the New
9 York City Fire Code?

10 A. No, I have not.

11 Q. Have you considered -- I withdraw the
12 question.

13 Are you aware that the New York City
14 Fire Code requires extremely thick walls around
15 the natural gas compressors as a fire safety
16 measure?

17 MR. STANISLAUS: He didn't do it
18 with respect to that.

19 JUDGE MOYNIHAN: He said he didn't
20 do it. Now he's asking if he's aware of
21 certain conditions. I will allow the
22 question.

23 A. No. I am not aware of New York Fire
24 Code.

25 Q. Did you see any equipment on the

1 general arrangement drawings that were provided to
2 you for the East River Repowering Project that you
3 identified as being superfluous, unnecessary for
4 the East River Repowering Project?

5 A. No, I did not.

6 Q. Did you identify, in the course of
7 your 16 hours of assessment of those general
8 arrangement drawings, any space-saving
9 opportunities that came to your attention that
10 might allow Con Edison to reduce the square
11 footage of the equipment that comprises the East
12 River Repowering Project?

13 A. No. I was not looking from that
14 point of view at East River, so --

15 Q. Have you heard of Washington Group
16 International formerly known as Raytheon --

17 A. Yes, I have.

18 Q. -- Project Consulting Engineers for
19 the East River Repowering project?

20 A. I have heard of them.

21 Q. Are you aware -- withdraw the
22 question.

23 Would you agree that Washington Group
24 International, formerly Raytheon, is a nationally
25 and even internationally known and well-respected

1 firm of consulting design engineers?

2 MR. STANISLAUS: Irrelevant, it's
3 irrelevant. The witness's testimony on Con
4 Edison's use of another consultant is
5 irrelevant.

6 JUDGE MOYNIHAN: Sustained.

7 Q. Are you aware that Con Edison has a
8 team of engineers devoted to design engineering
9 for the East River Repowering Project?

10 A. I am not, but I suppose so.

11 Q. And would you assume, based upon your
12 professional experience, that that project design
13 team of engineers has spent more than 16 hours
14 thinking about the space constraint issues that
15 are associated with the East River Repowering
16 Project?

17 A. Repeat the question, please.

18 Q. Would you assume, based upon your
19 professional experience, that the team of design
20 engineers at Con Edison has spent more than 16
21 hours thinking about space constraint issues
22 associated with the East River Repowering Project?

23 A. Yes.

24 Q. As a result of the additional time
25 and attention that Con Edison's engineers have

1 been able to devote to the East River Repowering
2 Project, do you have a professional opinion as to
3 whether they are likely to have more information
4 at their disposal than you do as to the
5 engineering considerations that bear on the space
6 requirement for two combustion turbine HRSG trains
7 with the electric and steam send-out capacity of
8 the East River Repowering Project?

9 A. I would imagine so.

10 Q. Con Edison's project, lead engineer,
11 Mr. Steven Kurtz, has testified that the
12 preliminary analysis of the Con Edison engineering
13 design team leads him to conclude that neither of
14 the EREC/CB3 alternatives that have been proposed
15 for Kips Bay would fit within the 29,000 square
16 foot footprint of the portion of the Kips Bay
17 parcel zoned for that use. Would it be fair to
18 say that you have not performed an engineering
19 analysis that would allow you to express an
20 opinion contrary to that view?

21 A. That is true. I have not done any
22 analysis, engineering analysis.

23 MR. KARMEL: No further questions.

24 JUDGE MOYNIHAN: Mr. Little?

25 MR. LITTLE: Your Honor, in the

1 interest of economy, I think I will pass at
2 this point. I think Mr. Karmel has covered
3 most of the areas I would cover.

4 JUDGE MOYNIHAN: Mr. Lang.

5 MR. LANG: Yes, your Honor.

6 CROSS-EXAMINATION

7 BY MR. LANG:

8 Q. Mr. Aziz, you have stated that you
9 have done some design work for refineries and
10 chemical plants?

11 A. Yes.

12 Q. Have you designed any large
13 industrial facilities for either of these areas,
14 these industries?

15 A. Define "large."

16 Q. Any industrial manufacturing
17 facilities of any size?

18 A. Permits, large or small?

19 Q. Forget the large or small. Have you
20 designed any industrial manufacturing facilities?

21 A. Yes, I have.

22 Q. How many have you designed?

23 A. How many? I can't count, but I can
24 tell you.

25 Q. More than ten?

1 A. More than that.

2 Q. More than 100?

3 A. No.

4 Q. More than 50?

5 A. Less than 50 probably.

6 Q. In all of the projects that you have
7 designed, did you ever get your design completed
8 in 16 hours or less?

9 A. No.

10 Q. Do you think it's appropriate to
11 spend only 16 hours doing a design of any type of
12 manufacturing facility?

13 MR. STANISLAUS: I object. Mr. Aziz
14 has testified to the limited extent the
15 work that he performed. I'm not sure of
16 the relevance of the question.

17 MR. LANG: I'm asking if he believes
18 it is appropriate.

19 JUDGE MOYNIHAN: I am going to allow
20 the question.

21 Q. I will repeat the question.

22 Do you believe it's appropriate when
23 you are doing a design study to spend only 16
24 hours in your analysis?

25 A. For design study, no.

1 Q. What you did here was a design study;
2 is that correct?

3 A. No, it's not.

4 Q. What did you do here?

5 A. Just layout, conceptual layout.

6 Q. Have you done conceptual layouts for
7 any manufacturing facilities?

8 A. Yes, we have.

9 Q. And has it taken you 16 hours to do
10 any of those layouts?

11 A. No, it takes more.

12 MR. LANG: Your Honor, I have some
13 questions about the two exhibits.

14 Permission to approach the witness --

15 JUDGE MOYNIHAN: Certainly.

16 MR. LANG: -- so I can point things
17 out to make sure we are clear, and I will
18 identify them for the record.

19 Your Honor, turning first to Exhibit
20 44, which are we told is Kips Bay.

21 Q. Do you have that exhibit?

22 A. Yes.

23 Q. What is the proper way to orient this
24 document in terms of where the East River would
25 be?

1 A. The East River would be --

2 Q. The smoke stack side?

3 A. Yes, the smoke stack side.

4 Q. So we are holding it the same way?

5 A. Yes.

6 Q. If you look then, if we assume the
7 smoke stack is in, as we are looking at this
8 document, the right side, that where First Avenue
9 would be on would be the left side of the
10 document?

11 A. Yes.

12 Q. Do you see two long boxes that run to
13 the wall by First Avenue?

14 A. Um-hmm.

15 Q. What are those two things that you
16 have?

17 A. That's the space for taking out the
18 measure of the generators.

19 Q. Okay. So there is nothing actually
20 there?

21 A. There is nothing in there.

22 Q. Do you see, again moving in from
23 First Avenue --

24 A. Um-hmm.

25 Q. -- you have one box labeled "natural

1 gas compressors 1 and 2, CTG bus accessory" and
2 then four others boxes?

3 A. Right.

4 Q. What do --

5 A. For water intake and some equipment
6 related to turbines, I guess.

7 Q. You guess, sir, or do you know what
8 those boxes are?

9 A. What those boxes are, I cannot tell
10 you, because I didn't write this on Con Edison's
11 drawing.

12 Q. Sir, we are looking at your drawing.
13 How are we supposed to know what they are if you
14 haven't labeled them?

15 A. I haven't labeled them.

16 Q. If someone had asked you, and you
17 hadn't prepared this, and asked you to look at a
18 drawing, would you know what you were looking at?

19 A. Probably not.

20 Q. During Mr. Karmel's questioning, you
21 had said that you thought you could put a second
22 story on this?

23 A. Sure.

24 Q. Where would you put that on this
25 diagram?

1 A. Probably on top of the gas
2 compressors.

3 Q. Would it span from the north wall to
4 the south wall?

5 A. It could, it could.

6 Q. It could. Okay. Where the
7 generators are?

8 A. The generators are right there.

9 Q. And the floor would go above the
10 generators?

11 A. Above the generators.

12 Q. How would you access the generators
13 for service purposes?

14 A. You could have a higher ceiling, what
15 prevents you?

16 Q. Didn't you state that the maximum
17 ceiling height for the building would be 100 feet?

18 A. I didn't, I didn't say maximum
19 ceiling height. I said up to 100 feet, it could
20 be higher.

21 Q. Are you saying now it could be higher
22 than 100 feet?

23 A. It could be higher than 100 feet.

24 Q. Are you familiar with the layout of a
25 generating facility?

1 A. Yes.

2 Q. Are you familiar that almost every
3 generating facility has a crane that is installed
4 in the plant?

5 A. Yes.

6 Q. So are you suggesting that the crane
7 would actually be installed below the second
8 floor?

9 A. Yes. Why not?

10 Q. How much space is needed then to put
11 the crane over the generators and lift the
12 generators up and out into the layout area?

13 A. I can't give you a specific. It
14 should be enough to do it.

15 Q. But you have no idea how much space?

16 A. I have no idea.

17 Q. You don't know that 100 feet would be
18 sufficient to have room for the crane and then the
19 second floor and the roof, you don't know it would
20 be 100 foot?

21 A. I don't.

22 Q. What is the basis of your testimony
23 it would be 100 foot tall?

24 MR. STANISLAUS: He never testified
25 the ceiling would be 100 foot. He

1 testified based on Mr. Karmel's
2 examination, the cumulative height based on
3 the placement of various equipment.

4 JUDGE MOYNIHAN: Yes. I recall
5 that.

6 MR. KARMEL: It's on page 3 of his
7 testimony.

8 BY MR. LANG:

9 Q. Mr. Aziz, didn't you say on page 3 of
10 your first full question in the second bullet
11 point that the building would be 100 feet high
12 based on the tallest structure of 68 feet?

13 So you see where I am pointing to?

14 A. Um-hmm.

15 Q. Isn't that what your testimony is,
16 sir?

17 A. Yes.

18 Q. Are you now recanting that testimony?

19 A. No, I am not.

20 Q. So then it is your testimony that
21 there, within 100 feet, that you could put the
22 generator, a crane with sufficient space to pull
23 the equipment out of the generator, specifically
24 the rotors, lift them up, have clearance, move
25 them over to a lay-down area and put a second

1 floor above that, and you could do all that within
2 100 feet?

3 A. I may not.

4 Q. Well, if you can't get the equipment,
5 get access to the equipment for maintenance, how
6 can you build this building from any kind of
7 technical perspective?

8 A. You know, I was to see if the
9 equipment can be laid out; that was my assignment.

10 Q. Was your task, as you understood it,
11 to build -- to design a plant that could actually
12 be built and could be operative in real life?

13 A. No. That was not my task, to design
14 a plant.

15 MR. LANG: Your Honor, I'm sorry.

16 But I have to object to this testimony. He
17 hasn't designed something that you could do
18 in reality, there can't be any probative
19 value in terms of an alternative of
20 something that could be existing if he
21 hasn't designed it.

22 MR. STANISLAUS: Your honor, if I
23 could be heard on this.

24 JUDGE MOYNIHAN: Yes.

25 MR. STANISLAUS: The testimony back

1 on page 3, the building height is based on
2 the SCRH being 38 feet high. During
3 Mr. Karmel's testimony, he talked about the
4 additive effect of equipment being done,
5 placed in a sequential order, which is not
6 part of his direct testimony and the
7 current cross-examination goes beyond that
8 with additional equipment. That's not what
9 he testified about. He is free to testify
10 regarding other items, but that is not in
11 conflict with his direct testimony.

12 MR. LANG: Your Honor, if I may be
13 heard, Section 168, paragraph 2(c)
14 requires the Siting Board to examine
15 reasonable alternatives. Based on
16 Mr. Aziz's testimony, there is no way that
17 these two alternatives could be considered
18 reasonable alternatives. He says all of
19 the equipment required in a power plant is
20 not there. By his own testimony, he hasn't
21 designed a real life power plant. All he
22 has done is refit Con Edison's equipment
23 into a footprint. He's already testified
24 that he omitted certain equipment. There
25 is no way that what he has put on here

1 could meet the test of reasonable
2 alternatives under Section 168.

3 MR. STANISLAUS: He is free to make
4 that argument in briefs.

5 JUDGE MOYNIHAN: I'm going to cut
6 that short. You can deal with his
7 testimony right now and save the rest for
8 your brief.

9 MR. LANG: We will keep going then.

10 BY MR. LANG:

11 Q. Mr. Aziz, in Exhibit 44, why do you
12 have three nature gas compressors?

13 A. Three natural gas compressors?

14 Q. Yes.

15 A. That's what they were shown on Con
16 Edison's.

17 Q. So you don't know why three would be
18 even needed?

19 A. No. I don't.

20 Q. Do you know how you would gain access
21 to the compressor? Is that approximately the
22 exact middle of the building for servicing
23 purposes?

24 A. For servicing, yeah. You could go
25 through the space that is -- you could go from

1 here.

2 Q. "From here," you are pointing to the
3 space on the First Avenue side?

4 A. Yeah.

5 Q. So are you suggesting that you would
6 walk through the area, the rotor layout area and
7 then you walk through these equipment banks and
8 then get to the compressor?

9 A. Yes.

10 Q. How would you get your equipment, to
11 the extent you needed to service and you needed to
12 pull out equipment from the compressor, how are
13 you going to get that in there?

14 A. Same way.

15 Q. So what happens, though, if that
16 equipment -- is this a scale drawing, by the way?

17 A. Yes, it is.

18 Q. What happens if the equipment is
19 wider than the space between -- going from the
20 First Avenue side to the first two unnamed boxes?

21 A. These are the boxes which can be
22 moved. These are not fixed, these are trailers.

23 Q. They are trailers?

24 A. Yes.

25 Q. What's in those trailers?

1 A. I don't know what is in that trailer.

2 Q. How do you know they are moveable?

3 A. That's how they are shown.

4 Q. That's how who showed them?

5 A. It is --

6 Q. That's not how you have shown them,
7 is it?

8 A. No, I have not.

9 Q. Have you taken into account at all
10 piping and wiring arrangements in your drawing?

11 A. No.

12 Q. Turning to the document that is
13 labeled Exhibit 45, could you orient me as to this
14 document. I see the equipment on one part and
15 then two empty spaces.

16 A. Right.

17 Q. Which side would be closer to the
18 East River?

19 A. The empty.

20 Q. The empty side, so I am holding this
21 correct?

22 A. Right.

23 Q. Okay. I see on the left side in the
24 lower corner of your drawing, you have two
25 unmarked empty spaces next to the generators?

1 A. Yes.

2 Q. Are those -- is there equipment there
3 or is that --

4 A. Lay-down spaces.

5 Q. Do you know how much a rotor weighs,
6 sir?

7 A. No, I don't.

8 Q. Would it surprise you that it weighs
9 in the tens of tons or higher?

10 A. No, it will not.

11 Q. Do you know how a rotor comes out of
12 a generator?

13 A. No, I don't.

14 Q. Would it surprise you to learn that
15 you would pull it out from the side?

16 A. No, it wouldn't.

17 Q. That would not surprise you?

18 A. No.

19 Q. Could you explain to me, since you
20 have your two generators perpendicular to each
21 other, how you would pull those two rotors out?

22 A. The space shown --

23 Q. Let me rephrase the question, sir.

24 Wouldn't you need a crane to assist
25 you in removing the rotors from the generators?

1 A. Yes, you would.

2 Q. How would you have a crane that goes
3 in both directions at the same time? Which way
4 would you orient your crane in the building, east
5 to west or north to south?

6 A. What do you mean?

7 Q. You have an overhead crane in the
8 building?

9 A. Right.

10 Q. The crane runs on tracks?

11 A. Um-hmm.

12 Q. Would the tracks be on the north and
13 south side or on the east and west side of the
14 building?

15 A. Should be east and west.

16 Q. The east and west being east and
17 west?

18 A. Right.

19 Q. If that is the case, if the crane is
20 moving in an easterly to westerly direction, how
21 do you pull the rotor on this one generator that
22 is oriented in the north-south direction?

23 A. See, by the crane, you move the --
24 operate with the crane.

25 Q. Yes. Don't you have to pull this

1 rotor out in a southerly direction?

2 A. Yes -- no, the crane moves this way,
3 but the operator can take it out this way.

4 Q. From a loading perspective, can you
5 load the crane in both directions?

6 A. No.

7 Q. The area that is to, as we are
8 looking at this diagram, to the east of your
9 plant, is this a lay-down area or is there
10 existing equipment?

11 A. There is existing equipment.

12 Q. So where would the lay-down area be
13 in the 74th Street plant?

14 A. There is space here, a balance space.

15 Q. Could you explain it on east, the
16 middle?

17 A. No, on the south side.

18 Q. On the south side?

19 A. Right here. Right here, around.

20 Q. This is the middle of the building?

21 A. Right.

22 Q. Does it cover from the south wall to
23 the north wall or just a small portion of that?

24 A. Half, about half portion.

25 Q. In your view, is that enough lay-down

1 area?

2 A. I cannot answer that.

3 MR. LANG: Your Honor, I am not
4 done, but I am done with the drawing.

5 Q. Mr. Aziz, I am not going to revisit
6 an area that you covered with Mr. Karmel, but I
7 don't believe he asked this question, so I will.

8 Have you undertaken any examination
9 of zoning issues as it relates to your drawings
10 and your design?

11 A. I have not.

12 Q. Did you do any examination of the
13 neighborhood and whether a steel structural
14 building with a brick veneer would be compatible
15 with the neighborhood in which you are proposing
16 the Kips Bay power plant?

17 MR. STANISLAUS: You are -- that is
18 not the purpose of the testimony,
19 neighborhood characteristics or zoning,
20 that is not the characterization of his
21 testimony.

22 JUDGE MOYNIHAN: Sustained.

23 MR. LANG: He's identified what type
24 of buildings he designed, and he's got
25 costs associated with it and I believe it

1 is permitted to inquire whether the design
2 that he has selected, that the cost he has
3 selected, would even be realistically
4 achievable in that neighborhood.

5 JUDGE MOYNIHAN: You are going into
6 the zoning.

7 MR. LANG: It was one question as to
8 whether the building he has designed would
9 be compatible with that neighborhood.

10 MR. STANISLAUS: Could you define
11 "compatible"? What does "compatible" mean?

12 MR. LANG: Consistent with the
13 general neighborhood in which you are.

14 Q. Could you build a brick veneer
15 building in that neighborhood, given the nature
16 and the design of the surrounding structures?

17 MR. STANISLAUS: But that is not an
18 engineering question.

19 MR. LANG: Sure, it is, your Honor.

20 JUDGE MOYNIHAN: I'm going to allow
21 the question.

22 MR. STANISLAUS: Okay.

23 JUDGE MOYNIHAN: We are getting into
24 a lot of argument back and forth on these
25 questions.

1 MR. LANG: Your Honor, I believe
2 it's appropriate to determine whether his
3 pricing is accurate.

4 JUDGE MOYNIHAN: I allowed you to
5 ask the question. Originally, I had,
6 because I thought you were going into a
7 line on zoning.

8 MR. LANG: Just the one question.

9 A. What was the question?

10 Q. Did you examine whether or not brick
11 veneer would be compatible or appropriate for that
12 neighborhood?

13 A. No, I did not.

14 Q. Sir, I did have one other question on
15 both Exhibits 44 and 45.

16 What types of emission control
17 technology are you proposing?

18 A. The same as East River, SCR.

19 Q. Is there a reason why you are not
20 proposing SCONox?

21 MR. RIBACK: He's not a SCONox
22 expert. He's testified he replicated --

23 MR. LANG: They're arguing it should
24 have been SCONox, but their own witness
25 isn't even considering SCONox.

1 JUDGE MOYNIHAN: There is an
2 inconsistency.

3 MR. LANG: Okay. One second, your
4 Honor.

5 Your Honor, I would like to have
6 marked as 46, which is Interrogatory Number
7 252.

8 JUDGE MOYNIHAN: We will mark it
9 Exhibit 46 for identification.

10 (Exhibit 46 was so marked
11 for identification.)

12 Q. Sir, in your testimony on page 3, you
13 referred to Con Edison's response to question
14 Number 252?

15 A. Um-hmm.

16 Q. Have you ever seen what has been
17 marked as Exhibit 46?

18 MR. STANISLAUS: I'm sorry. Could
19 you repeat your question?

20 MR. LANG: Sure.

21 MR. LANG: Have you ever seen what
22 has been marked as Exhibit 46?

23 MR. STANISLAUS: Can we clarify that
24 this is Con Edison's response?

25 MR. LANG: Excuse me?

1 MR. GUTMAN: It's an excerpt from
2 their response to us.

3 MR. LANG: It's the entire response,
4 252.

5 MR. STANISLAUS: Just to clarify to
6 the record, this is a Con Edison response
7 to EREC/CB3's interrogatory?

8 MR. LANG: Yes.

9 Q. I'm asking if you have ever seen it?

10 A. Yes.

11 Q. Can you show me where in this
12 document there is any reference to Kips Bay?

13 MR. STANISLAUS: Your Honor, I am
14 trying to understand the nature of this
15 question. He's presented an interrogatory
16 from Con Edison and he's asking him about a
17 reference in the response to Kips Bay; that
18 is not something that he can testify to.

19 MR. LANG: That is exactly what I am
20 getting at, your Honor.

21 JUDGE MOYNIHAN: To begin with, who
22 submitted this interrogatory?

23 MR. LANG: EREC did.

24 JUDGE MOYNIHAN: Okay. And was this
25 one that was submitted by this witness?

1 MR. LANG: I have no idea, your
2 Honor. They didn't identify from whom each
3 question was submitted. The reason I ask,
4 your Honor, is he refers to it in his
5 testimony.

6 JUDGE MOYNIHAN: Right.

7 MR. STANISLAUS: Could you repeat
8 your question again?

9 MR. LANG: Sure.

10 Q. Sir, could you identify for me where
11 in this response to 252 there are references to
12 Kips Bay?

13 A. There are none.

14 Q. Thank you.

15 Then could you please explain to me
16 how you were able to use this interrogatory to
17 develop your costing for the Kips Bay alternative?

18 A. These are basically rough costs, and
19 my rationale was that the equivalent was similar,
20 so I used those costs.

21 Q. Well, do you have any knowledge that,
22 in fact, what would be required for an
23 interconnection in Kips Bay would be the same as
24 what it would be for 74th Street or for 59th
25 Street?

1 A. This was, I don't -- steam, correct?

2 Q. Is that your answer, sir?

3 A. Yes.

4 Q. Well, do you know what would be
5 involved in the interconnection in Kips Bay?

6 A. You are talking about steam? Are you
7 talking about electricity?

8 Q. No, the steam. Do you know what
9 would be involved to make that interconnection?

10 A. What do you mean?

11 Q. Well, you have said that you used
12 this information on Interrogatory Answer 252 to
13 derive your information for Kips Bay?

14 A. Um-hmm.

15 Q. What I am asking you is: Do you know
16 what would be involved in the interconnection at
17 Kips Bay?

18 A. Yeah. You will need steam piping
19 that would be connected to the main steam line.

20 Q. Would you need anything else?

21 A. Without, you know, further knowledge,
22 I cannot tell you.

23 Q. So, do you know how much piping you
24 would need?

25 A. Rough estimate. I cannot tell you

1 exactly how much you would need. It would be a
2 rough estimate.

3 Q. Was your rough estimate based on the
4 response to Interrogatory 252?

5 A. No. It was based on how much pipe we
6 need and the estimated cost for 242.

7 Q. How did you determine how much pipe
8 you would need?

9 A. We laid out the distance of Kips Bay
10 to the main line.

11 Q. Did you go out and physically do
12 this?

13 A. No, you don't have to.

14 MR. STANISLAUS: Let him answer the
15 question.

16 A. You don't have to go and physically.
17 You have the drawings, you can do that.

18 Q. Do you have the drawings?

19 A. Yes.

20 Q. Do you know what size pipe you would
21 need?

22 A. I cannot recall it, but we did figure
23 out.

24 Q. Did you do a design of the
25 interconnection?

1 A. No.

2 Q. Can you say with any degree of
3 certainty that your estimate of \$7 million is
4 accurate?

5 A. This is an order of magnitude. I
6 cannot say that that is it.

7 Q. When you use the term "order of
8 magnitude," what is to you, an order of magnitude?

9 A. It can vary, by 50 or 100 percent.

10 Q. 50 or what, sir?

11 A. Or 100 percent.

12 MR. LANG: Sir, I would like to now
13 show you 47, I believe.

14 JUDGE MOYNIHAN: Yes, we are up to
15 47.

16 MR. LANG: Interrogatory Response,
17 Question 416 and Response 416, also
18 proffered by EREC/CB3 to Con Edison.

19 JUDGE MOYNIHAN: This is Exhibit 47
20 for identification.

21 (Exhibit 47 was so marked
22 for identification.)

23 Q. Sir, have you ever seen what's been
24 marked as Exhibit 47 before?

25 A. Yes, I have.

1 Q. What is your understanding of what
2 has been provided by Con Edison?

3 A. That it would cost \$8.8 million to
4 build a new GP stack.

5 Q. Where would that stack be built?

6 A. 74th Street.

7 Q. Would it be built next to the
8 building, on top of the building?

9 A. I cannot say.

10 Q. Do you know whether there is any
11 cost, in this \$8.8 million, if there is any cost
12 to be built on top of the building whether there
13 were any structural enhancements?

14 A. No. I don't.

15 Q. Do you know whether structural
16 enhancements would be necessary?

17 A. There might be.

18 Q. Would they have a cost?

19 A. Sure.

20 Q. Would the cost be in excess of a
21 million dollars in your view?

22 A. I cannot say that.

23 Q. Do you have any reason to believe
24 that if you had to build a new GEP stack on top of
25 the existing building with the structural

1 improvements you stated you believe would be
2 necessary, that \$8.8 million is still a correct
3 number?

4 MR. STANISLAUS: Your Honor, the
5 \$8.8 million is a Con Ed estimate. However
6 they derived it, they derived it.

7 JUDGE MOYNIHAN: We understand that.

8 MR. LANG: That's not my question.

9 Q. My question is: Do you believe with
10 the structural improvements that would be
11 necessary to the building as you have testified,
12 that \$8.8 million is a valid number for the cost
13 of a new stack at 74th Street?

14 A. I cannot say yes or no.

15 MR. LANG: Your Honor, I think I
16 will just leave it at that.

17 JUDGE MOYNIHAN: Do you have
18 redirect?

19 MR. STANISLAUS: A little redirect.
20 Can we have a few minutes?

21 JUDGE MOYNIHAN: We'll take a
22 ten-minute recess.

23 (Recess taken.)

24 JUDGE MOYNIHAN: Please come to
25 order.

1 Mr. Stanislaus.

2 MR. STANISLAUS: Thank you.

3 REDIRECT EXAMINATION

4 BY MR. STANISLAUS:

5 Q. Mr. Aziz, I'm going to ask you to
6 refer to two exhibits, Exhibit 44, which is the
7 Kips Bay layout, and Exhibit 45, which is your
8 74th Street layout.

9 As I recall, you had stated in your
10 testimony you did a layout to provide the space
11 for the equipment that Con Ed has proposed as the
12 ERRP project; is that right?

13 A. That is correct.

14 Q. Can you tell us an estimate of the
15 space requirements for EREC/CB3's two
16 alternatives, and I will go in sequential order,
17 okay.

18 Kips Bay East River alternative
19 number one, which consists of 2,000 pounds of
20 steam.

21 A. Um-hmm.

22 Q. Would you give an idea of the rough
23 changes in space for the Kips Bay layout due to
24 such change?

25 MR. KARMEL: Your Honor, we would

1 object that it's not proper redirect, nor
2 is it within the scope of this witness's
3 prefiled direct testimony. He testified
4 specifically that his prefiled testimony
5 constituted a layout of the East River
6 Repowering Project. Heretofore, he has not
7 presented -- he did not present any
8 testimony about the EREC/CB3
9 alternatives --

10 JUDGE MOYNIHAN: Would you like to
11 be heard?

12 MR. STANISLAUS: Yes. Mr. Aziz did,
13 in fact, testify as to the layout of his
14 Kips Bay and 74th Street, those two
15 locations, using the equipment that Con Ed
16 proposed. And I am merely asking him to
17 give his informed opinion about the changes
18 in size associated with the changes in
19 equipment.

20 JUDGE MOYNIHAN: And there was no
21 cross-examination with respect to this.
22 This is redirect.

23 I will sustain the objection.

24 MR. STANISLAUS: Your Honor, my
25 recollection is there was references to

1 CB3/EREC alternatives during the
2 cross-examination. I believe that the
3 record will show that there is some
4 reference to those alternatives.

5 JUDGE MOYNIHAN: The name may have
6 come up, I don't recall. But the point is
7 all of the cross-examination with respect
8 to the spacing on these two exhibits dealt
9 with the layout of these two exhibits. It
10 didn't go into other alternatives. Now you
11 are trying to go into other alternatives
12 and it is not proper redirect.

13 MR. STANISLAUS: Okay.

14 Q. Mr. Aziz, you had provided Exhibits
15 44 and 45, which provided a space layout for
16 various equipment, which matched the size of
17 equipment for the proposed project in this case.

18 A. Right.

19 Q. Okay. Can you give some estimate of
20 how such would change with changes in size of such
21 equipment?

22 MR. KARMEL: Same objection.

23 MR. LANG: Objection.

24 JUDGE MOYNIHAN: Same ruling,
25 sustained.

1 Q. Mr. Aziz, you were cross-examined
2 about the amount of time you had spent on the
3 layout. You had been asked about the time that
4 you spent providing the layouts as set forth in
5 Exhibits 44 and 45, and you were asked about that
6 time versus the time you spent on other projects
7 for layouts. What explains the difference in
8 time?

9 A. This was merely exercising, you know,
10 exploring if that equipment can fit on the smaller
11 footprint; whereas the other projects are more
12 detailed, it's more detailed design, and you had
13 to consider that more, the size, and everything
14 else. It takes longer to do that.

15 Q. And you have been cross-examined
16 about certain equipment that would be included in
17 the plans that are not included in your layout.
18 And that is some of the additional detail that you
19 would consider in the additional layout?

20 A. That is true. Plus I would have
21 actual sizes of the equipment, the, you know,
22 project life, you accumulate changes, people
23 choose bigger, smaller, a lot of things go into
24 it.

25 Q. And the way that you laid out the

1 equipment in Exhibits 44 and 45, it was laid out
2 to just provide a depiction of space?

3 A. That is correct.

4 Q. And that it could be reconfigured, it
5 could be reconfigured in another way, but that was
6 merely to provide some idea of space limitations?

7 A. That is correct.

8 Q. Okay. Mr. Aziz, you were asked by
9 the Department of Public Service counsel regarding
10 steam interconnection cost.

11 Can you provide some -- can you
12 provide information regarding how you derived
13 those numbers?

14 A. Yes. Based on the responses from Con
15 Ed, I derived a per-foot cost, roughly, between --
16 they have given two answers, I guess, and
17 comparing both, I derived a per-foot cost of
18 steam. And I looked at where the main goes on
19 the -- on First Avenue on Kips Bay, and how much
20 length we would need to connect, and that's how I
21 came up with the cost.

22 Q. Well, based on information that Con
23 Ed has presented regarding the Kips Bay site, are
24 you aware of the proximity and distance to the
25 steam, steam lines and various space limitations?

1 A. Roughly, I was, you know, I was aware
2 of the location of the main, that's how I did
3 my -- how much pipe we would need.

4 Q. And you, in fact, have visited Kips
5 Bay?

6 A. That's correct.

7 Q. And you have visited 74th Street?

8 A. That is correct.

9 Q. And you have done a tour within the
10 East River plant?

11 A. That is correct.

12 Q. And you have seen the space
13 allocation and the placement of equipment within
14 the East River plant?

15 A. That is correct.

16 Q. And the same with the 74th Street
17 plant?

18 A. 74th Street, correct.

19 Q. Mr. Aziz, are you aware that the
20 steam main is immediately adjacent to the Kips Bay
21 project?

22 MR. KARMELO: Objection, leading.

23 Q. Mr. Aziz, are you aware of the
24 proximity of the steam main to the Kips Bay
25 property?

1 A. That is correct. It was not, you
2 know -- when I looked at the skids that were
3 provided, it was not very far from Kips Bay.

4 Q. Mr. Aziz, I refer you to Exhibit 45,
5 which is the 74th Street layout. Mr. Lang asked
6 questions about whether you had accounted for
7 reinforcement costs of the stack you have
8 depicted.

9 Can you provide some information
10 regarding your consideration or absence of
11 consideration of reinforcement costs?

12 A. The -- my -- when I, you know,
13 assumed that cost, it was based on the stack being
14 on the ground, you know, not on the rooftop. So
15 that's why there was no consideration for
16 structural reinforcement.

17 Q. When you mean stacks being on the
18 ground, that would be that there are certain costs
19 that you would not have to bear, whereas if it was
20 on the roof --

21 A. That is correct, but there would be
22 additional costs for bringing the stack down to
23 the ground.

24 Q. Okay. Mr. Aziz, you were asked about
25 a statement in your testimony about the building

1 height at Kips Bay being roughly 100 foot. Is
2 that a fixed number?

3 A. No, it is not.

4 Q. And that could vary?

5 A. That could vary, yes.

6 Q. And that could vary based on what?

7 A. Based on the height of the equipment,
8 the amount of space you need to remove equipment.
9 There are factors.

10 Q. And the other equipment that you had
11 testified in cross-examination are the water
12 treatment facilities?

13 A. That's correct. Water treatment.

14 Q. Again, I ask you to refer to Exhibit
15 45, which is the 74th Street layout. Can you give
16 a rough estimate of the dimensions of your layout?

17 A. Which one?

18 Q. The 74th Street plant, Exhibit 45.

19 MR. KARMELO: Objection, your Honor.
20 Goes beyond the scope of redirect.

21 JUDGE MOYNIHAN: Yes, I don't recall
22 anyone asking about that.

23 MR. STANISLAUS: It seems to me it
24 was subsumed within the whole series of
25 questions regarding what space is

1 available, and how things could fit.

2 JUDGE MOYNIHAN: Well, the answer
3 may be right on Exhibit 45. I just can't
4 read it. It looks like there are numbers
5 there on the dimensions.

6 MR. STANISLAUS: Maybe I will just
7 take up a procedural question then. It may
8 be more appropriate for us to provide an
9 expanded version of this Monday, just to
10 make it easier for purposes of the record,
11 if there is no objection.

12 JUDGE MOYNIHAN: Would there be any
13 objections to giving one that has numbers
14 that we could read?

15 MR. KARMEL: In concept we would
16 have no objection, but I would want to
17 review the document before --

18 MR. STANISLAUS: Fine.

19 MR. KARMEL: -- making a
20 determination that that document is a
21 correct depiction of these documents.

22 JUDGE MOYNIHAN: Okay. Good.

23 MR. STANISLAUS: You are not saying
24 I am going to switch something, are you?

25 Q. Mr. Aziz, you had provided cost

1 estimates in your testimony. How did you derive
2 those estimates?

3 MR. KARMEL: Objection. Goes beyond
4 the scope of redirect.

5 JUDGE MOYNIHAN: On which? Is there
6 one that was cross-examined.

7 MR. STANISLAUS: He was
8 cross-examined on -- wait, one second.

9 Well, the stack, the steam
10 connections, there was interrogatories
11 presented and identified, regarding the
12 various costs, so all those costs, you
13 know, were --

14 JUDGE MOYNIHAN: The problem is you
15 are being a little bit vague. If you could
16 identify the item that he was
17 cross-examined on, it would be easier for
18 us.

19 Q. Okay. With respect to your steam
20 interconnection costs, how was that cost derived?

21 MR. LANG: Objection, asked and
22 answered. We already went through this.

23 MR. STANISLAUS: I don't get the
24 opportunity to redirect on that? That was
25 a cross-examination question.

1 MR. LANG: You did it -- the steam
2 interconnection cost. You did it on
3 redirect. You asked him what it was based
4 on and he explained it.

5 JUDGE MOYNIHAN: I am not sure. I
6 know you went through distance.

7 MR. STANISLAUS: Actually, I believe
8 I went through the basis of how he derived
9 it. We looked at the distances, the
10 information that he had. I am not sure.

11 JUDGE MOYNIHAN: I will allow the
12 question.

13 MR. LANG: I will withdraw the
14 objection.

15 BY MR. STANISLAUS:

16 Q. Would you like me to repeat the
17 question?

18 A. I believe you were asking how I
19 derived the cost --

20 Q. Yes.

21 A. -- for steam reconnection.

22 Q. Yes.

23 A. What I did is based on Con Edison's
24 plans 252, and their view of the distances for the
25 steam reconnect, and their view of the cost, based

1 on that, I came up with a per-foot cost.

2 Q. And how did you derive the cost of
3 stacks?

4 A. Stacks, the costs were given in the
5 same reply.

6 MR. STANISLAUS: One second. I just
7 want to check something.

8 MR. LANG: Your Honor, just so we
9 can clear the record while they are
10 looking, Mr. Aziz did testify on my cross
11 that the stacks came from Interrogatory 416
12 and 252, and I am not objecting. I am just
13 saying he said it was 416.

14 Q. Is that correct, it was 416?

15 A. Yes.

16 MR. STANISLAUS: I think that is it.

17 JUDGE MOYNIHAN: Recross?

18 MR. KARMEL: Yes, your Honor.

19 Briefly.

20 RECROSS EXAMINATION

21 BY MR. KARMEL:

22 Q. Mr. Aziz, I would like to ask a short
23 series of questions, hopefully, on an issue that
24 came up in Mr. Lang's cross-examination. I
25 believe --

1 MR. STANISLAUS: Your Honor, just to
2 be clear, I believe the proper subject
3 matter of this cross is anything I opened
4 in redirect.

5 JUDGE MOYNIHAN: That's correct.

6 MR. STANISLAUS: So he's referring
7 to the cross-examination.

8 JUDGE MOYNIHAN: When he asks the
9 question, raise the objection.

10 MR. STANISLAUS: Okay.

11 BY MR. KARMEL:

12 Q. On Exhibit 44, I believe you
13 testified that these four rectangles that you have
14 located here between the two combustion turbines
15 in your hypothetical Kips Bay power plant are
16 trailers?

17 MR. STANISLAUS: Objection.

18 JUDGE MOYNIHAN: I will sustain the
19 objection.

20 MR. KARMEL: I'm sorry, your Honor.

21 JUDGE MOYNIHAN: This was not the
22 subject matter of the redirect.

23 MR. KARMEL: But it came up on
24 Mr. Lang's cross. Commission staff is
25 another party to this proceeding.

1 JUDGE MOYNIHAN: This is why I
2 wanted you to go last when I was asking if
3 you wanted to go last and it's simply to
4 prevent problems like this. Now, I am
5 trying to get it straight in my mind here.

6 (Judges Moynihan and O'Connell
7 confer.)

8 JUDGE MOYNIHAN: I will sustain the
9 objection.

10 MR. KARMELO: Okay. I have nothing,
11 your Honor.

12 JUDGE MOYNIHAN: Mr. Lang?

13 MR. LANG: Yes, I do have a few
14 questions.

15 RECROSS EXAMINATION

16 BY MR. LANG:

17 Q. Mr. Aziz, to the questions that
18 Mr. Stanislaus was asking you, just so that we are
19 entirely clear, when he was discussing the time
20 spent, your response, and I don't know if I am
21 quoting this word for word, but you said it was an
22 exercise in exploring whether the equipment could
23 fit in a smaller space; it wasn't a design
24 exercise. Is that a fair representation of your
25 answer?

1 A. No, it was not a design exercise.

2 Q. That's what I want to be clear, you
3 did not do a design of a new power plant?

4 A. No, sir.

5 Q. Okay. With respect to the steam
6 interconnection, is anything else involved in an
7 interconnection other than a length of main
8 interconnecting into an existing main? For
9 example, are their valves, other controls?

10 A. Sure, there are valves.

11 Q. Did you include the cost of all those
12 other pieces of equipment in the facilities?

13 MR. STANISLAUS: Again, I have to
14 object. I don't believe that was covered
15 in my redirect.

16 MR. LANG: It was. He did ask about
17 what the costs were and how he came up with
18 his costs.

19 JUDGE MOYNIHAN: You did ask him how
20 he came up with steam interconnection cost.

21 MR. STANISLAUS: This is a question
22 going to other presumed costs that was not
23 raised on my cross-examination. I simply
24 asked questions about how he derived the
25 costs that he lied on. And Mr. Lang is now

1 asking about certain additional components
2 and the cost of that. That was not opened
3 by me in redirect.

4 MR. LANG: Your Honor, I was asking
5 about the steam interconnection costs in
6 what he was exploring.

7 JUDGE MOYNIHAN: Yes, I was going to
8 allow the question.

9 MR. STANISLAUS: Can he focus the
10 question then.

11 Q. Did you include in your determination
12 of steam interconnection costs all the costs
13 associated to facilitate the interconnection,
14 whether at Kips Bay or at 74th Street?

15 A. I went with the presumption that when
16 Con Ed provided the costs for the length of the --
17 having to reach the valves and everything that is
18 needed for the connection, that they have included
19 all the costs, anything.

20 Q. You don't know whether it did or not?

21 A. No, I don't.

22 Q. With respect to Kips Bay, didn't you
23 explain on redirect to Mr. Stanislaus that what
24 you did is you came up with a per-foot cost for
25 the mains?

1 A. That is correct.

2 Q. Are you assuming that as part of a
3 per-foot, that would include the cost of the
4 related facilities?

5 A. That is correct.

6 Q. Is it typical to include facilities
7 that don't span distances in a per-foot cost for
8 the main?

9 A. That is one estimate, yes, that is
10 one of the ways.

11 Q. I'm sorry.

12 A. That is one of the ways you can
13 include all of the costs on a per-foot basis.

14 Q. Can you state with any certainty that
15 those other related facility costs are included in
16 your estimate?

17 A. If they were included in the Con
18 Edison costs, yes; if not, they were not.

19 Q. But you don't know?

20 A. I don't know.

21 MR. LANG: Your Honor, I would now
22 ask to be marked -- I think we are up to
23 48.

24 MR. STANISLAUS: Can I see that
25 before anything happens?

1 JUDGE MOYNIHAN: We can mark it.

2 Certainly provide one to counsel.

3 MR. LANG: Your Honor, Exhibit 48 is
4 a picture of the 74th Street steam station.

5 MR. STANISLAUS: I have to object.
6 My cross came on a very limited basis based
7 on two exhibits that were introduced. This
8 is introducing another exhibit that was not
9 opened on redirect. I don't believe it's
10 proper in terms of cross-examination.

11 MR. LANG: I will make a proffer,
12 your Honor.

13 JUDGE MOYNIHAN: Let me mark it for
14 identification. We can argue its
15 admissibility later. If there are problems
16 with the questions, make your objections.

17 (Exhibit 48 was so marked
18 for identification.)

19 Q. Mr. Aziz, you testified on redirect
20 that you had visited the 74th Street site; is that
21 correct?

22 A. Sure.

23 Q. Does the power plant that is pictured
24 in what's been marked as Exhibit 48, does that
25 look to you like the 74th Street steam station?

1 MR. STANISLAUS: Your Honor, let me
2 object. He's providing an aerial view.
3 Mr. Aziz did not testify that he saw the
4 plant from the air.

5 JUDGE MOYNIHAN: Well, he's been
6 asked if he can identify it. I will allow
7 the question.

8 A. I cannot say if this is. I did not
9 see it from the air.

10 Q. Mr. Aziz, would you accept, subject
11 to check, that this is a picture of the 74th
12 Street steam stations?

13 A. If you say so, yes.

14 Q. On redirect you explained to
15 Mr. Stanislaus that you based the cost of your
16 stack for your redesigned plant being at ground
17 level?

18 A. True.

19 Q. Could you explain to me, sir, how you
20 would fill that stack on this site?

21 MR. STANISLAUS: Your Honor, again,
22 I have to object. The limited testimony on
23 redirect was the cost of the stack; that is
24 it.

25 JUDGE MOYNIHAN: I think you also

1 mentioned whether it would be built down on
2 the ground, and I am going to allow the
3 question.

4 MR. STANISLAUS: If I can be heard
5 again. What I asked was the cost
6 differential associated with the stack, it
7 was merely that. It wasn't the placement
8 of one versus the other. It is how we
9 consider the costs.

10 MR. LANG: Because of placement?

11 MR. STANISLAUS: Yes. It was not --
12 there was no testimony about the spacial
13 relationship of the stack versus any other
14 equipment on redirect. That is the area
15 that Mr. Lang is getting in to.

16 (Judges Moynihan and O'Connell
17 confer.)

18 JUDGE MOYNIHAN: Our recollection is
19 that the redirect related to the cost.

20 MR. LANG: Yes, your Honor. That is
21 what I am going to go to in about two
22 questions.

23 JUDGE MOYNIHAN: Okay. Continue.

24 MR. LANG: I just need to get the
25 basis set up for the question.

1 Q. Sir, where would you be siting this
2 ground level stack in your exercise of layout?

3 A. On the west side of the existing
4 stack.

5 Q. In the street -- I'm sorry, at the
6 west side?

7 A. Yes.

8 Q. So you would knock out a piece of the
9 building to put the stack in?

10 A. Probably would have to do that.

11 Q. Did you include in your cost estimate
12 then the cost of knocking out the piece of the
13 building to put the new stack?

14 A. No, I don't.

15 Q. Did you include in your cost estimate
16 the cost for laying a proper foundation up under
17 the new stack in that building?

18 A. That is part of the -- yes, that is
19 part of the cost.

20 Q. That is?

21 A. Yes.

22 MR. LANG: Okay. Your Honor, that
23 is all I wanted to get out of it on the
24 cost issue. That is all I have, your
25 Honor.

1 JUDGE MOYNIHAN: Do you have
2 anything further?

3 MR. STANISLAUS: No.

4 JUDGE MOYNIHAN: Thank you.

5 Mr. Aziz, you are excused.

6 (Whereupon, the witness was excused.)

7 JUDGE MOYNIHAN: We have two EREC
8 exhibits, 44 and 45.

9 MR. STANISLAUS: I would like to
10 move that they be moved into evidence.

11 JUDGE MOYNIHAN: Are there any
12 objections?

13 MR. LANG: Yes, your Honor. These
14 two exhibits have no probative value to
15 this case, which requires an analysis of
16 reasonable alternatives. These are not
17 alternatives. These are simply some sort
18 of an exercise in fitting the East River
19 equipment into another location. This
20 witness has testified this is not actually
21 a design of any alternative plan. It
22 wasn't meant to be a design of an
23 alternative plan, it is not a complete
24 design. It doesn't include all of the
25 equipment that would be in an alternative

1 plan and, as such, they have no probative
2 value to this case, because they don't
3 support any of the findings that the Siting
4 Board would have to make in this case.

5 MR. STANISLAUS: I repeat, he's free
6 to do so, make the argument in briefs.
7 Mr. Aziz testified that the purpose of
8 these two documents is to lay out equipment
9 and space.

10 MR. LITTLE: Your Honor, if I may be
11 heard. I don't mean to interrupt.

12 JUDGE MOYNIHAN: Go ahead.

13 MR. LITTLE: My fear is that there
14 will be a temptation to allow it, subject
15 to whatever weight it has, and I think that
16 these are only imaginary, and do not really
17 contemplate the actual need for the site.

18 MR. STANISLAUS: I object to the
19 characterization.

20 MR. LITTLE: It wouldn't be
21 appropriate to allow them, subject to
22 giving them whatever weight they are valued
23 at. I don't think they have any value to
24 the record at all. I think you should take
25 that into consideration.

1 (Judges Moynihan and O'Connell
2 confer.)

3 JUDGE MOYNIHAN: Did you have
4 anything else you wish to add?

5 MR. STANISLAUS: I was just going to
6 make a notation for the record that I
7 object to a characterization of
8 "imaginary."

9 JUDGE MOYNIHAN: We're going to
10 allow the documents into evidence. We view
11 space availability as an issue in this
12 case, and certainly these address it. You
13 can make your arguments with respect to how
14 much weight they should be given. We do
15 believe it's relevant.

16 MR. LANG: I'm sorry. In your
17 ruling, you said that these documents
18 relate to space availability of what?

19 JUDGE MOYNIHAN: Of Kips Bay and
20 74th Street.

21 MR. LANG: But they don't, your
22 Honor. They don't relate to space
23 availability at those two sites. They
24 don't.

25 JUDGE MOYNIHAN: I shouldn't say

1 "available." Perhaps that is the wrong
2 word. They are estimates of how much space
3 the equipment would take at both sites.

4 JUDGE MOYNIHAN: All right. We
5 have --

6 MR. LANG: I would note an objection
7 to that characterization of these exhibits.
8 I don't believe that is what they show.

9 JUDGE MOYNIHAN: Okay. We have
10 Exhibits 46, 47, and 48. And those are
11 staff exhibits. Are you moving them into
12 evidence?

13 MR. LANG: Yes, your Honor.

14 JUDGE MOYNIHAN: Are there any
15 objections?

16 None? They are in evidence.

17 (Exhibits 46, 47 and 48
18 were received in evidence.)

19 MR. STANISLAUS: Just to make sure
20 the record is clear, we will be providing
21 an expanded version of these, subject to
22 the review of all parties, on Monday.

23 JUDGE MOYNIHAN: Good.

24 MR. STANISLAUS: Your Honor, could
25 those just be substituted as the official

1 copies of Exhibits 44 and 45. I was going
2 to mark them 44-A and 45-A.

3 MR. LANG: I would have no objection
4 to just substituting them and making them
5 the exhibit, as long as they are the same
6 thing; that way there is just one instead
7 of two, and there is no confusion down the
8 road.

9 JUDGE MOYNIHAN: They're one-page
10 exhibits. I don't think they can cause
11 that much confusion.

12 JUDGE MOYNIHAN: All right. Who is
13 left?

14 MR. KARMEL: Mr. Kurtz, if you would
15 like to keep going. We would like to keep
16 going, if that is possible.

17 JUDGE MOYNIHAN: We'll keep going
18 until -- we could go about another hour if
19 that is good.

20 Before we call that witness, during
21 the break we were discussing something. We
22 would like to take, if we could, a site
23 inspection of not only the East River plant
24 but of the alternatives.

25 Could you arrange something like

1 that? If you could provide enough room for
2 at least a representative from each party.

3 If we can do something, if we could
4 do it at the end of the cross-examination
5 sometime next week. Would that be all
6 right?

7 MR. RIBACK: Absolutely.

8 MR. KARMEL: Mr. Kurtz.

9 Whereupon,

10 STEPHEN KURTZ,
11 having been previously sworn, was examined and
12 testified further as follows:

13 MR. KARMEL: Your Honor, this is a
14 brief preliminary matter I would like to
15 take up before Mr. Kurtz.

16 JUDGE MOYNIHAN: Can I just remind
17 the witness that he has been sworn in and
18 you don't need to be sworn in again?

19 THE WITNESS: Yes, your Honor.

20 MR. KARMEL: Before Mr. Kurtz begins
21 his SCONOX-related examination, I believe
22 Exhibit 6, excuse me, Exhibit 16, which is
23 the Sandborn map of 74th Street --

24 THE WITNESS: Yes.

25 JUDGE MOYNIHAN: -- was admitted

1 into evidence in this proceeding subject to
2 check. Is that correct?

3 JUDGE MOYNIHAN: I believe it, yes.

4 MR. KARMEL: We have now checked and
5 Mr. Kurtz has some observations about this
6 document that are pertinent to the decision
7 whether it should be admitted into
8 evidence.

9 JUDGE MOYNIHAN: All right.

10 CONTINUED DIRECT EXAMINATION

11 BY MR. KARMEL:

12 Q. Mr. Kurtz, you testified two days
13 ago, the first day of this proceeding. Have you
14 visited the 74th Street plant area since that
15 time?

16 A. Yes, I have.

17 Q. I would like to direct your attention
18 to this area marked as lot 37B, which abuts 75th
19 Street on the Far East side by the FDR Drive just
20 north of the 74th Street plant.

21 Do you see the area I am talking
22 about?

23 A. Yes, I do.

24 Q. I believe it came up earlier in your
25 testimony as to what that building was and you

1 were unable to identify what it was from this
2 document. Can you identify what it is now from --
3 now that you have visited the area?

4 A. Yes. It is a residential structure.

5 Q. Thank you.

6 JUDGE MOYNIHAN: This is 37B?

7 MR. KARMEL: Correct, your Honor.

8 Q. Also, I believe the issue came up as
9 to whether -- whether the uses were along 74th
10 Street on the buildings facing 74th Street, just
11 opposite the Con Edison plant. In the course of
12 your visit to this area in the last two days, were
13 you able to identify what these uses are?

14 A. Yes. There are six residences there,
15 501, 511, 513, 515, 517 and 15 East 74th Street.

16 Q. Is there another use also in addition
17 to residential use there?

18 A. Yes, there were garages there.

19 JUDGE MOYNIHAN: I'm not following
20 this.

21 THE WITNESS: I have a lot marked
22 2B, 3B, 9B, for instance. I don't know
23 which ones you are referring to.

24 MR. KARMEL: I believe, your Honor,
25 the street numbers are written not within

1 the plots, but parallel to 74th Street.

2 THE WITNESS: Oh, 74th. I'm sorry.

3 I'm on 75th.

4 Q. I apologize.

5 A. You were referring to 75th Street,
6 right? Can I see the map?

7 Q. Yes. I'm sorry. Why don't we do
8 this again, because I think there is confusion.

9 MR. KARMELO: Since the witness
10 understood my question being 75th Street,
11 let me ask the question that way.

12 Q. The land uses on 75th Street, can you
13 identify them, please?

14 A. Again, on 75th Street, there is 501
15 East 75th Street, 511 East 75th Street, 513 East
16 75th Street, 515 East 75th Street, 517 East 75th
17 Street, 15 East 75th Street.

18 Q. What are those uses?

19 A. Those are residences.

20 Q. Now, going to go 74th Street, were
21 you able to identify the uses on 74th Street
22 immediately opposite the power plant?

23 A. Yes. Again, there are residences
24 including the Epiphany Community Nursery School,
25 located at 15 East 74th Street.

1 Q. Were you able to identify one respect
2 in which the Sanborn map is outdated in that the
3 structure is no longer there?

4 A. Yes. On 75th Street, there is a
5 garage has been demolished and they are preparing
6 for construction of a new building.

7 MR. KARMEL: Your Honor, with the
8 record clarified in that way, we have no
9 objection to the admission of this document
10 into evidence.

11 JUDGE MOYNIHAN: Okay.

12 MR. GUTMAN: May I ask a question
13 about his identification of these
14 structures?

15 The building at the corner of FDR
16 Drive and 75th Street, which you identified
17 as a residential building --

18 THE WITNESS: I'm sorry. 75th
19 Street and East River Drive?

20 MR. GUTMAN: Yes. Is that the rear
21 entrance, the entrance of the garage on
22 75th Street, whereas the entrance to the
23 residence is on 76th Street?

24 THE WITNESS: There is a Kinney
25 garage located on 75th Street and East

1 River Drive.

2 MR. GUTMAN: The pedestrian entrance
3 for people who live in the building is not
4 on 75th Street, is it?

5 THE WITNESS: No.

6 MR. LANG: Your Honor, we still
7 object to its introduction as a land use
8 map, because it's already been demonstrated
9 that it's not, but for a limited purpose as
10 it's just been described, we'll not have an
11 objection.

12 JUDGE MOYNIHAN: I believe we did
13 limit this. Actually, I am searching my
14 mind here to try and recall what it was.
15 It was this map or the other map.

16 Yes, we understood it to be for
17 the -- to depict -- to depict the buildings
18 that are there and not necessarily what
19 it's zoned for. I believe that is the way
20 it went.

21 MR. LANG: That is fine. No
22 objection.

23 MR. KARMELE: Your Honor, I believe
24 Mr. Kurtz's prefiled testimony has already
25 been admitted and I believe his exhibits

1 relating to that have also been admitted,
2 so we would now make him available for
3 cross-examination.

4 JUDGE MOYNIHAN: Okay. Who from --

5 MR. STANISLAUS: I will.

6 JUDGE MOYNIHAN: Mr. Stanislaus.

7 CROSS-EXAMINATION

8 BY MR. STANISLAUS:

9 Q. Hello, Mr. Kurtz.

10 A. Hello.

11 Q. Mr. Kurtz, you referred to -- in a
12 March 26, 2000 letter, in your testimony, I
13 believe it's Exhibit Number 10.

14 A. Okay. I will get it.

15 Q. Do you disagree with the conclusions
16 by Alstom in the letter that SCONOX is a
17 technically viable control technology?

18 A. Exhibit 10?

19 Q. Exhibit 10, the Alstom letter, March
20 26th, from Ronald Debond and a statement that is
21 contained in the last paragraph on the first page,
22 the first line.

23 A. I have it, I'm sorry. What are you
24 referring to, Matt?

25 Q. It's the statement Alstom agrees that

1 SCONOX is a technically viable control technology.

2 A. Yes. I guess Alstom, since they are
3 the licensor for the product, that they would
4 think it is a viable control technology. I
5 wouldn't think they would be selling and marketing
6 it if they didn't think it was a viable control
7 technology.

8 Q. So, I mean, do you disagree with that
9 statement that it is a viable control technology,
10 that statement, that letter that was issued to Con
11 Edison?

12 A. I think in a generic sense, I agree
13 with the determination.

14 Q. Okay. Mr. Kurtz, I refer you to page
15 5 of your rebuttal testimony, lines 18 through 21.

16 A. Okay.

17 Q. And you may also want to have counsel
18 provide to you Exhibit Number 39, which is the
19 Otay Mesa decision. Do you have that?

20 A. Okay.

21 Q. I refer you to page 122, the last two
22 paragraphs, starting with "Condition AQ-27"?

23 A. Okay. I am reading it.

24 Q. Okay. Now, in fact, that, that
25 states something slightly different from what is

1 stated in your testimony; would that be correct?

2 A. No, I disagree.

3 Q. How do you disagree?

4 A. In my testimony, in my rebuttal
5 testimony, again, page 18, I had made the
6 determination that California Certification
7 Committee for the application have determined that
8 SCONox technology can be considered to be fully
9 reliable at this time due to probable scale-up
10 issues; this is why they have provided a six-month
11 opposition period. It confirms my determination.

12 Q. So, well, in fact, in the California
13 decision, there are permitting the opportunity to
14 move forward in the optimization period, and
15 according to you, you conclude that they actually
16 preclude that possibility, in consideration of
17 SCONox?

18 A. I don't believe that is what I said.
19 What I said was it gives the applicant either one,
20 either/or, and it is up to the applicant to
21 determine which technology, either SCONox or SCR,
22 to be installed.

23 Q. Mr. Kurtz, I refer you to page 7 of
24 your testimony, starting on line 11?

25 MR. KARMELE: Excuse me. Is this the

1 rebuttal testimony?

2 MR. STANISLAUS: I'm sorry, rebuttal
3 testimony.

4 A. Okay.

5 Q. Now, in it you raise concerns about
6 scale-up from various plants up to the size of the
7 project that Con Ed is proposing here?

8 A. Yes, I do.

9 Q. Would you agree that scaling up is a
10 standard engineering technique, that it is an
11 accepted engineering technique?

12 A. Yes, I would.

13 Q. You are familiar with how LAER
14 determinations are made, L-A-E-R, decisions are
15 made?

16 MR. KARMEL: Objection, your
17 Honor -- I withdraw the objection.

18 A. Slightly familiar.

19 MR. LANG: Could we have the
20 witness's answer read back.

21 (Record read.)

22 Q. Are you aware that LAER decisions are
23 made by looking at the actual achievement of that
24 technology actually in practice?

25 MR. KARMEL: Objection, your Honor.

1 Calls for a conclusion of law.

2 JUDGE MOYNIHAN: I'm going to
3 sustain the objection.

4 MR. STANISLAUS: I think we go back
5 to the same question. It's a mix of law
6 and fact. Maybe I will limit my question
7 to the non-legal aspect of it.

8 JUDGE MOYNIHAN: Please do.

9 BY MR. STANISLAUS:

10 Q. Okay. From a technical perspective,
11 you are aware that the determination valuation of
12 a LAER technology can be done by the technical
13 determination that the levels of control are
14 actually being achieved in practice?

15 MR. KARMEL: Objection, same
16 objection.

17 JUDGE MOYNIHAN: We will allow the
18 question. And, again, we recognize there
19 is an overlapping here of a legal
20 conclusion and expert opinion. We're going
21 to limit this to the expert opinion and no
22 legal inferences should be drawn from it.

23 MR. KARMEL: If I may, your Honor,
24 can I place a standing objection to these
25 LAER questions if there is going to be a

1 succession of them on the same ground so we
2 don't interrupt each time?

3 JUDGE MOYNIHAN: Yes, it is
4 understood. Thank you.

5 MR. STANISLAUS: I'm not sure.

6 A. I guess my understanding would be to
7 technical feasibility of the technology, and a
8 determination of the technical feasibility of the
9 technology with specific reference to the project.

10 Q. Now, with respect to the
11 determination of the control of NOx, NOx, and
12 determination of the level of control technology
13 to secure a permit and, therefore, make -- meet
14 the determination of LAER, are you aware that that
15 determination can be made and one can reasonably
16 expect -- be expected for such pollution control
17 technology to work?

18 MR. KARMEL: Objection, compound.

19 MR. STANISLAUS: Can I ask the
20 witness whether he understands my question?

21 MR. KARMEL: He asked with respect
22 to this, with respect to that, are you
23 aware of something or other?

24 JUDGE MOYNIHAN: It's awkward.
25 Please rephrase it.

1 Q. Mr. Kurtz, are you aware that LAER
2 determinations can be made where a particular
3 technology can be reasonably expected to work in
4 practice?

5 A. Again, my understanding of LAER is
6 technical feasibility, specifically with respect
7 to the project, of the technology. And, again,
8 technical feasibility has to do with size,
9 operability, maintainability, and all the other
10 engineering aspects associated with that
11 technology.

12 Q. Mr. Kurtz, are you aware that in the
13 determination of LAER, that scaling up of
14 pollution control technologies has been done in
15 the past?

16 A. I have no firsthand knowledge, but I
17 can assume that it has been done.

18 Q. Okay. I refer you to Exhibit 9,
19 which was also referred to as Kurtz 7 -- I'm
20 sorry, Exhibit 9, which is part of your testimony,
21 attached to your testimony.

22 A. Kurtz 7, summary of space
23 constraints.

24 Q. Yes, I have it. Just for the record,
25 that is Exhibit 9.

1 Would it be a correct
2 characterization of that document that the intent
3 of that document is to go through the constraints
4 associated with the installation of SCONOX at the
5 East River plant and how you would resolve those
6 constraints?

7 A. No. That would be an incorrect
8 characterization.

9 Q. How would you characterize that
10 document?

11 A. This document was an evaluation of
12 the problems associated with placing the general
13 arrangement drawing that Alstom provided into the
14 existing plant at East River. It is a compilation
15 of the steel in the building that would be altered
16 as a result of that installation. It does not
17 purport that this could be done and, in fact, it
18 is my best engineering judgment that it is not
19 technically feasible to do this, and this is what
20 this document says. It does not give the results
21 of what this massive redesign would do, it just
22 presents what the redesign would entail.

23 Q. Okay. So it presents the various
24 pieces of the structural modification to conform
25 with the Alstom diagram?

1 A. Yes.

2 Q. Mr. Kurtz, I refer you to rebuttal
3 testimony, page 8, lines 14 through 16?

4 A. Yes.

5 Q. And you state that an opinion that
6 the commercial guarantees regarding performance
7 and emissions will be voided if SCONOX technology
8 would be used. In fact, that is a legal
9 conclusion of a potential contract between Con
10 Edison and a manufacturer; is that right?

11 A. I stand by the statement. It is my
12 professional opinion that all of the warranties
13 would be voided if, in fact, we went back to Vogt
14 and asked them to install a SCONOX system onto the
15 project.

16 Q. That opinion about a guarantee being
17 voided, which way is that guarantee provided to
18 Con Edison?

19 MR. KARMEL: Objection, your Honor,
20 which guarantee is being discussed here?
21 There are, I think, several emission
22 guarantees from different vendors.

23 MR. STANISLAUS: Okay. Let me take
24 him through it.

25 Q. In page 8 of your rebuttal testimony,

1 page 14 through 16, you refer to commercial
2 guarantees. Can you talk about what those
3 guarantees are?

4 A. Yes. The performance guarantee with
5 respect to steam generation capability, NOx limits
6 guarantees, CO limit guarantees, temperature of
7 steam leaving the HEPA recovery steam generator
8 guarantees.

9 Q. Those guarantees are set forth in --
10 how, between Con Edison and each one, for each one
11 of these guarantees?

12 A. We have a contract with Vogt for the
13 procurement of heat recovery steam generators in
14 that contract that are specific technical
15 specifications that are requirements of the heat
16 recovery steam generator.

17 MR. STANISLAUS: Your Honor, I move
18 that his testimony -- that sentence be
19 struck as providing a legal opinion.

20 JUDGE MOYNIHAN: Well, this is
21 similar to the questions we were discussing
22 earlier. There is an overlap here. You
23 have got professional opinions and legal
24 opinions. He has limited his answer to his
25 professional opinion, and I am not going to

1 strike it.

2 MR. STANISLAUS: Just to clarify,
3 your Honor. He's providing professional
4 opinion about a legal conclusion. He is
5 not providing professional opinion
6 regarding any faxes within his expertise.
7 Now, so that is the nature of my objection.

8 JUDGE MOYNIHAN: I agree it's a
9 conclusion he's drawing here, and he hasn't
10 given the details, but in any of these
11 situations, the law has to look to the
12 professional to get their professional
13 opinion in determining many of these types
14 of issues. We rely on those professional
15 opinions, and I will not exclude testimony
16 simply because they are professional
17 opinions.

18 Q. Mr. Kurtz, I refer you, in your
19 rebuttal testimony, to page 10, lines 14 through
20 17.

21 A. Yes.

22 Q. In your testimony, and correct me if
23 my characterization is incorrect, you essentially
24 conclude that in your engineering judgment, the
25 modifications that are necessary to install SCONOX

1 may not be technically feasible; is that correct?

2 A. No, that is incorrect. In my best
3 engineering judgment, such modifications,
4 structural modifications, summarized in the
5 annexed report, may not be technically feasible.
6 That's what this sentence says.

7 Q. You don't preclude because you have
8 not done a structural engineering analysis that,
9 in fact, if you had an engineering analysis, that
10 is not possible?

11 A. The engineering analysis has not been
12 done but, again, it is my best engineering
13 judgment that it would be technically infeasible
14 or very close to technically infeasible to do the
15 modifications that would be required in order to
16 house the SCONOX unit.

17 Q. You don't know one way or the other
18 if you had done the engineering analysis, we can't
19 state today that based on the results of the
20 engineering analysis, that the results of the
21 engineering analysis would preclude the
22 installation of SCONOX with the ERRP project?

23 A. Yes, I could say that.

24 Q. Okay.

25 A. Again, it's simple. If you remove

1 the steel, it's a big building steel, and this is
2 steel holding up the stacks and the roof. If you
3 remove that steel, you need to put new steel in to
4 transfer the load from the steel that you removed
5 to the new steel. However, the enormous size of
6 the SCONOX unit, which is the drawing provided by
7 Alstom with respect to the four-inch pressure
8 drop, would not provide you enough room to put new
9 steel in to transfer the load from the steel you
10 took out. These are four-inch members,
11 floor-to-ceiling members, which are holding up the
12 stack both from wind loads and seismic loads, and
13 also structural stability to the building. The
14 entire building is steel, the heart of the
15 building steel, that would be in the affected
16 area, that would be in the affected area where the
17 SCONOX would have to go.

18 Q. You can't state today whether the
19 items set forth in Exhibit 9 and the structural
20 modifications could not, in fact, occur; that
21 there could not be an engineering-based solution
22 that could address all those limitations set forth
23 in Exhibit 9?

24 A. I cannot conceive of any
25 engineering-based solution that would allow you to

1 install the SCONOX unit.

2 Q. You don't know that for certain?

3 A. I am 99.9 percent certain.

4 Q. You have not done an engineering
5 analysis?

6 A. No, I have not.

7 Q. To get a certain degree of confidence
8 for that conclusion you would have --

9 A. To get the other one-tenth of one
10 percent.

11 Q. What is your 99 percent based on?

12 MR. KARMEL: Object,
13 mischaracterizes testimony.

14 JUDGE MOYNIHAN: I think it was
15 one-tenth of a percent.

16 MR. STANISLAUS: 99.

17 MR. KARMEL: I believe it was 99.9
18 percent.

19 MR. STANISLAUS: Thank you.

20 A. That's where I got one-tenth of one
21 percent.

22 Q. What is that confidence level based
23 on?

24 A. It's based on a knowledge of the
25 building steel, the extensive analysis that we

1 needed to perform for the project. We have
2 analyzed every piece of steel in the building as
3 required by the New York City Department of
4 Buildings to install the project. In order to get
5 a building modification permit, each piece of
6 steel had to be analyzed, inspected the loads that
7 are on it now with respect to the loads that would
8 be imposed upon it upon the installation of the
9 new equipment. We have a pretty good idea of what
10 the loads are. We have a pretty good idea what
11 the critical steel components are. Again, it's my
12 engineering judgment. It was the proximity of the
13 heat recovery steam generator and the HRSG would
14 be to the stack steel; that there is no feasible
15 technical solution to put the SCONOX unit in the
16 area it would need to go for this project.

17 Q. But if you were told you had to
18 figure out that Con Edison had to figure out some
19 way of installing SCONOX at the plant, and you
20 wanted to refute that conclusion, you, in fact,
21 would have to do an engineering analysis to
22 support your position, you just can't base it on
23 engineering judgment; is that correct?

24 MR. KARMEL: Objection, compound,
25 ambiguous and argumentative.

1 JUDGE MOYNIHAN: I will allow the
2 question.

3 A. This engineering judgment is based on
4 a lot of analysis. The analysis was performed
5 with respect to what steel structure would be
6 impacted and what the existing stresses are on
7 those steel members. What wasn't performed is an
8 engineering solution, if there was one, which I
9 still don't believe there is, of how you would
10 radically modify that building. And there are
11 limits to every engineering solution, and if I was
12 pressed to say if there was an engineering
13 solution to this, I would say no.

14 Q. To identify those limits of the
15 engineering solution you, in fact, would have to
16 do an engineering analysis; isn't that correct?
17 You don't know those limits today?

18 MR. KARMEL: Objection, compound.

19 JUDGE MOYNIHAN: I understand.

20 MR. KARMEL: The interrogator keeps
21 asking one question and shifting gears in
22 midstream and asking another question.

23 JUDGE MOYNIHAN: You are doing that.

24 MR. STANISLAUS: Okay.

25 JUDGE MOYNIHAN: Let him answer the

1 question and then follow it up with another
2 question.

3 A. Would you like to repeat the
4 question, please.

5 Q. I have to remember.

6 You had stated that your analysis to
7 find engineering solutions may result in
8 identification of engineering limitations; is that
9 correct?

10 A. No. What I said was the analysis
11 that was performed to date has identified certain
12 serious engineering limitations.

13 Q. If you were to perform an
14 engineering -- a full-blown engineering analysis,
15 only in that analysis would you find limits or
16 solutions to address the limitations that you have
17 identified?

18 MR. KARMEL: Objection, compound.

19 Q. Did you understand the question?

20 JUDGE MOYNIHAN: Wait a minute.

21 Is it the fact that it had an "or" in
22 there, limits or solutions? It's
23 compound.

24 MR. KARMEL: If the answer is "yes"
25 or "no," whatever the answer is, the record

1 would be ambiguous as to this witness's
2 agreement or disagreement with that
3 question and for that reason, I believe
4 compound questions are prohibited and this
5 question shouldn't be permitted.

6 JUDGE MOYNIHAN: I am going to
7 sustain the objection simply on the form of
8 the question. Just rephrase it so we don't
9 have the confusion.

10 BY MR. STANISLAUS:

11 Q. If you were to perform an engineering
12 analysis, that analysis could identify engineering
13 limitations; is that correct?

14 A. We have performed an engineering
15 analysis that had identified engineering
16 limitations; that is the purpose of the report.

17 Q. I guess, clarify that for me. You
18 couched your testimony as stating, on page 10 of
19 your rebuttal testimony, as stating that you have
20 not performed a detailed structural engineering
21 analysis; is that correct?

22 A. What line are you looking at?

23 Q. I'm sorry. Page 10, rebuttal
24 testimony, line 14.

25 A. An engineering analysis was not

1 performed of the structural modifications that
2 would be required. An engineering analysis was
3 performed to see whether it was technically
4 feasible for the installation of SCONOX, which is
5 this. We did not perform an engineering analysis
6 of potential modifications; that, again, this is
7 determined to be technically infeasible.

8 Q. And you go on that such detailed
9 structural engineering analysis would need to be
10 performed to make a definitive judgment about
11 these structural modification; is that correct?

12 A. What it's saying, if you proposed --
13 if you could come up with some kind of structural
14 modification, which I don't believe you can, you
15 would have to do a detailed structural analysis of
16 the modification, which means you would have to
17 remodel the whole building with the steel, with
18 the steel that you moved out and the new steel in,
19 in order to see if that modification would again
20 be in conformance with building codes; however,
21 you would have to have some kind of modification
22 in mind as a starting point. I do not have any
23 modification in mind as a starting point;
24 therefore, you couldn't do an analysis.

25 Q. Mr. Kurtz, assuming that everything

1 else being equal between SCR and SCONOx,
2 performance, engineering limits, that both are
3 equal, what would be your view with respect to the
4 use of ammonia and SCR versus SCONOx?

5 MR. KARMEL: Objection, goes beyond
6 the scope of his direct testimony.

7 JUDGE MOYNIHAN: Sustained.

8 Q. Mr. Kurtz, again, I refer you to
9 rebuttal testimony, lines 19 and 20?

10 A. Same page?

11 Q. Yes. Page 10, lines 19 and 20?

12 A. Okay.

13 Q. In that you talk about some
14 construction-related impacts associated with the
15 reconstruction of the East River to enable SCONOx;
16 is that correct?

17 A. No. That is not what that sentence
18 says.

19 Q. Okay. Read that sentence.

20 A. That sentence says that one of the
21 underlying goals of the project was to use an
22 existing station so as to avoid adverse
23 construction-related impacts.

24 Q. If you could read the entire sentence
25 starting from line 17?

1 A. I'm sorry. In any event, the
2 reconstruction of the East River regeneration
3 station that would be required to accommodate the
4 SCONox equipment is neither reasonable in practice
5 nor in keeping to use an existing station so as to
6 avoid adverse construction-related impacts.

7 Q. If hypothetically the impact of SCR,
8 let's say the long-term operational impacts of SCR
9 were greater than the construction-related
10 impacts, do you have a view the companies or --
11 I'm sorry -- your view, on the choice of pollution
12 control technology?

13 MR. KARMEL: Objection. Goes beyond
14 the scope of direct.

15 MR. STANISLAUS: I disagree. The
16 witness has testified about the impacts of
17 SCONox and that there is a particular
18 impact related to SCONox, and that is one
19 of the factors that he cites as not
20 preferring SCONox. It's completely
21 appropriate to ask the hypothetical that if
22 there were impacts of one pollution control
23 technology versus the other, what would he
24 prefer.

25 MR. KARMEL: The question, if I may,

1 your Honor, would require, if I understand
2 it correctly, Mr. Kurtz to weigh that
3 various disparate unspecified impacts,
4 which could be numerous, air quality, water
5 quality, all sorts of impacts against each
6 other, to make some type of determination,
7 the weighing of all those various impacts,
8 associated with different pollution control
9 technology, in my opinion, is beyond the
10 scope of his direct testimony.

11 JUDGE MOYNIHAN: Excuse me.

12 (Judges Moynihan and O'Connell
13 confer.)

14 JUDGE MOYNIHAN: Sustained.

15 MR. STANISLAUS: Maybe I will try it
16 smaller and then wait for the objection.

17 Q. Mr. Kurtz, wouldn't you agree that
18 construction-related impacts are short-term in
19 nature?

20 A. Yes, I would.

21 Q. Wouldn't you agree that impacts
22 associated with the operation of a plant are
23 long-term in nature?

24 MR. KARMEI: Objection, which
25 impacts are being referred to here?

1 Q. Any impact associated with the
2 generation of a power plant, air quality impacts?

3 A. Yes, I would.

4 Q. Everything else being equal, would it
5 be your preference to avoid the longer term
6 impacts of air quality versus the shorter term
7 impacts of construction-related impacts?

8 MR. KARMEL: Objection, beyond the
9 scope of direct examination, and also
10 incompletely stated hypothetical that would
11 be impossible to answer.

12 JUDGE MOYNIHAN: I am going to
13 sustain the objection. You are going
14 beyond the scope of his direct. He deals
15 with construction-related impacts; you keep
16 trying to tie it into longer term impacts,
17 and it is just --

18 MR. STANISLAUS: And the Siting
19 Board is going to have to make an ultimate
20 determination of a variety of --

21 JUDGE MOYNIHAN: -- impacts on
22 various pieces of equipment on the entire
23 project. This witnesses is testifying
24 regarding a particular impact regarding
25 SCONOX, and I am trying to elicit from him

1 that if there was hypothetically an impact
2 of -- that was avoided with respect to
3 SCONOX, we believe it's pertinent for your
4 finding and the Siting Board's findings.

5 JUDGE MOYNIHAN: It wouldn't be
6 through this witness. The long-term
7 impact, you would have to deal with the
8 long-term impact witnesses.

9 BY MR. STANISLAUS:

10 Q. Mr. Kurtz, I again refer you to
11 Exhibit 9, which is also your Exhibit 7?

12 A. Okay.

13 Q. And the limitations that you cite in
14 this document relate to Con Ed's proposal for the
15 ERRP, that is two CDGs two HRSGs and the
16 associated equipment; is that correct?

17 A. Yes, it does.

18 Q. If only one CDG and HRSG was going
19 in, wouldn't it be correct that in part some of
20 these limitations may, in fact, be avoided?

21 A. They may or may not, depending on the
22 ultimate configuration of one of the project
23 units.

24 Q. But, in fact, there would be some
25 space savings or less space used by the project if

1 one train, and I mean one train as a CDG-HRSG
2 connection were not placed into the East River
3 plant?

4 A. Yes. You would save approximately
5 half the space.

6 Q. Mr. Kurtz, if you are limited to one
7 train, and you had acknowledged that there would
8 be significant space limitations, could you
9 conceive of or is it -- could you conceive of a
10 configuration that avoids the facility
11 modifications you identified in Exhibit 9?

12 A. No. Because the way the project is
13 laid out now, with respect to foundation
14 requirements for the combustion gas turbine, with
15 respect to stack location, that the orientation
16 with the 90-degree turn between the combustion gas
17 turbine and the HRSG is the only one that is
18 really technically feasible for this project, so
19 instead of having two identical project units, you
20 would have one.

21 So therefore, you would not utilize
22 the other space because it would not be
23 technically feasible with respect to engineering
24 requirement specific to stacks flow modeling and
25 combustion gas turbine placement on foundations;

1 therefore, you would still have the space
2 constraints with the unit, with the one unit as
3 you would for the two units.

4 Q. Con Ed had a feasibility study
5 performed by Raytheon; is that correct?

6 A. Yes, we did.

7 Q. And that -- the conclusion of that
8 was resulted in the current configuration
9 contained in the application; is that correct?

10 A. No. The current configuration really
11 looks nothing like the feasibility study.

12 Q. Okay. The tight space requirements
13 identified in the application, those were based on
14 the spatial requirements of the two trains; is
15 that correct?

16 A. Correct.

17 Q. Do you know for certain that the
18 90-degree turn you identified could change if you
19 saved approximately half the space that you had
20 just stated?

21 A. If we were to design the project with
22 only one project unit, that is the configuration
23 that is now would be the configuration that we
24 would use, due to the constraint that we had
25 cited previously, again, combustion turbine

1 foundation requirements, height of the existing
2 building. Again, without really redesigning the
3 roof, you need the 90-degree turn in order to fit
4 the GE frame 7 in, have it operable and
5 maintainable, and have the HRSG in proximity to
6 the stack, so as to stay within 20-inch design
7 basis back pressure allowed for the combustion
8 turbine. When all of these technical requirements
9 are properly considered into the design, and we
10 have taken a long time, and it was very difficult
11 to do because of space constraints in the
12 building, this I feel is the only design that will
13 work.

14 Q. Okay. You have acknowledged that you
15 would be saving approximately half the space with
16 one train. Wouldn't you agree it's theoretically
17 possible with the increased space requirements you
18 have identified for SCONOX that there could be an
19 engineering solution which takes advantage of the
20 space saved?

21 MR. KARMELE: Asked and answered, and
22 argumentative.

23 MR. STANISLAUS: I'm not sure it was
24 asked and answered.

25 JUDGE MOYNIHAN: I think he said on

1 a number occasions he could do it.

2 MR. STANISLAUS: I kind of asked the
3 question related to SCONOX. I asked him
4 with respect to reconfiguration of the
5 90-degree turn.

6 JUDGE MOYNIHAN: I think you were
7 talking about SCONOX.

8 MR. STANISLAUS: This is the first
9 time I asked a question about SCONOX.

10 THE WITNESS: We looked at quite a
11 number of alternatives, some involving
12 90-degree turns, your Honor, a few
13 involving 180-degree turns, and a number
14 involving no turns. There is no way,
15 because of the height considerations,
16 foundation considerations, that you can fit
17 one straight train without a turn into the
18 building where we are presently going to
19 house the East River Power Project. It was
20 absolutely essential to have a 90-degree
21 turn.

22 Q. It is still fair to say you have not
23 performed the analysis of one train and the
24 addition of SCONOX on that one train?

25 A. We have not performed that specific

1 analysis, no.

2 Q. And that wasn't the charge of
3 Raytheon when it conducted its feasibility study?

4 A. Oh, no.

5 Q. Okay.

6 MR. STANISLAUS: Thank you, your
7 Honor.

8 JUDGE MOYNIHAN: Thank you.

9 MR. LANG: Your Honor, if I may, I
10 apologize. I have to make a correction
11 with Exhibit 48 that we had marked.

12 Apparently I had grabbed, there is
13 copies of a number of different pictures.
14 The pictures that I had handed out to all
15 the parties are a slightly different angle
16 than the actual exhibit.

17 What I would like to do is just
18 substitute, keep the original exhibit that
19 he testified to the same, and just provide
20 everyone the actual comparables to it. In
21 other words, your copy isn't an exact copy
22 of 48. It's very close but not exactly the
23 same.

24 JUDGE MOYNIHAN: Do you need the
25 original back?

1 MR. LANG: She needs it.

2 JUDGE MOYNIHAN: Actually, we don't.
3 We can use a copy.

4 MR. LANG: We need the originals.
5 Why don't you give her a copy to mark.

6 JUDGE MOYNIHAN: Okay. We are
7 ready.

8 Mr. Little, do you have any
9 cross-examination?

10 MR. LITTLE: I do not.

11 JUDGE O'CONNELL: No, your Honor.

12 JUDGE MOYNIHAN: Redirect?

13 MR. KARMEL: I have no redirect.

14 JUDGE MOYNIHAN: Thank you,
15 Mr. Kurtz. You are excused.

16 (Whereupon, the witness was excused.)

17 JUDGE MOYNIHAN: Is there anything
18 further before we adjourn?

19 We will be in adjournment until ten
20 o'clock Monday.

21 (Whereupon, at 5:03 p.m., the hearing
22 was adjourned.)

23

24

25

C E R T I F I C A T E

I, BONNIE ATELLA, a Registered
Professional Reporter and notary public within and
for the State of New York, do hereby certify that
I reported the proceedings in the within-entitled
matter on April 20, 2001, and that this is an
accurate transcription of what transpired at that
time and place.

A handwritten signature in cursive script that reads "Bonnie Atella". The signature is written in dark ink and is positioned above the printed name.

BONNIE ATELLA, RPR