NEW YORK STATE BOARD ON ELECTRIC GENERATING SITING AND THE ENVIRONMENT

DEPARTMENT OF PUBLIC SERVICE

Case 01-F-0761 - Application by KeySpan Energy Development Corporation for a Certificate of Environmental Compatibility and Public Need to Construct and Operate a 250 Megawatt Combined Cycle, Combustion Turbine Electric Generating Facility to be Developed in the Town of Huntington, Suffolk County

AND

DEPARTMENT OF ENVIRONMENTAL CONSERVATION

Case No. 1-4726-01500/00001 - in the Matter of Application for a State Pollutant Discharge Elimination System Permit Pursuant to Environmental Conservation Law (ECL) 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., and Air Pollution Control permits consisting of a Preconstruction permit and a Certificate to Operate, pursuant to ECL Article 19 and 6 NYCRR Parts 200 et seq.

MINUTES OF EVIDENTIARY HEARING held at the Offices of Department of Public Service, One Penn Plaza, New York, New York, on Wednesday, August 14, 2002, commencing at 9:50 o'clock a.m.

BEFORE: ROBERT R. GARLIN,
Presiding Examiner

KEVIN J. CASUTTO,
Associate Examiner

For DEPARTMENT OF PUBLIC SERVICE STAFF:

Three Empire State Plaza
Albany, New York 12223
BY: KIMBERLY A. HARRIMAN, ESQ.
KEVIN LANG, ESQ.

For SOUTH HUNTINGTON ALLIANCE FOR RESPONSIBLE ENERGY:
SIVE PAGET & RIESEL, P.C.
460 Park Avenue
New York, New York 10022
BY: MARK A. CHERTOK, ESQ.
KATE SINDING, ESQ.
JAY EVERSMAN, ESQ.

For KEYSPAN ENERGY DEVELOPMENT CORPORATION:
ARNOLD & PORTER, ESQS.
399 Park Avenue, 14th Floor
New York, New York 10022
BY: MICHAEL B. GERRARD, ESQ.
ANDREW S. RATZKIN, ESQ.

* * *

JUDGE GARLIN: On the record.

I believe that the first panel indicated for this morning is the witnesses Agresti, Alexander and Smith, for the applicant.

Mr. Smith, you remain under oath.

J E F F R E Y S M I T H, recalled as a witness, having been previously duly sworn, resumed, was examined and testified as follows:

JUDGE GARLIN: The other witnesses, please raise your right hand.

M A R T I N A L E X A N D E R,

A N T H O N Y A G R E S T I, called as witnesses, having been first duly sworn, were examined and testified as follows:

JUDGE GARLIN: Please be seated, and each of you please state your name and business address.

MR. ALEXANDER: Martin Alexander, 63 Passaic Avenue, Summit, New Jersey.

MR. AGRESTI: Anthony Agresti, TRC Environmental, 1200 Wall Street West, Lyndhurst, New Jersey.

MR. SMITH: Jeffrey Smith, KeySpan Energy Development Corporation, 201 Old Country Road,

Melville, New York.

MR. RATZKIN: May I proceed?

JUDGE GARLIN: Yes.

DIRECT EXAMINATION

BY MR. RATZKIN:

MR. RATZKIN: Mr. Smith, have you reviewed the prefiled rebuttal testimony of Anthony Agresti, Martin Alexander and Jeffrey Smith dated July 24th, and the testimony dated July 30, 2002?

MR. SMITH: Yes, I have.

MR. RATZKIN: Do you have any corrections or modifications to the testimony that you wish to make at this time?

MR. SMITH: No, I don't.

MR. RATZKIN: Mr. Agresti, have you reviewed the rebuttal testimony of Anthony Agresti, Martin Alexander and Jeffrey Smith, dated July 24th and July 30, 2002?

MR. AGRESTI: Yes, I have.

MR. RATZKIN: Do you wish to make any modifications or corrections at this time?

MR. AGRESTI: No, I do not.

MR. RATZKIN: Mr. Alexander, have you reviewed the rebuttal testimony of Anthony Agresti,

Martin Alexander and Jeffrey Smith, dated July 24th and July 30, 2002?

MR. ALEXANDER: Yes, I have.

MR. RATZKIN: Do you have any corrections or modifications to that testimony that you wish to make at this time?

MR. ALEXANDER: No, I do not.

MR. RATZKIN: Your Honors, I move to have the subject testimony submitted into evidence.

JUDGE GARLIN: The rebuttal testimony of witnesses Agresti, Alexander and Smith will be copied into the record as if given here today orally.

(Continued on following page.)

KEYSPAN ENERGY DEVELOPMENT CORPORATION

REBUTTAL TESTIMONY
OF
ANTHONY C. AGRESTI
MARTIN ALEXANDER
JEFFREY L. SMITH

IN SUPPORT OF SECTION 11.0 OF THE
SPAGNOLI ROAD ENERGY CENTER PROJECT
ARTICLE X APPLICATION
Case 01-F-0761

July 24, 2002

Q. Please state your names and business addresses.

A. My name is Anthony C. Agresti, and my business address is 1200 Wall Street West, Lyndhurst, New Jersey.

A. My name is Martin Alexander, and my business address is 63 Passaic Avenue, Summit, New Jersey.

A. My name is Jeffrey L. Smith, and my business address is 201 Old Country Road, Melville, New York.

Q. Mr. Agresti, have you previously provided testimony in these proceedings?

A. Yes. I have provided pre-filed testimony that was included as part of the Article X Application that was filed on January 28, 2002. My educational background and professional qualifications are set forth in that testimony.

Q. Mr. Smith, have you previously provided testimony in these proceedings?

A. Yes. I have provided pre-filed testimony that was included as part of the Article X Application that was filed on January 28, 2002. My educational background and professional qualifications are set forth in that testimony.

Q. Mr. Alexander, please state your position and the duties of your employment.

A. I am a sole proprietor providing consulting services in the area of noise and vibration measurements, noise control impact assessment, noise control and architectural acoustics.

Q. How are you qualified to perform your employment duties?

A. I have a bachelor's and master's degree in Mechanical Engineering and have worked in the area of acoustics and vibration for the past 30 years, both as a consultant and an application engineer and market manager for Bruel & Kjaer. I

have provided testimony before planning boards throughout the state of New Jersey regarding noise impact from commercial and industrial projects and have testified in New York City Housing Court, Maryland and New Jersey Public Utilities Commission Hearings, regarding noise impact of projects, and in several court cases. I have provided noise control consulting services for Con Edison, General Public Utilities, Baltimore Gas and Electric, and the Power Authority of the State of New York, among others. I have taught acoustics and noise control courses for The Center for Professional Advancement, and for Bruel & Kjaer, and am a member of the Acoustical Society of America Noise Committee.

Q. Does your curriculum vitae, which is attached as Exhibit __ (AAS-1), fairly and accurately represent your professional experience?

A. Yes.

Q. Please describe your role in the Spagnoli Road Energy Center project.

A. I was retained by KeySpan Energy Development Corporation to provide expert consulting and testimony on noise issues. While I did not play the primary role in the noise impact analysis for the site, I do provide input to ensure that the modeling and evaluation are a thorough and accurate description of the existing and eventual conditions.

Q. Are you supporting a portion of the application of KeySpan Energy Development Corporation for a Certificate pursuant to Article X of the New York State Public Service Law ("Application") as a member of this witness panel?

A. My testimony supports Section 11 of the Application.

Q. To the panel: have you reviewed the testimony of Eric J.W. Wood and Beth Constantino?

A. Yes.

Q. Is the noise modeling analysis presented in the Article X Application a realistic estimate of project noise or an overly conservative estimate?

A. The modeling analysis conducted for the Application is extremely conservative in nature.

Q. Could you please explain what makes the analysis conducted for the Application so conservative?

A. The initial modeling analysis for sensitive receptor locations assumed that all facility sources were located on the property, and that each source propagated noise out in all directions, with absolutely no credit taken for the noise shielding which would be provided by facility buildings or other structures. Further, the model assumed that the condensate pumps, which are major noise sources, would be outdoors, when in reality, they are designed to be within an enclosure. In particular, the proposed turbine building will be a large noise barrier, for which no credit was taken in the initial modeling. The only barrier effect considered in the modeling was for the existing berm along the LIPA transmission line, and this credit was only taken for the SUNY campus buildings.

Q. Could you please explain why the Applicant chose to use such a conservative noise modeling study for the Application?

A. Yes. The modeling analysis conducted for the Application, for the offsite receptors, was designed to demonstrate that, even with extremely conservative

assumptions, noise generated by the proposed project would comply with the NYSDPS required modified CNR rating of "C" or better at any residential sensitive receptors and at the nearest SUNY campus buildings. A more refined analysis would yield only lower noise levels.

Q. Mr. Agresti, have you had occasion to perform an additional or more refined noise analysis since the Application was submitted?

A. Yes. The additional noise analysis, including a technical report describing the modeling, is attached to this testimony as Exhibit __ (AAS-2).

Q. Can you please describe the subsequent analysis.

A. I have since remodeled the facility noise sources, using the same input data as presented in the Application, with the following exceptions. I re-calculated turbine building wall noise, as a function of interior noise propagated through the walls. I also updated the building wall material to the more massive walls currently proposed for the project, rather than the thin wall material conservatively assumed in the original analysis, by including the planned transformer wall fire barriers. I also assumed that the condensate pumps would be inside an enclosure.

I also used a different noise model, called CadnaA, which is widely used by other noise consultants and engineers in performing noise studies. This model is able to account for all buildings and structures that are entered into it: both the barrier effect and the reflections that occur from the structures.

With regard to barrier and shielding effects, I took credit for all the proposed buildings and structures, including the transformer fire walls, and retained the transmission line berm.

Q. Did the refined analysis assume any mitigation proposed by the Applicant since the Application was filed?

A. Yes. The Applicant plans to construct a fourth transformer noise barrier wall just east of the main transformer. The fourth transformer barrier was assumed to be located 40 feet east of the transformer tanks, reaching 25 feet high, and 75 feet long. This change was accounted for in the refined analysis as well.

Q. Are the assumptions in the refined analysis nonetheless conservative?

A. Yes.

Q. What conservative features did you retain in the model?

A. In order to retain conservative estimates, I configured the model to treat all the ground surfaces as hard, acoustically reflective surfaces, when in reality, the vegetation and sand/soil will act as partially absorptive surfaces. I did not account for any foliage or other vegetation which would also act to reduce noise. In addition, when I configured the model, I introduced the assumption that all structures are noise-reflecting surfaces

Q. Did the refined analysis include the addition of any new noise sources?

A. Yes, several sources were added to the model. These include a fin fan cooler adjacent to the air-cooled condenser, a cooling water module inside the turbine building and the turbine compartment vent fan, which was exhausted through the turbine building roof.

Q. What were the results of the refined modeling analysis?

A. The refined analysis revealed that lower, and in some cases, significantly lower, noise levels are projected at all locations.

Q. To the panel: turning to the testimony of Eric Wood, Mr. Wood claimed that the proposed facility would not meet the Huntington lot line noise performance standards. Do you disagree?

A. No, that's why Applicant is seeking a waiver under PSL § 168.

Q. Mr. Wood testified that the proposed facility could more closely meet the lot line standards by using the "quietest plant design and equipment that are commercially available and practicable regardless of whether it would achieve the property line standard." He goes on to state: "I do not find anything in the Application to indicate that KeySpan has done or will do this." Do you believe that this statement is fair and accurate?

A. No.

Q. Why not?

A. In Mr. Wood's view, the Applicant should utilize the quietest equipment "practicable." Similarly, he interprets the Draft Certificate as requiring the Applicant to comply with Huntington's lot line standards to the "fullest extent practical." Even assuming his interpretation is correct, use of the terms "practicable" and "practical" indicates that economic considerations are relevant. A measure that might be technically or technologically possible may not be warranted because it is impractical or unreasonable.

Q. How common is it for economic considerations to be weighed as a factor in the determination of appropriate noise mitigation measures?

A. It is quite common for economic and practical considerations to be considered for determination of appropriate mitigation measures. Even where it is technically possible to meet a noise specification, often the marginal benefit of a measure is deemed insufficient to outweigh other considerations, and other measures, such as variances, are sought. For example, it would be unreasonable to require an applicant of a project to require noise control that would add 20% to the cost of the project to meet a regulatory limit, if it was clear that no one would be impacted should the regulatory limit not be met. If a project site bordered on an industrial site, it would be impractical to meet a limit specified for protecting the public health and welfare, if no residential uses would be impacted by the noise. In industrial noise cases, cost of engineering noise control is often considered in the decision of whether to reduce sound levels or use a less costly hearing conservation (i.e., hearing protection and worker education) program.

Q. Has the Applicant considered all "practicable" or "practical" measures to attempt to attain the Huntington lot line standard?

A. Yes. Note that the human ear can generally discern changes in noise levels of about 3 dB or greater. This must be kept in mind when considering whether the benefit of a change in equipment or other design changes is warranted or reasonable.

As set forth in the Application and further evaluated in the refined modeling analysis, Applicant has investigated the quietest air-cooled condenser

commercially available (equipped with so-called "stealth" fan blade technology), but has concluded that the noise level improvement derived though use of this equipment will not be noticeable to the human ear, and will not allow the proposed facility to meet the lot line standards. Where the benefit attained is warranted, Applicant has committed to design and equipment that will make a significant difference in noise levels. Applicant has committed to placing noise generating components, such as the condensate pumps, the combustion turbine, the HRSG and the gas compressor station, indoors in a significant, acoustically treated building, and to installing a fourth wall in front of the transformer. In addition, the HRSG stack will have a significant silencer and the turbine air inlet will also have a silencer. Applicant has also committed to installing sound absorbing equipment in the turbine building walls. As to any further changes, quieter equipment would not be practical, considering the marginal benefit attained.

Q. Please explain.

A. Use of the ACC equipped with "stealth" fan blade technology would achieve a level of 32 dBA at 1800 feet. By contrast, the ACC currently modeled for the facility achieves a level of 35 dBA at 1800 feet. Recall that the human ear does not usually perceive changes less than 3 dBA. As set forth in Exhibit __ (AAS-2), replacing the ACC modeled in the Application with the lower noise unit would result in no significant benefit, either under the CNR analysis, or for the cumulative increases at any residential locations. There would be a one dBA or less improvement in total project noise at all locations. Improvements in

cumulative late night noise (project plus background) would be limited to 1 dBA or less (and for most locations 0 dBA) at all locations.

Q. Mr. Wood also testifies that the Applicant should have modeled noise sources such as turbine building ventilation fans, water treatment equipment, steam lines and drains, the turbine building roof, the station service transformer, the combustion turbine generator compartment exhaust fans, the load compartment exhaust fans, and the "ACW" cooler (presumably the cooling water module). What is your response to his suggestion?

A. As noted previously, the refined modeling analysis included many of these components. Some of the sources noted, including the service station transformer, would be insignificant noise sources. Directivity effects for roof generated noise would act to render this source insignificant, when compared to noise transmitted horizontally through the vertical building walls.

Q. In your view, then, has the Applicant committed to use the facility components that will deliver the greatest noise reduction practical?

A. Yes.

Q. Would placement of the proposed facility on a 50 acre parcel enable the proposed facility to meet Huntington's lot line standards?

A. No. As set forth in Exhibit __ (AAS-2), an analysis was conducted assuming the parcel site was increased to 50 acres. The resulting estimated 4 dBA reduction would still not achieve compliance with the standard.

Q. Mr. Wood claimed that the Extended Stay should be treated as a sensitive receptor, and as such, the modified CNR analysis should be applied there. He has

represented in his testimony that, using the background data presented in the Application, and the results of the Applicant's modeling analysis (which, as the panel previously testified, was overly conservative), he obtained a rating of "D", which exceeds the minimum rating of "C" required by NYSDPS. In the first instance, Mr. Alexander, can you please describe the composite noise rating ("CNR") method?

A. The original CNR model was first described in an article published in Noise Control magazine (an Acoustical Society of America journal) in 1955. Exhibit __ (AAS-3). Authored by Rosenblith, Stevens and Bolt of BBN, it became a common method of assessing a community's reaction to noise, especially after being described in Cyril Harris's Handbook of Noise Control. I have found over the years that the CNR is an accurate method of predicting community response to noise and evaluating reasonableness of noise complaints. The technique rates noise in terms of its octave band spectral content and then adjusts these ratings using several factors relating to the community's past exposure to the sound, the sound's duration, seasonal and day variations, the noise's "character," and noise levels in the community in the absence of the source under study. These adjusted ratings (letters are used for the different ratings) are then used to predict the expected community response to the noise. The relationship between the adjusted ratings and community response are arrived from a model relating the two, trained, as it was, using actual case histories for which community response and sound exposure data were known.

Q. What does the term sensitive receptor mean under the CNR method?

A A sensitive receptor is a location where people habitate. As described in the original CNR document, impact is evaluated "out of doors in the vicinity of residences." While the vast majority of areas considered as noise sensitive receptors are residential, there are other possible sensitive receptors, for example, parkland where people expect to experience solitude and/or an absence of the noise of our society, such as national parks (but not playgrounds or ballfields); and locations where low sound levels are important to proper functioning in the facilities, such as schools (where communication is critical), and hospitals.

Q. In your opinion, would a hotel or a commercial office be appropriately designated as sensitive receptors under the CNR method?

A. No.

Q. Why not?

A. Clearly a commercial office would not be designated as a sensitive receptor, since it does not encompass the activities of residential developments, and is certainly not used during the times of day when noise has its greatest potential impact. There are typically only indoor activities at a commercial facility, unless it includes loading docks or outdoor storage and loading, which will typically be dominated by the noise it produces itself. Commercial properties are almost exclusively air-conditioned and so open windows are not a factor in exposing indoor workers to exterior noises. In fact most modern office buildings do not have operable windows. Further, few office workers work during the late night hours, when noise sensitivity is often greatest. The latter is also related to the fact that noise impact is most common where outdoor leisure activities are common

and during the sleeping hours, where noise can interfere with sleeping. Neither of these activities are expected at commercial facilities.

Q. In your view, do the Extended Stay or Arrow office locations qualify as "sensitive receptors" under CNR analysis?

A. No. The CNR analysis was designed to be applied to residential uses, where people live year round and spend time out of doors and other sensitive uses, such as schools and parkland as described above. The Extended Stay, while it may be used for a few weeks or perhaps months at a time by someone, does not fit this category. Thus, it is not properly considered a sensitive receptor under CNR analysis. For the same reasons, it is even more apparent that a commercial facility like the Arrow offices does not qualify as a sensitive receptor.

Q. Mr. Agresti, have you, in any event, conducted a modified CNR analysis of your own for the Extended Stay?

A. Yes. I used the results of the latest, more refined noise modeling I conducted, and the results of the background noise monitoring, to calculate a CNR rating for the Extended Stay. Based on a site visit, it was determined that the facility has no pool or other outdoor amenities. Accordingly, I applied a correction factor for mainly indoor use (e.g., wintertime correction). The resulting analysis reveals that a late night rating of "B", with at least a one dB margin in each octave band, would result. See Exhibit __ (AAS-2). This is below the CNR rating that would be required if the Extended Stay were considered to be a sensitive receptor.

Q. What are the nighttime noise levels at the Extended Stay?

A. The average measured L_{90} nighttime level is 43 dBA. The modeled facility level at this location is 44dBA under both refined model scenarios.

Q. Regarding the SUNY campus, did you re-evaluate the CNR rating there using the new modeling results.

A. Yes, I did. The lower noise levels from the refined modeling reveal that there is at least a one dB margin in each octave band for the SUNY Campus dormitory under the first refined model scenario and a minimum 2 dB margin with the air cooled condenser employing the "stealth" fan blade technology. Further, I re-evaluated the background for this location. (Note that, to be conservative, we modeled the closest SUNY building as a dormitory. In fact, according to a SUNY map, the modeled structure is actually an administrative building, presumably with daytime use only. The actual dormitories are located further away.)

The background correction is part of the CNR analysis. The measured ambient late night octave band levels, without the project, are entered onto data plots. A correction factor is then obtained from these plots. Figure E-17 of Appendix 11A is the background correction for the SUNY dormitory. The final CNR rating is the initial rank plus the background correction. While we initially took a correction of +1 to remain conservative (and the modeled "B" initial rank +1 = C for the campus building), the curve really fluctuates between 0 and +1. The background CNR correction is therefore actually between a "0" and a "+1", not simply the "+1" I conservatively used in the Application CNR analysis. Using the more realistic "0" to "+1", the final rating for the SUNY "dormitory" is actually between a "B" and a "C" under both refined model scenarios.

Q. Did you identify any other changes in noise levels as a result of your refined analysis?

A. Improvements to the calculated increases in late night levels were realized at many locations. For example, the increase at Carnation Drive drops from 3 dBA in the Application to 0 dBA with the refined modeling. While the refined modeling revealed lower calculated noise levels, no improvements in the modified CNR ratings were realized.

Q. Mr. Wood maintains that a safety margin of 3 dB should be used for the analysis. Mr. Agresti, what is your opinion of that margin?

A. Safety margins are an important part of the actual design of the project. The safety margin which the final noise designer will use when designing the project will be at that designer's discretion. The designer will obtain noise guarantees from equipment vendors and he/she must use whatever margin he/she is comfortable with in guaranteeing that the noise limits will be met.

The analysis I conducted here, which is typical during the licensing phase of a project, is based, to the extent possible, on data estimates from manufacturers. However, because the equipment has not been purchased, no guarantees are available from manufacturers. The purpose of this noise modeling study and Application are to demonstrate that it is possible to design the project to comply with the acoustic design goals set forth in the Application. The final noise designer must achieve these limits, and it is at that time that the designer will apply the safety margin he/she believes is necessary to guarantee performance.

Q. Mr. Alexander, do you understand the basis for Mr. Wood's opinion that a safety margin of 3dB is appropriate?

A. No. I do not believe that such a margin is appropriate or necessary here. Certainly, there is no legal requirement. Moreover, I am not aware of an industry or professional guideline that supports such a margin. As Mr. Agresti explained, the assumptions in the model are based on manufacturer's guarantees – it is therefore a reasonable assumption that they have built in their own safety margins. If they do not, the risk is theirs. My own practice, wherever possible, is to design for noise levels to be at least one dB below requirements. But I reiterate, that this is something done when possible. In any event, the results of the refined model indicate a minimum of at least a one dB margin at all sensitive receptors.

Q. Mr. Agresti, in addition to the refined noise modeling that you conducted, did you do any further background noise monitoring in the area, to further quantify existing ambient noise levels?

A. Yes. Additional noise monitoring programs were conducted at neighboring, non-residential uses, including the Austin Travel building and the Arrow Electronics building adjacent to the property line of the proposed facility site, and at the Extended Stay.

Q. What did the additional noise monitoring programs reveal?

A. Additional noise monitoring was conducted on June 4, 2002. The results of that monitoring revealed slightly higher background noise levels than those measured

during the November 28, 2001 program presented in the Application, likely due to natural sounds such as insect and bird noise.

Q. Regarding daytime ambient levels at Arrow Electronics, Austin Travel and Extended Stay, what are the average ambient daytime noise levels TRC measured there, based on all the noise data collected?

A. The average L_{90} daytime levels, respectively, are 48 dBA, 52 dBA and 53 dBA.

Q. Finally, with respect to Mr. Wood's testimony, does the Applicant expect at this time that construction of the proposed facility will involve pile driving?

A. No.

Q. Would the Applicant be willing to accept a permit restriction precluding the use of such equipment during facility construction?

A. Yes.

Q. Turning to the testimony of Beth Constantino, Ms. Constantino states that the noise emitted from the proposed facility "will clearly make it significantly less appealing to sit outside on the [Arrow] terrace, or anywhere else for that matter." What is your response to this statement?

A. First, Ms. Constantino's testimony addresses the noise from the commissioning of the steam plant. Much of the startup activities may not even occur during the period when Arrow's picnic tables are used, so it may be irrelevant. Moreover, if another type of facility (office or industrial building) was built on the lot there could be similar, temporary construction noise for a period as well.

Regarding noise during project operation, measured background levels near the Arrow building during the day were 44 dBA based on data presented in

the Application, which were collected during a cold weather month. Additional background monitoring collected in June 2002, when insect and other natural sounds are more prevalent, resulted in higher noise levels. Warm weather months are when the Arrow picnic would more likely be used. As testified earlier, the average (cold and warm weather months) background level near the Arrow building was 48 dBA. The calculated project noise level, based on the Application, is 48 dBA at Arrow. Moreover, this level is for a point near the property line. The Arrow picnic area, however, is on the south side of the building. As such, both project and background noise would be similarly shielded, resulting in lower actual noise levels.

Note that relaxed speech at a distance of one meter is not affected until background sound levels reach 54-56 dBA, which is greater than the modeled level.

Q. Mr. Alexander, have you had an opportunity to review the lot line noise performance standards contained in the Town of Huntington Zoning Code?

A. Yes.

Q. In view of your experience and research, how do these performance standards compare to the requirements of other localities?

A. The requirements of the performance standards in the Huntington Zoning Code are relatively unusual in that they are specified at the emitter's property line and not the receiver's property line. The vast majority of regulations, including those of many municipalities on Long Island, provide for different allowable emission levels depending upon the character of the receiving property where there may be

impact. Typically, the allowable level at a commercial receiving property is substantially higher than those for a residential receiver, in recognition of the higher sensitivity to noise in residential areas. The Huntington requirements, while strict, though not inappropriate for residential receivers, is exceptionally strict for a commercial receiving property. A review of regulations for municipalities in Long Island reveal that many are only "nuisance" codes, but that those with specific allowable sound levels, generally allow for much higher levels at commercial receiving properties. A sample is provided below. All codes were reviewed at the website of General Code Publishers of Rochester, New York. (www.generalcode.com).

- Brookhaven. Industrial emitter to commercial receiver is 65 dB(A), 24 hours per day (Code of the Town of Brookhaven, New York, v. 69 para. 50-12 through 50-13).

- Great Neck. 65 dB(A) at commercial receiving properties 24 hours per day (Code of the Village of Great Neck, New York, v. 82 ch. 130-2, para. N)

- Easthampton. 70 dB(A) daytime, 55dB(A) nighttime at receiving commercial property (Code of the Town of Easthampton, New York, v. 8 ch. 185-3, para. B)

- Glen Cove. 70 dB(A) at commercial receiving properties 24 hours a day (Charter and Code of the City of Glen Cove, New York, v. 19 ch. 196-12)

- Sag Harbor. 70 dB(A) daytime 55 dB(A) nighttime at commercial receivers (Code of the Village of Sag Harbor. New York, v. 115 ch. 33.3, para. B)

- Westhampton Beach. 65 dB(A) day 55 dB(A) nighttime for commercial receivers (Code of the Village of Westhampton Beach, New York, v.57 ch. 110-11)

This is the most common and sensible arrangement in community noise regulations, that is, the allowable sound levels are a function of the receiving property or zone. Or in other words, the allowable sound levels are a function of their potential for impact. A review of a broader range of 30 standards for communities outside of Long Island indicates that the mode for allowable daytime and nighttime sound levels is 65 dB(A) at commercial receiving properties. All New Jersey municipalities with which I am familiar have similar ordinances (Bayonne, Boonton, Brant Beach, Brigantine, County Wide, Cranford, Denville, Edison, Egg Harbor, Fort Lee, Franklin, Garwood, Glen Rock, Hanover, Holmdel, Lavallette, Long Beach, Lower Manalapan, Madison, Manchester, Mansfield, Margate, Milltown, Mine Hill, Monroe, Montville, Mount Olive, Mountain Side, New Brunswick, North Caldwell, Old Bridge, Parsippany, Phillipsburgh, Pohatcong, Rahway, Readington, Riverdale, Rockaway, Roselle Park, Sayereville, South Amboy, South Brunswick, South River, Springfield, Stafford, Teaneck, Tenafly, Ventnor, Ventnor City). Exhibit __ (AAS-4). The New Jersey model noise ordinance, promulgated by the New Jersey Department of Environmental Protection, is similar. Exhibit __ (AAS-5).

Moreover, in completing a survey of regulations some years ago for a project for the European Telecommunications Standards Institute, I found that the common form of community regulation was one that specified acceptable sound levels by the receiving property. For commercial properties, the acceptable level was typically 60 to 65 dB(A). While there are regulations which specify allowable sound levels at the emitter's property, and while there are regulations

that still specify sound levels in the old octave bands, these are certainly the exception and not the rule.

Q. Mr. Agresti, do you have any information regarding the relative restrictiveness of the Town's lot line standards?

A. Yes. As noted in the Application, a survey of noise standards applicable in other Article X proceedings shows that the Town of Huntington's standards are, in fact, stricter than any other jurisdiction where an Article X facility has been proposed to date. As among Athens, New York City, Rockland County, and the Towns of Brookhaven and Smithtown, only New York City, like Huntington, has octave band standards, although these (approximately 70 dBA for commercial and industrial lot lines) are not nearly as stringent as the Huntington standards (approximately 45 dBA on average). Application at 4-124 n.12.

Q. Mr. Alexander, do the Huntington lot line standards represent current thinking in the field of acoustics?

A. Two issues mark the Huntington standards as out of date with current thinking. First and foremost, the limits are provided in old octave bands, which have not been in use for more than 35 years. It is unlikely that there are instruments still working today which can directly measure these levels, and if one did exist, it would likely fail to meet the other aspects of current sound level meters. In itself, this is of minor issue, since ANSI does provide for a conversion from the old specification to the new. Of more importance is the significance of still using these old specifications. Either the Town has not updated its regulation for almost 40 years, or it may have copied another municipality's regulation using these

outdated specifications, after the changeover to modern octave bands. (For example, the Towns of Port Jefferson and Oyster Bay have similarly outdated codes.)

Typical community noise regulations result from a review of planning and zoning for a town, and the completion of a noise survey to evaluate existing conditions. Based upon this work, and a review of comparable communities and regulations, a noise regulation is developed that is protective of the aural environment and enforceable, without being unduly restrictive and a burden to development. The overwhelming majority of regulations in suburban communities and at the State level, specify acceptable sound levels at the potentially impacted receiving property, and not at the emitter's property line.

Q. Mr. Agresti, what is your view about the conformance of other like uses to the Huntington lot line standards?

A. I cannot comment regarding compliance generally, although my view is that violations are likely to be widespread, considering the exceedingly strict nature of these standards. For example, existing noise levels at the proposed site already exceed the levels specified in the lot line standard, even though it is essentially vacant, due simply to background noise levels, principally other industrial uses, traffic and existing HVAC units. The same would likely be true for other nearby properties such as Arrow and Marchon Eyewear, which contain these HVAC units.

We did specifically collect lot line data for one property for comparison purposes, the Covanta Bi-Town Resource Recovery Facility, located on Town

Line Road in Huntington. The Covanta facility is waste to energy facility, with a capacity of approximately 25 MW. As indicated by our review of that data, the noise generated by the Covanta facility far exceeds the Town of Huntington's lot line standards – by up to 16 dB at the 500 Hz octave band, at the northern property line. All octave bands are exceeded, with the exception of the 63 Hz band.

Q. Are you aware of the Town of Huntington's enforcement history with respect to the lot line noise standards?

A. I am informed that counsel has identified no known instance in which the Town has sought to enforce these standards against an existing use.

Q. Does this conclude the panel's testimony?

A. Yes.

MR. LANG: Your Honors, can I ask a very quick procedural question?

They have direct testimony. Has that been moved into the record?

JUDGE GARLIN: The direct testimony that was in one of the appendices to the application is considered part of Exhibit 1.

MR. LANG: So it's not testimony, it's just an exhibit?

JUDGE GARLIN: Well, the direct testimony, to my recollection, all pieces of it consists simply of the person identifying which section of the application that that person is responsible for developing; is that correct?

MR. RATZKIN: And their credentials.

JUDGE GARLIN: And their credentials.

MR. LANG: Just asking.

JUDGE GARLIN: Yes. That's all.

MR. RATZKIN: Your Honors, at this time we would also like to mark the exhibits for identification.

JUDGE GARLIN: Okay.

Are you not going to submit the supplemental --

MR. RATZKIN: I'm sorry. I thought I stated both dates of the two.

JUDGE GARLIN: I'm sorry.

The supplemental rebuttal testimony should also be copied into the record as if given here today.

JUDGE CASUTTO: Following the rebuttal testimony.

MR. LANG: Actually, I'm not sure it should be. If the Town of Huntington isn't going to be sponsoring that witness, do we need the rebuttal to that witness' testimony?

JUDGE GARLIN: I leave it up to the applicant as to whether they place it in the record or not.

MR. RATZKIN: We feel it does complete our record, and we would like to have it in.

MR. LANG: I don't think it's necessary, but I won't object.

MR. RATZKIN: I suppose the way to think about it is, if in this case the reason that supplemental testimony came in later is because Mr. Lee late filed his prefiled.

So if he had filed at the same time as

all the other direct intervenors, on June 28th, we would have had that within the scope of our original July 24th testimony.

JUDGE GARLIN: I think, again, I'm going to allow if applicant to decide.

I think there are some things in the supplemental testimony that the applicant might consider as supporting the stipulations.

MR. LANG: Okay.

(Continued on following page.)

KEYSPAN ENERGY DEVELOPMENT CORPORATION

SUPPLEMENTAL REBUTTAL TESTIMONY
(IN RESPONSE TO TESTIMONY OF VAN M. LEE)
OF
ANTHONY C. AGRESTI
MARTIN ALEXANDER
JEFFREY L. SMITH

IN SUPPORT OF SECTION 11.0 OF THE
SPAGNOLI ROAD ENERGY CENTER PROJECT
ARTICLE X APPLICATION
Case 01-F-0761

July 30, 2002

Q. Please state your names and business addresses.

A. My name is Anthony C. Agresti, and my business address is 1200 Wall Street West, Lyndhurst, New Jersey.

A. My name is Martin Alexander, and my business address is 63 Passaic Avenue, Summit, New Jersey.

A. My name is Jeffrey L. Smith, and my business address is 201 Old Country Road, Melville, New York.

Q. Mr. Agresti, have you previously provided testimony in these proceedings?

A. Yes. I have provided pre-filed testimony that was included as part of the Article X Application that was filed on January 28, 2002. My educational background and professional qualifications are set forth in that testimony.

Q. Mr. Alexander, have you previously provided testimony in these proceedings?

A. Yes. I have provided pre-filed testimony that was included as part of the Article X Application that was filed on July 24, 2002. My educational background and professional qualifications are set forth in that testimony.

Q. Mr. Smith, have you previously provided testimony in these proceedings?

A. Yes. I have provided pre-filed testimony that was included as part of the Article X Application that was filed on January 28, 2002. My educational background and professional qualifications are set forth in that testimony.

Q. To the panel: have you reviewed the testimony of Van Lee submitted on July 25, 2002?

A. Yes.

Q. Dr. Lee asserts (p. 3) that there is a history in New York of applying local noise ordinances in the absence of specific state regulations. In this regard, he asserts that electric power generation projects in New York City must meet the City's CEQR and local law requirements. Do you have any comment on these statements?

A. Yes. We believe that Dr. Lee's statement contains a number of errors. We are informed by counsel that, under Article X, electric power projects in New York City (or any other locality within New York State) are not required to adhere to local laws, concerning noise or any other subject, where the local law is shown to be unreasonably restrictive. Thus, the same analysis under PSL § 168 would apply within New York City, as it does in the present case. (In fact, as testified to earlier, New York City's noise standards, unlike the Huntington standards, differentiate residential receptors from commercial and industrial receptors.) As Dr. Lee testified, in the Ravenswood case, the applicant *agreed*, in stipulations, to comply with the City's noise code. Lee Testimony, Exhibit B. This does not mean that it would have been required to comply if an unreasonably restrictive showing had been made.

Q. Mr. Alexander, do you have any comment on Van Lee's suggestion (p. 4) that EPA recommended noise limits are consistent with or support the Town's 45 dB(A) nighttime lot line standards?

A. Yes. What he is referring to is the March 1974 Document "Information on Levels of Environmental Noise Requisite to Protect Public Health and Welfare with an Adequate Margin of Safety" (550/9-74-004), prepared by EPA Office of Noise

Abatement and Control, popularly known as the "Levels Document." Exhibit __ (AAS-6) (excerpts).[1] This document is an often quoted and often misinterpreted reference source. First and foremost, as stated on page 4 of the "Levels Document," "The levels [provided in the document] are not to be construed as standards as they do not take into account *cost or feasibility*." (my emphasis).

The 55 dB(A) daytime and 45 dB(A) nighttime L_{eq} values cited by Dr. Lee were developed based upon several factors. A thorough reading of the "Levels Document" makes it clear that the consideration is for residential uses where sleeping at night and conversation indoors and outdoors are the bases of the identified levels. An indoor level of 45 dB(A) is necessary to permit normal conversation. Assuming a 15 decibel isolation for normal home construction with windows partially open necessitates an outdoor level of 60 dB(A). A five decibel "margin of safety then yields daytime levels of 55 dB(A)." The indoor nighttime level is identified as 32 dB(A), to "protect against sleep interference." With the same adjustment of 15 decibels, we obtain a nighttime level of approximately 45 dB(A). In all cases, it is residential uses being considered.

Q. Does the EPA "Levels Document" separately consider commercial receptors?

A. Yes. Commercial areas are considered, and included in Table 4 of the document. Exhibit __ (AAS-6) at 29. The only level cited is 70 dB(A) to protect against hearing loss. Commercial areas include "retail and financial service facilities, offices, and miscellaneous commercial services." No level for activity

[1] I note that although this document is indicated as an attachment to Dr. Lee's testimony (Exhibit "B"), it does not appear in the material.

interference is identified. Exhibit __ (AAS-6) at 28. Suggestions for activity interference in commercial spaces are provided in an Appendix. Here indoor levels are cited from numerous sources which range from 35 to 65 dB(A), typically 45 to 50 dB(A). Assuming the same 15 decibel isolation from construction, a conservative estimate for office buildings which often have more substantial construction than wood frame homes, and whose windows are typically closed or sealed, would yield an outdoor sound level of 60 to 65 dB(A). Therefore, if the EPA document was to be used as a reference for what would be reasonable sound levels at a receiving commercial property, hence the Applicant's property line, the result would be 60 dB(A) or more, a level clearly met by the modeled facility.

Q. Does the EPA guidance separately consider educational uses as receptors?

A. Yes. For educational uses, an indoor level of 45 dB(A) is identified as necessary to ensure there is no interference with activities, principally speech communication. This covers areas including "classrooms, auditoriums, schools in general, and those grounds not used for athletics." Exhibit __ (AAS-6) at 30. This again translates to 55 dB(A) outdoor levels (including the 5 dB margin of safety). These would apply during times when there is teaching activity and where the teaching activity is carried out. The average sound level for outdoor recreation areas at schools is identified in the document of no more than 70 dB(A).

Q. Do you have any information about how the EPA recommended levels have been applied in practice?

A. Yes. It has been recognized that while the 55 dB(A) day-night levels identified by EPA are an admirable goal, a more realistic level of 65 dB(A) should be applied where specific regulations are involved. Hence the Federal Highway Administration, Department of Housing and Urban Development, and the Federal Aviation Authority use a day night sound level of 65 dB(A) in their requirements for project funding and/or evaluating the potential for impact.

Q. What is your conclusion about what EPA's suggested guidance tells us about the Huntington standards?

A. If a case is to be made based upon the EPA document which Dr. Lee cites, it is that the Huntington lot line noise standards are excessively restrictive where the adjoining properties to an operation are not residential, and that more reasonable levels for these receivers would be 55 to 60 dB(A) or higher.

Q. Mr. Agresti, Dr. Lee claims (p. 4) that the 6 NYCRR 360.1.14 (p) noise limit of 47 dB(A) at the property line for waste management facilities including power generating resource recovery facilities is consistent with the Town of Huntington noise standard. He states that this limit was set for rural areas and that the northern part of the SUNY campus might be characterized as such. Do you have any opinion on this?

A. The refined analyses that we conducted reveal that noise generated by the project will be well below this level at the usable SUNY property nearest the project site. Exhibit __ (AAS-7) Further, the calculated noise level anywhere on the useable SUNY property would also be below this level. Id. I might add that, as testified previously, the Covanta Resource recovery facility in the Town of Huntington

generates noise levels well in excess of 47 dB(A) (56 dB(A)) at its northern property line.

Q. Dr. Lee states (p. 4) that the stipulations between the agencies and the Applicant do not adequately address the noise impacts at various receptors because the Town emphasized that sensitive receptors should include residential, recreational, educational, health related facilities and hospitals.

A. The analysis included the nearest residential uses, educational uses (SUNY), and recreational areas (Bethpage State Park). No hospitals or health related facilities were identified in the immediate area other than the SUNY infirmary, and an analysis has already been conducted for the SUNY campus. As such, I believe all these concerns were addressed and thus I do not completely understand Dr. Lee's statement.

Q. Dr. Lee states that the SUNY campus was not adequately addressed because the CNR analysis was not applied at the point on the SUNY campus with the greatest potential for impact or at the nearest property line. Did your refined analysis evaluate additional locations on SUNY property?

A. The existing location with greatest potential for impact is the nearest occupied building on SUNY property. This is the receptor location used in the Application and further evaluated through refined modeling. Exhibit __ (AAS-2). The resulting CNR rating at this location is between a "B" and a "C". The analysis assumed that this was a dormitory, and so the nighttime ambient was used for the background correction in the CNR analysis, yielding a conservative result. In fact, as noted in our prior testimony, the structure is an administrative building.

Additional analyses were done for areas on the SUNY property not presently developed, but closer to the Applicant project site. These locations yielded a range of sound levels and results from a CNR analysis. Based on our understanding of the future anticipated uses of the area, we first analyzed the potential impact based upon daytime uses only (e.g., teaching spaces). For daytime conditions the background correction (Exhibit __ (AAS-7)) is clearly a "0", and the resulting CNR ratings fall between a "B" and a "C" for all locations anywhere on the SUNY property.

Then, under very conservative assumptions about future usage, since no nighttime use is foreseen, we nonetheless calculated using the nighttime adjustments and obtained CNR ratings falling between "C" and D". Again, the nighttime assumption is overly conservative since these areas are expected to be developed, if at all, as classroom space, recreational space (ballfields and track fields), administration use, or for industrial use, and not for use as a residence hall. In fact, pursuant to an RFP issued by SUNY, these areas were quite recently under consideration for power plant development. Exhibit __ (AAS-8).

The highest noise level calculated anywhere on the SUNY property was approximately 43 dB(A), which is comparable to existing ambient L_{90} levels at the developed portion of the property (44 dB(A) during the day and 40 dB(A) late at night). We also note that even the refined analysis assumed that all terrain consisted of acoustically reflective surfaces with no vegetation, as opposed to the thick vegetation found in the northern portion of the property closest to the project site.

Q. To the panel: Dr. Lee claims (p. 6) that the application of the CNR method should not be restricted to residential areas or sleeping areas, and that he has calculated a CNR rating of "E" for locations in the northern part of the SUNY campus.

A. It appears that Dr. Lee may have used a receptor location at the edge of the transmission berm, which is at a much higher elevation (approximately 140 feet) than the usable part of the campus, which is at an elevation of approximately 100 feet. The nature of the transmission line berm is that it is essentially a right-of-way plateau, a portion of which lies in SUNY's property. However, the terrain gradient is extremely steep at the edge of the plateau, dropping very quickly from 140 feet to 100 feet. Considering the dedicated right of way, the presence of the transmission towers and lines, the steep climb to access the plateau, and its limited area, this portion of the SUNY property is accessible only with difficulty and is considered unusable for any future campus development. The effective border of the SUNY property begins at the south side of the berm.

Q. Mr. Smith, Dr. Lee states that the Applicant did not address vibration impacts from heavy construction activities, specifically with respect to Town Code § 198-89(A). Is that correct?

A. No. Page 4-80 of the Application specifically states that vibration at the property line will not exceed this limit. Moreover, this statement in the Application assumed, for purposes of conservatism, that pile driving would occur during construction. In fact, we have since determined that pile driving will be unnecessary. As indicated in our prior testimony, the Applicant is willing to

accept a certificate condition to that effect. As a result, vibration impact from construction of the proposed facility is expected to be no different than from the construction of any other commercial building that would involve the use of cranes and grading equipment.

Q. Mr. Agresti, Dr. Lee testifies (p. 6-7) that the Applicant did not include a detailed accounting of facility design parameters and additional noise attenuation or mitigation measures, and that doing so would make compliance with the Town of Huntington noise code more feasible.

A. The analysis conducted for the Application was extremely conservative, in that it did not include all the barrier attenuation which will exist at the site. As testified to previously, this was done in order to demonstrate that even with this extremely conservative type of analysis, project noise levels would comply with the CNR rating of "C" or better at the sensitive receptor locations, and that a more refined analysis would yield lower levels, and subsequently better results. However, again, as testified earlier, I did revisit the analysis and prepared a much more detailed noise model of the project, one which accounted for all the barrier effects provided by onsite structures, including the turbine building and the transformer fire walls. The analysis also included a fourth fire wall for the transformer. Further, I accounted for the fact that the condensate pumps will be enclosed. As an additional step, I modeled the facility with a "stealth" air cooled condenser, which is the lowest noise level unit available. Lastly, I added in the directivity effect for stack noise, in an attempt to further reduce calculated noise levels. At this point, all barrier effects have been included, virtually everything that can be

enclosed is within substantial enclosures, directivity effects have been added in as appropriate, and the lowest noise air cooled condenser available has been evaluated.

Q. And what were the results of your analysis?

A. As expected, calculated off-site noise levels were shown to be lower. However, it was still not possible to demonstrate compliance with the Town of Huntington noise standard at all property line locations, even with the extensive noise control measures, including the "stealth" air cooled condenser.

Q. What about the berms along Spagnoli Road?

A. These berms do not exist at this time and would be future landscaping berms. The Applicant estimates these will only be approximately five feet in height, which would have virtually no effect on off-site noise levels.

A. Dr. Lee also states (p. 8) that in his calculations, he added 10 to 12 foot high noise walls on the border with SUNY, and that his results indicated that this might achieve compliance with the Town of Huntington noise standard. Did you perform any such analysis?

A. The project site's property line is at a lower elevation (generally by about 10 to 12 feet) than the top of the berm and is on the north side of the berm. Application at Figure 7-11a. Accordingly, a 10 to 12 foot wall or fence would not provide any further noise reductions, since in many instances it would not exceed the maximum berm height. Also, constructing a wall on such a steep grade would be extremely difficult, and could actually create a safety hazard, as a "V" shaped channel would be formed between any wall and the top of the berm.

Q. Dr. Lee states in his testimony that his own independent calculations to verify the accuracy of your analysis showed very close agreement. Do you have any opinion regarding this close agreement?

A. The fact that the sound levels Dr. Lee calculated compare so well with those I calculated shows that the calculation method employed should yield good results based on the input data. I did note some errors in his Exhibit C where he compared TRC calculated sound levels against his results. In particular, the 250 Hz sound level for Ruland Road is missing and subsequent octave band levels are therefore shifted by one column. The TRC property line calculated sound levels (P-2, P-9, P-12 and P-14) are not presented in the correct columns. TRC calculated sound levels were presented in the Application for octave band frequencies from 63 Hz to 8000 Hz to coincide with the Town of Huntington noise standard. Dr. Lee transposed these levels incorrectly in the 31 HZ to 4000 Hz columns in his Exhibit C. If presented properly, the property line octave band sound levels would show excellent correlation.

Q. Does this conclude the panel's testimony?

A. Yes.

MR. RATZKIN: Your Honors, at this time, I would like to mark the exhibits for identification.

Do any of you have any corrections or modifications you wish to make to the exhibits and the testimony?

MR. ALEXANDER: No.

MR. AGRESTI: No.

MR. SMITH: No.

JUDGE GARLIN: What I'm going to do is, Exhibits AAS-1 through AAS-5 will be marked for identification as Exhibit 25.

(Documents marked Exhibit 25 for identification.)

JUDGE GARLIN: Then Exhibits AAS-6 through AAS-8 will you marked for identification as Exhibit 26.

(Documents marked Exhibit 26 for identification.)

MR. RATZKIN: Thank you, your Honor.

The witnesses are available for cross-examination.

MR. LANG: No Cross.

JUDGE GARLIN: Go ahead, Ms. Sinding.

MS. SINDING: Just a preliminary matter.

CROSS-EXAMINATION

BY MS. SINDING:

MS. SINDING: Mr. Smith, it's correct that you are the Project Manager on behalf of KeySpan for the Spagnoli Road Energy Center; is that correct?

MR. SMITH: That's correct.

MS. SINDING: So do you have any particular training in noise impact assessments or analysis?

MR. SMITH: Nothing more than my engineering degree.

MS. SINDING: Mr. Smith, it's correct, isn't it, that KeySpan has entered into a set of stipulations that include certain topic agreements with the Town of Huntington and the County of Suffolk?

MR. SMITH: That's correct.

MS. SINDING: One of those agreements is related to land use, local laws and decommissioning; is that right?

MR. SMITH: Yes.

MS. SINDING: And another one is related to noise, right?

MR. SMITH: Yes.

MS. SINDING: And is it also correct that the topic agreement related to land use provides -- and this is on page 23 of the document --

Actually, I'm not sure if this document has been entered into evidence yet.

JUDGE GARLIN: Which one is that?

MS. SINDING: That's the joint stipulation.

JUDGE CASUTTO: They have not been marked for identification.

MS. SINDING: Okay. Then at this time I would ask that it be marked as an exhibit.

JUDGE GARLIN: The joint stipulations will be marked for identification as Exhibit 27.

(Documents marked Exhibit 27 for identification.)

(Pause.)

JUDGE CASUTTO: Please continue.

MS. SINDING: I was referring to the land use topic agreement.

Do you have a copy of the document in front of you, Mr. Smith?

MR. SMITH: What document are you referring to?

MS. SINDING: I'm referring generally to the joint stipulations, with the attached topic agreement.

MR. SMITH: Dated?

MS. SINDING: Dated August 12, 2002.

MR. SMITH: I have it.

MS. SINDING: Okay. And on page 23, which is within the land use local laws and decommissioning topic agreement, item Roman numeral IIE provides that the certificate holder, which I understand is KeySpan, will erect an eight to ten-foot high wall, constructed of a material with a minimum sound transmission loss of ten to fifteen decibels along a portion of the western boundary of its property.

Is that correct?

MR. SMITH: That's what it reads.

MS. SINDING: Okay. And this is to the panel.

Can you explain to me exactly what it means to say that a wall will be constructed with a minimum sound transmission loss of ten to fifteen decibels?

MR. AGRESTI: Transmission loss refers

to the amount of reduction material can provide.

In this case, the wall itself, in a test room, for example, would provide a ten to fifteen-decibel reduction from one room to another.

MS. SINDING: So it's sort of a measure of how soundproof a wall will make --if it were in a room, would make a room, for example?

MR. AGRESTI: Generally.

MS. SINDING: And does it mean that, conversely, a maximum of ten to fifteen decibels can be transmitted through that wall?

MR. AGRESTI: No.

MS. SINDING: I guess I don't fully understand.

MR. SMITH: I believe it says a loss of ten to fifteen DB in the write-up.

MS. SINDING: So, it's a loss from what, the total sound being generated on one side of the wall?

MR. ALEXANDER: The transmission loss is a measure of the reduction of sound traveling through the wall.

So if we erected that wall between two spaces, and there was a certain amount of sound power

incident on the wall, on one side the amount of sound power traveling through the wall would be ten to fifteen DB less on the other side.

JUDGE CASUTTO: So for the seventy decibels on one side it would be --

MR. ALEXANDER: Roughly fifty-five to sixty potentially on the another side.

There are other issues. Once the sound gets to the other side, that can affect the resulting sound on the other side.

But it's a measure of the wall, the material performance in reducing sound.

JUDGE GARLIN: If I could interrupt you for about thirty seconds.

I just want to go to my office and get my copy of the stipulation.

MS. SINDING: Sure.

(Pause.)

JUDGE CASUTTO: Let's go back on the record.

JUDGE GARLIN: Thank you for your indulgence.

MS. SINDING: All right. And then also, in the land use topic agreement, and it's also

provided in the noise topic agreement, at page 30, it's 2F of the land use topic agreement, provides that the certificate holder shall install a low-noise, air-cooled condenser, with stealth fan blades; is that right?

MR. SMITH: Yes.

MS. SINDING: And what I don't understand is whether there are two elements to that, or whether there is one.

Is it going to be a low-noise, air-cooled condenser by virtue of installation of the stealth fan blades, or will the air-cooled condenser itself, aside from the fan blades, also be of a reduced noise model?

MR. SMITH: I believe our testimony identifies that the air-cooled condenser will have a stealth of fan blade, which lowers the DB, the noise level, of the air-cooled condenser, and that is the air-cooled condenser that we are referring to.

MS. SINDING: Okay. It's the same air-cooled condenser, but with the stealth blade technology that you discussed in your rebuttal testimony?

MR. SMITH: Yes.

MS. SINDING: I also understand from the topic agreement on noise, item Roman numeral IIA, as well as your rebuttal testimony at page 16, lines 10 through 12, that KeySpan has committed not to using pile drivers; is that correct?

MR. SMITH: That's correct.

MS. SINDING: There are certain other items listed in the noise topic agreement on page 30, under Roman numeral II related to noise.

B relates to certain limitations on construction activities.

C relates to KeySpan's compliance with Federal noise level requirements under OSHA.

D provides that a temporary vent silencer will be installed on the steam blow vent during pipe cleanout.

E provides that safety valves shall incorporate silencers.

F represents that the project will achieve a modified composite noise rating of C at the seven sensitive noise receptors that were analyzed in the application.

And H relates to an operational noise evaluation report that is to be submitted within six

months of the startup.

Other than these items, is there anything -- and the wall that is referenced in the land use topic agreement, are you aware of anything else in the stipulations that would relate to the issue of noise?

MR. SMITH: There may be, but I'm not familiar enough with the document. I haven't read the latest update.

MS. SINDING: In announcing the stipulations on Monday, Ms. Liccione, who is counsel to the Town of Huntington, represented that KeySpan was going to be able to meet the Town's noise performance standard at two of the site's lot lines; is that correct? Do you recall that?

MR. SMITH: I don't think any of us were here on Monday.

MS. SINDING: Do you know whether it's, in fact, true that KeySpan is committing to meet the noise performance standard at two of the lot lines?

MR. SMITH: I don't believe that we made any commitment along those lines.

JUDGE CASUTTO: My recollection is that as Ms. Liccione described it, that there were some

qualifiers on that characteristic of not absolutely meeting the standard, but something to the effect that it will come as close as possible.

There was some qualifying language in there, to my recollection.

MS. SINDING: We will have to review the transcript.

JUDGE GARLIN: My notes also say that along Spagnoli Road, that side of the lot, that the ambient noise level already exceeds the Town requirement.

MS. SINDING: I also recall that.

And I believe she also said that along the western property line, it was expected that KeySpan would be able to attain a noise level of forty-seven to forty-eight decibels.

Mr. Smith, or any other member of the panel, are you familiar with that commitment?

MR. SMITH: I'm not familiar with that commitment at all.

JUDGE GARLIN: I'll just note for the record that my notes say the same thing.

MS. SINDING: Okay. This, again, is to the panel.

Isn't it correct that in your rebuttal testimony, and the page reference is page 7, line 23, to page 8, line 4, you stated that, in fact, KeySpan could not meet the property line standard, even if it uses enhanced noise control measures.

And I believe included in those enhanced noise control measures were the stealth fan blades that we were speaking of earlier.

MR. AGRESTI: That is correct.

MS. SINDING: And does that remain your testimony?

MR. SMITH: Yes.

MR. ALEXANDER: Yes.

MR. AGRESTI: Yes.

MS. SINDING: So you remain of the opinion that even with the stealth fan blades on the air-cooled condenser, the proposed facility will not be able to achieve the Town noise standards at any of the lot lines?

MR. SMITH: That's correct. We have not taken any position that we do meet the Town noise.

However, we do meet all the sensitive receptor requirements, which we think is important as compared with the Town standard, which we don't find

has significant noise reduction.

MS. SINDING: I'll come back to the sensitive receptors.

I'll, in fact, come to the sensitive receptors right now.

Those seven sensitive receptors that were discussed in the application do not include the Extended Stay Hotel; is that correct?

MR. AGRESTI: In the application, that's correct.

MS. SINDING: And it's correct, isn't it that stipulation 6, which is the noise stipulation, clause 9, required KeySpan to determine the CNR rating at "the nearest residential school and open public space"?

MR. AGRESTI: That is correct.

MS. SINDING: You stated in your rebuttal testimony, and the page reference is page 12, lines 5 to 6, that in your opinion, the CNR doesn't apply to the Extended Stay Hotel, because it's not a place where people live year round; is that right?

MR. RATZKIN: Excuse me, your Honor, can I request a clarification?

JUDGE GARLIN: Yes.

MR. RATZKIN: Were you referring to the pre-application stipulation?

MS. SINDING: I'm sorry. Yes.

MR. RATZKIN: Just so the record is clear.

MR. SMITH: I think Mr. Agresti thought you were referring to the stipulations that we were looking at before, and I think you would have to show him exactly where that stipulation is in the --

MS. SINDING: Sure. Let's do that. This is stipulation 6. It's the preapplication stipulation that's also included in the application, as an appendix, and it relates to noise.

And I'm referring specifically to clause 9, which states that the modified composite noise rating, or CNR methods, is to be used at the nearest residential school and public open space receptor locations.

Do you see that?

MR. AGRESTI: Yes, I see that.

MS. SINDING: And turning back to your rebuttal testimony at page 12, I believe it's correct that you stated that you did not believe that the use

of CNR was appropriate at the Extended Stay Hotel, because people do not reside there, or live there year round; is that correct?

MR. SMITH: Where are you on the page?

MS. SINDING: Lines 5 to 6. Or it's actually lines 5 through 9.

MR. AGRESTI: Yes, that's what it says.

MS. SINDING: The stipulation itself doesn't distinguish between whether people reside in a place year round or not year round to be considered residential, does it?

MR. AGRESTI: The stipulation, from what I read, does not go into that detail.

MS. SINDING: In fact, isn't it true that the CNR model recognizes that people who are not repeatedly exposed to a noise source are more sensitive, and conversely, that people who are more repeatedly exposed to a noise source become less sensitive to that source?

MR. ALEXANDER: Can you repeat that?

MS. SINDING: Isn't it the case that the CNR model recognizes that people that are less frequently exposed to a noise source are more sensitive to that noise source than are people who

are repeatedly exposed to it?

MR. ALEXANDER: I believe what you're referring to is the adjustments for intermittent noises versus steady or continuous noise. That may be what --

MS. SINDING: Well, let me refer you to Exhibit AAS-3, to your rebuttal testimony, and specifically, to pages 68 to 69, the very bottom of 68, running over to 69 of that exhibit.

And unfortunately, the way it was copied, it's slightly cut off, but what I believe it says under the heading "Previous Exposure," and I'm beginning with the second to last sentence on that page that begins with the words "no correction," do you see that?

MR. ALEXANDER: Yes.

MS. SINDING: And it states that no correction should be applied -- well, why don't you actually read that sentence into the record, since I'm going to be -- to the best of your ability, in light of the fact that it's cut off.

MR. ALEXANDER: I'll read that.

"No correction should be applied to the noise level rank if an intruding noise is a new one

to which the residents have not been exposed previously."

MS. SINDING: Okay, and the next sentence?

MR. ALEXANDER: "If there has been some previous exposure to the noise -- or to a noise of similar nature, a correction number of minus one is proposed."

MS. SINDING: And is it correct that minus one refers to a reduction of minus one decibels?

MR. ALEXANDER: No.

MS. SINDING: Okay. Could you explain what "minus one" refers to, please.

MR. ALEXANDER: It refers to a -- let's just say a level on this -- more of a gross scale that the CNR uses to categorize the potential impact. So it's a shift from one category to another.

But what the sentence is referring to, actually, is a discussion, not of an intermittency.

It actually, in a sense, reinforces that they are thinking in terms of people who are continuously in that area, who may already have been exposed to, say, an operation which has similar noise

characteristics.

An example: If there's a residential developments, and there is some industrial on commercial operations in the area, and there is an addition of a commercial or industrial operation, you would say that those people have previous exposure.

They are really not referring to somebody who spends a couple or three nights in a hotel, so he's exposed to it then, and he wasn't exposed to it where he continuously lives.

They are really talking about people who are there, and who have previous experience with the sound levels in their environment.

MS. SINDING: Are you aware that the Extended Stay Hotel, as suggested by its name, is a place specifically for people who stay for more than one or two nights?

MR. ALEXANDER: Yes.

MS. SINDING: But it is true that what this article is saying is that individuals who are exposed over a period of time to a noise source will become less sensitive to that noise source; is that correct?

MR. ALEXANDER: No. I don't believe

it's saying that.

It's saying that people who have been exposed to the noise will be less impacted to a similar noise in that area.

It's a subtle difference, but there is a difference.

MS. SINDING: Okay. Let's move on.

Is it correct that KeySpan analyzed the SUNY dorms using the CNR?

MR. AGRESTI: Yes, we did.

MS. SINDING: Students don't live at the SUNY dorms all year round, do they?

MR. AGRESTI: I don't know if any students live there year round or not.

MS. SINDING: And the stipulation -- I'm referring again to stipulation 6, that was one of the preapplication stipulations.

It doesn't say that one should only analyze residences where the residents spend time out of doors, does it?

MR. AGRESTI: It does not specifically say that, no.

MS. SINDING: So in your rebuttal testimony at page 12, line 6 -- again, it's lines 5

to 9, really, the fact that people don't spend time out of doors necessarily at the Extended Stay Hotel was not a basis for excluding the Extended Stay Hotel from the CNR, was it?

MR. AGRESTI: I'm sorry.

Could you repeat that question?

MS. SINDING: Well, you say here in lines 5 through 9, at page 12, you appear to be distinguishing the Extended Stay Hotel from other residential uses, in addition to the fact that people don't live there year round, on the basis that people don't spend time out of doors there.

Am I reading that correctly?

MR. AGRESTI: We looked at the Extended Stay as if it's not a place where people live year round.

MS. SINDING: So the fact that people don't spend time there out of doors necessarily was not a basis for excluding the Extended Stay Hotel from the CNR analysis?

MR. AGRESTI: I don't think it was a basis for it, but it was considered.

MS. SINDING: But you didn't omit from the CNR residences that did not have, say, outdoor

pools or patios, did you?

MR. AGRESTI: No. If it was a residence, it was included.

MR. SMITH: The fact of the matter is the extended stay has no outside facilities for use, other than a parking lot, and on that basis, we determined that it was an inside application of the CNR, and not outdoor application, as you would find an at a house where people are expected to be out in their yard, in the pool, by their barbecue, that sort of thing.

MS. SINDING: Well, isn't an apartment building considered residential use?

MR. ALEXANDER: Yes.

MS. SINDING: And isn't it true that many apartment buildings don't have swimming pools, or back yards, or outdoor patios where people might be spending time?

MR. ALEXANDER: Yes.

MR. SMITH: I don't believe that the Extended Stay is an apartment.

MS. SINDING: Understood. And I'm just trying to understand the bases, and it sounds to me that one is that people don't live there year round,

and in others, that people don't spend time there out of doors.

MR. SMITH: And that there are no facilities out of doors for them to spend time.

MS. SINDING: But, at the same time, you've testified that there are other uses that you consider residential uses where people don't live year round, or where there are not outdoor amenities; is that right?

MR. ALEXANDER: There are other uses of that type.

I don't think we are stipulating that there were any of those uses in this particular area where we did the analysis, although there may be mixed with uses where there are outdoor facilities.

The real issue of indoor versus outdoor was more applied when evaluating what the CNR value would be for a particular location. I don't think it was an issue specifically in determining not to address the Extended Stay in the initial selection of noise sensitive uses.

MS. SINDING: Okay. So it sounds like I've misread your testimony on page 12, lines 5 to 7, where you state that the CNR analysis was designed to

be applied to residential uses, where people live year round and spend time out of doors, and other sensitive uses, such as schools and parkland, as described above.

And then continuing, the Extended Stay, while it may be used for a few weeks, or perhaps months at a time by someone, does not fit this category.

MR. ALEXANDER: Correct.

MS. SINDING: But that wasn't -- it's not that this category does not necessarily depend on whether people live there year round.

MR. ALEXANDER: It's an aggregate of factors that make that determination, not any one factor individually.

MS. SINDING: Let me just ask you this question.

Would you consider a summer home in the Hamptons to be a residential use in determining whether to include it in the CNR analysis?

MR. ALEXANDER: I suspect I would.

MS. SINDING: But people typically don't spend the full year there, do they?

MR. ALEXANDER: No, but they spend a

protracted time, and they spend it with different expectations, and not just because it's in the Hamptons -- than people do in -- and I'm not using this word in a derogatory fashion -- but in a transient hotel, or a transient resident.

MS. SINDING: Turning back to stipulation 6, to the preapplication stipulation, it's correct, isn't it, that stipulation 6 required KeySpan to use the NOISCALC model to predict future noise impacts in the facility?

I'll refer you specifically to page 29, which is incorporated into -- you have my copy. It's incorporated into the stipulation, but describes the protocol that is to be utilized.

MR. AGRESTI: Yes. The protocol stipulated that the NOISCALC model would be used.

MS. SINDING: Okay. And in your rebuttal testimony at page 1219 -- I'll refer you to the whole paragraph. And this is Mr. Agresti's testimony.

You refer to using a "refined noise model" to arrive at a late night rating of B.

Do you see that?

MR. AGRESTI: Yes.

MS. SINDING: But it's true, right, that that was not using the NOISCALC model?

MR. AGRESTI: That's correct.

MS. SINDING: And in fact, using the results from the NOISCALC model, as Mr. Wood did in his direct testimony, you can't dispute, can you, that the facility would fail to meet a CNR rating of C at the Extended Stay Hotel?

MR. AGRESTI: The NOISCALC model conducted for the Extended Stay in the application did not account for any barrier effects, or other measures or factors that would result in lower noise levels at the Extended Stay than are presented in the application.

MS. SINDING: Okay. I understand that.

And when you ran the second model which is the CadnaA model, one word, you testified that you did include certain other -- certain other of the items you referred to in running that model; is that right?

MR. AGRESTI: Yes.

MS. SINDING: But it's also true that there were certain other sources that you did not include in running that model; is that right?

MR. AGRESTI: In running the CadnaA model?

MS. SINDING: Right.

MR. AGRESTI: We included all of the significant sources at the site.

MS. SINDING: I refer you to page 5 of your testimony, lines 20 to 23.

You list, I believe, three items that were identified in Mr. Wood's testimony as having been excluded from the NOISCALC model which you included in the CadnaA model, right?

And that's the fin fan cooler adjacent to the air-cooled condenser, a cooling water module inside the turbine building, and the turbine compartment vent fan; is that right?

MR. AGRESTI: Yes, that's correct.

MS. SINDING: But then there were other items that Mr. Wood had identified in his directed testimony that you chose to exclude from the CadnaA model; is that right?

MR. AGRESTI: That's correct.

MS. SINDING: And I believe, and I'm referring now to your response to Interrogatory Request 169, from SHARED to KeySpan, Subsection L.

Do you have a copy of that?

MR. AGRESTI: Yes, I do.

MS. SINDING: That the items that you left out of the CadnaA model included the service station transformer, the turbine building roof, the turbine building ventilation fans.

Those are the ones you identify in 169L; is that right?

MR. AGRESTI: That's correct.

MS. SINDING: Will the service station transformer create noise?

MR. AGRESTI: It certainly will generate noise.

MS. SINDING: And the turbine building roof, will that contribute noise to the facility?

MR. AGRESTI: It will generate noise. How much it contributes is another question, but yes.

MS. SINDING: And will the turbine building ventilation fans create noise?

MR. AGRESTI: They will generate noise, yes.

MS. SINDING: And there are two other items that aren't mentioned in response to Interrogatory 169L, but that were identified by

Mr. Wood. One was the water treatment equipment. Did you include that in the CadnaA model?

MR. AGRESTI: No. That is not in the model.

MS. SINDING: But will the water treatment equipment, in fact, create or generate noise?

MR. SMITH: This facility will have no water treatment equipment.

MS. SINDING: Okay. And Steam lines and drains, will this facility have steam lines and drains?

MR. SMITH: The steam lines and drains are enclosed within the turbine building.

MS. SINDING: Will they create noise, generate noise?

MR. AGRESTI: They may generate some noise.

MS. SINDING: And cumulatively, would you expect that each of these four sources that you excluded from the CadnaA model would generate more noise than they would individually?

MR. AGRESTI: If I understand your question, just by the very physics, they will

generate more noise together than they would separately.

MS. SINDING: So isn't it the case, then, that it would have been more conservative in running the "refined model" to have included all of these sources?

MR. AGRESTI: That would suggest that those sources would increase the total sound level.

Based on my experience of the sound levels, I don't believe that would be the case.

MS. SINDING: You don't believe those four sources will increase the noise level from the facility?

MR. AGRESTI: I do not. And I would add that if it were shown that they would, that could be treated in the final design.

MS. SINDING: Okay, but we are talking now about the modeling.

And my question is whether it would have been more conservative to have included those sources in your modeling.

MR. AGRESTI: I would ask you to repeat that question one more time.

MS. SINDING: The question is, wouldn't

it have been more conservative to incorporate the sources, the four sources that we previously mentioned, in the CadnaA model?

MR. AGRESTI: Yes. Aside from the fact that there were other measures that are considered in the model, yes.

MS. SINDING: I would like to talk about the modeling that was done at the SUNY campus. And I'll refer you to table 11-8 from the application.

It's correct, isn't it, that at the SUNY dorm receptor, using the NOISCALC model results, the facility is just meeting fifty decibels in the 125 per octave bands, and forty-three decibels in the 250 hertz octave band?

MR. AGRESTI: Yes, that's correct.

MS. SINDING: So am I correct, then, in assuming that if even one additional decibel of noise were at this location, the facility would violate the CNR rating of C?

MR. AGRESTI: For that modeling analysis that was done prior to the additional analysis we conducted, yes, that is correct.

MS. SINDING: So under the NOISCALC model results, that's correct?

MR. AGRESTI: Right. And that model, again, is without all the noise abatement features that are currently planned.

MR. SMITH: I think the point being made here is that the NOISCALC model you're referring to in the application here does not take into refined analysis that was done or introduce additional noise reduction equipment that subsequently was performed, such that this data is virtually outdated.

MS. SINDING: In your view, the NOISCALC data is outdated?

MR. ALEXANDER: I would say that that is an extremely conservative projection of what the noise levels will be because, A, it doesn't include a lot of the site features which will attenuate the noise.

And B, because it doesn't include many of the additional noise control features that are now stipulated to be included in the plan; for instance the stealth plate technology and other factors.

So in terms of being conservative, this is extremely conservative.

So the actual levels will be substantially lower than this.

MS. SINDING: But, in fact, this was the model you were required to use under stipulation 6; isn't that right?

MR. ALEXANDER: It was the model.

MR. AGRESTI: It's the model we are required to use, but it's not the most recent noise level date.

MS. SINDING: I understand that. The most recent model data is from the CadnaA model?

MR. AGRESTI: Well, that data could also be used on a NOISCALC model.

MS. SINDING: But you didn't run it in a NOISCALC model, did you?

MR. AGRESTI: No, I did not.

MS. SINDING: I would just like to refer back to your rebuttal testimony, again, at page 5, lines 1 to 9.

JUDGE CASUTTO: I'm sorry, what was that reference?

MS. SINDING: Page 5, lines 1 to 9.

And do those lines identify all of the so-called credits that were taken for shielding and mitigation effects that you referred to earlier?

MR. AGRESTI: Yes, they do.

MS. SINDING: And these are the items that you did not include in the NOISCALC model?

MR. AGRESTI: That's correct.

MS. SINDING: So it's a fact, then, that, as you sit here today, you cannot guarantee that using the results from the NOISCALC model, including these additional noise sources --

MR. AGRESTI: I apologize. I'm sorry, would you repeat that, please?

MS. SINDING: Yes. Isn't it a fact that, as you sit here today, you cannot guarantee that using the results from the NOISCALC model, the facility will achieve a CNR rating of C at the SUNY dorms?

MR. AGRESTI: Well, again, the NOISCALC model uses data that are input to it. The modeling results from the application are essentially -- they don't include all the noise mitigation features that have since been incorporated into the plant.

MS. SINDING: I understand that. Those were included in the CadnaA model, which is not the model that's provided for in preapplication stipulation 6; is that right?

MR. AGRESTI: That's correct.

MS. SINDING: So using the NOISCALC model, you can't guarantee that the facility will achieve a CNR rating of C at the SUNY dorms?

MR. AGRESTI: It would be possible to go back and put that data into the NOISCALC model and you get lower results.

MS. SINDING: But you haven't done that?

MR. AGRESTI: No, I have not.

MS. SINDING: And if you were to include some of the other noise sources that were left out of the CadnaA model and the NOISCALC model, you don't know what the overall results would be, do you?

MR. AGRESTI: No, I do know not.

MS. SINDING: Wouldn't the best practice then be to -- or let me not --

Withdrawn.

I have to apologize. I can't remember whether it was Mr. Alexander or Mr. Agresti's testimony, but one of you gentlemen testified in your rebuttal testimony that it's your practice to include a one-decibel margin of safety when designing --

MR. ALEXANDER: That was mine.

MS. SINDING: That was yours.

MR. ALEXANDER: It was more referring to

the fact that when I do an analysis, I typically like to see that the end result is at least a decibel below the criteria I'm aiming for.

That was my testimony.

MS. SINDING: Okay. And isn't it the case that based on the NOISCALC results, you cannot guarantee that you will be able to include, or that the ultimate designers of the facility will be able to include a one-decibel margin of safety at the SUNY dorms at those two octave band levels that we previously identified?

MR. ALEXANDER: Well, again, there are a couple of issues here.

First of all, it's actually my belief that those are not dormitories. So we were being conservative in assuming they were dormitories. They are actually offices.

So as offices, the CNR model for that space, if done correctly, would come out with a lower value, because it would use a higher ambient, because it's a day time only facility.

But leaving it as dormitories, the additional noise control, and the additional features in the facility that are now planned, would result in

the CNR results using the NOISCALC model coming out lower than these values in that table.

The sources are now the sound pressure level for many of the sources in the design that has been re-evaluated, and the additional noise control that has been stipulated to would result in lower individual sound levels.

So when those were applied in the NOISCALC model, the aggregate would come out lower than those values in the table you're referring to.

So I'm confident that if we apply those new numbers, the C would meet with a margin.

MS. SINDING: Okay, but that's just speculation, right, because you haven't run any model that, in fact, indicates what the noise levels would be, even at the building you modeled, which you have now testified is an administrative building, using the NOISCALC model.

MR. ALEXANDER: I would use the word "professional judgment," and not "speculation," first of all.

And on my professional judgment, I would expect the levels to be lower, because as you said before, if you add things together they add up

higher, if you lower the things you're adding together, they add up lower than they added up to previously.

MS. SINDING: But we have already established that there were certain sources not included, even in the refined model. So we don't know what the results would have been if all of those sources had been included.

MR. ALEXANDER: That's correct.

MS. SINDING: And you haven't performed NOISCALC -- the NOISCALC model to achieve a residential CNR rating at any actual SUNY dorm; is that right?

MR. AGRESTI: At an actual dormitory?

MS. SINDING: Well, you selected one building, and assumed that it was a dormitory, if I understand your testimony correctly.

MR. AGRESTI: It was like at the nearest building, I assumed it was a dormitory.

MS. SINDING: But you haven't actually done any testing at a building that you subsequently determined is a dormitory; is that right?

MR. AGRESTI: No, at the more distant buildings, we did not.

MS. SINDING: So we don't know what the results would be if you ran a model at one of those buildings?

MR. AGRESTI: The process levels would be lower at most of the locations.

MS. SINDING: But you don't know what those levels would be?

MR. AGRESTI: The exact number, I don't, no.

JUDGE GARLIN: The ambient noise level in a dormitory with or without stereo?

(Laughter.)

MR. ALEXANDER: I was thinking that, but I didn't want to say it.

MS. SINDING: So just returning to your earlier testimony, you have affirmed what is in your rebuttal testimony, that even using the stealth fan blades, you don't expect the facility to be able to achieve the Town standard at any of the lot lines; is that right?

MR. AGRESTI: I would say not at all of the lot lines, we would not.

MS. SINDING: At each of the lot lines you would not?

MR. ALEXANDER: There would be locations where it may meet the regulation at the lot line. There are other locations where it will not.

Your statement has been "at all," and that is the only word that we are in argument with.

We can't say it won't meet it at all. We can say that it will not meet it at some. It may meet it at some.

MS. SINDING: Okay. And I believe that in Exhibit AAS-2 to your rebuttal testimony, table 7, and I'm afraid there's not a page number within the exhibit.

Do you have that in front of you?

MR. AGRESTI: Yes.

MS. SINDING: And it's correct, isn't it, that what table 7 indicates is that the Town of Huntington standard will be met or exceeded at only three of the fourteen points along the property line that you took measurements?

MR. AGRESTI: Table 7?

(Pause.)

MR. AGRESTI: Are you referring to the DBA levels in the right-hand column?

MS. SINDING: I am.

MR. AGRESTI: The Town standard is by octave bands. So even if one octave band exceeds, the standard is exceeded, not just the DBA levels.

The DBA level is presented just for a reference. In reality, the only location there that would show compliance is property line number ten.

MS. SINDING: Because that is the only point along the property line where the facility would be meeting or exceeding the standard in every octave band?

MR. AGRESTI: It would be at or below the standard at every octave band.

MS. SINDING: Right.

Now, you state in your rebuttal testimony -- and the reference is page 4, line 13, that one of the things that you did in the CadnaA model was to "update the building wall material to the more massive walls currently proposed for the project."

MR. AGRESTI: That's correct.

MS. SINDING: In fact, the walls that are proposed for the project are 22 gauge; is that right?

MR. AGRESTI: The application analysis

assumes a simple 22-gauge panel wall.

The exact material here, I have the transmission loss data -- I don't know the exact gauge of the exterior skin.

MS. SINDING: When you say the "material here," you're referring to the wall that was an input into the CadnaA model?

MR. AGRESTI: That's correct.

MS. SINDING: And what materials are those walls?

MR. AGRESTI: The engineering firm was looking at a wall material to use for the project.

I believe it's about a foot thick or so, a very massive wall.

And they provided us with transmission loss data on that wall, and that's what was used in this analysis.

MS. SINDING: It's one foot thick of what material?

MR. AGRESTI: I don't know the exact material.

MS. SINDING: And do you recall what the transmission loss data are associated with that material?

MR. AGRESTI: No. Not offhand, no.

MS. SINDING: Would that appear anywhere in the testimony?

MR. AGRESTI: Appendix B to my rebuttal provides the composite transmission loss values to the wall material. That's based on the walls, any openings that were assumed in the walls, and some translucent panels that would be part of the wall makeup.

MS. SINDING: When you say Appendix B, that is Appendix B to Exhibit AAS-2?

MR. AGRESTI: That is correct.

MS. SINDING: And I assume here that you are looking at the second page of that appendix?

MR. AGRESTI: Yes, that's correct. That is page 2, the second page.

MS. SINDING: And at the bottom of that chart, it says "Centria Wall System (22 GA)."

MR. AGRESTI: Right.

MS. SINDING: Does that refer to 22-gauge?

MR. AGRESTI: Yes. That's the exterior skin on that wall, yes.

MS. SINDING: Isn't it true that a

22-gauge steel panel is about the thickness of, say, a car hood?

MR. AGRESTI: I don't know of the thickness offhand --

MR. ALEXANDER: I think the real issue here is -- and I have to admit I'm not familiar with the exact product used, but the transmission loss of a structure, of a wall, of a panel, is not solely a function of the gauge of its components, but, in a sense, the way those components are combined.

So you can have a 22-gauge wall, and it certainly isn't a function of the thickness, because cardboard will have a lot less transmission loss than the equivalent thickness.

Steel, because steel has more mass.

But it's more a function of the construction of the wall itself.

So I believe that the wall they are referring to, if they say it's a foot thick, that it probably is an exterior panel of 22-gauge, as the original design evaluation by Mr. Agresti was, but has an interior panel, also, that is separated from the exterior panel.

And it's really the combination of that

construction that allows it to provide a much higher transmission loss than just the single panel.

I'm not sure of the details, but if Mr. Smith is saying that the overall wall thickness is a foot, that's not coming from the 22-gauge exterior panel. It's coming from the combination of the total wall construction.

But I don't know the details.

MS. SINDING: And I guess what I'm asking is, is there information anywhere in your testimony that would enable us to know precisely what the construction of the walls are that are going to be used at the facility is.

MR. AGRESTI: No. The engineering firm provided us with a material they were looking at evaluating for the wall, and that wall is what was used in this analysis.

MS. SINDING: I'm not seeing this here, but that's probably because I'm not an engineer; what the sound transmission class of the material that is being proposed here is.

Do you happen to know that information?

MR. AGRESTI: That detail is not here, and I don't know offhand what that is by octave band,

or even overall. I don't know what that is much.

MS. SINDING: Could you use your professional judgment to hazard a guess, or is that something that you just can't ascertain?

MR. AGRESTI: The wall material alone is certainly higher than the transmission wall numbers there, but what the exact number is, I don't know.

MS. SINDING: Could it be an STC of 40?

MR. AGRESTI: It could. It may be higher than that. I don't remember offhand.

MS. SINDING: Are you familiar with a manufacturer of walls -- I'm not sure if this is the company name, but the wall is referred to as Atco Walls?

MR. AGRESTI: Yes. I'm familiar with Atco.

MS. SINDING: Would you know if the walls that are being analyzed here would be Atco Walls, or an equivalent to Atco Walls?

MR. AGRESTI: From what I remember, Atco manufactures several different -- as many as ten different wall panel materials. There may be one that is similar to this, but I can't confirm that.

MS. SINDING: In response to an

Interrogatory request from SHARED -- and that's Interrogatory request 147 -- and the response says it was prepared by you, Mr. Agresti -- you provided certain documents, and the Interrogatory was related to studies of noise attenuation measures for the proposed facility.

And you provided certain documents that appear to show the results of your analysis, assuming that different numbers, or types of controls were incorporated.

Do you have that in front of you?

MR. AGRESTI: Yes.

MS. SINDING: And I'd like to have this marked.

JUDGE GARLIN: The multiple page document which consists of Interrogatory SHARED-147, and the response to it, is marked for identification as Exhibit No. 28.

(Document marked Exhibit 28 for identification.)

MS. SINDING: If I'm correct in reading the charts, one of the additional controls that was considered was the use of Atco B walls, which have a sound transmission class of 40; is that right?

MR. AGRESTI: At one time when we were evaluating different controls through the NOISCALC model, yes, that's correct.

MS. SINDING: And was a decision made at some time not to utilize these Atco Walls?

MR. AGRESTI: No. We were not preparing the final design. We were just evaluating different wall material as far as what kind of reductions could be achieved.

MS. SINDING: And one of the other controls that is included in here -- and actually, there are several sets of data here, but are silencers for the stack, and for the air inlet.

And then it looks like on the fourth row down -- I'm sorry, on the fifth row down is where you're including all of the additional controls, plus the silencers for the stack, and for the air inlet; is that right?

MR. AGRESTI: Yes.

MS. SINDING: And just looking at the first page now, so this is at the first property line receptor, do the results indicate that in fact, if you utilized all of these sound controls, that the proposed facility would be able to meet or be lower

than the Town's ordinance in all but three of the octave bands?

MR. AGRESTI: It's more than three. It's four.

MS. SINDING: Four?

Yes. You're correct.

Have you analyzed what the impacts would be if you were to utilize the Atco Walls with an STC of 40 together with the stealth fan blades at any time?

MR. AGRESTI: No. In the refined modeling, I did not look at Atco Co. B walls, but again, I don't know if the wall that was incorporated in the model is more efficient than that wall or not.

MS. SINDING: So you don't know, if you were to utilize the Atco B walls, it might, in fact, be able to achieve the property line standard in combination with the use of the stealth fan blade?

MR. AGRESTI: I don't think there would be that much a difference between the walls to make that much of a difference in the total sound level, mainly because the walls have openings, and other materials in them, in a composite level, and the composite transmission loss is actually lower than

just that solid wall would provide.

So even increasing the transmission loss of the wall material, the composite probably would not increase very much at all.

MS. SINDING: When you're referring to openings, are you referring to, for example, ventilation openings?

MR. AGRESTI: That's correct.

MS. SINDING: And what those do is, in fact, allow a certain additional amount of noise to get out of the proposed facility and into the community?

MR. AGRESTI: That's correct.

MS. SINDING: So, in fact, the most conservative thing to do, going back to the CadnaA model, would be -- I note that in response to the SHARED Interrogatory 169 -- you said that you had taken into consideration the ventilation openings.

But again, wouldn't it have been most conservative to have also taken into consideration every source that was inside the building?

Let me refer specifically to -- the turbine building ventilation fans?

MR. AGRESTI: I'm sorry?

MS. SINDING: The turbine building ventilation fans?

MR. AGRESTI: Yes.

MS. SINDING: And I believe your response to 169L was that you had accounted for the ventilation openings.

MR. AGRESTI: Um-hm.

MS. SINDING: But you didn't take the source itself into consideration.

MR. AGRESTI: The fan itself, that's correct.

These sources, these additional sources -- I mean, I've looked at the sound level that would be expected from some of them, and the sounds power is just so low compared to the aggregate sound power of the entire plant that it just would not add to the total sound level.

So in conducting an analysis, after a while when the contribution is going to be so small, it's just not according to the model anymore.

MS. SINDING: But the fact is that you don't know what the overall contribution would be --

MR. AGRESTI: I can certainly say, for example, the service station transformer, the sound

power level from that is so far below the aggregate of the plant that it would not contribute anything to the total noise.

MS. SINDING: It might not even contribute, say, one decibel?

MR. AGRESTI: No, it would not.

MS. SINDING: In response to another Interrogatory from SHARED which is SHARED 133, Mr. Smith, you responded to this Interrogatory that the applicant was not aware of any studies, reviews, evaluations or consideration of potential noise impacts from constructing a 250-megawatt facility such as that proposed for Spagnoli Road at any of the alternative sites considered in the application; is that right?

MR. SMITH: That's correct.

MS. SINDING: I would like to have the response to SHARED 133 marked as an exhibit.

JUDGE GARLIN: 29 for identification will be the Interrogatory SHARED-133 and the response to it.

(Document marked Exhibit 29 for identification.)

MS. SINDING: Finally, yesterday

Ms. Harriman asked about the visual impacts of the eight to ten-foot high wall that is referred to in the stipulations, and specifically, in the land use topic agreement for the western boundary line, and she directed that question to the visuals panel, Mr. Wolfgang and Mr. Corrado.

And, in response, it was suggested that that question be directed to this panel, as you would have more familiarity with the wall that is being proposed.

So my question is, have you considered the visual impacts of constructing an eight to ten-foot high wall along the western property edge?

MR. SMITH: This is a noise panel, so I'm not sure exactly why that was directed towards us.

JUDGE GARLIN: Well, do you know what the materials might be?

MR. SMITH: We were looking at a form of wood material.

Certainly, we would work with the Town of Huntington, and what was an acceptable appearance. We had not looked at any detailed design.

Certainly, when we made that commitment,

we were assured that there was some reasonable material for fencing from a fencing company that could be made eight to ten-foot high and meet the sound absorption that the consultants were discussing.

JUDGE GARLIN: So you're talking about, for example, about the color, or whatever is in the Sherwin-Williams catalogue?

MR. SMITH: Certainly we never addressed anything relative to color yet.

JUDGE GARLIN: I'm sure we'll be hearing from Mr. Davis about that.

MR. SMITH: I'm sure we will.

MR. ALEXANDER: Obviously, the materials could affect the acoustical performance, but there is a wide range of materials, from tongue and groove, or ship lathe wood fencing, to precast concrete, decorative panels.

There's actually some plastic panels which can be achieved in a lot of different colors. There's metal panels.

I mean, there's a broad, broad range of materials that are used for fence/barriers that provide the appropriate acoustical performance.

And it's really just an issue of what aesthetically is acceptable, and obviously, what has a low maintenance factor, so the cost is low.

MR. SMITH: The location that was proposed already has a chain link fence along that property, but I assume we will probably replace that.

MS. SINDING: And when you refer to the proper acoustical qualities, you're referring to the ten to fifteen-decibel sound transmission loss. Okay.

So you don't know if anybody has actually performed any meaningful assessment of what the visual impacts would be?

MR. SMITH: I do not.

MS. SINDING: Okay. I have no further questions.

JUDGE GARLIN: Redirect?

MR. RATZKIN: May I just have a few minutes, please?

JUDGE GARLIN: Yes.

MR. RATZKIN: Thank you.

(Whereupon, a recess was taken.)

JUDGE GARLIN: We are back on the record.

Redirect?

MR. RATZKIN: Thank you, your Honor.

REDIRECT EXAMINATION

BY MR. RATZKIN:

To the panel generally, could you please describe what is the typical practice in deciding what sources to model in developing a major project.

MR. ALEXANDER: Of course, the whole process has become a little bit easier with computer models, but it's typical a case that a list of the equipment that would be present in the plant is be made, and then the major contributors are identified, and they are included in the model.

There's always some very small sources that can't necessarily be considered because of lack of data, but based on engineering judgment, they are usually excluded because their contribution, either individually or in aggregate, are determined based on previous experience, to be much, much less significance, and virtually insignificant compared to the major sources.

Often what is done is that the major sources are modeled in a conservative manner, to sort of take care of those small sources which weren't

included.

So, for instance, in the model that Mr. Agresti ran, I know that he excluded any ground cover, or any attenuation due to foliage.

For example, the directivity from the turbine exhaust stack, I believe he used a 90-degree directivity, whereas the receivers of that would be at angles of greater than 90 degrees, which means there will be additional attenuation due to just the directivity of that noise.

So you sort of consider the major sources in a conservative manner, and by doing that, the small, minor sources have sound powers and contributions which are so much lower individually, and in aggregate, that they can be virtually ignored.

And that's typically the way I've carried out the analyses on facilities that I've worked on.

MR. RATZKIN: And were the major sources included in the modeling of this?

MR. ALEXANDER: Yes, I believe so.

MR. RATZKIN: Do you believe that including the sources suggested by Ms. Sinding would have any effect on any receptor?

MR. ALEXANDER: I'll pass that on to Mr. Agresti, because he did run the model, so he is more familiar with the specifics there.

MR. AGRESTI: No, I do not. Especially considering the service station transformer. The expected power level from that would be so far below the aggregate of the balance of the plant that it would not add to the total sound level.

MR. RATZKIN: If the Extended Stay were modeled as a year round residence in that location, what CNR rating would be achieved?

MR. ALEXANDER: I believe that that would come out to be a C rating and meet the requirements that's using the current configuration of the facility.

And in fact, that's a very conservative assumption, because if you review the way the CNR is described to be used, there is a correction in there that provides for a one rank shift.

If there is no -- well, in the original writeup, if there is only winter operations, and if you read the text of it, that was really a way of describing locations where there is not extended outdoor activities.

And in the case of a hotel, even one where there's extended stay, there would not be expected to be people having outdoor activity.

So, in fact, a more accurate modeling of the CNR at that location would come out, under the current configuration, would be a B.

So it clearly would meet the C requirement.

MR. RATZKIN: Thank you.

Would you please describe the difference between the NOISCALC model and the CadnaA model.

MR. AGRESTI: The CadnaA model is designed to automatically take into account buildings and structures, the reflections from them, and the barrier effects from them, as well.

The NOISCALC would be the same thing, but to do that through the noise CALC model would be a much more labor intensive process, because one would have to sit down and physically look at the source barrier receiver interaction and take into account the calculation for each one, whereas the CadnaA model does it automatically.

And in fact, the CadnaA model, if you put a thousand engineers in a room, they could

duplicate all the calculations that are done and come up with the same results.

So it's just that the CadnaA model is easier to use because it makes those calculations on that.

MR. RATZKIN: Just to make sure I understand correctly, would it be possible to factor into the NOISCALC model all the refinements and mitigation that was subsequently used in the CadnaA model?

MR. AGRESTI: Absolutely.

MR. RATZKIN: And the difference is simply a question of labor intensivity?

MR. AGRESTI: That's correct.

MR. RATZKIN: Mr. Smith, there was some discussion about the various materials that might be used to construct the skin or the walls of the proposed facility.

What steps would you take to assure that the materials that are ultimately purchased for the facility could meet the modeled expectations?

MR. SMITH: The stipulations as presently written indicate that in the six months following operation of the unit, we would have to

demonstrate the CNR rating at the sensitive receptors.

In order to do that, the contract that we establish with our engineering procurement construct contractor would have stipulations assuring that the design of the facility, when it goes into operation, would meet those noise requirements, and that vendor, as well, would be in discussion with the numerous manufacturers of different types of materials, and have available to them the selection of material that would assure that we meet that noise criteria.

And that may vary, whether it's a manufacturer of Atco, specifically or some other insulating material, they are pretty much limited, for example, air-cooled condenser manufacturers are limited in the market, and there is only a couple available that both use the stealth fan blade technology, and it's a blade that they both use by a different manufacturer.

So in that particular case, we are pretty well identified about where we would go.

MR. RATZKIN: I would like to ask you to make a comparison between the typical facility of

this type that might be constructed in the northeast without any sound attenuation or mitigation, and to the measures that are planned to be employed in this project.

Can you try to describe the various mitigation items that are being planned.

MR. SMITH: In another location it is not inconceivable that this facility would probably not have an enclosure around the heat recovery steam generator.

The facility would not have silencers.

Most of the other equipment would be located outside, without sound attenuation.

In now dealing with this facility at Spagnoli Road, we totally enclosed all turbine generator, combustion turbine, steam turbine, heat recovery steam generator in a building, sound attenuated.

We have added stack silencer. We have added air inlet silencer.

We have enclosed the combustion -- the gas compressor building externally.

We have taken external equipment at other facilities and placed it inside the turbine

building to tenuate sound.

We have gone to a stealth fan blade design on an ACC.

I think that pretty much -- oh, and then the use of a low noise main step-up transformers.

MR. RATZKIN: Can you describe the decibel levels of a standard transformer, step up transformer to the low noise transformer that is being planned for this facility?

MR. SMITH: Typically, the NEMA standards, the National Electric Manufacturers Association, specifies I think approximately eighty-two DB, at three foot, for a main transformer similar to what you would have as a step-up for the steam generator in the turbine stepup transformer.

The identification in talking to the transformer manufacturers, we will be specifying seventy-one DBA at three foot and requiring that.

MR. RATZKIN: Finally, counsel for SHARED made various references to the preapplication stipulations.

Was SHARED a signatory to those stipulations?

MR. SMITH: The preapplication did not

include SHARED as signatories. However, if they would like to join in the final stipulation, we could make some arrangement.

(Laughter.)

MR. RATZKIN: No further questions.

JUDGE GARLIN: Any Cross or Redirect?

MS. SINDING: I just have a couple of questions.

RECROSS-EXAMINATION

BY MS. SINDING:

MS. SINDING: Just so I understand, with respect to the sources that were excluded from the CadnaA model, the four or so sources that we discussed previously, you stated that there were two instances in which they might not be included. Sometimes you don't have the data as being one of them.

The reason they were not included in here was not because of lack of data; is that right?

MR. AGRESTI: The sources, in my judgment, were insignificant, so I did not go to try to get exact data for those sources, because they were so minor.

MS. SINDING: So you don't know if the

data was available, and consequently, what the results would have been if that data would have been included as inputs?

MR. AGRESTI: I'm sorry, could you repeat that question, please.

MS. SINDING: Yes. You said that you did not take the step of trying to ascertain whether data was available for those sources; is that right?

MR. AGRESTI: For some of those sources, yes.

MS. SINDING: So again, you don't know what the results of the model would have been had that data been available and used --

MR. AGRESTI: No, I don't, but the fact that many of those sources, number one, are inside the building, and are minor, to begin with, they would not be contributors.

MS. SINDING: And, secondly, I just want to understand, Mr. Alexander, the basis of your conclusion that if the Extended Stay Hotel had been modeled as residential, that it would have achieved a CNR rating of C, you're familiar, aren't you, with the testimony of Mr. Wood?

MR. ALEXANDER: Yes.

MS. SINDING: And you know that he utilized the NOISCALC model, and considered the Extended Stay Hotel, or modeled the Extended Stay Hotel, as a residential location, and determined that, in fact, it achieved a CNR rating of D; is that right?

MR. ALEXANDER: That's correct.

MS. SINDING: And do you have any basis for concluding that running that model, the NOISCALC model, and considering the Extended Stay Hotel to be a residential use, that that is not, in fact, the correct rating?

MR. ALEXANDER: Yes. First of all, when Mr. Wood ran the model, he was using the original configuration.

And I think we have discussed here and in the testimony that the current configuration has lower noise level equipment; for example, the ACC and various measures.

So that brings the levels down, and that's how it went on a worst case analysis to a C.

And the B would be achieved if you modeled it in the way that, in my judgment, it should be modeled; that is a location where there are people

who may sleep, but there is not outdoor activity.

So that's how I got the C indication.

MS. SINDING: I understand all of that, but you did not perform that modeling; is that right?

MR. ALEXANDER: No. I have reviewed some of that data with Mr. Agresti, and based on our discussions, that's where the conclusion comes from.

MR. AGRESTI: I would add, too, that the data Mr. Wood used for his CNR calculations, based on the application modeling for Extended Stay, not only did it not account for the lower source levels we have now, but it didn't account for any of the barrier effects which are there.

And incorporating those into the modeling reduces the sound levels at Extended Stay such that even if it's treated as a year round use, it would meet the rating of C.

MS. SINDING: And that's because he used the NOISCALC model as you, in fact, used it as required under stipulation 6, regardless of whether SHARED was a signatory to that stipulation or not, right?

MR. ALEXANDER: No. It's because he used the NOISCALC model with data that, at that

point, he had available, which does not reflect the current configuration, and is an extremely conservative model, in that it does not account for any barrier effect or shielding.

MS. SINDING: But that's the same data you utilized in running the NOISCALC model?

MR. AGRESTI: But again, the NOISCALC model could have been enhanced to take into account barrier effects that would have resulted in lower sound levels, as we showed in our rebuttal testimony.

MS. SINDING: I understand that.

All I'm trying to make clear is that you, in fact, have not run the NOISCALC model with those different input factors.

MR. AGRESTI: No, but again, it's intuitive, just knowing, taking into account barrier effects and lower sound levels, it would have lower sound levels At the receiver.

MS. SINDING: Okay. I have no further questions.

JUDGE GARLIN: The witnesses are excused.

(Witnesses excused.)

JUDGE GARLIN: We are going to recess

for about five minutes.

(Whereupon, a recess was taken.)

JUDGE GARLIN: We will go back on the record.

I believe the next witness is Mr. Wood.

E R I C W O O D, called as a witness, having first affirmed to tell the truth, was examined and testified as follows:

JUDGE GARLIN: Please be seated, state your name and business address for the record.

MR. WOOD: My name is Eric Wood, E-r-i-c, 33 Moulton Street, Cambridge, Massachusetts.

DIRECT EXAMINATION

BY MS. SINDING:

MS. SINDING: Mr. Wood, have you reviewed your prefiled direct testimony dated June 27, 2002?

MR. WOOD: Yes.

MS. SINDING: And do you have any corrections or modifications to make to that testimony?

MR. WOOD: No.

MS. SINDING: And do you adopt the testimony as your own?

MR. WOOD: Yes.

MS. SINDING: At this time, I would like to move the admission into evidence of the prefiled testimony of Eric Wood.

JUDGE GARLIN: The prepared testimony of Mr. Wood will be copied into the record as if given here today orally.

(Continued on following page.)

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

IN THE MATTER

- of the -

Application of Keyspan Energy Development Corporation for a Certificate of Environmental Compatibility and Public Need to Construct and Operate a Nominal 250 Megawatt Combined Cycle Combustion Turbine Electric Generating Plant in the Town of Huntington, Suffolk County, New York

Case No. 01-F-0761

SOUTH HUNTINGTON ALLIANCE FOR RESPONSIBLE ENERGY DEVELOPMENT, ARROW ELECTRONICS, INC., GILBERT DISPLAYS, INC. AND MARCHON EYEWEAR, INC.'S PRE-FILED DIRECT TESTIMONY OF ERIC J. W. WOOD

Mark A. Chertok, Esq.
Sive, Paget & Riesel, P.C.
460 Park Avenue
New York, New York 10022

- and -

Richard C. Cahn, Esq.
Cahn, Wishod & Knauer, LLP
425 Broadhollow Road, Ste. 315
Melville, New York 11747

Attorneys for the South Huntington Alliance for Responsible Energy Development, Arrow Electronics, Inc., Gilbert Displays, Inc. and Marchon Eyewear, Inc.

Dated: June 27, 2002

Q: Please state your name, title, affiliation and address.

A: My name is Eric J.W. Wood, and I am a Principal in Acentech Incorporated, where I have been employed since 1989. My business address is 33 Moulton Street, Cambridge, Massachusetts.

Q: On whose behalf are you offering your testimony?

A: I offer my testimony on behalf of S.H.A.R.E.D. and its constituent members Arrow Electronics, Inc., Gilbert Displays, Inc. and Marchon Eyewear, Inc.

Q: What role does Acentech have in this proceeding?

A: Acentech is a noise and acoustical consultant for the South Huntington Alliance for Responsible Energy Development ("S.H.A.R.E.D.") for the purpose of evaluating and analyzing the noise impacts that will result from the construction and operation of Keyspan's proposed Spagnoli Road Electric Generation Facility (the "Facility").

Q: What role do you have in this proceeding?

A: I have been asked to review and evaluate the adequacy of Keyspan's Application insofar as it relates to construction and operation noise impacts associated with the proposed Facility and to give my opinion on issues relating to noise impacts.

Q: What is your job at Acentech?

A: I am a Principal at Acentech, where I have worked since 1989. Acentech is among the largest and oldest acoustical consulting firms in North America with extensive direct experience in energy projects. I direct and provide technical contributions to engineering and environmental projects related primarily to the measurement, evaluation and control of noise during the design, construction and operation of major energy systems, transportation facilities, and industrial plants.

Q: How are you qualified to perform your employment duties?

A: During thirty years of consulting practice, I have personally supervised or participated in hundreds of projects requiring ambient measurement surveys, environmental reports, project licensing, construction and demolition noise studies, interior and exterior noise and vibration surveys, and noise control designs. This includes my experience from 1972 until 1989 with Bolt Beranek and Newman, where I was a Supervisory Consultant. I have a B.S. in mechanical engineering from the University of Hartford. In addition, I am a member of the Institute of Noise Control Engineering and the Acoustical Society of America.

Q: Does your curriculum vitae, which is attached as EW-1, fairly and accurately represent your experience with respect to the evaluation of noise impacts?

A: Yes.

Q: Do you have any noteworthy experience with noise impacts from the construction and operation of power generation facilities?

A: Yes. I have had extensive engineering acoustics experience at electric-power generation projects ranging in size from less than 1 megawatt-electric (MWe) to more than 1,000 MWe, including combined-cycle combustion turbine facilities such as the one proposed here. My curriculum vitae lists representative cogeneration and combined-cycle facility projects on which I have consulted. Moreover, I have co-authored or edited several comprehensive guidebooks for the electric power industry on the subjects of power plant construction noise, power plant operating noise and power plant draft fan noise. These include, among others, the *Power Plant Construction Noise Guide*, prepared for the Empire State Electric Energy Research Corporation, New York, 1977; and the *Electric Power Plant Environmental Noise Guide: Volumes 1 and 2*, Copyright by the Edison Electric Institute, Washington D.C. (1978, updated 1983). Indeed, these publications are principal materials that Keyspan has used to predict noise levels from the construction and operation of the proposed Facility, and referenced repeatedly in Section 11 and Appendix 11A of the Application.

Q: What documents and other information have you reviewed in preparing your testimony?

A: I have comprehensively reviewed the relevant portions of Keyspan's Article X Application, with particular focus on Sections 2 (Project Description) and 11 (Noise) and on Appendix 11A (Noise Technical Report), as well as Keyspan's May 20, 2002 Reponses to S.H.A.R.E.D., Arrow Electronics, Inc.,

Gilbert Displays, Inc., and Marchon Eyewear, Inc. Interrogatory/Document Request of May 9, 2002, and the May 15, 2002 Order Specifying Article X Issues (the "Issues Order"). I also visited the area surrounding the proposed Facility site, including the Extended Stay America Hotel (the "Extended Stay Hotel"). Additionally, I have read relevant portions of the Town of Huntington Noise Ordinance and Article X.

Q: Have you formed any opinions based on your review of these materials?

A: Yes.

Q: What are they?

A: First, I believe that the proposed Facility would not comply with Section 198-89(B) of the Town of Huntington Code ("Code") entitled "Measurement of elements at lot line" at this location. Second, in my opinion Keyspan did not design the Facility with a sufficient safety margin to ensure that it will meet the Composite Noise Rating ("CNR") of "C" limit at the dormitories on the adjacent State University of New York at Farmingdale Campus (the "SUNY Dormitories"). Third, I am of the opinion that the facility noise reported by the Applicant would result in a CNR rating of "D" at the Extended Stay Hotel. Finally, I believe that noise levels from pile-driving during construction would be greater than reported by the Applicant.

Q: What is your opinion concerning the proposed Facility's ability to meet Town's Noise Ordinance?

A: Table 11-10 on page 11-15 of Keyspan's Application shows that the proposed Facility will violate Code Section 198-89(B) at the site's lot line, even with the noise control features Keyspan proposes as "mitigation". This would occur at each of the 14 locations considered by Keyspan along the Facility property line. Keyspan identified the proposed air cooled condenser as the "dominant noise source" causing this violation, and apparently found that no existing air cooled condenser ("ACC") would achieve the Town's Noise Ordinance standard. Therefore, Keyspan argued that it could not comply with Code Section 198-89(B).

In my opinion, the proposed Facility is predicted to violate the Town's Noise Ordinance, not because of the ACC, but because it is a large industrial facility proposed to be built and operated on a small site. Thus, the violation of Code Section 198-89(B) is not simply the result of project noise, but construction of a facility that does not fit this site. If Keyspan built this Facility on a larger site, then it could more closely comply with the Code Section 198-89(B).

Q: In your opinion, if Keyspan obtains a waiver from Code Section 198-89(B), would the Facility comply to the fullest extent practical with that Section at this location?

A: Not necessarily. In Section 11.5.2 of the Application at page 11-15, Keyspan states that it made requests to potential ACC vendors to supply the noise level data associated with the quietest ACC design that was commercially available, regardless of cost. According to Keyspan, even using the quietest available ACC, the property line standard would still be exceeded. Therefore, Keyspan maintains that it cannot comply with this standard, and so should receive a waiver.

But Keyspan's inability to comply with the law does not excuse it from coming as close as existing technology permits. Section VI.2. of the Draft Certificate requires Keyspan to comply with the Town standards "to the fullest extent practical" even if a waiver is granted. Thus, Keyspan must use the quietest plant design and equipment that are commercially available and practicable regardless of whether it would achieve the property line standard. This includes not only the quietest ACC, but the quietest transformers, turbines, compressors and other equipment that contribute noise at the property line.

I do not find anything in the Application to indicate that Keyspan has done or will do this. Nor do I find anything in the Application to indicate that using the quietest equipment would be unreasonably costly. The final Certificate should therefore specify that Keyspan must use the quietest practical plant and equipment designs.

Q: Do you have an opinion about noise impacts the Facility would cause at the SUNY Dormitories?

A: Yes.

Q: What is your opinion?

A: In my opinion Keyspan did not include a reasonable and explicit margin of safety in the plant design goal or modeling results sufficient to ensure that the noise generated by the Facility will not exceed the NYSDPS requirements at the SUNY Dormitories.

Q: What are the NYSDPS noise requirements at the SUNY Dormitories ?

A: For new power plants to be built in New York State, the Applicant must demonstrate that they will not exceed specific noise limits at sensitive receptors near the proposed site. The Applicant's table 11-8 provides both calculated operating noise levels and what the Applicant terms "design goals". The design goals listed in this table are actually the specific maximum noise limits that, if exceeded, would violate the NYSDPS noise requirements. For the SUNY dormitories, two of these maximum noise limits are shown as 50 decibels (dB) in the 125 Hz octave band and 43 dB in the 250 Hz octave band.

Q: What is the basis for your opinion that Keyspan did not include a reasonable and explicit margin of safety in the plant design goal or modeling results relative to the SUNY Dormitories?

A: When calculating facility operating noise levels, Table 11-8 of the Application shows that the project operating-noise modeling results for the 125 and 250 Hz octave bands at the SUNY Campus include zero margin or room for such uncertainties. However, an error of only 1 dB in the modeling results would result in the project exceeding the required modified CNR rating of "C" at the SUNY Campus.

Such an error is entirely plausible here. For example, Appendix 11A Section D of the Application identifies nine specific noise sources at the proposed plant and shows that eight of those noise sources were included in the operating noise model. However, in calculating the facility operating noise, the Applicant did not include numerous other sources of noise that will operate at the Facility. Sources of noise not included in the model include the turbine building ventilation fans, the fuel-gas-compressor station ventilation fans, water treatment equipment, steam lines and drains, the turbine building roof, the station service transformer, the combustion turbine generator compartment exhaust fans, the load compartment exhaust fans and the ACW cooler. No one of these "left-out sources" is of great importance by itself. However, together they could be expected to increase the modeled noise levels.

When operating noise limits are considered important and must not be exceeded, it is common practice in the engineering profession to include a reasonable and explicit margin (factor of safety) in the plant design goal and/or

modeling results. In my opinion, the Applicant should be required to provide a revised operating-noise analysis that includes the additional noise abatement necessary to exhibit a design margin of at least 3 dB, and to include additional noise control treatments required to comply with the NYSDPS noise requirements applying this design margin.

Q: Do you have any opinion about the noise impacts from operation of the Facility at the Extended Stay Hotel?

A: Yes. The Applicant treated the SUNY campus as a sensitive receptor because dormitories where students reside are located on the Campus. Mr. DeSanctis informs me that guests at the Extended Stay Hotel, as the name implies, reside there for weeks and even months at a time. Yet the Applicant did not use the modified CNR analysis to evaluate the Facility operating noise at the Extended Stay Hotel as was done for the SUNY campus. I did, however.

Q: What is the modified CNR analysis?

A: It is an analysis and rating method employed to judge the acceptability of noise from industrial facilities located near noise-sensitive receptors. The CNR analysis yields composite noise ratings ranging from "A" to "I", where "A" is very quiet and "I" is very noisy. New power plants to be built in New York State must be evaluated with a modified CNR analysis and must demonstrate that they will achieve a rating no greater than "C" at noise-sensitive receptors near the proposed site.

My calculations show that operation of the Facility will result in a CNR rating of "D" at the Extended Stay Hotel. To reach this conclusion, I used the background noise levels at the hotel measured by the Applicant and reported in Table A-23 of Appendix 11A Section A. I also used the plant operating noise levels expected at the hotel as calculated by the Applicant and reported in Appendix 11A Section D. These data show the Facility operational noise level to be 7 to 8 dBA greater than the existing background noise at the hotel. Applying the modified CNR analysis to the Applicant's data, annexed as EW-2, I calculated that the Facility noise would achieve a "D" rating at this receptor. This fails the design requirement of Level "C".

Q: Finally, do you have any opinion on the adequacy of Keyspan's application as it concerns construction noise impacts, particularly from pile-driving activities?

A: Yes.

Q: What is your opinion?

A: In my opinion Keyspan has underreported the level of noise to be expected during pile driving activities.

Q: What is the basis for your opinion?

A: Keyspan's assertion that "no noise impacts from construction activities are anticipated" is based on the their data presented in Table 11-5 on page 11-8. That table suffers from two problems. First, to derive the anticipated average

construction noise or "ACN" in that Table, Keyspan used what they refer to as the "Maximum Noise Levels of Major Construction Equipment" listed in Table 11-4 on page 11-7 of the Application. But the 90 dBA noise level in Table 11-4 used by the Applicant does not represent the "maximum noise levels" for pile driving activities. Instead, for pile drivers the 1971 and 1974 BBN reports referenced by the Applicant provide maximum noise levels of 105 and 107 dBA.

Second, Applicant's Table B-1 of Appendix 11A indicates that pile driving will occur during 4% of the initial grading and excavation construction phase. The source of this operating time value appears to be Table A-2c of the 1971 BBN report referenced by the Applicant. However, that BBN source report states that this value includes the fractional number of industrial construction sites throughout the U.S. at which pile drivers are used. Thus, the 4% operating time value appears to have been improperly applied in the Applicant's construction noise analysis.

The Applicant reports in Table 11-5 that the average construction noise during initial grading and excavation will be 59 dBA at the Extended Stay Hotel. After correcting these two problems, as shown in EW-2, the Applicant's analysis would show actual noise levels during pile driving can be expected to exceed 70 dBA at the Extended Stay Hotel.

Q: Does this conclude your testimony?

A: Yes.

MS. SINDING: And, Mr. Wood, have you reviewed the exhibits to your testimony?

MR. WOOD: I don't remember, other than my resume. Were there others, also?

MS. SINDING: Yes. There is a memorandum dated June 25th, to Michael Bogen concerning modeling at the Extended Stay America Hotel.

Would you like to review those exhibits now?

MR. WOOD: No. I believe you. I remember that now.

MS. SINDING: Do you have any changes or modifications to those exhibits?

MR. WOOD: No.

MS. SINDING: At this time, I would like to request that Exhibits EW-1 and EW-2 be marked as exhibits.

JUDGE GARLIN: Exhibits EW-1 and EW-2 are marked for identification as Exhibit 30.

(Documents marked Exhibit 30 for identification.)

JUDGE GARLIN: Anything else?

MS. SINDING: Oh, I'm sorry. The

witness is available for cross-examination.

JUDGE GARLIN: All right. I received estimates of about forty-five minutes from the applicant, and about a half hour from DPS.

MR. RATZKIN: The applicant will have no questions.

JUDGE GARLIN: No questions?

MR. RATZKIN: No, sir.

JUDGE GARLIN: Ms. Harriman, do you have any?

MS. HARRIMAN: This will be Mr. Lang's territory.

MR. LANG: We have a few, Judge. Certainly it won't be a half-hour.

JUDGE GARLIN: Before you go, are there any late comers who have joined us?

No.

Go ahead, Mr. Lang.

CROSS-EXAMINATION

BY MR. LANG:

MR. LANG: Sir, do you have a copy of your testimony in front of you?

MR. WOOD: I do.

MR. LANG: Would you please turn to page

5 of your testimony, lines 12 through 17.

MR. WOOD: Page 5, yes.

MR. LANG: As I understand your testimony, you're saying that the facility does not fit the site.

Are you saying that the footprint of the facility is too large for this site?

MR. WOOD: No. I would say that the site is small for the facility.

MR. LANG: Well, you state in lines 14 through 16 that the violation of the code section is due to construction of a facility that does not fit this site.

MR. WOOD: Correct.

MR. LANG: So you're saying that the facility is too large?

MR. WOOD: Physically too large?

MR. LANG: Yes.

MR. WOOD: No. What I'm saying is that because the site is small, and because it's a noisy industrial facility, that the noise from the facility is expected to exceed the Town noise limits.

If it had been placed on a larger site, clearly, the noise at the property boundary would

have been lower.

MR. LANG: How much larger of a site?

MR. WOOD: Well, if you take a look at the plot plan, one of the locations along the property line, if I remember correctly, is location ten, I believe, is nearly in compliance. It's the one that is the closest to compliance.

So if the site had been slightly larger than where location ten is, you could have expected it to either meet or come close to meeting the Town noise level.

MR. LANG: Do you believe that the Northport site would be sufficiently large to accommodate the site for this proposed facility?

MR. WOOD: I haven't studied the Northport site. I haven't been to Northport probably for twenty years.

MR. LANG: Have you looked at any of the alternative sites from a noise perspective?

MR. WOOD: I have not.

MR. LANG: Are you offering any opinions as to the suitability of any alternative from a noise perspective?

MR. WOOD: No opinion.

MR. LANG: Is your testimony that you have submitted related solely to noise issues, or are you opining on the design of the building, design of the facility, or any other aspects besides noise?

MR. WOOD: Only noise.

MR. LANG: I have no further questions, your Honor.

JUDGE GARLIN: Redirect?

MS. SINDING: I'll take one minute to consult with the witness, but I doubt it.

JUDGE GARLIN: All right.

(Whereupon, a recess was taken.)

MS. SINDING: SHARED will have no Redirect.

JUDGE GARLIN: In that case, the witness is excused?

MR. WOOD: Done?

JUDGE GARLIN: Done.

MR. WOOD: We appreciate the brevity.

(Laughter.)

(Witness excused.)

JUDGE GARLIN: The only remaining witnesses scheduled for today are aviation witnesses panel for the applicant and the witness for SHARED.

I guess nothing has changed from what I canvassed yesterday as to the advanced availability of witnesses by anybody.

Apparently, it's not the case for anybody.

Let's just go off the record for a second.

(Discussion held off the record.)

JUDGE GARLIN: Let's go back on the records.

Is the applicant going to proceed with the aviation panel first?

MR. RATZKIN: If that's your preference.

JUDGE GARLIN: I don't --

MR. RATZKIN: Yes. We are happy to do that.

JUDGE GARLIN: Just because of the way this issue was framed, I didn't know if it was going to be done differently.

MR. RATZKIN: No, your Honor.

JUDGE GARLIN: Go ahead. Why don't you call your witness.

Mr. Young, if you would raise your right hand.

H E N R Y Y O U N G, called as a witness, having first duly affirmed to tell the truth, was examined and testified as follows:

JUDGE GARLIN: Please be seated, and state your name and business address for the record.

Before you do, let me just note that Mr. Smith who has already been up once today, is reappearing with this panel. I won't make him go through this again.

J E F F R E Y S M I T H, recalled as a witness, having been previously duly sworn, resumed, was examined and testified as follows:

MR. YOUNG: My name is Henry Young. I'm President of Young Environmental Sciences, 1295 Northern Boulevard, in Manhasset, New York 11030.

MR. SMITH: Jeffrey Smith.

JUDGE GARLIN: Go ahead. You've done it.

Go ahead.

MR. SMITH: KeySpan Energy Development Corp., 201 Old Country Road, Melville, New York.

DIRECT EXAMINATION

BY MR. RATZKIN:

MR. RATZKIN: Mr. Young, have you had an

opportunity to review your prefiled testimony in this case submitted on July 24, 2002?

MR. YOUNG: Yes, I have.

MR. RATZKIN: And do you have any corrections or modifications to that testimony that you wish to make at this time?

MR. YOUNG: No, I do not.

MR. RATZKIN: Mr. Smith, have you reviewed the prefiled aviation testimony of Smith and Young submitted on July 24th of 2002?

MR. SMITH: Yes, I have.

MR. RATZKIN: Do you have any corrections or modifications that you wish to make to that testimony at this time?

MR. SMITH: No, I don't.

MR. RATZKIN: Your Honors, I move that the testimony be submitted into evidence.

JUDGE GARLIN: The prepared filed testimony of witnesses Smith and Young will be copied into the record as if given here today orally.

(Continued on following page.)

KEYSPAN ENERGY DEVELOPMENT CORPORATION

REBUTTAL TESTIMONY
OF
JEFFREY L. SMITH
HENRY A.F. YOUNG

IN SUPPORT OF SECTION 13.0 OF THE
SPAGNOLI ROAD ENERGY CENTER PROJECT
ARTICLE X APPLICATION
Case 01-F-0761

July 24, 2002

Q. Please state your names and business addresses.

A. My name is Henry A.F. Young and my business address is 1295 Northern Boulevard, Suite 11, Manhasset, New York.

Q. Mr. Young, have you previously provided testimony in these proceedings?

A. Yes. I have provided pre-filed testimony that was included as part of the Article X Application that was filed on January 28, 2002. My educational background and professional qualifications are set forth in that testimony.

A. My name is Jeffrey L. Smith, and my business address is 201 Old Country Road, Melville, New York.

Q. Mr. Smith, have you previously provided testimony in these proceedings?

A. Yes. I have provided pre-filed testimony that was included as part of the Article X Application that was filed on January 28, 2002. My educational background and professional qualifications are set forth in that testimony.

Q. Have you reviewed the testimony of Robert Gordon?

A. Yes.

Q. Mr. Young, are you familiar with the Exhibit __ (SY-1), the appeal filed by Arrow Electronics ("Arrow") concerning the No Hazard determination issued by the Federal Aviation Administration ("FAA") with respect to the proposed facility stack (Petition for Review of Aeronautical Study No. 01-AEA-1176-0E)?

A. Yes.

Q. Has the FAA rendered a decision on the Arrow appeal?

A. Yes. See Exhibit __ (SY-2) (Letter to Jim J. Marquez, Holland and Knight LLP from Sabra W. Kaulia, Program Director for Air Traffic Airspace Management, dated July 19, 2002).

Q. What did the FAA decide?

A. The FAA rejected the appeal, finding no merit in any of the issues raised by Arrow. Specifically the FAA stated:

> [W]e find that the Regional Office properly followed all of the necessary procedures in making the subject determination. Your petition failed to provide any new facts or information that would change the basis on which the determination was made. Accordingly, your request for discretionary review is denied and the above referenced Determination of No Hazard to Air Navigation is final.

Q. What issues did Arrow raise in its appeal?

A. Arrow raised five separate issues, asserting (i) that the proposed exhaust stack would constitute a hazard to navigation; (ii) that the proposed stack's effects on airspace exceeded its height; (iii) that the type of traffic at Republic Airport presents particular safety concerns; (iv) that the proposed stack impinges on the finite airspace that the FAA should protect; and (v) that the FAA's aeronautical study had been procedurally flawed.

Q. In his testimony, does Robert Gordon present any issues other than those that were presented by Arrow in its appeal and that were considered by the FAA in rejecting that appeal?

A. No. The issues discussed by Mr. Gordon concern (i) whether the proposed stack would present a hazard to aviation; (ii) whether the plume from the stack would

present a danger to aircraft; (iii) whether particular risk factors were present at Republic Airport.

Q. Do you have any further comments about the stack plume discussed by Mr. Gordon.

A. Yes. Notably, Mr. Gordon does not testify to a single accident involving aircraft overflying a stack plume. Nor does he cite a single study evaluating the asserted impacts of stack plumes on air navigation. Mr. Gordon, although an experienced pilot, is not a scientist with the technical expertise that would qualify him to evaluate the impact of stack plumes on aircraft performance. He does not even testify that he, a pilot with over 10,000 hours of flight time, has ever flown through a plume. Thus, he lacks even a relevant anecdote to relate. In sum, he provides no evidence of the effects of stack plumes.

Q. Are you aware of any air traffic accident ever associated with a stack plume?

A. No.

Q. To the panel: are you aware of any studies or FAA circulars or any other information identifying or even suggesting any air navigation hazard associated with thermal or vapor plumes that might be associated with the proposed facility?

A. No. Mr. Gordon speculates that overflying the stack could cause engine failure due to oxygen depletion. I am aware of no basis for this statement. Assume, for example, that an aircraft is travelling at 50 mph, the low end of the range suggested by Mr. Gordon. That computes to 73.4 feet per second. Even assuming that the plume is spread 75 feet wide with a total absence of oxygen, it would take but one second for the slowest of aircraft to cross the plume width.

This is insufficient to cause engine failure because the oxygen starvation would not be complete. Notably, Mr. Gordon has presented no testimony or other evidence of the breadth of the stack plume at various elevations, nor of the oxygen content of such a plume at any elevation, although presumably oxygen content will increase rapidly as the plume becomes diluted as it rises. In fact, the gas turbine exhaust leaving the stack contains approximately 15% oxygen, as compared to 21% in air – a depletion of 25% even before mixing with atmospheric oxygen begins. With respect to vapor plumes, again, Mr. Gordon has not presented any evidence or testimony of any accident ever associated with a vapor plume emitted from a stack.

The fact is that stacks of much greater output than the proposed stack already exist near airports. There are numerous power plant stacks within close range of LaGuardia Airport in New York City. For example, the Astoria Generating Station and NYPA Poletti Stations are approximately 1.5 miles from the end of the runway and have a total of five 299 feet AMSL stacks. In addition, recent proposed facilities approved or in the Article X process include the Poletti expansion on the Astoria property with a single 268 foot AMSL stack and the Astoria Energy LLC project, located adjacent to the Astoria Station, with multiple 269 foot AMSL stacks. The Ravenswood Generating Station is located approximately three miles for LaGuardia Airport and has three 499 foot AMSL stacks and a fourth stack under construction that will be 415 feet AMSL. These existing stacks are greater in number, taller, emit more particulate matter (soot),

and, in several instances, are closer to the runway than the proposed stack would be. And, of course, LaGuardia is a much busier airport than Republic.

Q. Are you aware of any accidents or studies related to any type of stack plume?

A. No.

Q. Does this conclude your testimony?

A. Yes.

MR. RATZKIN: Mr. Young, have you reviewed the exhibits to that testimony?

MR. Young: Yes, I have.

MR. RATZKIN: Do you have any corrections or modifications that you would like to make to those exhibits?

MR. YOUNG: Not at this time.

MR. RATZKIN: Mr. Smith, have you reviewed those exhibits?

MR. SMITH: Yes.

MR. RATZKIN: Would you like to make any corrections or modifications to those exhibits?

MR. SMITH: No.

MR. RATZKIN: Your Honors, we request that those exhibits be marked for identification.

JUDGE GARLIN: Exhibits SY-1 and SY-2 will be marked for identification as Exhibit 31.

(Documents marked Exhibit 31 for identification.)

MR. RATZKIN: The witnesses are available for Cross.

JUDGE GARLIN: I believe that SHARED is the only party indicating cross-examination.

MR. EVERSMAN: I'll be doing the

cross-examination.

My name is Jay Eversman, from Sive, Paget & Riesel, counsel for SHARED, Arrow, Electronics, Marchon Eyewear and Gilbert Displays.

CROSS-EXAMINATION

BY MS. EVERSMAN:

Mr. Young, it's true that you're not a licensed pilot; is that correct?

MR. YOUNG: That's correct.

MR. EVERSMAN: Do you have any flight training at all?

MR. YOUNG: No, I do not.

MR. EVERSMAN: Have you ever operated an aircraft?

MR. YOUNG: No, sir.

MR. EVERSMAN: Do you have any education or experience in the mechanics of aircraft engines?

MR. YOUNG: I have considerable experience with reciprocating engines, but I do not have specific experience as a mechanic for aircraft.

MR. EVERSMAN: It's true that you haven't published any documents on the topic of the impact of aviation caused by electric generating facilities or other large industrial facilities;

isn't that correct?

MR. YOUNG: That's correct.

MR. EVERSMAN: Have you testified as a witness or expert before a rule-making regulatory body, or any legislative body on the topic of impacts of aviation on electric generating facilities?

MR. YOUNG: No.

MR. EVERSMAN: Have you had any dealings with the FAA regarding the issuance of no hazard to air navigation determinations, besides the one involved in this case?

MR. YOUNG: Certainly.

MR. EVERSMAN: Did you assist in the preparation of Section 13.4 of the Article X application?

MR. YOUNG: If you're referring to the section discussing Republic Airport, yes, that's correct.

MR. EVERSMAN: Yes, I am.

Mr. Smith, are you a licensed pilot?

MR. SMITH: I am not.

MR. EVERSMAN: Do you have any flight training?

MR. SMITH: No.

MR. EVERSMAN: Have you ever operated any aircraft?

MR. SMITH: No.

MR. EVERSMAN: Have you published any documents on the topic of aviation?

MR. SMITH: No.

MR. EVERSMAN: Have you testified as a witness or expert before any rule-making regulatory body, or any legislative body, on the topic of impact to aviation?

MR. SMITH: No.

MR. EVERSMAN: I have a question for the panel, generally, and this is in reference to your rebuttal testimony from page 4, line 11, regarding other stacks located near airports.

I would like to ask you about your statements from page 4, lines 12 to 13, in the rebuttal testimony that numerous power plant stacks within close range of LaGuardia Airport, in New York City.

The only example of an airport with stacks near it is what you cite as LaGuardia Airport of; isn't that correct?

MR. YOUNG: In the testimony, that's correct.

MR. EVERSMAN: Could you compare the distance from any of the numerous power plant stacks surrounding LaGuardia Airport with any of the public approaches for LaGuardia Airport, for that distance compared to the distance between the stack for the proposed facility and any of the public approaches for Republic Airport?

MR. YOUNG: The stacks that are located to the west of LaGuardia, I believe, are not directly underneath the approach fan, but are in close proximity, within one to two miles.

With respect to Republic Airport, the proposed stack lies approximately two miles from the airport and is equidistantly located between the approaches to runway 19 and 14, as an approximation.

MR. EVERSMAN: How close to the approach fan at Republic Airport?

MR. YOUNG: It's quite close to the approach fan for runway 19, in the sense of the imaginary surface.

MR. EVERSMAN: Would you care to hazard a guess on that distance?

MR. YOUNG: No, sir.

MR. EVERSMAN: Do student pilots fly in and out of LaGuardia?

MR. YOUNG: No, sir.

MR. EVERSMAN: What proportion of the air traffic at LaGuardia Airport is single-engine, light aircraft?

MR. YOUNG: A very small proportion.

MR. EVERSMAN: Do you have any guess?

MR. YOUNG: Less than five percent.

MR. EVERSMAN: Less than five. Thank you.

Do you know if the effects of the plume was an adjudicable issue in the Article X siting process for the Ravenswood generating facility?

MR. YOUNG: I'm not knowledgeable about that.

MR. EVERSMAN: How about for the Article X siting process for the Astoria Energy process?

MR. YOUNG: I was not involved in that.

MR. EVERSMAN: Or for the Article X siting process for the NYPA-Poletti Power Project?

MR. YOUNG: I was not involved in that.

MR. EVERSMAN: Mr. Smith, do you have

the same answers for those questions?

MR. SMITH: Yes, I do.

MR. EVERSMAN: Mr. Young, I would like to show you a document and enter it into evidence, as well.

JUDGE CASUTTO: At this point, it will be marked for identification.

MR. RATZKIN: Your Honor, applicant objects to the offering of this document for identification for the same reasons that yesterday the Examiners determined not to allow questioning concerning the ad that SHARED had placed concerning visual impact of the proposed facility.

This is a document that is not part of the record, that has not been offered by the applicant to support the application, and has no probative value in this proceeding.

JUDGE GARLIN: Well, I'll take it and mark it and hear your objections at the conclusion of the hearings, but before I hear a question asked -- well, I'll ask just one.

Was this obtained through discovery?

MR. EVERSMAN: I can't recall.

JUDGE GARLIN: It's dated July 2nd of

this year. It appears to be from the witness to Mr. Corrado.

Let me go off the record and take a few minutes to read this.

(Discussion held off the record.)

JUDGE GARLIN: Back on the record.

I have had a chance to review the proposed letter, which is on the letterhead of Young Environmental Sciences, the firm of which one of the witnesses on the stand is principal, I believe, and it's dated July 2nd of this year and addressed to Mr. Corrado, at KeySpan.

I'm going to mark it for identification as Exhibit 32, and I'll allow questions.

If there are sound objections to be raised to the questions, I'll consider them, but I would note, from my quick review of this letter, that it appears to be on topic with this panel's testimony.

(Document marked Exhibit 32 for identification.)

So proceed.

MR. EVERSMAN: I would also like to point out that the Interrogatory was produced and

responded to by KeySpan. It's SHARED 161.

JUDGE GARLIN: SHARED 161 was the means by which this letter was obtained?

MR. EVERSMAN: Not to my knowledge.

JUDGE CASUTTO: Please proceed.

MR. EVERSMAN: Mr. Young, do you recognize this document?

MR. YOUNG: Certainly.

MR. EVERSMAN: Could you identify it, please.

MR. YOUNG: Yes. It's a letter to Christopher Corrado, of KeySpan Corporation, with respect to concerns expressed by the local community with regard to this project.

MR. EVERSMAN: Could you read the first line of Paragraph 2 of the letter.

MR. YOUNG: It begins with, "Further, all flying aircraft, large and small are immersed in a turbulent fluid, air."

MR. EVERSMAN: So would a technical expertise in fluid dynamics equate to a technical expertise in aerodynamics?

MR. YOUNG: Not necessarily.

MR. EVERSMAN: What would the difference

be?

MR. YOUNG: Fluids can include liquids, as well as gaseous materials.

MR. EVERSMAN: I would like to refer to a statement in your rebuttal testimony and ask you a question about that statement.

On page 3, lines 7 to 9, you state, "Mr. Gordon, although an experienced pilot, is not a scientist with technical expertise that would qualify him to evaluate the impacts of stack plumes on aircraft performance."

MR. YOUNG: My copy says "air navigation."

MR. EVERSMAN: My apologies.

MR. YOUNG: I'm sorry, yes, "aircraft performance."

MR. EVERSMAN: "Aircraft performance."

Do you still agree with this statement?

MR. YOUNG: Yes, I do.

MR. EVERSMAN: Do you know how many hours of technical training Mr. Gordon has had --

MR. YOUNG: Many thousands, I'm certain.

MR. EVERSMAN: In regard to what?

MR. YOUNG: I believe your question, if

you would like to repeat it, was whether he had considerable training and experience with respect to piloting an aircraft.

MR. EVERSMAN: Yes, it was, piloting an aircraft. Thank you.

Do you know how many hours of technical training Mr. Gordon has had in his professional field?

MR. YOUNG: No, I do not.

MR. EVERSMAN: Do you know what he does for a living?

MR. YOUNG: I believe he's a businessman.

MR. EVERSMAN: I would like to go back to the Corrado letter for a moment, if I could.

Can you identify the diagram attached to the back of the letter?

MR. YOUNG: Yes. The diagram at the back of the letter is a schematic of what are known as the ground tracks that are associated with touch and go operations at Republic Airport.

These tracks have been reviewed by the New York State Department of Transportation, the FAA. They have been published publicly.

They have been used since 1984 in studies concerning noise exposure and other purposes around Republic Airport.

MR. EVERSMAN: Did you prepare the document?

MR. YOUNG: The document in question is a print from the integrated noise model, and these tracks have been used consistently for over the last twenty years.

MR. EVERSMAN: In touch and go training, do pilots ever go further away from the runways that are illustrated here?

MR. YOUNG: Touch and go patterns can be variable. They can be smaller than are shown here, particularly at smaller airports, with shorter runways.

If the touch and go patterns involve much larger aircraft, and historically, they have, they can be larger than are shown here.

These are representative tracks. They are based upon considerable observation at Republic Airport, and have been used definitively for twenty years.

MR. EVERSMAN: When the tracks go

farther than is illustrated in this diagram, would they pass over the stack at the proposed facility?

MR. YOUNG: Well, that would depend upon the pilot, and what was the techniques that were involved. It is not impossible.

MR. EVERSMAN: Mr. Young, do you know what circling approach patterns are?

MR. YOUNG: Sure. That's a technique of approaching the airport typically using a navigation device, either an instrument landing system or a similar radio beacon, in order to locate the airport during the descent to the airport. The pilot acquires the runways visually, and then, based upon wind conditions, determines the appropriate runway, navigates to that runway and lands.

MR. EVERSMAN: Did you identify circling approach patterns in any analysis of the effect of the stack on air traffic in and out of Republic Airport?

MR. YOUNG: No, not specifically.

MR. EVERSMAN: Would circling approach patterns look similar to the diagram of the touch and go pattern?

MR. YOUNG: No, sir, it would not. It

would depend, of course -- the diagram would depend upon exactly which procedure, how the aircraft was approaching the airport.

Typically, if he did that on runway 14, which is the instrumented runway, the ground traffic would resemble a straight in.

The pilot would reach his minimum descent altitude somewhat before getting to the runway threshold approximately three-quarters of a mile.

MR. EVERSMAN: What percentage of the time do planes circling Republic Airport circle the airport at more than two miles away from the end of the runway?

MR. YOUNG: I don't have information on that. I believe that's a relatively infrequent event.

MR. EVERSMAN: In the same letter, I would like to ask you about a statement on page 2.

JUDGE GARLIN: Before you go on, are you implying by your question that this is a record that is kept by someone?

MR. EVERSMAN: There's a record kept by someone, anyone.

What do you mean by a record?

JUDGE GARLIN: You asked the witness if he knew of the percentage of circling approaches --

What was the question?

MR. EVERSMAN: Circling --

JUDGE CASUTTO: More than two miles.

JUDGE GARLIN: Is this a statistic --

MR. EVERSMAN: I don't know if it's a published statistic, but I would think someone who knows about the operation at Republic Airport would have knowledge of how often planes circling the airport pass over the stack or the same radius from the airport over the stack, toward the stack.

JUDGE GARLIN: I just was curious as to whether there was something someone could look at. It didn't sound like a kind of a log that would be kept --

MR. EVERSMAN: I don't know if it's a log, but I think that information could be obtained.

JUDGE GARLIN: I'm sorry.

Proceed.

MR. EVERSMAN: Going back to the letter for a moment, I was going to ask about a statement on page 2.

The fourth sentence in the first full paragraph, that no pilot in command, trainee or otherwise, is expected to be airborne without sufficient skill to adequately and safely operate under all these conditions.

Do you still agree with that statement?

MR. YOUNG: Certainly.

MR. EVERSMAN: Do you know what the FAA required number of hours for flying is before a solo flight is permitted?

MR. YOUNG: That depends on the discretion of the flight instructor, I would think, to determine when the applicants qualify, but I believe it's a minimum of approximately twenty hours.

MR. EVERSMAN: And in those twenty hours, does the training received include information about the risks of flying into an invisible smokestack plume?

MR. YOUNG: It certainly would, if it were conducted at Republic Airport.

MR. EVERSMAN: What is the basis for that statement?

MR. YOUNG: There are a variety of unique conditions at every facility, things that

occur in one specific location that may or may not be applicable to others.

Let me give you an example.

Many years ago there was a second airport adjacent to Republic. That's a very infrequent condition, but because of the intersection of the extended center lines of the runways at Republic and the other facility, that caused certain kinds of training patterns to be adopted by trainees at the airport, specifically a short final on runway 32, to avoid that intersection point.

That's a specific condition that exists at Republic, and generally speaking, does not exist at other airports.

With respect to the proposed stack, there are stacks near other airports, but certainly, an obstruction would be marked, would be lighted, would be available in the documentation about the airport, and presumably, if there was an adequate curriculum, the students would be informed of the existence of that and other factors in and around Republic Airport.

MR. EVERSMAN: Have you spoken to any of the flight schools about whether they would teach

that in their curriculum?

MR. YOUNG: Not specifically, no.

MR. EVERSMAN: What about pilots that are trained elsewhere, would they know about the risks of flying into an invisible smokestack plume at Republic Airport?

MR. YOUNG: Most pilots would check the published information about the airport, and an obstruction would be included.

This proposed plant will be shown on the appropriate diagrams that are used by both trainees, local operators that are based at the field, as well as transient operators.

MR. EVERSMAN: So you said that an obstruction would be noted, correct?

MR. YOUNG: Correct.

MR. EVERSMAN: Does an obstruction include the invisible plume?

MR. YOUNG: The plume itself is not considered an obstruction.

MR. EVERSMAN: So the existence of a plume may not be noted in that information, correct?

MR. YOUNG: No, but it's certainly an obvious implication.

Usually stacks are associated with emissions of plumes of one sort or another. That's the reason that they come into existence.

MR. EVERSMAN: That part makes sense.

Are pilots generally -- are beginner pilots generally told about flying into smokestack plumes, to your knowledge?

MR. YOUNG: I would not claim any special knowledge in that regard, but I presume that all trainees would be acquainted with the obstructions at the facility at which they are trained.

MR. EVERSMAN: Thank you.

Question for the panel, generally.

At what speed would the plume leave the proposed stack, assuming full generation at the proposed facility?

MR. SMITH: I do not know the velocity of the exit gases.

JUDGE GARLIN: Is that something Mr. Main might know?

MR. SMITH: Probably, yes.

JUDGE GARLIN: You may want to try that, only because I think he has done the model.

MR. EVERSMAN: Would it be safe to assume that at whatever speed that plume does exit the stack, that it would cause turbulence in a light aircraft, if it were flying through the plume?

MR. YOUNG: If it were deliberately flown through the plume at low altitude, quite probably.

MR. EVERSMAN: Did you request FAA or NTSB to provide you with accident data on accidents involving smokestacks or stack emissions?

MR. YOUNG: We did a brief review of what was available.

We did not find any advisory published material from the FAA with respect to stack plumes.

We did not find through inspecting public records that there was a -- we did not find any recent accidents, light planes or otherwise, that resembled the concerns that had been advanced with respect to the potential upsets of a light aircraft.

MR. EVERSMAN: In that review of public records, did you request any information from the FAA or NTSB regarding accidents involving smokestacks?

MR. YOUNG: No, we did not make any specific inquiries, no.

MR. EVERSMAN: Thank you.

Did your request from the FAA or NTSB any accident data on accidents involving turbulence?

MR. YOUNG: Turbulence is a very common matter. It can be generated from a variety of sources, is a frequent inclusion in the factors that may lead to an accident.

We did not do a thorough investigation of all turbulence, and all sources of turbulence, and how those might have interacted with specific activities to create an incident or an accident.

MR. EVERSMAN: All right. You said it was a frequent inclusion of factors that would cause accidents for small planes, correct?

MR. YOUNG: I believe that with respect to light aircraft turbulence, in general, and with respect to all aircraft turbulence, specifically, such matters as storms, thunderstorms, clear air turbulence, and other such matters, can be significant, can be a contributory cause to an incident or an accident.

MR. EVERSMAN: Thank you very much.

Another question for the panel generally.

I would like to ask you a question about a statement from the application.

This is from page 1336 of the application.

The statement is, under normal conditions, thermal plumes from a point source, such as the proposed stack, do not rise vertically through the atmosphere, but rather show a horizontal trajectory.

MR. YOUNG: Generally, I presume that you would like me to comment on that statement?

MR. EVERSMAN: No. I didn't ask that.

My question is, if this were to occur, if the plume were to go in a horizontal trajectory, could it be wider or longer than seventy-five feet?

MR. YOUNG: That would be a variable, depending upon the atmospheric conditions, including the velocity of the winds, and the turbulence factor, the wind stability factor within the atmosphere itself.

MR. EVERSMAN: But that could occur, correct?

MR. YOUNG: Certainly.

MR. EVERSMAN: So a plane could enter

that horizontal plume and remain in it for longer than a second, correct?

MR. YOUNG: That would depend on the conditions that were involved. It is certainly possible, but you are speaking of the plume as an integral phenomenon. The fact is, it's a dynamic phenomenon.

MR. EVERSMAN: Of course.

MR. YOUNG: As it spreads, particularly in the presence of winds and atmospheric instability, it will become diluted, and as a consequence, lose its ability to be characterized as an integrated plume.

MR. EVERSMAN: That could occur, I'm sure --

MR. YOUNG: I suspect that we need another word to describe what occurs between the points at which a plume can be defined as a plume and that point at which it becomes so dilute as to no longer be recognizable as a plume.

MR. EVERSMAN: All right, but for our purposes here, let's continue to refer to it as a plume.

What effects, other than an engine

shutting down, could oxygen depletion have on an aircraft?

MR. YOUNG: I do not believe that oxygen depletion is a significant aspect of the plume from the proposed stack. It will contain oxygen, even as it exits the mouth of the stack. It is not devoid of oxygen at that point.

MR. EVERSMAN: That wasn't my question, Mr. Young.

My question was, what other effects, other than an engine shutting down, would occur from oxygen depletion from inside a plume?

MR. YOUNG: I don't have any records or evidence of any other factors, or any other consequences.

MR. EVERSMAN: Okay.

I would like to ask a question about an Interrogatory response.

In our request number SHARED-170B, we asked, state the basis of the claim made in the prefiled rebuttal testimony of Misters Smith and Young that one second of total oxygen deprivation is insufficient to cause engine failure.

In the response filed by your attorney,

you responded, subject to, and without waiver of its objection, applicant states that the basis of this claim is prior professional experience.

Are you aware of this response?

MR. YOUNG: Certainly.

MR. EVERSMAN: What professional experience would this be regarding the sufficiency or insufficiency of oxygen depletion necessary to cause engine failure?

MR. YOUNG: Well, I have a concern about engine failure. I believe that engines cough, engines sputter, engines can stop, without failing.

Engine failure presumes that there is something that's gone wrong with the engine.

In this particular case, I don't believe that oxygen starvation such as is purported to occur in this situation, would cause an engine to fail. It might stop running momentarily.

As soon as it exited the plume, it would resume normal operations, or could be restarted in flight.

MR. EVERSMAN: But my question, though, is what professional experience do you have about aircraft engines which indicates that it would not

fail if it were deprived of oxygen?

MR. YOUNG: Well, I've been involved at Republic Airport since 1984, and I have been in a position to receive detailed reports of the airport staff concerning various different mishaps, various different problems with aircraft coming and going from Republic.

This has never been a reported problem.

MR. EVERSMAN: So you have seen no reports about oxygen deprivation at all, have you?

MR. YOUNG: No, sir.

MR. SMITH: Do you think you could explain "failure"?

I don't understand that question.

MR. EVERSMAN: I was referring to an engine shutting down.

MR. EVERSMAN: I would like to stay on this topic of your knowledge of aircraft engines, if you would.

You stated that you have seen no report about oxygen deprivation at Republic Airport, correct?

MR. YOUNG: I have not seen any reports of incidents or accidents caused by that particular

confluence of events.

MR. EVERSMAN: All right. And there is no smokestack near Republic Airport now, is there?

MR. YOUNG: That's correct.

MR. EVERSMAN: I would like to go back to the Interrogatory response, if you would.

This is still in response to our request that you state the basis of the claim made in prefiled rebuttal testimony that one second of oxygen deprivation is insufficient to cause engine failure.

You responded, "The applicant further states that a spinning engine attached to a propeller develops considerable rotary inertia that does not cease in the absence of power.

"An in-flight restart could thus be spontaneous, even if the engine self starter isn't operative."

Are you aware of that statement?

MR. YOUNG: Yes, I am.

MR. SMITH: Are you on 170?

MR. EVERSMAN: Yes, 170B.

Are you familiar with the term "wind milling" in reference to a propeller-driven aircraft?

MR. YOUNG: Yes.

MR. EVERSMAN: Could you find it for me, please?

MR. YOUNG: "Forward motion of the aircraft bears upon the angled surface of the propeller."

The question revolved around what constitutes wind milling.

Wind milling is derived from what happens in a windmill which is on the ground in response to wind velocity.

An aircraft in the air is moving forward at a relatively high velocity, and that causes air to impinge on the propeller, which is an angled surface, to create a rotary motion, which tends to make the propeller continue to spin, resembling a windmill.

MR. EVERSMAN: All right. Does that cause a drag on a single-engine propeller-driven aircraft when the engine is no longer turning the propeller?

MR. YOUNG: Certainly.

MR. EVERSMAN: What is the recommended procedure for a pilot when the propeller is wind milling?

MR. YOUNG: Well, since I'm not a

qualified pilot I don't think I'm qualified to answer that question.

MR. EVERSMAN: Okay. Would it surprise you if I told you that the recommended procedure is to bring the nose of the airplane up, to slow the air speed, to stop the propeller from wind milling, thereby reducing the drag?

MR. YOUNG: It sounds plausible, but that presumes, of course, that the engine has actually failed.

MR. EVERSMAN: Correct. It does.

In a case that the engine has failed, and the pilot has brought the nose up, and stopped the propeller, then how could an in-flight restart be spontaneous, if the propeller has stopped turning?

MR. LANG: I object to this, your Honor.

This is going towards the performance of airplanes and whether you can restart engines, and really has nothing to do with this case.

JUDGE GARLIN: I understand where he's coming from. I'll allow it.

MR. YOUNG: If an engine stops for one reason, perhaps the pilot has failed to switch fuel tanks, for example, and there's momentary fuel

starvation, the rotary motion of the engine does not instantly cease, and if, within a relatively short time, fuel is resupplied, the engine will spontaneously restart.

MR. EVERSMAN: Well, let's assume for a second that the fuel line -- where the fuel won't momentarily be resupplied to the engine. Let's assume that the engine has stopped operating, for whatever reason. Could there then be a spontaneous restart?

MR. YOUNG: If the rotary motion has completely gone, no, there would be no opportunity for a spontaneous restart.

One would have to utilize the starter that's on the engine.

MR. EVERSMAN: Okay.

I have no further questions at this time, your Honors.

JUDGE GARLIN: Redirect?

MR. RATZKIN: One moment.

JUDGE GARLIN: Okay.

(Whereupon, a short recess was taken.)

JUDGE GARLIN: Back on the record.

Redirect?

REDIRECT EXAMINATION

BY MR. RATZKIN:

MR. RATZKIN: Mr. Young, could you please describe your experience in the aviation industry.

MR. YOUNG: Yes. I'm an environmental and an airport planner.

I first began my profession in 1974. During the period of time since, I have conducted between two and three hundred professional studies, some of them about noise.

Generally, my specialty is in land use compatibility.

I have worked at airports throughout the United States, both military airports and civilian airports, and I have worked at airports in other countries, although not as extensively.

I have been involved in various aspects at Republic Airport itself since 1984, and have published approximately twelve studies of various different sizes and scopes at that facility, including being on the planning team for the master plan, the most recent one, as well as a number of other studies, noise studies, as well as planning

studies and obstruction studies on and around that airport.

I think that sufficiently summarizes it.

You do have my resume, and that lists, virtually all the projects that I have accomplished in my professional career.

MR. RATZKIN: Thank you. Are you aware of whether it's a requirement to have a pilot licensed to work at FAA in the Flight Standards Division?

MR. YOUNG: No, I don't believe it's a requirement.

MR. RATZKIN: You mentioned on cross-examination that you hadn't found any examples in which an accident was attributable to a plume, the contact between an aircraft and a plume, and you stated that your review had gone back five years.

Why was the review limited to five years?

MR. YOUNG: Well, we briefly queried the NTSB database, and their database goes back five years.

MR. RATZKIN: Thank you.

Are you aware of any suggestion or

evidence of oxygen deprivation constituting an aviation hazard anywhere, irrespective of location?

MR. YOUNG: I have not run into that particular matter in all of my years of professional experience, no.

MR. RATZKIN: Are you aware of any existing exhaust stack in proximity to Republic Airport?

MR. YOUNG: Yes. There is at least the incinerator. It's located at the Babylon resource recovery plant. I would say -- I would have to measure it. I suspect that it's about three miles away. I do not expect that it operates twenty-four hours a day.

That particular location is under the horizontal surface, which is the part 77 surface, the penetration of which determines, in part, whether something is an obstruction.

So certainly, there are other industrial-sized facilities, smokestacks, in the vicinity of the airport.

MR. RATZKIN: Thank you.

Mr. Smith, could you please describe the oxygen content of the exhaust plume that will exit

the proposed stack?

MR. SMITH: The oxygen content for the exit, based upon documentation from the OEM, General Electric or 7FA, ranges between 12 and 14 percent 02 by volume, percent 02 by volume.

I have had discussions with other plant managers who have seen numbers that are closer to 14 to 15 percent. In fact, the air emissions people standardized to 15 percent 02 by volume in doing their calculations.

MR. RATZKIN: How does that content compare with the oxygen content of air?

MR. SMITH: The oxygen content percent by volume of 02 is 21 percent.

MR. RATZKIN: And do you have any information about how the oxygen content of the plume would vary upon dispersion?

MR. SMITH: The air quality review people that do dispersion modeling of the plume, and I asked those individuals to give me some idea of how that oxygen content from the plume mixes with the surrounding atmosphere, and at what rate or height, some way of presenting how that disperses.

And in some data that I received, the

indication was in the worst case, which is about seventy-five feet downwind of the emission point on the stack, and about 225 feet rise in height of the plume, that the oxygen content would be approximately 17 percent, a little over 17 percent 02.

That, as far as the partial pressure of oxygen, compares approximately to an elevation of two thousand feet.

Therefore, the summation that I make is that if an airplane can fly at two thousand feet with a partial pressure of oxygen that is comparable to 17 percent at ground level, then it should be able to fly through that plume without any shutoff of the engine.

MR. RATZKIN: Mr. Young, can a single-engine general aviation aircraft navigate at an altitude of two thousand feet?

MR. YOUNG: Certainly.

MR. RATZKIN: Thank you.

No further questions.

JUDGE GARLIN: Any Cross on the Redirect?

MR. EVERSMAN: Yes. Just a moment.

Just one question.

RECROSS-EXAMINATION

BY MR. EVERSMAN:

MR. EVERSMAN: In regards to your query data about accidents attributable to a plume, can I ask, what did that query involve?

MR. YOUNG: It involved entering several words into a search engine that's associated with the NTSB database.

MR. EVERSMAN: Can you identify what those words were.

MR. YOUNG: Power plants, plumes, stacks and a variety of similar words, intended to reveal whether there was a long or profound accident history and involvement between light aircraft and electric power station emissions.

MR. EVERSMAN: Okay.

No further questions.

JUDGE GARLIN: The witnesses are excused:

(Witnesses excused.)

JUDGE GARLIN: Are the parties inclined to press ahead, I hope, with the last witness?

I have estimates for witness Gordon of fifteen minutes from the applicant, and a half hour

from DPS.

MR. RATZKIN: The applicant will not have any Cross.

JUDGE GARLIN: There will be no Cross from the applicant.

MR. LANG: DPS will, your Honor. We will have Cross.

JUDGE GARLIN: Okay. Are you still thinking in a half an hour?

MR. LANG: Half an hour to forty minutes, something like that.

JUDGE GARLIN: Proceed to call Mr. Gordon.

(Pause.)

JUDGE GARLIN: Please raise your right hand.

R O B E R T G O R D O N, called as a witness, having duly affirmed to tell the truth, was examined and testified as follows:

JUDGE GARLIN: Please be seated and state your name and business address for the record.

MR. GORDON: My name is Robert Gordon. I reside at 174 Chichester Road, in West Hills, Huntington, New York.

DIRECT EXAMINATION

BY MR. EVERSMAN:

MR. EVERSMAN: Mr. Gordon, have you reviewed your prefiled testimony dated June 27, 2002?

MR. GORDON: I have.

MR. EVERSMAN: Do you have any changes or modifications to that testimony?

MR. GORDON: No.

MR. EVERSMAN: Your Honors, I would like to move to have submitted into evidence the prefiled direct testimony of Robert Gordon.

JUDGE GARLIN: The prepared direct testimony of witness Gordon will be copied into the record as if given here today orally.

(Continued on following page.)

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

IN THE MATTER

- of the -

Application of Keyspan Energy Development Corporation for a Certificate of Environmental Compatibility and Public Need to Construct and Operate a Nominal 250 Megawatt Combined Cycle Combustion Turbine Electric Generating Plant in the Town of Huntington, Suffolk County, New York

Case No. 01-F-0761

SOUTH HUNTINGTON ALLIANCE FOR RESPONSIBLE ENERGY DEVELOPMENT, ARROW ELECTRONICS, INC., GILBERT DISPLAYS, INC. AND MARCHON EYEWEAR, INC.'S PRE-FILED DIRECT TESTIMONY OF ROBERT GORDON

Mark A. Chertok, Esq.
Sive, Paget & Riesel, P.C.
460 Park Avenue
New York, New York 10022

- and -

Richard C. Cahn, Esq.
Cahn, Wishod & Knauer, LLP
425 Broadhollow Road, Ste. 315
Melville, New York 11747

Attorneys for the South Huntington Alliance for Responsible Energy Development, Arrow Electronics, Inc., Gilbert Displays, Inc. and Marchon Eyewear, Inc.

Dated: June 27, 2002

Q: Please state your name, title, affiliation, and business address.

A: My name is Robert Gordon. I am President of the Republic Airport Pilots Association ("RAPA"), an organization with almost a thousand member pilots. I am also a member of the Republic Airport Technical Advisory Committee, which advises the airport on planning issues, and the Aircraft Owners and Pilots Association.

I am employed by Piping Specialties at 84 Wall Street, Farmingdale, New York.

Q: On whose behalf is your testimony offered?

A: I am volunteering my testimony in support of the South Huntington Alliance for Responsible Energy Development, Arrow Electronics, Inc., Gilbert Displays, Inc., and Marchon Eyewear, Inc. (collectively, S.H.A.R.E.D.) in their opposition to the electric generating facility proposed by Keyspan Energy Development Corporation ("Keyspan") in the Town of Huntington, New York (the "Proposed Facility").

Q: What is the nature of your testimony?

A: My testimony is offered to address the adverse impacts on aviation that would result from the construction of the Proposed Facility.

Q: What are your qualifications to comment on aviation effects?

A: I have been a pilot for thirty-five years and have a multiengine and instrument rating. I have accumulated more than 10,000 hours of flying time,

which equals more than a full year in the air. I fly approximately 500 hours per year out of the Farmingdale Republic Airport ("FRG"). I have owned ten planes so far and currently own two twin-engine, six-seat Beechcraft airplanes. And I have been appointed to represent the interests of FRG pilots as the president of RAPA.

Q: Why have you chosen to testify at this proceeding?

A: I believe that the Proposed Facility's exhaust stack (the "Stack") – and particularly, the plume of heat and vapor rising from the Stack (the "Plume") – would present a hazard to airplanes arriving at and departing from FRG. FRG is the fourth busiest airport in New York State, with more than 200,000 takeoffs and landings annually, so any safety issue affecting it will be a constant danger to surrounding residents as well as to the pilots and passengers who use FRG.

Q: Have you reviewed the relevant portions of Keyspan's Article X Application for the Proposed Facility (the "Application")?

A: Yes. I have read Section 13.4 of the Application, which deals with aviation impacts, as well as the no-hazard determination issued by the Federal Aviation Administration ("FAA") and an April 25, 2002 letter from Christopher Corrado of Keyspan's Environmental Engineering Department to Michael A. Grello sent in response to questions posed by the Concerned Citizens Association of Farmingdale about the thermal Plume.

Q: Where would the Stack of the Proposed Facility be positioned in relation to air traffic to and from FRG?

A: The Stack would sit 2.1 miles from the intersection of two runways at FRG, directly between the extended centerline of Runway 14 (so-named due to its 140-degree magnetic heading) and Runway 19 (190-degree magnetic heading). Runway 14 is the primary instrument-landing runway and provides for the lowest altitude on an approach – 329 feet above sea level, 250 feet above ground level – by which point a pilot must determine if he can see the runway or approach lighting system or, alternatively, must initiate a missed approach procedure.

Q: Is the attached Exhibit RG-1 a true and accurate diagram of where the Stack would be positioned?

A: Yes. Exhibit RG-1 is a page from a published flight manual where I have penciled in approximately where the Stack would be located in relation to FRG's main runways.

Q: In your opinion, would the Stack present an impact hazard to aircraft?

A: Quite possibly, particularly if the cloud ceiling was low and a pilot decided to bend the rules and descended below pattern altitude in an effort to maintain ground contact to land or was operating under special visual flight rules. The Stack would sit 195 feet above the ground at 110 feet above sea level. This equals a total height of 305 feet above sea level, which is what a plane's altimeter

reading would register. 305 feet is low, but not so low that it would be unthinkable for aircraft occasionally to come in at that level just a little over a mile and a half from the end of the runway.

A very slight miscalibration of the altimeter or a small variation from the approved flight path could similarly result in an aircraft's flying at the same level as the Stack. There is only a twenty-four-foot difference between the approved approach height for Runway 14 and the proposed height of the Stack, and much flying by general aviation aircraft is not sensitive to such small differences. The Stack's presence so near the runway would be particularly dangerous in cloudy or foggy weather, when visibility is limited.

Q: Are you familiar with Keyspan's description of the thermal and vapor plume the Stack would emit?

A: Yes. According to the data provided by Keyspan in the Application, the Stack would emit a hot, pressurized Plume of vapor that would rise as high as 490 feet above the Stack, or a total of 795 feet above sea level, depending on weather conditions. I do have to question that estimate, however, as I've seen plumes rising 2000 to 3000 feet over other power plants.

Q: Why would such a Plume present a danger to aircraft?

A: There is no way to mark such a Plume to warn pilots, and it would have two potential effects. First, the rising hot gases could create a pocket of sudden up-and-down turbulence. Second, it could emit a stretch of oxygen-poor exhaust

that would impair engine function. All aircraft engines, piston or turbine, need oxygen to run; without it, an engine can sputter or shut down altogether.

Rapidly rising hot air causes turbulence that planes experience in the form of a big, jarring "bump." I have experienced turbulence caused by rising hot air even flying over a relatively minor heat source such as a large black-asphalt parking lot. These up-and-down drafts can be dangerous, which is why planes reroute rather than fly through thunderstorms. The presence of these up-and-down drafts in thunderstorms is described in the attached Exhibit RG-2, a Federal Aviation Administration ("FAA") pilot education pamphlet. In extreme cases, the "bump" can actually cause structural damage to an aircraft. Otherwise, it may cause the pilot to have difficulty controlling the aircraft or may injure passengers. In less severe instances, the turbulence would give everyone discomfort and a scare.

The altitude of this Plume would be the highest hazard within ten miles of the airport. It would rise 255 feet *above* the minimum altitude for circling aircraft (which is 560 feet above sea level, 488 feet above ground level. Aircraft operating under visual flight rules ("VFR") would pass in the vicinity of the stack at an altitude of approximately 500 feet, depending on the approach, until they oriented themselves correctly in respect to the runway. An approaching piston-powered aircraft generally descends at about 500 feet per minute. The Stack would be approximately two miles from the center of the airport, which is a little

less than one minute from ground level if a plane is approaching at 120 MPH. It is therefore perfectly likely that a plane would be flying at an altitude of 500 to 600 feet on the same radius as the Stack as it prepared to land. Even if the Plume rises only as high as Keyspan's estimate of 490 feet, some planes would probably fly through the Plume as they angled in just before making their final descent on the runway centerline.

Q: How would the Plume affect light aircraft in particular?

A: I am particularly concerned about the effects of such a Plume on single-engine planes weighing less than 6000 pounds, which constitute more than seventy-five percent of the traffic at FRG. The Aeronautical Information Manual published by the FAA recognizes that artificial thermal currents are dangerous to small aircraft in particular in its discussion of wake vortex effects. (See attached Exhibit RG-3.) Small planes are very susceptible to disturbances due to their light weight and relatively low rate of speed. Some may approach an airport at speeds as low as 50 to 75 miles per hour, which means that they have less momentum to carry them through an area of turbulence. And the potential for engine failure presents a double danger: small aircraft engines have a greater chance of shutting down due to lack of inlet air if they encounter a section of oxygen-poor exhaust, since it will take the plane longer to pass through the exhaust.

Q: Are there greater risks involved in encountering disturbances near the airport than there would be midflight?

A: Yes; disturbances that occur during takeoff or landing are potentially disastrous, since there is little opportunity for a pilot to regain control at such a low altitude. A plane is statistically more likely to have an accident during the takeoff and landing phases of flight than at any other time.

Q: Are there risk factors particular to FRG that you would like to note?

A: Yes. FRG hosts hundreds of student pilots from numerous area flight schools flying with and without instructors, so you will frequently not be dealing with experienced pilots. And in general, pilot error is the greatest single cause of plane accidents. Student pilots or low-hour pilots are less able to handle flight disturbances, as well as less likely to assess that there may be a risk due to emissions from the Stack in the first place. Again, although you could mark the physical Stack as an obstacle, you could not mark the rising thermal Plume, which would not always be visible.

Q: Does the emission of water vapor from the Stack present any specific hazards?

A: I worry about the effects on visibility so near the runway. About ninety percent of the takeoffs and landings performed by general aviation aircraft at FRG are done under VFR rather than instrument flight rules (IFR). VFR pilots are not even allowed to fly without special permission when the cloud ceiling is lower than 1000 feet or when visibility is less than 3 miles. This is because when visibility is limited, a pilot can easily become lost or disoriented. When a plane is

flying at low altitudes on approach to an airport, a pilot does not have much time to compensate for mistakes before he or she has to abort the landing or, worse, ends up having an accident.

Q: Did the no-hazard determination issued by the FAA settle your concerns?

A: The no-hazard determination mentioned nothing about possible effects from the thermal Plume; as far as I know, the Plume didn't enter into the FAA's analysis. States may evidently choose to take thermal plumes into account, however; counsel for S.H.A.R.E.D. have shown me an Illinois regulation that prohibits the building of structures that would put aircraft pilots and the public at risk due to emissions that interfere with airport use. (The text of the regulation is attached as Exhibit RG-4.)

Q: Do you believe pilots will need to alter their landing procedures once the Stack is in place?

A: I think it is likely that FRG will need to change the minimum decision height on the approach to Runway 14 to protect flights coming in slightly off-course to the left of the runway. Right now, the minimum altitude at which a pilot must decide whether he or she is going to land or execute a missed approach is 329 feet above sea level on that runway. Raising the minimum height due to the presence of the Plume would cause more planes to execute missed approaches, which increases the danger involved: planes have to give their engines a sudden

increase in power, transition from a descent to a climb, and circle back around, actions which increase the accident risk. The worst recent accident at FRG, described in the attached Exhibit RG-5, occurred in 1997 and involved a Piper 28-180 that attempted an instrument landing on Runway 14, executed a missed approach, and crashed in a field nearby, killing four people. Ironically, the crash occurred directly on what is now the Proposed Site of the Keyspan plant.

Q: In sum, what is your overall opinion on the effects of the proposed Stack on aviation in the vicinity of FRG?

A: I believe the Stack and its accompanying Plume would present a significant danger to aircraft using FRG, as I have just described, and accordingly to people living and working nearby.

Q: Does this conclude your testimony?

A: Yes.

MR. EVERSMAN: Have you reviewed the exhibits to your prefiled direct testimony?

MR. GORDON: I have.

MR. EVERSMAN: Do you have any changes to those exhibits?

MR. GORDON: No.

MR. EVERSMAN: Your Honors, I would like to move to have the exhibits to the prefiled direct testimony admitted into evidence -- marked for identification, I should say.

JUDGE GARLIN: Exhibits RG-1 through RG-5 are marked for identification as Exhibit 33.

(Document marked Exhibit 33 for identification).

MR. EVERSMAN: The witness is available for cross-examination.

JUDGE GARLIN: Okay. Mr. Lang, proceed.

CROSS-EXAMINATION

BY MR. LANG:

MR. LANG: Good afternoon, Mr. Gordon.

MR. GORDON: Good afternoon.

MR. LANG: I don't see a resume attached to your testimony. Are you an aeronautical engineer?

MR. GORDON: No, I'm not.

MR. LANG: Are you an engineer?

MR. GORDON: No.

MR. LANG: Do you have a background in aeronautics?

MR. GORDON: Yes.

MR. LANG: Other than as a pilot?

MR. GORDON: No.

MR. LANG: Do you have a background in Meteorology?

MR. GORDON: Just studies there were associated with flying instruction.

MR. LANG: Are you familiar with the letter from the Department of Transportation dated July 19, 2002, on the determination of the no hazard air navigation by the FAA?

MR. GORDON: I am.

MR. LANG: Does that in any way change your view as to whether there are concerns with this proposed project, the fact that the FAA has now looked at this issue twice, and in both instances, has found there was no reason for concern?

MR. GORDON: It does not.

MR. LANG: You don't believe that the FAA is qualified or competent to make this

determination?

MR. GORDON: I didn't say that.

MR. LANG: Do you believe the FAA is qualified and competent to make this determination?

MR. GORDON: I don't know exactly what their competency level is. I just know, based on my own experience, I believe it's a hazard.

MR. LANG: Well, based on your experience, how many years have you been flying out of Republic Airport?

MR. GORDON: Close to twenty.

MR. LANG: Are you familiar with the terrain in the area surrounding the airport?

MR. GORDON: I am.

MR. LANG: Is there a cell tower in close proximity to the airport?

MR. GORDON: I would say it's four to five miles away.

MR. LANG: How many times has that cell tower caused a problem with a pilot landing or taking off from the airport?

MR. GORDON: None, to my recollection.

MR. LANG: Do you know what the height of that -- and we will try to keep everything

consistently and above mean sea level basis, what the height of that cell tower is?

MR. GORDON: I believe it's somewhere between three and four hundred feet.

MR. LANG: Fair to say it's higher than the stack, then?

MR. GORDON: And also further away from the airport, yes.

MR. LANG: How about the sand and gravel mine across Spagnoli Road from the proposed site, are you familiar with that?

MR. GORDON: Yes.

MR. LANG: Are you familiar with a large sand elevator on the site?

MR. GORDON: I am.

MR. LANG: Do you know what the height is of the top of that elevator?

MR. GORDON: I don't believe it's published.

MR. LANG: Well, do you know what it is, sir?

MR. GORDON: I would say it's probably two hundred feet, maybe, 175.

MR. LANG: And again, we are talking

about above mean sea level, not ground level?

MR. GORDON: Yes.

MR. LANG: To your knowledge, sir, have any airplanes ever come in contact with that elevator?

MR. GORDON: Not to my knowledge.

MR. LANG: Have there been issues in the past with the height of that elevator? And would it be fair to say in such close proximity to the airport, the same as the project site?

MR. GORDON: I think there's concerns, yes.

MR. LANG: Well, concerns that there have been accidents?

MR. GORDON: No, concerns that there might be.

MR. LANG: How many years has that elevator been there?

MR. GORDON: To the best of my knowledge, it's been there for a long time.

MR. LANG: Has it been there for the twenty years that you have been flying out of Republic Airport?

MR. GORDON: I don't recall.

MR. LANG: Do you believe it was there than long?

MR. GORDON: I don't know.

MR. LANG: Has it been there ten years?

MR. GORDON: Probably.

MR. LANG: In ten years, have there been any incidents involving that elevator?

THE WITNESS: Not to my knowledge.

MR. LANG: Are you familiar with an incinerator that we were told yesterday is approximately a half mile, a closed incinerator, approximately a half mile from the project site?

MR. GORDON: Yes.

MR. LANG: How long has that incinerator been in place?

MR. GORDON: Probably ten years.

MR. LANG: Any problems with airplanes running into the smokestacks associated with that incinerator?

MR. GORDON: No, it's quite low.

MR. LANG: What's the height on that?

MR. GORDON: It's not published anywhere.

MR. LANG: Are you familiar, as a pilot

in the area, are you familiar with approximately what the height is?

MR. GORDON: Approximately 150 feet.

MR. LANG: Were there ever --

MR. GORDON: Mean sea level.

MR. LANG: Thank you. Were there ever plumes emitted from that incinerator?

MR. GORDON: I've never seen any. I think it tends to be invisible.

MR. LANG: Well, is it fair to say that something was coming out of the smokestacks while that plant was in operation?

MR. GORDON: I think it's a fair assumption.

MR. LANG: To your knowledge, sir, have any airplanes had problems with emissions or the whatever that was coming out of those smokestacks?

MR. GORDON: Not to my knowledge.

MR. LANG: Are you familiar with a series of high voltage transmission lines that run along the rear of the project site, as well as neighboring sites?

MR. GORDON: I am.

MR. LANG: Do you know what the height

is of those transmission lines?

MR. GORDON: Again, I don't think they're are published anywhere, but I would guess approximately fifty feet above ground level.

MR. LANG: How about above mean sea level?

MR. GORDON: Approximately 150.

MR. LANG: To your knowledge, have any airplanes ever crashed as a result of those transmission lines or had accidents as a result of those transmission lines?

MR. GORDON: Yes, I am.

MR. LANG: How many times has that happened?

MR. GORDON: Not at that particular place, but a Beachcraft Bonanza crashed into lines near 110 a number of years ago.

MR. LANG: Is that in the same corridor as where the proposed project is, or in a different part of 110?

MR. GORDON: A different part.

JUDGE GARLIN: Is that the accident that is reported in the exhibit attached to your testimony?

MR. GORDON: Very likely. It was executing a misapproach.

JUDGE GARLIN: I understand. I read the whole report.

MR. LANG: Sir, were you ever on a heading for only 14, and you are within the flight path, would you be flying over this stack?

MR. GORDON: Could you define "within the flight path" for me?

MR. LANG: Well, I will use your exhibit, which I believe is RG-1, sir.

Do you have a copy of your testimony and exhibits with you?

MR. GORDON: I don't have that exhibit with me, no.

MR. LANG: Could we give him the marked copy of his testimony and his exhibits?

(Handed to the witness.)

MR. GORDON: Is this the one we're talking about?

MR. LANG: Yes.

Sir, I understand from your testimony, and from this exhibit, that the flight path is what is indicated almost as an arrow, with some shading on

it on Exhibit RG- 1.

Is my understanding correct of what the flight path is for runway 14?

MR. GORDON: I don't think that arrow depicts the variation from center line that a pilot can achieve on an instrument approach. I don't think that's the scale.

MR. LANG: Well, what does this Arrow demonstrate, then?

MR. GORDON: It indicates that there is an ILS approach instrument landing system to that runway.

MR. LANG: Is that the same as a flight path, sir?

MR. GORDON: I guess you could say that.

MR. LANG: Well, could you say that?

MR. GORDON: There is a certain amount of latitude left and right of center line that is exhibited on an HSI, which is a horizontal situation indicator, or on a VOR indicator.

If your needle goes beyond the last dot, then you're supposed to execute a missed approach.

The distance when you're further out is wider, but I don't think this arrow is to scale

indicating what that difference can be.

MR. LANG: Well, given where you have indicated the stack, and your understanding of the approach, is it your understanding that the stack is within the flight approach?

MR. GORDON: It certainly is, if you execute a missed approach.

MR. LANG: That wasn't my question, sir.

If you didn't execute a missed approach, and you're trying to land at this airport on runway 14, are you within the --

MR. GORDON: The government requires a missed approach under certain circumstances.

MR. LANG: If you're trying to land the airplane, not a missed approach, but if you're going to be landing the airplane, would this stack be within the flight approach?

MR. GORDON: Probably not.

MR. LANG: How about if you're on runway 19?

MR. GORDON: Probably not.

MR. LANG: Turning to your testimony on page 4, line 6 -- I'm sorry, starting, not at line 6, lines 9 and 10, you explain that there's concern in

cloudy or foggy weather, when visibility is limited.

Are visual flight rules in effect when you have foggy weather?

MR. GORDON: They can be.

MR. LANG: Well, sir, don't you state at page 7 that VFR pilots are not allowed to fly when the ceiling is lower than a thousand feet, or visibility is less than three miles?

MR. GORDON: Yes, but you can have fog with visibility greater than three miles.

MR. LANG: Well, in cloudy weather, what kind of clouds are you referring to there?

MR. GORDON: Clouds come in all shapes and forms, and some are thin, and you can see through them. Others are dense, and you can't see through them.

MR. LANG: So when you say it's particularly dangerous in cloudy weather, are you saying no matter what kind of cloud, it's dangerous, or are you saying only during certain types of cloudy conditions?

MR. GORDON: Certain types.

MR. LANG: Which types would those be?

MR. GORDON: I would say low ceilings,

dense clouds.

MR. LANG: So low ceilings when visual flight rules wouldn't be in effect?

MR. GORDON: They probably wouldn't be, but then there is something known as special VFR, which reduces the minimums you can take off in.

MR. LANG: How often will student pilots, for example, be flying in these cloudy, foggy conditions?

MR. GORDON: Well, they will be flying as long as it's three miles visibility and a thousand foot ceiling.

MR. LANG: And if those conditions aren't in effect, they probably would not be flying?

MR. GORDON: Probably not, unless they're an instrument student.

MR. LANG: And if you're an instrument student you would be on the instrument flight path that we were talking about earlier?

MR. GORDON: You would be accompanied by an instructor who was instrument rated, and you may or may not be.

MR. LANG: Well, if you are using an instrument flight path, or instrument flying rules,

you would be following a path that would be similar to what you have designated on RG-1, or wouldn't you?

MR. GORDON: I didn't really dictate a path there. This is an approach plate published by the government and by Jefferson Company.

MR. LANG: What is the purpose of this document, then, sir?

MR. GORDON: It's for anyone who happens to be landing on runway 14, this document gives you the information necessary to accomplish that.

MR. LANG: So that would, for example, include the flight path that you should be using to land at runway 14?

MR. GORDON: One of the methods, yes.

MR. LANG: At what oxygen level does an airplane loose power?

MR. GORDON: The mixture of gasoline to air is quite critical in an airplane. Fifteen to one is the optimum. It will not work on anything eight to one or above eighteen to one.

MR. LANG: Let me rephrase the question, sir.

MR. GORDON: Please.

MR. LANG: What percentage oxygen within

the air below which will the engine fail, 15 percent, 12 percent, 22 percent?

MR. GORDON: I think whenever you get away from the optimum, there is a likelihood that it will fail. The optimum is fifteen parts of air to one part of fuel, by weight.

MR. LANG: And what does that equate to in percentage oxygen in air?

MR. GORDON: It will -- I'm talking about the proper mixture.

MR. LANG: Right.

MR. GORDON: I'm not talking about percentage of oxygen in the air.

MR. LANG: Do you want me to rephrase the question?

MR. GORDON: At higher altitudes, you have less oxygen percentage, and it's lower.

You have to adjust mixture controls on the plane to compensate for that. If you don't adjust the mixture properly, the engine will fail.

MR. LANG: Sir, do you understand my question?

I'm trying to find out, air normally, would you agree, has 21 percent oxygen?

MR. GORDON: At sea level.

MR. LANG: At sea level?

Would you know what your equivalent fifteen parts per million is in percent oxygen in air?

MR. GORDON: It's not fifteen parts per million. It's fifteen parts of air to one part of fuel.

MR. LANG: I'm sorry. Do you know what fifteen parts of oxygen per part of fuel equates to in percentage oxygen in air?

MR. GORDON: Yes.

MR. LANG: What is it?

MR. GORDON: At sea level, it's 21 percent.

MR. LANG: So if you go below, at all, 21 percent, you're saying that you won't have the proper mix of oxygen to fuel?

MR. GORDON: That's what I'm saying.

MR. LANG: And do you have any studies that support that?

MR. GORDON: Every flight training manual.

MR. LANG: Says that it the second you

drop below 21 percent oxygen, you're going to have a problem?

MR. GORDON: I don't think it's stated quite that way. It says that you must adjust the mixture for the percentage of oxygen in the air.

MR. LANG: Is that a significant problem?

MR. GORDON: Yes.

MR. LANG: It is. So do you test the air before you go out flying, to determine what the percentage of oxygen is on any given day?

MR. GORDON: No. What we do use is an exhaust gas temperature gauge.

MR. LANG: Okay.

JUDGE GARLIN: What is the service ceiling for, say, a single-engine piston aircraft, unpressurized?

MR. GORDON: It would depend on the horsepower.

A light twin could probably struggle up into the low twenties.

JUDGE GARLIN: I said single-engine piston.

MR. GORDON: Sorry. Get into the high

teens.

JUDGE GARLIN: Unpressurized, and that would be safe for the pilots?

MR. GORDON: Oxygen on the tank, it would have to be -- the FAA requires if they are above twelve-five for more than thirty minutes, you have to be on oxygen.

JUDGE GARLIN: Okay, but can the airplane fly above twelve-five?

MR. GORDON: Oh, sure. But the mixture is all the way back, making the difference for the lack of oxygen in the air.

You're putting less fuel in there to keep that fifteen to one ratio.

JUDGE GARLIN: Is this something that is done through manual controls in the cockpit, or is it something that is now automatic?

MR. GORDON: Manual control, but using the information from the exhaust gas temperature gauge.

JUDGE GARLIN: Are there any GA aircraft that you're aware of in which this is an automatic function?

MR. GORDON: There are some. The Beach

Bonanza, built after 1984 has an automatic compensation.

JUDGE GARLIN: Proceed, Mr. Lang.

MR. LANG: Sir, if you have to make these adjustments as you increase your altitude --

MR. GORDON: That's correct.

MR. LANG: -- it can't be that difficult of a thing, because people increase altitudes as they take off from ground level and get up to whatever they're cruising altitude is, correct?

MR. GORDON: Yes. However, you climb relatively slowly. If there is a sudden change in the oxygen in the air, you might not respond as quickly.

MR. LANG: When you say there's a sudden, how long does that change have to be?

MR. GORDON: It could be instantaneous to a few seconds.

MR. LANG: And that few seconds would be sufficient to kill an engine?

MR. GORDON: Absolutely.

MR. LANG: Do you have any engineering studies that would support that view?

MR. GORDON: Well, I operate in a

business that sells valves. We get involved in fluid dynamics. We get involved in dealing with gases, pressure drops, a variety of subjects.

And yes, I think I have enough background to substantiate that.

MR. LANG: That wasn't my question, sir.

I said do you have any studies that support that the momentary loss of the 21 percent oxygen is going to cause an engine to fail?

Are you aware of any such studies?

MR. GORDON: Well, if you put your hand over the throats of a carburetor and starve it of air --

MR. LANG: Sir, please answer my question.

MR. GORDON: That's what I'm trying to do.

MR. LANG: Are you aware of any such studies.

Putting your hand over a carburetor is not a study.

Are you aware of any engineering studies that indicate that the momentary loss -- excuse me, not loss, reduction in oxygen level in the air, will

cause an airplane engine to fail?

MR. GORDON: No. I'm only saying that based on my own experience.

MR. LANG: And you're not an engineer, as we've already established?

MR. GORDON: That's correct.

MR. LANG: At page 5 of your testimony, lines 7 to 9, are you suggesting that the plume that could come out of this smokestack is equivalent to a thunderstorm?

MR. GORDON: A thunderstorm is basically violent because of updrafts and down drafts, particularly when they are located close together.

When you're talking about heated air which exhausts from a generating plant, all this is, yes, you could have a sudden uplift with that rising air.

And then it would end when you removed the source.

MR. LANG: Well, let me ask the question again, sir, and try to answer my question this time.

Are you saying that the plume is the same as a thunderstorm, yes or no?

MR. GORDON: No.

MR. LANG: In your Exhibit RG-2, the FAA guidance is not to fly within five miles of thunderstorms.

Are you suggesting that the same guidance should be applied to this stack, and that no one should be allowed to fly within five miles of this stack?

MR. GORDON: No.

MR. LANG: So they are not really the same thing?

MR. GORDON: No, obviously not.

MR. LANG: Does the FAA publish an educational pamphlet on flying near plumes?

MR. GORDON: Not that I've seen.

MR. LANG: What is the purpose of the FAA educational pamphlets?

MR. GORDON: To provide the pilots with information that will prevent accidents.

MR. LANG: And there isn't any pamphlet related to flying by or through plumes from power plants?

MR. GORDON: Not to my knowledge.

MR. LANG: Have you ever flown through a plume by a plant that would be similar to the

proposed project?

MR. GORDON: I have flown close to plumes from, particularly nuclear power stations in Pennsylvania --

JUDGE GARLIN: Sir, those are steam plumes. I think that the question, by definition, would be referring to an exhaust plume.

MR. GORDON: Well, steam typically is hot, and the exhaust plume is hot, and it's rising.

JUDGE GARLIN: So let's confine it to exhaust plumes.

MR. GORDON: Okay.

MR. LANG: Are you suggesting, sir, that a nuclear power plant is the same as this proposed project?

MR. GORDON: No.

MR. LANG: Have you ever flown through a plume of a project similar to the one that's being proposed here?

MR. GORDON: No.

MR. LANG: Do you have any firsthand knowledge of what it's like to fly through the plume at any altitude that would be coming out of a smokestack like this?

MR. GORDON: No.

MR. LANG: Do small planes, if they were to experience engine loss, would they be more akin to a rock or a glider?

MR. GORDON: Glider.

MR. LANG: So if you have a momentary engine loss, the plane is not going to fall out of the sky, is it?

MR. GORDON: No. It will descend, obviously.

MR. LANG: But there would be the ability of a pilot to either restart the plane, or perhaps land it, again, without falling like a rock, but to glide down to an approach, correct?

MR. GORDON: If they were flying over the stack at 800 feet, and they were to lose an engine, I don't think they would make the runway.

MR. LANG: Well, I didn't say whether they would make the runway. I said would they be able to land the plane like a glider, or would they land it like a rock?

MR. GORDON: It will glide a limited distance.

MR. LANG: The regulation that you cite

in Exhibit RG-4 -- first off, do you have any personal experience with this regulation, or is it simply something that counsel for SHARED showed to you during the course of this proceeding?

MR. EVERSMAN: Objection. That's privileged.

MR. LANG: No, it's not. I'm asking what his personal knowledge is.

MR. EVERSMAN: You're calling for an answer which violates attorney-client privilege.

MR. LANG: He is not a client, your Honor.

JUDGE GARLIN: We established that yesterday. Apparently, non of these witnesses are clients. That's what I was told yesterday.

Besides, even if he were the client, he may answer the question if he so chooses.

It's not your privilege to assert, it's his.

MR. GORDON: Could you restate your question?

MR. LANG: Do you have any independent knowledge of this regulation?

MR. GORDON: No.

MR. LANG: Have you ever had any experience with this regulation?

MR. GORDON: No.

MR. LANG: Are you familiar with any such regulations in any other state, besides Illinois?

MR. GORDON: No.

MR. LANG: Did you go about looking for this regulation yourself, or was it something that was suggested to you?

MR. GORDON: I don't recall how I came upon it.

MR. LANG: Did you read the regulation?

MR. GORDON: Yes, I did.

MR. LANG: Does the regulation -- well, let's turn to the regulation.

The underlining that is in your exhibit, is that underlining that you did, or that somebody else did?

MR. GORDON: I don't recall.

MR. LANG: Well, looking at the underlined portion, does the regulation pertain to emissions generally, as you said in your testimony, or does it per pertain specifically to smoke?

MR. GORDON: I think they are speaking in terms of smoke. But what is smoke?

MR. LANG: Well, is it your understanding that, typically, smoke is something that would be either opaque, or have some type of visibility to it?

MR. GORDON: I think smoke is something that is created when there is combustion, and I think it varies in its density.

MR. LANG: Sir, do you know at this rate what was the intent behind this regulation when they specifically used the word "smoke," and not "emissions"?

MR. GORDON: I think that they just selected "smoke," that's all.

MR. LANG: You don't have any knowledge of the context of this, however, or what went into the creation or enactment of this regulation?

MR. GORDON: No.

MR. LANG: I don't want to be callous here, sir, but talking about the incident that you describe at pages 8 and 9 of your testimony, as I understand from your Exhibit RG-5, as a result of this accident, there was a crash, correct?

MR. GORDON: I think the crash constituted the accident.

MR. LANG: And as you have testified on page 9, lines 5 to 6, ironically, the crash occurred directly and what is now the proposed site. So is it fair to say that the altitude of this plane, when it was impacting on the site was at zero above ground level?

MR. GORDON: Yes.

MR. LANG: So would the stack, if it had been there, have made any difference in this case when the plane was clearly well below the height of the stack?

MR. GORDON: Probably not.

MR. LANG: Sir, are you using this example to simply show that there have been accidents, or that the stack would cause an accident?

MR. GORDON: My feeling is that the stack could contribute to an accident.

MR. LANG: But are you using this example to show that the stack would have contributed to the accident, or to show that there was an accident?

MR. GORDON: Just that there was one.

MR. LANG: Turning to page 6, line 13, of your testimony, you discuss the aeronautic information manual in Exhibit RG-3, and the discussion of weight vortex effects and artificial thermal currents.

Could you please point to me where in RG-3 it has that discussion.

MR. GORDON: What line are you at on page 7?

MR. LANG: I'm on page 6 every your testimony from lines 10 through 13.

MR. GORDON: I think we are talking about situations where an upset of an aircraft could occur. I don't think the wake turbulence section refers to thermal conditions, rather, just an upset created by wake turbulence.

MR. LANG: Well, does the smokestack cause weight vortex effects?

MR. GORDON: No.

MR. LANG: So what is the relevance, then, of this exhibit?

MR. GORDON: Just that turbulence, whether created by a thermal disturbance, or rising hot air, or the passing of a larger plane in front of

you, can have the same effect.

MR. LANG: But where in this exhibit does it say that those will all have the same effect?

MR. GORDON: It doesn't.

MR. LANG: So are you just implying that, or are you using this exhibit to support that position?

MR. GORDON: I am using this exhibit to show that an upset can occur when you run into disturbed air.

MR. LANG: Does this exhibit talk generally about disturbed air, or specifically about wake turbulence caused by other airplanes?

MR. GORDON: That is disturbed air.

MR. LANG: Well, again, is this exhibit talking generally about disturbed air, or specifically about wake turbulence caused by other airplanes?

MR. GORDON: Wake turbulence.

MR. LANG: And that's all it talks about, correct?

MR. GORDON: Yes.

MR. LANG: One last thing, sir.

If this project is built, are you going

to stop flying at Republic Airport?

MR. GORDON: No.

MR. LANG: Will the members of the Republic Airport Pilots Association stop flying?

MR. GORDON: Probably not.

MR. LANG: How about the Aircraft Owners -- is it Aircraft Owners and Pilots Association?

MR. GORDON: Can't speak for them.

MR. LANG: To your knowledge, sir, are you familiar with any of their members?

MR. GORDON: I am a member.

MR. LANG: Do you know from any conversations that you've had whether any of the members will stop flying if this project is built?

MR. GORDON: I haven't had that conversation.

MR. LANG: I will leave it at that, your Honor.

JUDGE GARLIN: Just a few questions.

Your Exhibit RG-1 shows that it's copyrighted by a firm called Jefferson Sanderson, Incorporated?

MR. GORDON: That's correct.

JUDGE GARLIN: I think I recall hearing you saying in one of your responses that there is some governmental involvement with the issuance of this type of information?

MR. GORDON: Yes. The government publishes it themselves, in a slightly different format, and apparently, Jefferson has a relationship with the government that allows them to do it in their format.

Essentially, information is the same, just presume it's slightly different.

JUDGE GARLIN: Is there a similar sheet for every airport in the country that is accessible for general aviation?

MR. GORDON: If there is an instrument approach, yes.

JUDGE GARLIN: So, for example, and things obviously changed last September, but for a long time National Airport, in Washington, had an exceptionally high percentage of general aviation takeoffs and landings for a busy commercial airport.

Would there have been something like this?

MR. GORDON: There are approaches into

Washington National.

JUDGE GARLIN: Okay. Is it as simply stated as this, or are there some notes about what to look out for?

MR. GORDON: Sometimes there are warnings that appear.

For example, North Adams, Massachusetts, is surrounded by mountains. There are references to that fact.

JUDGE GARLIN: What is the busiest commercial airport accessible to general aviation that you have flown into as a pilot?

MR. GORDON: I have flown into Boston, Washington National, Dulles, BWI, Chicago Midway. I've been to almost all of them.

JUDGE GARLIN: A little bit different, say, again, landing at National Airport than at Republic Airport?

MR. GORDON: You've got to be a little more alert.

JUDGE GARLIN: You have to keep your head up for constant activity, correct?

MR. GORDON: However, Republic is the fourth busiest airport in New York State.

JUDGE GARLIN: I understand. And general aviation airports can run up those numbers pretty well?

MR. GORDON: Yes.

JUDGE GARLIN: But is it a constant, now, succession of commercial airliners, like say at National Airport?

MR. GORDON: Not into Republic, no.

JUDGE GARLIN: Not into Republic. Okay. What does it take to get Jefferson Sanderson to add an advisory note to their sheet for an airport if some sort of a hazard develops?

MR. GORDON: They get the information from the government.

JUDGE GARLIN: So, in your opinion, does the finding, and then the determination on appeal from the Federal Aviation Administration make it more or less likely that Jefferson Sanderson would be receptive to some sort of an advisory note about the presence of the stack at the proposed facility at the location proposed?

MR. GORDON: I don't know what the Government's response might be. They could just publish it kind of like I drew it in here, and show

its height.

They generally show the height above sea level, which is how pilots fly when there are ten of us.

There is another thing, and that is there is an allowable altimeter error, and there's an error created by temperature. So even though you think you're at a particular altitude, you might not be.

JUDGE GARLIN: Understood. Understood.

Are these issues that were at least brought in front of the finder of fact at the FAA?

MR. GORDON: I'm sorry?

JUDGE GARLIN: If you know, were these particular aspects, temperature air, altimeter air, were these aspects of risks to aviation that were put before the FAA?

MR. GORDON: I don't know, but I would suspect they are fully aware of it.

JUDGE GARLIN: I have no further questions.

Do you have Redirect?

MR. EVERSMAN: Yes, just three questions.

JUDGE GARLIN: Okay.

REDIRECT EXAMINATION

BY MR. EVERSMAN:

MR. EVERSMAN: When the FAA indicates flight problems shown, let's say, on Exhibit 1, that is the Jefferson diagram, do they take the plume into consideration, or just the smokestack?

MR. GORDON: Just the smokestack.

MR. EVERSMAN: If the incinerator in Babylon were to be constructed or operated today, would you have the same concern in that instance of a plume from the incinerator that you have in this case?

MR. GORDON: I just suspect that the temperature, the velocity, the height of the stack, and so forth, when we compare the two, that the incinerator would be less of a factor.

MR. EVERSMAN: Okay.

No further questions.

JUDGE GARLIN: Any Cross on the Redirect?

MR. LANG: No, your Honor.

JUDGE GARLIN: The witness is excused.

(Witness excused.)

JUDGE GARLIN: That concludes the witnesses scheduled for today, unless someone has sneaked in some wetlands witnesses who want to testify, but it seems to be a losing proposition.

(Laughter.)

JUDGE GARLIN: So does anyone have anything else they want to bring up on the record, before we go off the record, and do some housekeeping?

MR. CHERTOK: Yes, your Honor.

We have a motion to make, and I want it on the record, to avoid any confusion.

SHARED has a motion to introduce surrebuttal testimony relating to the financial aspects of the testimony adduced by the Dahl panel.

The reason I want it on the record is that we have made an effort, and it's my responsibility.

So if there's a problem with it, I'll take the hit, to distinguish between what is subject to the trade secret protective order and what is not.

And we have a set of documents which have the stamp on it, which can be given to the parties who are authorized to receive that

information, and another set which doesn't have that.

If there's any mistake, an inclusion of a document on the wrong side of the ledger, it's my fault.

I've looked at them, and I would like to be informed by KeySpan quickly, so there is no problem with that, obviously.

The intent is not to disseminate information, but I believe we have been correct in what's on this side of the ledger.

But I don't know who is authorized to see those documents other than, obviously, your Honors and KeySpan.

So I wanted to make sure that that's on the record, and that there is no confusion.

JUDGE GARLIN: I guess, obviously, if you want to verify --

MR. CHERTOK: Whatever KeySpan tells me, I will, obviously, take their word for it.

MR. RATZKIN: I would need to see which documents you're referring to.

MR. CHERTOK: Sure.

Oh, it relates to the financial information on the different cost estimates that are

contained in the supplement to the application.

That is the only information I'm aware of that is in this that would be subject to a trade secret.

MR. RATZKIN: I believe only the Department of Public Service and SHARED have signed onto that stipulation with respect to the documents.

MR. CHERTOK: I would be perfectly happy, while we're having some discussion, to have you skim the document, to make sure there's not any problems that I have missed.

The goal is not to disseminate the information.

I can file it now, or we can have the conversations that you indicated before, and then we can go back on the record, whatever they want.

JUDGE GARLIN: Does anyone else have anything you want to bring up before we recess the record for today?

I see no indications, so we will go into recess.

JUDGE CASUTTO: Can we start at nine tomorrow, or do you have a preference otherwise?

MR. LANG: Nine sounds good.

JUDGE GARLIN: Let's go into recess until 9:00 a.m. tomorrow morning.

Nine tomorrow morning.

(Whereupon, at 1:45 o'clock p.m., the hearing adjourned.)

I N D E X

E X H I B I T S

EXHIBIT NO.	DESCRIPTION	FOR ID.	IN EV.
25	Exhibits AAS-1 through AAS-5	1313	
26	Exhibits AAS-6 through AAS-8	1313	
27	Joint stipulation	1315	
28	Interrogatory SHARED-147 and response	1357	
29	Interrogatory SHARED-133 and response	1362	
30	Exhibits EW-1 and EW-2	1393	
31	Exhibits Sy-1 and Sy-2	1407	
32	Letter on letterhead of Young Environmental Sciences	1414	
33	Exhibits RG-1 through RG-5	1455	