#567

IN THE COURT OF COMMON PLEAS

CUYAHOGA COUNTY, OHIO

DAVID R. DEWALT,
A MINOR, et al.,

Plaintiffs,

-vs-

JUDGE D. O. CORRIGAN
CASE NO. 53032

THE CLEVELAND ELECTRIC
ILLUMINATING COMPANY,

Defendant.

- - - -

Deposition of ROGER W. HYBEE, taken as if upon cross-examination before Lynn D. Thompson, a Notary Public within and for the State of Ohio, at the offices of Squire, Sanders & Dempsey, 1800 Huntington Building, Cleveland, Ohio, at 10:00 a.m. on Monday, November 10, 1986, pursuant to notice and/or stipulations of counsel, on behalf of the Plaintiffs in this cause.

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On behalf of the Defendant.

- - - -

ROGER W. BYBEE, of lawful age, called by the Defendant for the purpose of cross-examination, as provided by the Rules of Civil Procedure, being by me first duly sworn, as hereinafter certified, deposed and said as follows:

CROSS-EXAMINATION OF ROGER W. BYBEE

BY MR. WEAVER:

Q. Would you please give us your full name and your business and residential address.

A. My full name is Roger W. Bybee. My business address is 142 Lincoln Avenue, Suite 301, Santa Fe, New Mexico, ZIP 87501. My mailing address is Post Office Box 2286, Santa Fe, New Mexico, ZIP 87504.

My residence does not have a number. It's on kind of a semirural area of Santa Fe.

Q. If we knew Santa Fe, we would understand.

A. Yes.

Q. How old are you, Mr. Bybee?

A. 47.

Q. Can you tell us something about your educational background from the time you graduated From high school?

A. Yes. I entered the New Mexico Institute of

Mining Technology in Socorro, New Mexico in 1957 under a cooperative work study program. I attended New Mexico Tech, as it was called, from 1957 through 1959, continuously.

In June of 1959, I left New Mexico Tech, went to work for a large electrical contracting firm named Reynolds Electrical and Engineering Company, Incorporated, who had executive offices in Santa Fe, New Mexico, corporate offices in El Paso and 37 district offices around the United States.

During my employment with Reynolds in the latter portion of 1960, I asked to be transferred to the Albuquerque, New Mexico district offices and in the fall of 1960, entered or enrolled at the University of New Mexico in Albuquerque in the electrical engineering program on a full-schedule part-time basis. I was working full-time and taking a full schedule of electrical engineering classes.

I continued to work for Reynolds Electric and ultimately received a bachelor of science degree in electrical engineering from the University of New Mexico in 1963.

Q. That's a bachelor of science in electrical engineering?
A. Yes, sir.
Q. In 1963. From the University of New Mexico?
A. Yes.
Q. Have you had any postgraduate training?
A. No, sir. Not in terms of formal education.
Q. So when you received your bachelor's degree in 1963, did you continue to work for Reynolds Electric or did you have other employment?
A. No. I continued to work for Reynolds.
Q. And how long did you continue to work for Reynolds?
A. Until the company was sold late in 1968. Among other activities at Reynolds Electric that Reynolds Electric was involved in was the management of the Nevada Test Site. And the company was sold to another company, Edgerton, Germeshausen & Grier, EG&G, Incorporated, who took over the management contract of the Nevada Test Site, and generally the various construction managers and district managers of Reynolds purchased the particular divisions that they were operating at -- the construction divisions that they were operating at that

time.

I remained with the Reynolds family and operated -- I was a general manager for two divisions of the Reynolds family that were held from the contracting business, and by that time, I had started my consulting business. In the Santa Fe-northern New Mexico area.

Q. Have you finished your answer?

A. I think so. I forgot what the question was.

Q. Well, we can go back and fill in any holes.

So as I understand it from your testimony, from 1957 through 1968 you worked for Reynolds Electric?

A. No, sir. From 1959, June, 1959, through the end of 1968, I worked for Reynolds Electrical and Engineering Company.

Q. Can you tell us what jobs you had held with Reynolds starting in 1959?

A. I started out in the estimating department, moved from estimating to materials expediting, purchasing, field engineering, which was a job description that was used within Reynolds. On to project engineering, area superintendent and, ultimately, vice-president of Reynolds Electric.

Q. What type of work did you do as a project

engineer for Reynolds?

A. Primarily -- Reynolds was involved in large industrial and basic research -- for example, Los Alamos National Laboratories, the AEC, Sandia Corporation, which is a weapons research facility, basic research facility. And large commercial with regard to large shopping malls. A few private buildings or multi-family dwelling types of facilities, high-rise buildings.

But the primary business of Reynolds Electric was large industrial installations of electricity. Including power plants for generation, transmission, distribution of electrical energy. And the like. It's just basically the heavy power portion of the industry.

Q. What did you do as a project engineer for Reynolds? What did you personally do? What were your duties? What type of work did you perform?

A. As a project engineer, I was in responsible charge of men and materials for execution of contracts that were designed by other groups. It was primarily construction contracts. There was a portion of that activity which was

involved in design. In many cases, the contracts that were entered into by Reynolds Electric, either as a prime contractor or a first-tier subcontractor to a particular contract, involved performance specifications rather than fully executed contract documents with drawings, details, things of that nature.

So as the project engineer, I was involved with implementing performance specifications to secure a final operational facility.

Q. How long were you a project engineer with Reynolds?

A. From about 1961 forward. It was prior to the time that I received my bachelor of science degree in electrical engineering. But about 1961 forward.

Q. Forward to what date?

A. Till probably mid 1964. At which time --

Q. You became an area supervisor?

A. -- I became an area superintendent for the Los Alamos-Santa Fe districts, and that did include a large portion of northern New Mexico.

Q. What were your duties as an area superintendent for Reynolds?

A. In those cases, for example, I had several

projects in the Los Alamos area office that were involved with the construction of advanced research facilities, terminal facilities for high-voltage transmission lines, work in and around the power plants in Los Alamos. I also had -- in the Santa Fe office, I had St. John's College, which was building a facility in Santa Fe at that time. New campus expansion program for the College of Santa Fe. A couple of relatively small medical office complexes.

I had a dredge mining operation in northern New Mexico in what is called the Hopewell Lake area.

Q. How long were you an area superintendent? '64 to what year?

A. Until the company was sold, actually.

Q. 1968?

A. Yes.

Q. At which time you became a vice-president?

A. No. I had become a vice-president in the meantime.

Q. When did you become a vice-president?

A. I believe it was around the latter part of 1965.

Q. Were you a vice-president and an area superintendent for a period of time?

A. Yes, sir. The vice-presidency allowed me to enter into contracts for Reynolds.
Q. But your job function didn't change?
A. Probably some added responsibilities. With regards to added authority, no. Some responsibilities. A change, but it was a question of whether I would have to travel 80 miles to get a signature from a vice-president or whether I could go ahead into the contract myself.
Q. The projects that you told us about which were undertaken while you were an area superintendent, what specifically was your involvement with those projects as an area superintendent?
A. I was in full responsible charge of men and materials in the execution of those projects. They varied from 10 to 20 electrical journeymen, whether they be linemen or interior wiremen. And I did have office support in the Santa Fe or the Albuquerque district offices for purchasing and expediting the materials.

But the area superintendent generally was responsible for the expediting or scheduling planning of the materials at the site, along

with the layout of the supervisory personnel -- for example, foremen or general foremen -- who then took the responsibility for the --

Q. Field work?

A. -- the actual field work on a particular project on the interior. On line work, for example, that one would have been a direct involvement in the staking, layout and daily supervision of the men.

Q. You say "on line work"?

A. On distribution or transmission line work. As opposed to interior wiring, wherein my work was primarily involved with only the foreman and general foreman rather than going on a floor-to-floor or particular subsystem program and becoming involved with that all the way through.

Q. You mentioned that sometime during the period that you were an area superintendent, you also began your consulting business?

A. Yes. In the latter part of 1966.

Q. When you began your consulting business in 1966, was it incorporated?

A. No. It was, and it remains today, a sole proprietorship. But at that time in 1966, it

was a part-time moonlighting kind of basis, with the permission of my employers.

Q. How many employees did you have when you began in 1966?

A. Myself.

Q. And what type of consulting work did you do initially in 1966?

A. In '66 it was primarily -- 1966-1967, my consulting work was the design of electrical systems for commercial and institutional buildings for architects.

Q. Did it change then after 1967, the nature of your consulting business that is?

A. It expanded. But it was at that time primarily for architects. There was more of it.

Q. You mentioned it expanded after 1967. What did it expand to?

A. Well, I did more work.

Q. Okay. The same time of work for architects?

A. The same time of work, but more of it.

Q. What type of consulting work do you do today?

A. Primarily it's design work for commercial, institutional, industrial facilities involving electrical systems.

Q. For architects again?

A. Probably 50 percent I would estimate is for architects. Very nearly 50 percent of that is for contractors. There is a lot of work in the southwestern portion of the U. S. that is turnkey or design and build. And where a performance criteria is issued by the owner, generally governmental owners, and the contractor designs, estimates, bids and, if successful, then submits a full performance set of contract documents to the owner and executes that construction.

Q. In 1968 you told us that you remained a general manager for the Reynolds family?

A. Yes. Of two divisions.

Q. Which two divisions were those?

A. Those were the Aztec Radiant Heating Division, which became Aztec Industries, Incorporated. It was the Aztec Radiant Heating Division of Reynolds Electric, became Aztec Industries. I was the general manager and chief engineer of that particular division, or that particular enterprise thereafter.

The other one was as an engineering manager and chief of research and development for the Ocate Corporation. That's O-c-a-t-e. Which

manufactured cold weather clothing and camping equipment. My involvement there was primarily in the thermodynamic calculations on equipment or characteristics of various materials that were being used.

Q. I forgot how you pronounced it, O-c-a-t-e?

A. Ocate.

Q. Ocate Corporation was owned by the Reynolds family?

A. Yes, sir.

Q. Aztec Industries I take it from what you have told us was involved in the production of some type of heating equipment?

A. It was electric heating equipment. Low-temperature radiant heating equipment.

Q. What do you mean by "low-temperature"?

A. Well, as a class, it's generally heaters whose ultimate temperatures, surface temperatures, are under 250 degrees Fahrenheit.

Q. How long did you remain with the Reynolds family in these two capacities?

A. In 1970 I switched around the involvement that I had and began consulting on a full-time basis, and I remained as a part-time consultant to the Reynolds family. So it was just a switch of the

primary activities that I was involved with.

Q. In 1970 as I understand it then, you became a full-time electrical consultant?

A. Yes, sir.

Q. Have you remained a full-time electrical consultant from 1970 until today?

A. Yes, sir.

Q. Do you have any affiliation today with the Reynolds family or any of their companies? Other than as a consultant?

A. Most of the principals are deceased of the Reynolds family.

Q. I see.

A. I do consulting work for the successors, widows, grand children and children who continue to operate Aztec Industries. And I believe I am on their board of directors. But probably my consulting with them amounts to some two hours a year, something of that nature. It's not really any kind of active involvement.

Q. From 1970 through this year, 1986, have you been on the payroll of any other company? Or have you just been involved exclusively in your consulting electrical business?

A. I have not been employed by anyone since 1970 on

a regular basis. I have performed some functions where I may have received reimbursables for attending meetings at a particular group, but it's not in terms of a salary or any kind of income.

Q. Mr. Bybee, have you ever had your deposition taken before?

A. Yes, sir.

Q. How many times, sir?

A. 45 or 46 times.

Q. And how recently have you had your deposition taken prior to today?

A. Last Thursday.

Q. Where was that, please?

A. Santa Fe.

Q. What kind of case was that?

A. That was a structural fire case.

Q. And you were testifying as what in that case?

A. That one as an expert in fire cause and origin determination.

Q. For the plaintiff?

A. Well, plaintiff generally --

Q. The person bringing the lawsuit?

A. I believe it was actually what you people say is a subrogation case between insurance companies.

Q. So, I see. I follow you. Okay.

Of the 45 to 46 depositions that you have given, how many of those have involved personal injury such as is involved in this case where an individual through one means or another has come into contact with electrical equipment belonging to a public or private utility company?

A. I would estimate around 10 to 15.

Q. When was the first such deposition you ever gave?

A. Probably around 1974. The first deposition?

Q. Yes.

A. Of any kind? 1972.

Q. No. Of the type we are involved in now.

A. Personal injury?

Q. Personal injury, right.

A. Probably 1974 or '75.

Q. Do you recall the name of that case?

A. I recall some of the participants in that particular case.

Q. You don't recall the style of the case, so and so versus so and so?

A. It was involving a young man named Rogers and a utility -- or the electrical supplier was Northern Rio Arribo County Cooperative, which

was a rural electrical co-op.
Q. In which state?
A. In New Mexico.
Q. And you testified for the Rogers boy?
A. My client was the attorney representing the Rogers family.
Q. Did you testify in court in that case?
A. Yes, sir.
Q. Of the 14 to 15 depositions that you have given in personal injury cases --
A. Excuse me.
Q. I'm sorry. 10 to 15 you said?
A. Those would not be all the personal injury cases. Those would be the ones that were involved with electrical supply lines, things of that nature. There are some personal injury cases, either as a result of fires or low-voltage contacts or something like that.
Q. So I don't have to keep repeating every time the 10 to 15 cases we are talking about, from now on, unless I tell you otherwise, we'll be talking about the cases you have been consulted in involving personal injuries vis-a-vis electric utilities. Okay?
A. Very good.

Q. How many times have you testified in court in one of those cases involving a utility company?
A. Well, now the utility company, so you understand, may have been a collateral or a member of the actual litigation. I was neither on their side or on the other side. My client may have been a codefendant, for example, of a utility company or something like that.

But of those, probably seven or eight cases that I can recall involving electrical utilities in personal injury situations. It may be one or two less as some of those were large property losses involving utilities.

Q. Let me make sure we are on the same page here.

We talked about 10 to 15 depositions that you had given in personal injury cases?
A. That's my recollection, yes.
Q. And you told us, for example, on the Rogers case you did testify in court in addition to giving a deposition?
A. Yes, sir.
Q. In any of the other 10 to 15 cases, have you testified in court?
A. Yes, sir.
Q. How many others?

A. There's probably six or seven total, of which the Rogers is one.
Q. Can you recall the names of the others?
A. There was one in Trinadad, Colorado. The name of the young boy that was injured was David Jones. The utility company was San Isabel Electric Cooperative, I believe.

There was one in Colorado Springs. The name of the injured person was David Jones.
Q. Another David Jones?
A. I'm sorry. David Higgs.
Q. H-i-g-g-s?
A. Yes.

And the utility company was the City of Colorado Springs.

There was one in southern New Mexico. The name of the injured party was Montanez, M-o-n-t-a-n-e-z. The name of the utility company was New Mexico Electric Service Company.

There was one that occurred in Los Alamos, New Mexico. The name of the injured party was Schleft, S-c-h-l-e-f-t. And the utility company was Los Alamos County Board of Commissioners.

How many is that?

Q. Including the Rogers case, that's five. Rogers, Jones, Higgs, Montanez and Schleft.

A. One in Huntsville, Alabama. The injured party was I believe a man named Gary Wayne Andrews. And the utility was the Tennessee Valley Authority.

That's all that I can recall right now where there was an actual court appearance.

Q. Can you recall the names of the additional cases in which you gave depositions?

A. There were a number of them. I'll try and recall.

Q. To the best of your ability.

A. The injured parties were Miguel Grado, G-r-a-d-o, and Emanuel Chavez, C-h-a-v-e-z.

Q. This is the same case?

A. No. This is another case.

Q. Oh, I'm sorry.

A. Yes. I'm sorry. These are two injured parties.

The utility company was Southwestern Public Service Company.

The injured party, I don't remember his name, was -- I'm sorry. I didn't have a deposition in that case.

The injured party's name was Alarcon, A-l-a-r-c-o-n. The utility company was Public Service Company of New Mexico.

The injured party's name was Aitken, A-i-t-k-e-n. The utility company was Public Service Company of New Mexico.

The injured party's name was Phillips. The utility company was Public Service Company of New Mexico.

The injured party's name was Knoll, K-n-o-l-l. The utility company was the City of Colorado Springs.

The injured party's name was Rodriguez. The utility company was Colorado Public Service Company.

That's all I can think of right now. There may be --

Q. Okay.

In the Chavez versus Southwestern Public Service Company case, where is Southwestern Public Service located?

A. Southwestern Public Service Company I believe has their main corporate offices in the Lubbock, Texas area, but they do serve portions of the southeastern part of the State of New Mexico.

Q. Which state did this case arise in?
A. This was in New Mexico.
Q. So the case was filed in New Mexico, even though this company is located in Texas?
A. Yes. Their lines do extend and their facilities do extend into southeastern New Mexico.
Q. Obviously Public Service of New Mexico is located in New Mexico, the State of New Mexico?
A. Very nearly exclusively. They do have generation facilities in what's called the Four Corners area, right at the area where New Mexico, Arizona, Colorado and Utah meet. They have the San Juan generating plants.
Q. Were all the cases involving Public Service of New Mexico incidents which occurred in the State of New Mexico?
A. Yes. I believe those three all occurred in Bernalillo County, or primarily in the county in which Albuquerque is located.
Q. And, finally, the case of Rodriguez versus Colorado Public Service, where is Colorado Public Service located? Is that Denver?
A. Their main offices are in Denver. That particular incident did occur in metropolitan Denver.

Q. Thank you.

In addition to giving depositions or testifying at trial, have you reviewed other cases involving personal injury sustained from coming into contact with equipment owned by an electric utility?

A. Yes, sir.

Q. How many additional cases have you reviewed?

A. I would estimate somewhere in the area of 10 to 15.

Q. Mr. Bybee, you are aware then from your previous experience of giving deposition testimony that if you have any problems with my questions, that is to say if you can't hear me for some reason, you'll let me know, and I will repeat the question. Or if you do not understand my question, let me know, and I will rephrase it so that you do understand. Is that correct?

A. Yes.

Q. In the Rogers case, did you testify for the injured party?

A. My client represented the injury party, yes, sir.

Q. And is that true in all of these cases?

A. No, sir.

Q. In the Jones case, did you represent the injured party?
A. My client was the attorney who represented the injured party, yes.
Q. In the Higgs case, was your client the attorney who represented the injured party?
A. Yes.
Q. Is the same true in the Montanez case?
A. No, sir.
Q. Who did you represent in the Montanez case?
A. My client represented the utility company.
Q. In the Schleft case?
A. My client represented the injured party.
Q. How about the Andrews case?
A. My client represented the injured party.

That was actually -- incidentally, the utility company was the Tennessee Valley Authority, but this was -- in my understanding, it was a co-employee suit. Rather than a suit against TVA.

Q. In the Chavez versus Southwestern Public Service Company, who did you --
A. My client represented the estates of the injured persons.
Q. In the Alarcon case?

A. My client represented the Public Service Company of New Mexico.
Q. Your client being the attorney?
A. Yes, sir.
Q. What was his name?
A. Thomas B. Keleher. K-e-l-e-h-e-r.
Q. And in the Aitken case?
A. My client was Thomas B. Keleher representing Public Service Company of New Mexico.
Q. Is the same thing true in the Phillips case?
A. Yes, sir.
Q. And how about in the Knoll case?
A. My client represented the injured party.
Q. And, finally, in the Rodriguez case?
A. My client represented the injured party.
Q. Mr. Bybee, you ever been retained by Mr. Kaufman in this case, the Dewalt case, to provide expert testimony on behalf of the plaintiff. Is that correct?
A. To examine the information provided to him and render any opinions that I may have in the case.
Q. When were you first contacted by Mr. Kaufman?
A. The latter part of November, 1984.
Q. How did Mr. Kaufman contact you?
A. By telephone.

Q. Do you know how he got your name?
A. It's my understanding he had contacted or had spoken with one of my clients, one of my previous clients.
Q. Do you advertise your services as an expert witness?
A. No, sir. I do -- I believe I am listed in the Forensic Service Directory, which has some relationship to Westlaw or one of those publications. It's not an advertisement or solicitation.
Q. What is the Forensic Services book or whatever it is?
A. It's a compilation of experts in a wide range of fields that is put together by an editor and/or a publisher apparently to assist attorneys and people involved in litigation, or not necessarily litigation but I would say that's the actual effect of it, in looking for qualified experts in various fields.
Q. Is the official title "Forensic Experts"?
A. No. It's "Forensic Services Directory."
Q. Is it a published book?
A. Yes.
Q. Or pamphlet of some sort?

A. No. It's a book. It's a hard-bound book.
Q. Mr. Kaufman contacted you then in late 1984 and apparently asked you to review some materials for him?
A. Yes, sir.
Q. And after reviewing these materials, you prepared a report which you submitted to Mr. Kaufman on March 27th, 1985. Is that correct?
A. Yes, sir.
Q. I notice in your report, you state that you have reviewed all of the data, information and material supplied by Mr. Kaufman's firm to date in this matter.
A. Yes, sir.
Q. I want to ask you now exactly what those materials were that you reviewed.
A. Mr. Kaufman supplied me with I believe it was two sets of answers to interrogatories by CEI, the responses to two sets of requests for production of documents. Provided me with medical records from Cuyahoga County Hospital, Cleveland Metropolitan Hospital.

MR. KAUFMAN: It's the same hospital.

THE WITNESS: Oh. They have

different titles on them, the doctors and reports. I don't know the difference between the two.

A. And some medical information from Case Western Reserve. Dr. Blanchard, I believe, as I recall.

I reviewed portions of distribution circuit diagrams and grid maps of CEI. Some portions of the CEI distribution standard handbook. Copies of some radio spots and printed materials from CEI. The depositions of Mr. Douglas and Mr. Smith, both CEI employees. Deposition of David Dewalt. A note from I believe it was Mrs. Dewalt concerning the -- or some pertinent information regarding witnesses and what happened on the day of the incident in which David was injured. Photographs of the Wengler playground. Photographs of David's injuries. This was later on in the injury sequence.

Q. What was later on?

A. These photographs.

Q. Let me try and, if we can, segregate the materials you reviewed prior to March 27th, 1985 and those that you have reviewed after. Up until the photographs of David's injuries, the things you just told us about that you reviewed

you saw and reviewed before March 27th, 1985; is that correct?

A. I don't remember when I read those depositions. I presume that that was -- it might be easier, if I can, to look through --

Q. Go ahead.

A. -- and determine what came after the March --

Q. Go ahead.

A. I believe that group that I just recited, with the exception of -- and although I didn't say it with specificity, in the printed materials I believe I did receive two copies of advertising documents from CEI recently. I did inspect the site of Wengler playground yesterday.

And I believe that's all of the new information that I have been provided since my report of March 27th, 1985.

Q. You mentioned you inspected the site yesterday. What time did you inspect the site?

A. I would imagine it was -- we arrived at sometime around 1:30 your time.

Q. So in the afternoon?

A. In the afternoon. I arrived in town at approximately 12:30.

And I would estimate we were at the site

for -- I was accompanied by Mr. Kaufman. We were probably at the site and its environs for approximately two hours.

Q. You mentioned that you were accompanied by Mr. Kaufman to the accident site.

A. Actually I accompanied him. He was in control of my --

Q. Well, both of you guys were there?

MR. KAUFMAN: We accompanied each other.

Q. Was there anyone else with the two of you?

A. No, sir. We were with each other.

Q. Did you meet the Dewalts while you were out there?

A. No, sir.

Q. Did you meet any other attorneys from Mr. Kaufman's firm?

A. No, sir.

Q. Did you take any notes on your visit to the site?

A. No, sir.

Q. After having viewed the site, tell me what determinations you made from your --

A. Well, the only actual determination was that the scene and the area had been modified since the

photographs that I was provided were taken, in that some playground equipment had been removed.

Q. That's on the asphalt portion?

A. On the asphalt portion. And the basketball goals had been removed. There were two young boys there. I did ask if they knew what happened to the equipment that had been there, and they said that it had been removed this summer.

The other thing that I did observe there was the entire facility. Since I had -- rather than a continuous group of photographs showing the entire layout, I was able to walk around the perimeter and through the park and take a look at it and take a look at some of the facilities there, the electrical facilities, that were not previously available to me.

Q. What did you observe about the electrical wires which run along the rear lot lines where this accident occurred?

A. I observed an open supply, basically a single-phase construction with the energize conductor generally on a pole top pin or ridge pin. The neutral conductor -- and these are estimates rather than actual measurements.

Q. Sure.
A. -- at least four feet and in some cases approximately five feet below on an insulated upset bolt at the same location as a triplex secondary. A neutral and triplex secondary attached at the same location on the pole generally.

The telephone conductors -- I believe they are Ohio Bell Telephone. At least that's what the records that I have indicate -- appear to be the lowest conductor on the pole, with a community antenna television cable, cable TV or TV cable, approximately four to six inches above the telephone cable.

Q. You say that the neutral was in your opinion four to five feet below the primary?
A. Yes, sir.
Q. Are you familiar, sir, with the National Electrical Safety Code?
A. Yes, sir.
Q. Please tell me how you are familiar with that code.
A. I have been using it since -- it's a recognized national standard and is part and parcel of the electrical power industry. Particularly

involving open supply lines, underground medium voltage cables or cables above 600 volts, and communications cables. I have been familiar with it since my first involvement with Reynolds Electrical Engineering Company. One of the projects or one of the things that I worked on from about 1961 forward was the construction of distribution lines throughout the northeastern part of Arizona.

Q. So you have worked with the National Electrical Safety Code since 1961?

A. Since actually 1959, but specifically with its direct application to distribution lines as a single involvement rather than just an ancillary involvement on a particular project since 1961.

Q. Was it significant to you that the neutral that you saw yesterday was four to five feet below the primary?

A. I don't know what you mean by "significant."

Q. You pointed that out as in your opinion it was about four to five feet, as you eyeballed it, below the primary. And I wondered obviously for you to estimate that distance if it had some significance to you or --

A. Only from the standpoint that it appeared that

the poles had been framed to allow for a transformer to be installed between the primary and the neutral on their particular design.

Q. You don't find any fault with the fact that it's four to five feet below the primary? That is, that the neutral is four to five feet below the primary?

A. I believe that was just an observation. And that they used the neutral position as the point of attachment for the secondary conductors that are -- well, I call them underbuilt. I don't know what the local terminology is.

Q. All I'm trying to find out is -- since I wasn't out there with you and haven't had the opportunity to discuss your inspection with you, I don't know whether this is significant to you or not, but I want to know do you find some problem with the fact that the neutral was four to five feet below the primary or is that acceptable construction?

A. As I said, all that it indicated to me is that it had been intended or planned that a transformer could, in fact, be installed at virtually any structure there. They allowed adequate -- adequate space was allowed for the

installation of the transformer.
Q. And there's nothing wrong with that type of construction, I take it?
A. I think that that kind of spacing is quite normal and acceptable.
Q. Going back to your report now, you indicate that in terms of the facts, David was flying his kite on the November 7th, 1982. How did you come by that fact?
A. That was reported to me by Mr. Kaufman. That report was supported by the note from Mrs. Dewalt. And I believe the subsequent testimony of David in deposition.
Q. I'm not questioning the accuracy. I wanted to learn the source.

At the time you prepared this report, the source for this was Mrs. Dewalt's note?
A. I don't recall whether I had David's deposition at that time. I believe I did. I can see.

MR. WEAVER: Do you know when it was taken?

MR. KAUFMAN: No, I don't remember what date David's deposition was taken.
A. I believe I got all the depositions of Douglas, Smith and Dewalt at the same time, and that was

November of '84.

THE WITNESS: I'll let you look through that --

Q. Well, Mr. Bybee, we can move on to save some time.

Do you have Mrs. Dewalt's note with you?

A. I have a copy of it, I believe. I don't have the actual note.

Q. May I see it, please.

Why don't you tell me exactly what you have with you here today, your materials.

MR. KAUFMAN: Let the record show that Mr. Bybee is handing Mr. Weaver --

A. This is a note that was provided to me and represented as being a copy of a note from Rosemary Dewalt dated December 3rd, 1984.

Q. Why don't you just tell us what you have with you, sir.

A. I believe it's basically the things that --

Q. I know, but just tell us, if you will, on the record -- just go through -- what is this?

A. That's some excerpts from the National Electrical Safety Code Interpretations.

Q. Okay.

A. Two volumes, 1970 through 1980, 1981 through

1984. Actually three volumes. 1961 through '77.

Q. A letter from Mr. Kaufman?

A. I have several letters from Mr. Kaufman.

Q. Would you give us the dates of those, please.

A. August 22nd, 1986, May 16th, 1986, February 5th, 1986, December 3rd, 1985 and October 4th, 1985, April 2nd, 1985, December 21st, 1984, December 20th, 1984, December 18th, 1984, December 4th, 1984.

Q. Following those letters you have --

A. Notes of -- or memos of telephone conversations with Mr. Kaufman concerning apparently a trial setting and so forth.

Q. Okay.

A. A group of CEI drawings on work orders.

Q. Okay.

A. A review of transmission distribution March, '84 super grid article.

Deposition of -- these are notes to the deposition of Edward Smith.

Q. Okay.

A. Notes concerning deposition of Donald Douglas.

Q. Okay.

A. The materials, CEI answers to request for

productions, answers to first set of interrogatories. These are notes concerning those.

Q. Okay.

A. The CEI safety spots. Two of them as I indicated before.

There is actually a letter possibly from you to Mr. Kaufman that was transmitted to me. It appears to be an original. With the safety spots.

Q. Okay.

A. Notes concerning the medical records. And the medical records themselves.

Here I have a packet of CEI distribution standards that were provided to me.

Q. Okay.

A. Electrostatic copies of some safety spots I received yesterday from Mr. Kaufman.

Along with some electrostatic copies of early injuries, which I did not have prior to yesterday, or had not seen prior to yesterday.

A group of documents which are in many cases multiple --

Q. Copies?

A. -- copies of -- I don't know -- out of

apparently four or five files from the same document from CEI concerning the area of the incident, along with some distribution circuit maps. The depositions of Mr. Smith and Mr. Douglas. The actual copies of the pleadings that I mentioned earlier.

And I don't see the deposition of David Dewalt. I may have missed it when I was going --

Q. Well, that's all right.

MR. KAUFMAN: I don't think it's in that packet, Roger. But it was supplied to you.

Q. Fine.

A. It just may not be attached.

As well as photographs of the site of Wengler playground provided by Mr. Kaufman. I don't know who photographed it. And photographs of the injured areas that are later in date than those that I spoke of having seen yesterday.

Some of these are portions -- there's five or six pertinent sections of the medical records that describe the injured areas. A sample of the wire that was used as a guideline by David Dewalt. And the notes that I have made during

this period.

Q. You mentioned at the outset that you wanted to take a smoke break. I'd like to look at these materials. Why don't I do that while you take a smoke break.

MR. KAUFMAN: Let the record show that we are handing over to Mr. Weaver the materials that have been described. I think he's familiar with the ones that have already been supplied to us by CEI.

MR. WEAVER: Let me take a look at it.

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(Thereupon, a recess was had.)

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Q. Mr. Bybee, after Mr. Kaufman contacted you initially in late November of 1984, you apparently needed some additional information and requested Mr. Kaufman to obtain it for you and he did?

A. Yes, sir. Generally he provided me with whatever available documents or whatever he could come up with.

Q. And among the data which Mr. Kaufman supplied you with was a note from Mrs. Dewalt dated

December 3rd, 1984. Is that correct?

A. That's correct.

Q. Did you ask Mr. Kaufman to determine David's height and weight?

A. Yes, sir.

Q. Why?

A. In order to understand the electrical circuit that was involved, it is necessary to know the anthropomorphic characteristics of the person that's involved in the electrical circuit. In order to determine the probable position and configuration of the human body in the electrical circuit, that information is necessary for me.

Q. In terms of formulating any opinions which you have, which we'll get to later, about the Illuminating Company's conduct in this case, was that a relevant fact?

A. It's relevant from the point that it does allow me to assess whether the injury record, the actual injuries received by David Dewalt in this particular case, are consistent with the information provided to me concerning the circumstances from which the injuries arose.

Q. What if David Dewalt had -- like I say, we will

get to your opinions later, but whatever they are, okay, would they have changed if David Dewalt had been six feet two and 195 pounds?

A. It might have with regard to the injuries. For example, the risk of electrocution rather than severe electrical burns or injuries of that type.

Q. Oh, in terms of the ultimate injury to the victim? Is that what you are saying?

A. Or even the intermediate injuries or the -- for example, it is in my opinion pertinent to know where the probabilities lie with regard to potential electrocution or destruction of life. That is pertinent. Or it is information for which the height and weight and that data is necessary to determine.

Q. Did you also want to know the type of clothing that David was wearing?

A. I asked specifically the type of shoes, pants, shirt, underwear or not.

Q. Why did you want to know what type of clothing David was wearing at the time?

A. Because that allows me to assess the position configuration of the body. Any intervening resistant materials that may have been between

him and, for example, the earth, which would have worked in concert with his bodily position to determine his particular location and position in an electrical circuit.

Q. Did you also seek information with regard to witnesses to the incident?

A. Yes, sir.

Q. Why did you want that information?

A. My experience in cases where people have been injured and survived in electrical cases is that their recollection and memory of the circumstances leading to it and during the incident are often incorrect as to exactly what happened, and I was interested in having -- or finding if there were a witness who may have seen parts of the incident in progress to, if not corroborate, then at least give us some idea of what they thought they saw.

Q. You have incorporated this finding in your report in Item No. 4 on the first page, is that correct, the neighbor who saw David in the park?

A. Yes. I believe that the first page and the Items No. 1 through 6 represent a fair assessment of the information that was provided to me concerning the circumstances surrounding

the incident.

Q. Now, Item 4A in your report. You say "Neighbor heard loud crackling noise, turned around and saw Dave hit the ground flat on his back."

Of what relevance is that to the formulation of your opinions?

A. A concern of mine was that with the nature of the injuries that David suffered -- for example, there were no noted injuries on the bottoms of his feet or on the sides of his feet, suggesting that if, indeed, he was standing up when the electricity first entered his body, it was for a very, very short period of time, insufficient time for tissue temperatures to exceed burn conditions.

So that he may have -- it may have been a multi-phased incident overall, with the first one, if he were indeed standing up, he would be knocked down very quickly. And then the injuries proceeded from there after he was either sitting down or on his back.

Q. And in 4B, you said the neighbor saw David's clothing burning, ran to help, saw David's heart exposed and spool with guideline laying at David's side smoking.

Of what relevance is that finding to the formulation of your opinions?

A. In the same manner as in the standing. That description is consistent with the evidence of electrical burns on David's body in that for a period of time, certainly much longer than the initial period, if he were standing up and got knocked down, it appears that he was in a prone position for a relatively long period of time with electricity flowing through his body.

Q. In terms of expressing opinions on CBI's liability in this case, that fact wouldn't have any bearing on those opinions, would it?

A. It does in understanding what happened after the electricity got into his body and understanding that, for example, this is not a case where in my opinion, and for my opinion, that it is highly improbable that the method of contact was anything but, for example, a conductive kite string or guideline into his body.

I would not, for example, consider the kinds of injuries that David had consistent with those had David climbed a pole and came into contact or had David used a long conductive object gripped in both hands hitting the line.

It tends to focus or eliminate other sources of electrical injury for this case, and it is important from my point of view that the record that I am provided by Mr. Kaufman and others is consistent with the injury that we have from an electrical standpoint.

Q. I think that there's one area that we will all be able to agree on, Mr. Kaufman, yourself and Mr. Percio, and that is he was flying a kite and that that was the source of the energy. Nobody -- I'll state for the record nobody is contending he climbed a pole. I understand your thoroughness, but that really is not an issue in this case, as to how he --

A. I can appreciate that, but it is required for my own personal review of the incident.

Q. Fine. No problem.

Now, in Paragraph 4C of your letter, you say "Neighbor ran to garage, returned with rubber boot and knocked the guideline away from David. David laid there shaking with clothes smoking for about 2 minutes."

Of what significance is that in formulating your opinions to whether CEI was negligent in this case?

A. That is in the same line as the previous information, because it does appear to me from the injury record that that particular condition, for example the shaking, is quite consistent, as is Item No. 5, for an electrical circuit which involves the head. And those are also consistent in that the wound to the back of David's head has a very, very high engineering probability of having been caused by the flow of electricity through David's head into the ground.

So that those two, Items 4C and 5, for example, are consistent with the injury record and what I indicate to be an exit wound in 6B on the back of the head. And that's all I'm attempting to assess and to differentiate between entry and exit wounds as a path of current flow through this circuit, which happens to include David Dewalt.

Q. Is it fair to say, Mr. Bybee, that Items 1 through 6 of your letter were important for you to put this case in proper perspective?

A. For me to understand and to make a determination that the information provided to me for review and for rendering an opinion was consistent, and

it establishes two things. It does indicate the information that was provided to me and a synopsis of that information.

Q. Now, in terms of CEI's ultimate liability in this case, namely as to whether CEI was negligent, those factors really are not relevant, are they?

A. Only from one standpoint. And that is how -- that's the manner in which he was injured.

Q. Oh, I understand. That's a component of the case. There's no question about that. But before you can get to the injuries or the damage phase of it, you have to establish liability. You know, in other words, was CEI negligent. That's the first issue.

A. No, I don't have to. It is sufficient for my purposes to, first of all, understand -- and it's required for my purposes -- to understand the configuration of David, his position, what he was doing when he was injured and then look at the instrumentality by which he was injured, which then leads us to the location, nature and characteristics of the electrical facilities which were the instrumentality.

So that I don't separate those as I

certainly understand that both you and Mr. Kaufman tend to differentiate and delineate these differences.

Q. Fair enough.

Moving on into your letter then, you say "The records from Cleveland Electric Illuminating Company indicate the following information." In No. 7, you say "CEI installed the incident distribution lines as a 4,340 volt line in the latter part of 1966 and the conversion to 7,620 volts was accomplished in 1969." Is that correct?

A. That's correct. That's what it says. That's my understanding.

Q. Now, of what relevance is that fact to the formulation of the opinions which you have about CEI's conduct in this case?

A. In particular, the information contained in Item 7 tells me the appropriate standard to apply to the lines with regard to their genesis. And the 1966-1969 dates of initial construction and either subsequent reconstruction -- because it's not totally clear that the conversion was made without some reconstruction -- indicates to me that the 1961 or 6th edition of the National

Electrical Safety Code was the one in force and effect and recognized.

Q. So if construction had occurred in 1973, then that would be relevant because another edition of the National Electrical Safety Code would apply?

A. It's unfortunate that you selected that because the 1973 edition is also the 6th edition. What happened in 1973 was the publication and the responsibility for the National Electrical Safety Code changed from the National Bureau of Standards to the IEEE, but the 1973 is still considered the 6th edition. It is, in fact, with a couple of very minor editorial changes.

Q. My point being that the relevance of the information that you have included in No. 7 of your letter is so that you can determine which edition of the National Electrical Safety Code governs?

A. That's correct.

Q. No. 8, you say "CEI was aware of Wengler Playground by at least 1970 when flood lighting was installed for the playground and when maintenance replacements were made in 1972 and 1981."

First, I would ask you what the source of your information was?

A. Those were CEI documents. One of them was a work order in 1970, when flood lighting was installed on the playground. And, in fact, the documents provided to me that indicate those are CEI documents. They indicate that that is a playground and they were aware of its use as a playground, and, in fact, the flood lighting was for the asphalted portion of the playground.

Q. Of what relevance are those facts to your opinions as to whether CEI was negligent in this case?

A. In this particular case, it indicates that CEI was aware or should have been aware, and, in fact, the documentation is that they were aware, that Wengler -- that this area along Wengler or off of Wengler was indeed a playground, and as a playground, it was an area where children and other members of the public congregate for recreational activities. That it was not just an empty lot where a building had been torn down and the neighborhood kids took it over and used it for a playground; it was, in fact, a planned area of congregation and recreation.

Q. No. 9 in your letter says "CEI installed 33KV insulated aerial cables adjacent to the playground." Did I read that correctly?

A. That's what it says. Of course, there is the typographical error in "ariel." I picked that up now.

Q. I just read it as -- I'm not interested in typographical errors.

What is the source of your information?

A. That again is CEI documents, as well as the photographs of the scene. There's an indication in the CEI documents that those are 33 kV cables that are strung aerially across what I generally call the northern or part of the northern boundary of Wengler playground.

Q. Can you show me which CEI documents you are referring to?

A. This one happens to be one. I don't know the identification, whether this is the grid map 5515. It does show the associated adjacent maps, and the area circled in red there, which is very difficult for me to read without optical aids, indicates that that is a 33 kV insulated cable.

That's one. There was, of course, the

deposition testimony of -- I don't recall whether it was Mr. Smith or Mr. Douglas indicating that 33 kV cable was, in fact, installed.

Q. Nothing on that grid map that you just showed me indicates that that 33 kV aerial cable is insulated, does it?

A. Well, I believe the cable itself is an indication that it's not an exposed or a bare conductor. I do see in the relevant documents or the photographs from the area that in late 1982 -- at least it's my understanding that's when they were taken. It indicates that those were, in fact, insulated cables that were cabled in a bundle and held on a messenger.

I do not know the meaning of the numbers below there. And I don't believe that I've been provided with any kind of a guide that tells me what "J34793" means, for example.

I have seen -- personally I have seen the cables for their entire run in the area of the Wengler playground in a westerly direction where they terminate at an overpass, I guess it would be considered, on the five points road. What the name of the roads are out there I don't

know, but it's to the west of that area. I have observed them. I haven't obviously inspected them.

Q. Of what significance is it to the formulation of your opinions in this case regarding CEI's negligence that there was a 33 kV insulated aerial cable near the playground?

A. It was pertinent in my view to recognize that a cable with a much greater duty with regard to insulation capabilities was, in fact, installed and used in the area of the Wengler playground and has apparently continued to be in use during this time. So that it's more of a confirmation of my opinion that the technology and certainly the materials were not only available but it was economically practicable and feasible to install insulated conductors as a suitable substitute for exposed uninsulated conductors which relied upon elevation and spacing for insulation.

Q. No. 10, you say "CEI was aware prior to November 7, 1982 that hazards to the public arose from contacts between the energized bare electric supply lines and kites and model airplanes."

What is the basis for that statement?

A. Well, in the event that CEI is living in a

vacuum, it is certainly indicated by their radio spots and their printed materials that it is at least viewed by CEI that there is a potential hazard from contact by kites and model airplanes.

I believe in the answers to interrogatories, there was a single reference to a prior incident of, and I don't know whether it was injury or what it was, a claim from a -- if not a consumer, a contact of CEI and CKI involving a kite.

Q. You say in No. 10 though CEI was aware that hazards to the public arose from contacts between the energized bare lines and kites. What evidence is there that CEI was aware of any such hazards? You are saying the advertising?

A. Well, in their advertising, in which they indicate that with the instructions to avoid contacts between the CEI lines or the electric company's lines or the Illuminating Company's lines and kites or model airplanes. And the fact that there had been apparently at least one filed claim prior to the Dewalt claim concerning a kite contact. I do not know the specific information concerning that one. I can only

read it in the context of the response to the particular question.

Q. Have you ever heard other than this case of an instance where a kite contacted a bare conductor and an injury resulted from it?

A. I have heard of them. I don't have any that I am aware of in my personal experience. I have never investigated an incident such as that. I have investigated incidents, for example, where a kite became entangled in lines and the subsequent attempt by a child or his friends to retrieve it resulted in injury. I am familiar with everything from Benjamin Franklin's experiments with kites using string that, of course, wet kite strings are conductive, or even damp kite strings are conductive, depending on the voltages that are involved.

Q. Do you think it would be good policy for a utility company to warn against flying kites around utility lines?

A. I think most utilities, or at least all of the ones that I'm familiar with, do warn against the hazards of flying kites in the vicinity of aerial lines.

The conditions that I am familiar with, of

course, all generally say "If your kite becomes entangled, call the" --

Q. Power company?

A. -- "power company or whatever in for assistance in removal or retrieval."

Q. And again as I asked you before, do you think it is a good idea for a utility company to advertise and warn people not to fly kites near electrical lines?

A. Yes. I think that it probably goes a little further than that though. I think it has to be a true warning with some recognition of the hazards or the risks that are involved in it.

Q. What risks are involved in flying a kite near a 13.2 kV line?

A. The risks with a wet string, of course, are not unlike those that occurred in the case of David Dewalt, except that it would be my opinion that the contact may not have been quite as long with a wet string as it would be with an insulated wire guideline.

Q. You are suggesting that if David Dewalt had been flying that kite with a wet string, the same result would have obtained?

A. No. I think it would be possible he could have

been killed.
Q. With a wet string?
A. Yes.
Q. So is it your opinion that wet string is as good a conductor as the wire that David was using on November 7th, 1982?
A. No, sir. I think what I'm saying is that it is a poorer conductor. Thus, the ranges of current are lower, and, thus, the potential for electrocution is much higher.
Q. Not being an electrical engineer, you just lost me there. You say you agree that string regardless of whether it's dry or wet is a poorer conductor than wire?
A. Oh, certainly. But what I am saying is that a wet string is potentially more dangerous or has a greater potential for electrocution rather than electrical injury than the wire guideline.
Q. That's where you lost me. If it's not as good a conductor, why would there be a potential for a greater injury?
A. Because the plant we call a human being is more susceptible to electrocution within a very narrow range of electrical through-body currents. And with the use of a guideline, that

range, the wire guideline as in David's case, the range was exceeded so it was highly improbable that David would have been electrocuted. However, it was almost certain that he would be injured, he would sustain severe electrical injuries, although he was outside of the probability of --

Q. Death?

A. -- electrocution. This is a destruction of life. And in that regard, a wet string would have tended to bring down the through-body currents, possibly into the level or into the electrocution range of currents.

Q. What if David had been using a dry string?

A. A dry string at 13.2 would probably -- actually it wasn't 13.2. Actually what it was, he was exposed to 7620. That's phase to ground voltage.

At 7620, it's unlikely that the contact of the string with the power line would have had any effect. However, not having the climatological data for the area, along with the humidity and dew point, I would imagine there is no such thing in November of 1982, or possibly even November, 1986, in which you really have a

zero percent relative humidity.

I would have a concern, for example, about the 33 kV line exposed on the northern end with a damp string, even though it would be something less than 33 kV to ground. So that a dry string, if it were indeed truly dry, should pose no potential for direct contact injury.

Q. In No. 11, you stated that "CEI recognizes the National Electrical Safety Code applies as the standard of minimum requirements for the owners and operators of electric supply lines with respect to installation, operation, inspection and maintenance."

What is the source for that statement in your report?

A. I believe in the answers to interrogatories, as well as the deposition testimony of Mr. Douglas, that the National Electrical Safety Code is, in fact, the basis for their operation.

Q. And if it were not the basis for the Illuminating Company's operation, would you find fault with that?

A. I would still apply the National Electrical Safety Code as a nationally recognized standard, minimum standard to their facilities.

Q. In evaluating their conduct?
A. Yes.
Q. Then you go on to say that "The National Electrical Safety Code of 1961 (Sixth Edition) applied continuously from the time the incident distribution line was first energized in 1966 through November 7, 1982 and through the present time." Correct?
A. That's what I say, yes, sir.
Q. Then you say "National Electrical Safety Code 1961, Part 2, Articles 201B, 202, 210, 211, 213, 214A, 230E, and 280 covered the line for initial compliance, inspections for safety, and proper maintenance."

Then in the next paragraph, you say "The official interpretations of the National Electrical Safety Code have consistently held that where the applicable National Electrical Safety Code is silent with regard to site-specific activities and conditions, the rules require recognition of these activities and conditions in the vicinity of the lines. Further, the rules require the safeguarding of persons involved in those recognized activities from the hazards associated with the use of

electricity."

First, I'd like to ask you do you have the official interpretations of the code which you state here have held that where the code is silent with regard to site-specific activities, the rules require that they be taken into consideration?

A. Yes. Those excerpts are included in my files here.

Q. May I see them, please?

A. Certainly.

Q. Thank you.

These photocopies of the interpretations you have just handed me contain several pages. Are there specific provisions in here which apply to this case?

A. Those are the particular -- those are electrostatic copies of those.

Q. My question is do I have to read all of this or is there one or two paragraphs which --

A. The way the National Electrical Safety Code interpretations work are you have an interpretation request, which is then responded to by the committee.

Q. Okay. I follow you.

A. For example, on the -- which one are you looking at there?
Q. I'm looking at the 1961 to 1977 inclusive.
A. Okay. If you will look at -- there should be a copy of Page 56 there, Interpretation Request 165.
Q. Oh, yes.
A. That's with regards to the use of the activities that occur in the vicinity of lines.
Q. So in this one, it's Request No. 165 that --
A. Interpretation Requests 165, 168 and 187.
Q. 165. 168?
A. Yes, sir. That's on Page 66.
Q. And the other one was 187?
A. 187 on Page 68.
Q. Now I'm looking at interpretations 1981 through 1984 inclusive. Which --
A. I'll have to look at that.
Q. Oh, sure.
A. It would be Interpretation Request IR344.

I might also add that Interpretation Request 349 on Page 231.

Q. Okay. Thank you.
Q. Finally, I'm looking at the copy of the 1978 to 1980 inclusive.

A. Interpretation Request 130, Page 221, which is actually a 1944 interpretation.
Q. 130?
A. Yes. I might add the 1978 through 1980 interpretations include interpretations prior to 1961. And that's why it's on Page 221 as a 1944 interpretation.

And on Page 77, Interpretation Request 270.

Q. Do you have extra copies of these, by chance?
A. Those just happen to be the only ones I have in this --

MR. WEAVER: Do you want copies?

MR. KAUFMAN: If you are going to have copies run off.

MR. WEAVRR: Let's take a five-minute break to see where we are.

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(Thereupon, a recess was had.)

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Q. Mr. Bybee, in your report, you mention specific sections of the National Electrical Safety Code, and I'd like to discuss those with you, if I can, at this time.

The first one you mentioned is 201B. Do you have your report there with you?

A. Yes, that is the one I mentioned first.
Q. What does Section 201B deal with?
A. That is under the classification of application of the rules and interpretations, and B is the realization of intent. I'll hand you --
Q. Thank you.

Do I take it then that your listing or mentioning of Rule 201 or Section 201B in your report is for the purpose of establishing that the National Electrical Safety Code applies to the Illuminating Company in this case?

A. That is a specific portion that applies with regard to application realization of intent on existing installations.
Q. Turning to Rule 202, it's labeled "Minimal Requirements," is that correct, sir?
A. Yes, sir.
Q. And it says "The rules state the minimum requirements for spacing clearances and strengths of construction for sample spacing and clearances of greater strength of construction may be provided if other requirements are not neglected in so doing." Correct?
A. Yes, I believe. And then there's a final --
Q. The footnote says "Some of these minimum values

are exceeded. Service requirements frequently call for stronger supports and higher factors of safety than the minimum requirements of these rules."

Do you believe, sir, that -- let me back up.

In your opinion, did CKI in this case violate Rule 201B? Or Section 201B?

A. It is violated from the standpoint that when other codes or when succeeding codes and documents, standards are issued, they do apply to existing construction. And as such, in recognition of the application of those later standards, one way that the facilities can be brought back into compliance should a new code standard be issued is by placing guards on the existing construction, as you'll note at the top of the next page, which is part, I believe, of the same section.

Q. Let me see if I understood you correctly. You are saying that --

A. Let me see this.

Go ahead.

Q. That subsequent revisions of this code height impose higher requirements?

A. That is correct.
Q. And when that happens, one way of meeting those new requirements, should it affect a particular installation, would be to place guards on the wire?
A. Yes. Rather than new requirements, they may really be considered additional requirements because the National Electrical Safety Code is not a design manual as such. With experience, and that experience has been a dynamic thing since 1913, when new information indicating the insufficiency or inadequacy of certain construction means, methods and materials, or activities that occur in the lines -- for example, the incident line along Wengler, if initially in 1966 that was indeed not a playground, then there would have been no concern about compliance or recognition of the activities that happened west of the houses along the west side of Wengler.

But subsequently -- and I don't know. This information I do not have. If the playground was established, for example, in 1967 or '68, then recognition of that activity must then be taken by the owner and operator of the

electrical supply lines. And one of the ways of accomplishing this additional hazard recognition would be to place guards on the existing facility or change it.

It is not the intent of the National Electrical Safety Code to fail to recognize changes in uses of the land or the property in the vicinity of and underneath electrical supply lines. So it's just a realization that existing lines are covered, and this is a recognition that a means of mitigating hazards that are -- or conditions that are shown to be less safe or hazardous, whatever the case may be, or newer activities, changes in activities, may be mitigated by the placement of guards. Among other things.

Q. The National Electrical Safety Code contains a chart with the minimum height requirements for bare conductors, does it not?

A. For some conditions. For several. In fact, for several conditions. Not all conditions but --

Q. And where is that chart contained in the --

A. That would be Table 1, Section 232.

Q. And as you say, in the area where David Dewalt was flying his kite, if those were houses in

that area instead of an open field -- okay? Do you follow me so far?

A. Yes, sir.

Q. -- and the rear lot lines of those houses adjoined the rear lot lines on Wengler Road, according to Table 232, how high should the primary wire have been in this case?

A. Well, in that case, of course, you do understand that the National Electrical Safety Code does apply to communication lines and electrical supply lines?

Q. Right.

A. So that if you have a structure that contains -- it's considered a joint use structure, for example, in this particular case in that on the date of the accident, November 7th, 1982, it's my understanding, and it has been provided to me, that there existed on those structures, on those poles, lines owned and operated by Ohio Bell Telephone, a community antenna television cable -- I don't know the name of the cable TV -- as well as the primary and secondary lines owned and operated by CEI.

In that case, one cannot ignore the appurtenant attachments to the structure. You

can't ignore the telephone and cable TV.

But in the cases along immediately behind the houses, for example, the areas, since they are fenced and it's in an area of a fence, the consideration for the electrical supply lines only would be -- without the openings in the fence suitable for an automobile or a truck to pass through would be in the area of spaces or ways accessible to pedestrians only.

Q. What is that heighth?

A. That's 15 feet for 750 to 15,000-volt lines in Column 3, and for the neutrals would also be 15 feet. Now, what this does not say, for example, one cannot infer from that that the neutral and electrical supply lines or the energize conductors have to be at 15 feet. What that tell us, it is the minimum clearance. So the neutral would be at 15 feet.

If the standard of framing applied for the local utility, if the utility standard is a four-foot spacing for a single-pole tangent construction of a minimum of four feet except where a transformer is installed, then it shall be 60 inches, then one may utilize this information to say that the neutral and the

secondary conductor in the particular construction used there would have to have a minimum ground clearance, or clearance from an accessible surface or space, of 15 feet and then CEI's standards would indicate that the minimum supply line height of the energize conductor would be 19 feet for a four-foot spacing or 20 feet for a five-foot spacing.

But -- and this is where recognition of the other conditions must occur. The National Electrical Safety Code requires a minimum of 40 inches clearance between electrical supply line conductors and communications conductors. So that that -- on a joint-use pole, the nearest CATV, which is considered a communications conductor, or the telephone cable would have to be an additional 40 inches lower than that 15 feet. And the 15 feet is also included over in Column 1 along with guys, messengers and communications cables. So then we can see that the lowest communications conductor has to be 15 feet.

The spacing between the communications conductor and the lowest supply line has to be an additional three feet four inches, and now we

keep pushing the size of the pole up.

Now, if this particular circuit, as it stands on the day that I inspected it, yesterday, November 9th, 1986, appears to be the same configuration that was on the site on or about November 7th, 1982, we have one additional requirement. And that is that we have a driveway that contains no affirmative prohibition against vehicular traffic up to 14 feet.

Q. Which driveway are you talking about?

A. The driveway from Wengler into the playground. With the gates. It's an asphalted driveway that goes all the way into the Wengler playground.

Q. Okay.

A. And in that regard, we have a requirement -- for example, under the public streets, alleys or roads in urban or rural districts, that means subject to --

Q. Well --

A. I'm trying to answer your question. And this ends up being an 18-foot requirement for communications. So at that particular span which crosses the driveway, our lowest elevation to the communications conductor is 18 feet and

then moves up accordingly.
Q. Right. Let me get back to this case. This case did not happen in the area of the driveway. You are aware of that? Correct?
A. No, sir.
Q. Do you know where this happened?
A. I do not have specific information concerning which span was actually contacted by David Dewalt's kite string.
Q. Well, let me ask you this then.
In your opinion, does the primary wire which runs along the rear lot lines on Wengler Road violate the height requirements of the 1961 National Electrical Safety Code? With regard to pedestrian traffic?
A. With regard to only those areas that are accessible to pedestrians?
Q. Right.
A. Based on my actual site inspection and what I can take from the photographs, yes.
Q. Yes, what?
A. It does violate the provisions of the National Electrical Safety Code.
Q. How?
A. With regard to the allowance or acquiescence by

the owner and operator of the utility lines to allow apparently the home owners in that area wherein the lines are constructed to reduce the isolation by elevation on at least two of the poles in that area and make them readily climbable. They are not, in fact, isolated by elevation and, thus, cannot meet the clearance requirements for spaces accessible to pedestrians only.

Q. What is readily climbable?

A. "Readily climbable" is a condition --

Q. You are saying the poles?

A. The poles --

Q. Those poles in the back are readily climbable poles?

A. At least two of them are.

Q. How do you define -- which two are readily definable?

A. I don't have a -- let me review photographs. I don't have the pole numbers, the structure numbers, but I may be able to describe to you.

The pole -- starting at the southeasternmost corner of the Wengler playground, there is a corner pole, a vertical corner pole. And the poles -- numbering that

corner pole as No. 1 heading in a northerly direction, my recollection from my site inspection yesterday is that Pole No. 3 and Pole No. 5 are readily climbable.

Q. Are they on this photograph?

A. Yes, sir. It does not show them well. But the corner pole is the pole that has the extension, that very light extension there?

Q. Yes.

A. That's Pole No. 1. No. 2. No. 3 is the one that has a cross arm on it and actually has an insulator pin on it. Poles No. 3 and 5.

Q. Why is that pole readily climbable?

A. Because of the presence of in one case an out building.

Q. A what kind of building?

A. Out building. A shed. A building that has been built in close proximity, within six or eight inches, of the pole and for which the fence and that out building provide a means to gain access to approximately I would estimate seven, seven and a half feet above grade and within three and a half feet of the pole steps which begin at approximately ten feet, nine to ten feet.

Thus, you have a suitable number of

footholds and handholds for the average person to approach the pole and the primary conductors nearer than a safe distance.

Q. Of course, the fact that in your opinion that pole was readily climbable had nothing to do with this accident?

A. I believe I just indicated -- this was in response to your question did I see anything wrong with the areas in response to did the primary conductors comply with the code standards.

Q. Somebody has written on this photograph --

MR. WEAVER: Why don't we mark this.

- - - -

(Thereupon, Defendant's Exhibit A was mark'd for purposes of identification.)

- - - -

Q. Mr. Bybee, someone has written on this photocopy of a photograph "This is segment of wire where kite contacted." Is that your handwriting?

A. No, sir.

Q. And then there's a ball-point pen on there. See that?

A. Yes, sir.

Q. If that is the area where, in fact, the kite contacted the wire, let's try to confine our discussion to that segment of the wire. Okay?
A. You are hypothesizing that that is the place where it occurred?
Q. This is a document which you have just handed me which is written on "This is segment of wire where kite contacted"?
A. I agree that's what it says.
Q. Who gave you Exhibit A?
A. That was provided to me by Mr. Kaufman.
I had another photograph in here. Right here. This one.
Q. When Mr. Kaufman gave it to you, was this handwriting on it?
A. Yes, sir. I received that electrostatic copy of a photograph with that handwriting on it. The information in blue ball-point pen was provided to me.
Q. Mr. Bybee, I'll hand you a sheet of paper and ask you if you would draw a segment of line between two poles on Wengler Road and at the top, identify that as the primary wire and what you see after that. Based on your visual inspection and any photographs you care to

consult.

A. This is not a particular structure or anything, just a --

Q. No. Wengler Road that you saw yesterday. The wire that runs along the rear lot line. If you want to just draw two poles and then connect all the wires that you saw out there.

I think that's probably good.

A. No, that's not good.

Q. I didn't need all the detail of the transformers. I really just want the primary, the secondary, the neutral and the Ohio Bell Telephone Company cable and cable TV.

You don't have to show those going in the house.

A. I'm just trying to show a typical span condition. And I'll label these.

And I'll just label this the "Typical span construction at rear lot line/playground west of Wengler Road."

Now, I'll lable down through the center.

Q. Okay.

A. "Primary (7620 volts)." Circle that one.

Q. Okay.

A. The "Primary neutral, secondary triplex

underbuild," which, as I said, is what I call that construction below.

The "CATV" is community antenna TV. And "OBT" for Ohio Bell Telephone.

And those three conductors, the leaders running from those, from the area of the secondary triplex underbuild is what I would call the service drop. That's typical. And then there would be a telephone drop from the lowest one. I don't recall the cable TV taps from that area.

Q. You have done much more --

A. Than you asked for.

Q. Yes.

Now here is the Chart 232A for the 1961 National Electrical Safety Code.

Assuming this area to be accessible only to pedestrian traffic, how high according to the code should those wires be?

A. Now, assuming that those houses, out buildings and other accessible surfaces are not present? Is that what you want me to draw? Do you want me to draw a six or seven-foot accessible road?

Q. No. We are talking about the area right where this accident occurred.

A. I don't know that that's where it occurred. I think I have already testified about that.
Q. Well, assuming it's not with the out house.
A. I'm going to put in here as a prequalification then "No accessible surfaces."

Of course, I have not shown the pole steps on here because I get too much detail in here.

Q. Right.
A. May I use the CEI standard construction methods as I understand them to give you these heights? To develop these heights?
Q. First, I'd like you to tell what the National Electrical Safety Code requires in terms of these heights.
A. Okay.

And no roadways, of course, in this area?

Q. Right.
A. Okay. The minimum height of any communication lines, including CATV or Ohio Bell, for areas accessible -- spaces and ways accessible to pedestrians only is 15 feet. So we'll start with 15 feet. And this is 15 feet 0 inches at 60 degrees Fahrenheit, no wind. That's the condition that that's measured at.

That's to the maximum point of the lowest

communications conductor.
Q. The Ohio Bell Telephone wire?
A. In this particular case, it happens to be Ohio Bell Telephone.
Now, with your particular construction --
Q. Where is your authority for saying that has to be 15 feet?
A. That's Table 232, or Section 232A, Table 1, under "Guys, messengers, communications cables." That's the first column.
Q. Okay.
A. Now, the spacing between Ohio Bell Telephone and CATV is not known to me. I know what CEI provides for that spacing.
Q. What does the code provide for it?
A. The code has no requirement. The lowest -- it's silent on that particular case. In the spacing between communications utilities, that is by joint agreement. In this particular case, I happen to know from the distribution standards of CEI that they provide a six-inch spacing between -- that's the only space that's available on the pole.
In the -- I don't have the section, but I'll be happy to look it up. There is a

four-inch requirement between the communications cable, whether it be CATV or the Ohio Bell Telephone --

Q. And the secondary?

A. -- and the primary neutral, or the secondary condition, which is the particular construction used by CEI at this location.

Q. Would you please find that portion of the code which contains that 40 --

A. 40-inch spacing.

Q. -- inch spacing requirement?

A. It'll take me a bit.

MR. WEAVER: Why don't you mark this Exhibit B while he's looking for that.

- - - -

(Thereupon, Plaintiffs' Exhibit B was mark'd for purposes of identification.)

- - - -

Q. I'll tell you what. To save time, if you would agree to maybe look at this on your plane on the way back to Santa Fe?

A. Oh, sure.

Q. And let Mr. Kaufman know, and he can tell me?

A. Yes. That's no problem. It's just the specific citation, it's the same as 238E, but I'll go

ahead and provide it to Mr. Kaufman, and he'll give it to you.

MR. WEAVER: Is that fair enough, Paul?

MR. KAUFMAN: Sure.

Q. So now we are up to the secondary wire.

A. Yes, sir.

Q. I guess what you have drafted in here so far, it would be 15 and a half, and 40 inches is three and a half --

A. It's three and a third, actually.

Q. So roughly in round figures, the primary should be 19 feet above ground? I'm sorry. The secondary should be 19 feet above ground?

A. That's correct. And the construction from here really depends on the particular construction that's used. It's my understanding and from my review of the CEI documents that it runs from 48 inches to 60 inches. 60 inches being the normal construction between the primary neutral and the primary phase wire. And I would put --

Q. Wait. Before you put something, I want to know what the code requires in your opinion in terms of spacing.

A. Oh, the minimum separation?

Q. Yes.
A. I'll have to look that one up.
Q. How high above ground should the primary wire be in this case according to the code, assuming it's accessible to pedestrian traffic?
A. Well, it has to be -- as I think I have already testified, the minimum that any of these can be is 15 feet. Now, we don't have -- if everything else was gone, either the neutral has to be 15 feet or the phase wire has to be 15 feet. Minimum. That's the minimum clearance at 60 degrees and no wind.
Q. I understand.
A. There is no other minimum requirement. Other than the separations of conductors, which is basically what we are talking about in the communication --
Q. So what is the separation between these two, the secondary and the primary?
A. And the primary neutral? There's none required. No separation between the primary neutral and the secondary triplex.
Q. No. Between -- this second wire on the diagram is called the triplex?
A. That's the secondary wire.

Q. Right. Now, what is the spacing requirement between that wire and the very top wire, which is the primary wire?
A. The very top on this pole would be required by the spacing from the transformer.
Q. Assuming no transformer, what --
A. Assuming no transformer?
Q. Right.
A. It could be within 12 inches of the primary. But that is not the case you have here because the construction is specifically for -- is a transformer construction. According to CEI's standards, that spacing should be 60 inches.

MR. KAUFMAN: I think Robin is asking you is there something in the code that gives a minimum separation between the very top wire --

THE WITNESS: The primary and the --

MR. KAUFMAN: Neutral. Does the code specify anything?

A. For this particular just vertical construction, ignoring the transformer? Is that --
Q. Right.
A. Assuming no transformers at all?

Q. Well, let's take both cases. One with a transformer and one without.
A. Well, of course, if you go with a transformer, you have to include the dimension of the transformer itself. That we don't have. That's contemplated by CEI's distribution standard in allowing 60 inches between them for transformer construction.

I believe at 7620, it's only six inches. I'll have to find you the citation for that.
Q. If you could do the same thing. Just draw it in. We'll take your word for it now, and then let Mr. Kaufman know at a later date.
A. That would be probably six inches without transformers.
Q. And put down the other with transformer.
A. What I'm going to do is in both of these where I'm going to provide you with the citation, I'll put a question mark in parentheses.
Q. Okay.
A. And I will put over here to the right that that's 60 inches CEI standard. That's my understanding.
Q. Right. Okay.

60 inches being five feet. Right?

A. Yes, sir.
Q. How high is the primary wire which runs along the rear lot lines on Wengler Road?
A. It's my understanding that that was measured by CEI after the accident. And, in fact, some documents were produced, which I have not been provided. I haven't seen them. And I believe they indicated that the primary conductor was some 27 or 28 feet above grade. I don't know where that dimension was taken. I don't know the conditions of measurement.
Q. Now, according to the measurements which you have given us from the National Electrical Safety Code, how high should that wire have been?
A. Well, based on my understanding of the facility, if the conductors in an area accessible to pedestrians only, if that primary conductor was in the area of 19 and a half to 20 feet, that would comply with the minimum requirements of the NESC.
Q. Now, based on your visual inspection which you conducted yesterday afternoon, do you believe the primary wire to have exceeded 20 feet?
A. It's my estimation that it appeared to in that

circuit along the west end, yes, sir.
Q. What is your best estimate as to -- if somebody said how high is that primary wire in the circuits you are talking about, how high would you estimate that wire to be?
A. Somewhere at the structure at the point of support. Probably 29 feet. Maybe 30 feet.
Q. How about the sag?
A. The sag is a little difficult to estimate. I would say that it did not appear to me that there was any phase wire probably lower than 25 feet.
Q. May I see your book again, please.

I think we were discussing Rule 202, or is it Section 202 of the code?

A. They are called either way. It can be called Section 202 or Rule 202.
Q. All right. Fair enough.

It talks about minimum requirements, and you have mentioned this rule in your report, have you not, sir, 202?

A. Yes, sir.
Q. Do you believe that CEI violated Rule 202 of the code in this case?
A. Yes. On this circuit? Yes, sir.

Q. And please tell me how you believe the Illuminating Company violated Section 202.
A. In that the circuit portion, the portion of the circuit over the roadway --
Q. No, we are not talking about the roadway.
A. That's all the same circuit. Electrically it's the same circuit. That's not a different circuit in the span between the poles.
Q. You would agree, wouldn't you, that the code specifies different height requirements for roadways?
A. That's just an activity that occurs under that particular circuit.
Q. Right.
A. The line cannot -- for example, this line is a single circuit.
Q. Right. I understand.
A. And it must comply with the minimum requirements throughout its entire length.
Q. Sure. Absolutely.
A. Now, you had asked me did that comply with the minimum requirements.
Q. And you are saying no?
A. 202 indicates that these are minimum requirements for clearances, spacing, et cetera,

and it is my opinion that the requirements are not met. Now, that's all of the requirements. That's not just Table 232, which is what we have discussed and which, in fact, I don't even concern myself with in the report.

But in the accessibility, the failure to recognize the activities that are occurring in the area, accessibility to climb it, the clearance in the area of the roadway, the failure, for example, to provide guy guards in the area of downed guys that are in the playground itself, I don't believe the minimum requirements of the National Electrical Safety Code are met with this circuit.

Q. Are those all the reasons that you believe the minimum requirements of the National Electrical Safety Code were not met?

A. No, sir. I have others in my report which I presume we are going to get to, 211, 213, 214A, 230E and 280.

Q. 210 says "All electric supply communication lines and equipment shall be of suitable design and construction for the service and conditions under which they are to be operated."

A. I agree that that generally says that, yes, sir.

Q. Do you believe that CEI in this case violated Section 210?
A. I believe that the exposed wire construction in the area of the playground is unsuitable. I don't believe that it meets the requirement for intended operation.
Q. And how doesn't it meet the requirement?
A. Because of the foreseeability of children flying airplanes, flying kites. And the fact that the what I consider readily climbable structures are in the area of the playground. I think that it's unsuitable, inappropriate and noncomplying construction.
Q. How high in your opinion should the primary wire in this case have been?
A. I don't think you can get it high enough to preclude the possibility of contact with kite strings and model airplane guidelines.
Q. So in your opinion, the height of the primary wire in this case is really irrelevant?
A. That's correct.
Q. You have also listed Rule 211, which says "All electric supply and communication lines and equipment shall be installed and maintained so as to reduce hazards to life as far as

practicable." Correct?
A. That's correct. That's my recollection of what this section says.
Q. Do you believe that CEI violated Rule 211?
A. I believe that Rule 211 was violated on November -- prior to November 7, 1982. I further believe that on --
Q. How was it violated?
A. In the same manner that I had indicated before, in that it is nonsuitable construction of the facilities for the recognized activities that occur in the vicinity and under those lines.

I further believe that on November 9th, 1986, that construction is still in violation with the accessibility to climbing and other materials or the other conditions that I have noted based on my site inspection.

Q. You have also listed Rule 213 in your report, and that deals with inspection and tests of lines, equipment, Part A, when in service, and, Part B, when out of service. You don't mention Part A or Part B here in your report, but obviously these lines were in service so we are dealing with Part A. Is that correct?
A. That's my understanding, yes.

Q. In your opinion, has CEI violated Rule 213A?
A. I don't believe they complied with it. Which is the same as violation.
Q. How has CEI failed to comply with Rule 213A?
A. For example, in 213A, which requires initial compliance with the rules. I am not confident, as I testified earlier, that the Wengler playground was, in fact, an identified facility in 1966 when it was built. But if it were, in fact, a condition and what later became a driveway was, in fact, a house lot, then I don't have the problems with clearance in 1966 because it was not anticipated as a throughway from Wengler Street into the playground area.

If, however, Wengler playground was part of the original plat of that particular subdivision and was an intended use of that land, then I don't believe that the facilities there complied with the National Electric Safety Code when they were first energized or energized for the first time, first placed in service.

213A2 as far as inspection, lines and equipment shall be systematically inspected from time to time by the person responsible for the installation, I don't believe -- based on the

information provided to me, including the depositions of Mr. Smith and Mr. Douglas and my review of the CEI super grid article in Transmission/Distribution Magazine, I don't believe that that complies with the requirements for inspection for safety or clearances or any other requirements of the National Electrical Safety Code.

I believe that -- it's my interpretation and my opinion that the super grid inspection is a reliability inspection and does not go to maintenance of code standard clearances or the portions that we talked about in Rule 202 under minimum requirements.

The rest of them I think are really moot. If the lines were not installed initially in compliance with the rules and if they weren't subsequently inspected on a systematic, periodic basis for compliance with the rules, then the rest of them really don't make a lot of difference. It's just not complied with.

Q. Moving over to 214A that you mentioned in your report, which deals with current-carrying parts, it says "To promote safety to the general public and to employees not authorized to approach

conductors and other current-carrying parts of electric supply lines, such parts shall be arranged so as to provide adequate clearance from the ground or other space generally accessible or shall be provided with guards so as to isolate them effectively from accidental contact by such persons."

In your opinion, did CEI violate Section 214A of the National Electrical Safety Code?

A. Yes, sir.

Q. And please tell us how.

A. There are actually two conditions. One is a result of my field inspection at the site. The first case, when one has a foreseeable, recognized activity occurring. For example, as in a playground. Among those activities are flying of kites, model airplanes and the other activities that occur on playgrounds.

It is not only foreseeable; it's recognized that children fly kites. And with aerial construction of that nature on the boundaries of the playground, it's foreseeable also that the contact between model airplane guidelines and kite guidelines will occur. Therefore, isolation by elevation is simply not a practical

way to approach the problem.

I think further, as I have discussed earlier, the acquiescence of CEI, the owner and the operator of the utility, in allowing residents along Wengler to construct or place structures or constructions such that the isolation intended by CEI is abrogated or that space is intervened by what a resident is doing fails to meet the compliance requirement in that children or other members of the public can by access of the fences and those structures gain access to the pole steps and approach the energized conductors nearer than a safe distance.

And I might add that it is my opinion that the residents who are doing this are not violating the National Electrical Safety Code because it doesn't apply to them. What they are doing is causing the utility to be in violation of the code. And I do think that there are some remedies that are available to the utilities to prevent that.

Q. The next rule you mention is 230E, and that's entitled "Maintenance of Clearances." Correct?

A. Yes, sir.

Q. It says "The clearances required by this section shall be maintained at the specified values." Is that correct?
A. That's correct.
Q. In your opinion, has CEI violated Rule 230E in this case?
A. That one is another area where if one makes the assumption, and it has to be an assumption at this point, that the lines complied with the rules when initially installed, the evidence suggests that assurance of continued compliance has not been met by their failure to inspect for safety.

For example, loose down guys, which are obvious in even a drive-by in the area, leaning poles, indicate that there has not been an assurance of maintaining clearances. And essentially that section requires that once the minimum clearances are met, those must be maintained in perpetuity or as long as the lines are energized.

I think that that is really in concert with the inspection provisions under 213.

Q. So in your opinion, CEI violated Rule 230E?
A. There's no evidence that they have complied,

which is a violation.

Q. The next rule you mention is Rule 280, which deals with -- it's quite a lengthy rule -- supporting structures for overhead wires. Is that correct?

A. That's correct.

I believe the area that is of concern is 280A1 and 2.

Q. Okay. Thank you.

280A1 is entitled "Rubbish, poles and towers shall be placed, guarded and maintained so as to be exposed as little as practicable to brush, grass, rubbish or building fires."

I take it you believe that CEI violated this rule?

A. I don't believe that they have complied with it. That's a violation, yes, sir.

Q. How has CEI violated Rule 280A1?

A. The structures along the west lot line off of Wengler not only have -- let me get that. They have neither been guarded nor maintained to be exposed as little as practicable to brush, grass, rubbish or building fires.

As I indicated, in one case, there's -- I call it an arbor or a pergola, a grapevine

holder that's about seven feet high in very nearly intimate contact with the pole, and vines are actually surrounding the pole.

There is -- since they are eased on private property -- at least that's my understanding. I have not seen a survey that certifies that. But it certainly is my understanding that everybody believes that the pole line is on an easement on private property, and it does, in fact, appear to be.

There are no indications of brush, weeds or rubbish removal in and around those poles. In fact, there have been materials tacked onto the poles that shouldn't, in fact, be there, which is a violation of another section. Actually it's under 280, but it's another section.

I do not believe that the Section 280A is met. For example, what I'll refer you to is on 280A7. The requirement to prevent obstructions, nails, signs, foreign attachments to power lines or to structures, to power pole structures. And it's obvious that a good number of those are many, many years old. They weren't put on just before my visit yesterday.

Q. What wasn't put on?

A. Signs. Wire hook attachments. Which appear to either be clotheslines or whatever on the structures themselves. As the CEI pole is used as a terminal point for maybe somebody's clothesline. Or for antenna guys or whatever.
Q. Are you prepared to testify that you have personal knowledge that that existed on November 7th, 1982?
A. No, sir, I'm not. I'm saying that it was present yesterday. I have not reexamined the photographs with the knowledge from my site inspection. I did, in fact, photograph, make photographs or take photographs yesterday. I haven't had them --
Q. How many photographs did you take?
A. 48.
Q. Color or black and white?
A. Color. I presume they will all result in -- I presume they will result in prints, but I did snap the shutter 48 times.
Q. Do you believe that Rule 280A2 was violated?
A. Yes, sir.
Q. Tell us how, please.
A. As I testified earlier, there is no protection against climbing. Which is a way of saying

about as close as the code came in 1961 in the 6th edition to prohibition against readily climbable structures. And, in fact, it is my opinion that those structures are readily climbable.

I think that the other --

Q. Excuse me. Does this code define "readily climbable structures"?

A. That was not defined until 1977. As a particular American national standard definition.

Q. What is the definition in the 1977 code?

A. Having a sufficient number of -- well, I can tell you in the '81. Rather than paraphrasing, let me read it directly. It's the same as the 1977.

"Readily climbable" is defined in the 1981 edition, as it was in the 1977 edition of the National Electrical Safety Code, as "having sufficient handholds and footholds to permit an average person to climb easily without using a ladder or other special equipment."

Q. Do you agree with that definition?

A. Yes, sir.

The other portion of 280A2 in protection

against climbing is that for those persons responsible for the operation and safety of electrical supply lines, the notice is made that regularly traveled thoroughfares or places where people frequently gather, such as schools or public playgrounds, are a special case to be recognized by the owners and operators of the system. In that it eliminates that from just routine consideration. And it is, in fact, a recognition that when one is concerned with gathering places, that specific attention must be paid to the nature of that kind of activity.

Q. That was your testimony with regard to how CEI violated 280A2a?

A. Yes, sir.

Q. And b?

A. It's not a violation. It's a failure to recognize the activities that are addressed in that area.

And again the National Electrical Safety Code is not an all encompassing design manual. It just refers to a number of conditions, but it does not even purport on its face to address the conditions as I noted earlier.

Q. Do you believe that CEI violated Rule 280A3

entitled "Warning Signs"?

A. I don't believe that the areas that I did see immediately adjacent to Wengler playground were -- this applied, where warning signs applied violate the section where they had latticed towers. They say "Danger, Do Not Climb, High Voltage Above." I accept that as an equivalent to "Danger, Do Not Touch." On those areas where I see that it would apply.

Q. Well, if it doesn't apply, tell me, and we can move on to another section. So you don't think 280A3 applies to this case or not?

A. No, sir.

Q. Doesn't apply?

A. I do not believe it applies.

Q. Does 280A4 apply?

A. I don't believe so.

Q. I would take it 280A5 wouldn't apply either? Or if I'm wrong, correct me.

A. That's incorrect. My opinion is that --

Q. It does apply?

A. 280A5 does, in fact, apply.

Q. And that's because you believe that metal steps are closer than six and a half feet to a readily accessible place?

A. Oh, I know that, yes, sir.
Q. Is that the reason you believe this wasn't complied with?
A. I believe that that was not complied with based on my investigation. As I say, I have not gone back and reviewed the temporally related photographs to see if some of those conditions have changed.
Q. Well, assuming they existed in 1982, you believe this section was violated how?
A. In fact, I believe that it was violated because in 1981, or 1977, the requirement was changed to eight feet from a generally accessible surface.
Q. How was this not complied with, this rule, 280A5?
A. Because even the fences that are adjacent to the poles, some of which appear to -- do appear in the photographs that I have seen temporally related to the accident, reduce the clearance to the first pole step, absent any intervening or interfering foreign structures, to less than six and a half feet. With the structures, it's even less than that.
Q. Did CEI comply with Rule 280A6 in this case?
A. I don't know. I don't believe that I have been

provided with any information. And I certainly did not look at the pole brands to see if CEI was identified. I assume based on the CEI documents that I have been provided with that CEI does, in fact, know where its lines are and know what those lines consist of. So I see no problem with that.

Q. Now, you mentioned earlier -- were there any other portions of 280 we should discuss? Portion B?

A. I think No. 7 we had discussed earlier.

Q. Yes, we already discussed that. We said one of the subparts didn't apply. I don't know whether it was B or C.

A. 280B does not apply.

Q. How about 280C?

A. I don't believe that that applies.

Q. So in 280, we are really talking of 280A, correct, in terms of the applicable provision to this case?

A. Yes. And I think, as I indicated earlier when I included the 1981 through 1984 inclusive interpretations, there was the additional interpretation request I noted at IR349, having to do with tree trimming, which, based on my

visit yesterday, confirms that essentially no tree trimming has occurred since those photographs shown as Exhibit A.

Q. Are you prepared to testify under oath that there has been no tree trimming in that period of time? Do you want to stake the outcome of this case on that testimony?

MR. KAUFMAN: Show an objection.

A. I really am not particularly interested in the outcome of this case.

Q. Tell me in your own words, Mr. Bybee, how CEI was negligent in this case.

A. I believe it's covered in my report.

Q. I know. I want you to tell me in your own words.

A. Those are my own words. I wrote this report.

Q. You are not going to be able to read this report at trial, sir. If a question is asked to you "Do you have an opinion based upon reasonable electrical engineering certainty as to whether CEI violated or was negligent in this case," I presume your answer is going to be "Yes," and then the next question is going to be "Please tell us how." That's what I want you to do right now, is tell me how.

A. The Wengler playground was identified and was known by CEI to be identified as a playground, as a playground for children where children and other members of the public congregated to participate in foreseeable playground activities. And among the foreseeable playground activities, for children for example, and some adults, are flying kites, flying model airplanes, with guidelines, not only just remote controlled airplanes, running, climbing, any number of anticipated activities.

The presence of exposed supply lines that relied solely on isolation by elevation could not and will not meet the requirements, the intent of the National Electrical Safety Code for the practical safeguarding of life and property from the hazards that arise from those electrical operations.

The failure by CEI to recognize these activities and to properly mitigate those hazards was in my opinion the sole proximate cause of the incident in which David Dewalt was injured.

Q. Doesn't your opinion boil down to the fact that there was a playground which ran -- or a field

which ran along the -- or adjoined the rear lot line of the property on Wengler Road?

A. Would you repeat that?

Q. Sure. Read it back to him.

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(Thereupon, the requested portion of the record was read by the Notary.)

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Q. Let me amend that and say doesn't the basis for your opinion hinge on the fact that this field abuts the rear property lines of the houses on Wengler Road?

A. Only to the extent that the rear property line or the lot line also happened to be the location of the electrical supply lines, not just because they were abutting.

Q. Sure. Let me rephrase my question.

If instead of an open field adjacent to the rear lot of Wengler Road, there had been houses back there, in your opinion this line would have complied with the National Electrical Safety Code. Isn't that correct?

A. If, in fact, what has been identified as Wengler playground was just an empty lot? Am I understanding your --

Q. Just an empty lot--

MR. KAUFMAN: He was saying houses butting up against -- you know, one backyard butting up against another backyard.

MR. WEAVER: Right.

A. Absent the recognized activity or the use of that property as a playground, as an intended playground, I have no problem with the particular designations of the property. If it were just vacant land or, indeed, used for some other purpose other than a recreational facility or place where persons congregate, a school yard or a playground, then I have no problem with that.

Q. That's why I said the essence of your opinion boils down to the fact that there is a field abutting the CEI right of way?

A. No. It's a playground. Specifically. Not just a field. It is a playground.

MR. KAUFMAN: Or it was on the date of the incident.

Q. With all due respect, you're an expert in electrical engineering, but that's an issue which is going to have to be resolved in this case by a jury. Okay? Whether it's a

playground or a field.

Let's assume for the sake of argument right now that it is a playground. But for the fact that there was a playground there, that's what this really boils down to, the fact that in your opinion, this constitutes a playground, and, therefore, CEI violated the National Electrical Safety Code in the respects you have told us? Is that correct?

A. It is my opinion that the facilities, the space where David Dewalt was injured, was identified as a playground, was recognized by CEI as a playground --

Q. What evidence do you have on that?

A. It's marked on their documents that it is a playground. As early as 1970. That have been provided to me. There may be others. But at least on one document and on subsequent documents prior to the accident, or prior to November 7th, it was indicated on CEI documents that that was a playground.

I do not hold, for example, a utility responsible or the supplier responsible if a rare, infrequent, unforseeable contact of this nature occurs. On a playground, I do. I think

it is of critical importance that the playground activity is recognized.

Q. Have you ever been consulted by a public utility to design a distribution system?

A. Only from the standpoint of municipal electrical utilities or small rural electrical utilities.

Q. If you had been contacted -- if someone had asked you "We are going to put this -- we have got these customers to serve on Wengler Road, and we want to give them service," how would you have designed this system?

A. You mean what are the design alternatives to --

Q. In your opinion, what would good engineering practice require?

A. It would require, for example -- I see no compelling engineering reasons to serve this particular row of houses from the rear lot line when all the adjacent streets are fed from the front lot line. So relocation would be sufficient in my opinion.

With the single notable exception of the 33 kV line that borders the north end.

I think that my recommendation to the utility -- and we are presuming the hypothetical case where I was hired by CEI, for example?

Q. Right.
A. I would have recommended they install those insulated conductors, the 33 kV conductors, two spans further to the east. It's two additional spans of 33 kV. They have approximately 15 spans to the west. I would have had them extend them.
Q. Why is that?
A. To get those conductors out of reach by children using that park.

The other option that was available is undergrounding those conductors. I would have no problem as an engineer utilizing tree cable.

Q. I'm not familiar with tree cable. What is tree cable?
A. Tree cable is a covered conductor which does prevent -- it would have prevented an accident such as David Dewalt was in. It would have prevented an accident from a wet kite string, for example. But it's not a fully insulated conductor. It reduces the values to low enough values to prevent casual contact kinds of things, kinds of injuries.

I presume that is available, although I believe in my understanding of the portions --

and I've only seen two portions of the distribution standards. I think it's Section 1 and 3. But it does appear that CEI does have a covered cable that is not used for insulation but consists of a thermoplastic or thermosetting insulation, or covering rather than insulation, that would prevent injuries from casual kinds of contacts.

I would expect, as I said, undergrounding with insulated cable if they wanted to remain on the back side. But if that were done, one must still address the 33 kV problem as I see it from the north side.

Q. You also said that good engineering practice could have meant locating these wires in the front of the property on Wengler Road?

A. I saw no compelling reason from the sections of the circuits for the lines to be located on the back lot lines.

Q. It just as easily could have been located in the front?

A. Certainly. There may have been some aesthetic considerations. I did note in the distribution standards that there is an aesthetic plan whose implementation is being attempted, and certain

guidelines have been -- or certain policy guidelines have been established. Again, I would presume that if I were indeed hired by CEI, I would have to work within their guidelines, which would not be -- which may, in fact, eliminate some of the operations that I might consider available.

Q. You mentioned you were out there yesterday afternoon, out there at the accident site, for approximately two hours. You told us you took 48 photographs. What else did you do out there? Did you take any measurements, for example?

A. No, sir. I brought nothing to measure with. I estimated heights based on the sizes of some of the terms that I knew and heights of some that were -- and it was purely estimates. I didn't see -- for example, I took a photograph with Mr. Kaufman in it -- I presume he indicated his true height to me -- in areas like across the road construction that would indicate that that was under 12 feet of clearance between Ohio Bell Telephone occupying this structure of, I presume, CEI's. I do not know of any independent knowledge of my own that that

structure is, in fact, owned by CEI, the poles.
Q. Which structure?
A. The poles. Since they are joint use, in some areas in outlying districts, the poles may, in fact, be owned by the telephone company and occupied by CEI under a joint-use agreement. I have no information concerning that.
Q. You told us you made no notes of your trip?
A. No, sir. I took photographs only.
Q. So basically for two hours, you just visually inspected the area and took photographs?
A. I walk around. Yes, sir. I walked around the entire park. I looked at various structures. I photographed certain portions of the construction.

The last probably 15 or 20 minutes was spent in kind of a driving review with occasional stops at my request by Mr. Kaufman.

For example, checking out the western termination of the 33 kV cable and going along I believe it was Shelby and Roberts Streets, passing by and having him slow down so I could see the method of distribution that was used in that area.

And I took photographs, of course.

I did talk to two young boys. I think I indicated earlier.

Q. Yes, you told us that.

Do you think it was important that you make a visual inspection of the area?

A. Definitely.

Q. Why is that?

A. For one thing, the photographs that were provided to me do not clearly depict the facilities in a manner that I can determine anything without having an on-site inspection. And I would prefer to make my own determinations based on what is there versus what was there rather than relying on even another engineer to tell me what he saw. I would let the other engineers talk about what they saw and what they think about it, but for my opinion, other than just a review of photographic evidence, I don't mind doing that and seeing from that.

But it is important from my standpoint certainly prior to being deposed or testifying under oath that I do see the ground upon which this occurred.

Q. Have you given us all of your opinions as to why you believe CEI was negligent in this case?

A. I believe so. I've certainly tried to respond to every question you asked me.
Q. Oh, I'm not suggesting you haven't. I just want to know if I have asked questions sufficient to elicit all of your opinions. Are there other opinions which I have not elicited through my questioning?
A. I believe we have covered them all because I do believe that our discussions have run past my report of March 27th and do encompass additional opinions that I have reached as a result of the inspection.
Q. I noticed in reviewing your file that you made certain comments or underscored certain portions of the medical records with regard to the burns in this case. Correct?
A. That you noticed that? Or that I did it?
Q. Is that, in fact, an accurate statement?
A. I believe that I had made some red marks around some of the medical information, yes, sir.
Q. Does the medical information which you reviewed have any bearing on your opinion as to CRI's negligence?
A. I believe, as I have testified earlier, the only continuing thing that that was used for was to

try to determine with as much precision as possible exactly what the injuries were. And as I had indicated, I had only seen photographs of injuries during the latter processes of healing or repair at that time. So I was trying to reconstruct what the doctors said they saw to those photographs.

Q. In the Rogers case, how did that little boy -- how was that little boy injured?

A. Actually he was a 21-year-old. He was riding on top of a well rig and contacted a 14,400-volt line with the back of his neck.

Q. You say riding?

A. Riding on top of a well rig. His purpose on top of that well rig was to be lifting lines.

Q. And how did the injury occur on the David Jones case?

A. David Jones, is that Trinidad, Colorado?

He was on the roof of his house helping his father reroof the house.

It's my opinion --

Q. No, I don't want your opinions on --

A. No. Well --

Q. I mean you can give them to me, but we'll be here all day.

A. No, no. I'm telling you what my opinion was of what happened.
Q. Okay.
A. Which is not exactly what I was told had happened.
Q. Okay.
A. My opinion was that the young man jumped with his left hand on the neutral wire up and grabbed the phase wire on a line that was about 7200 volts.
Q. What were the circumstances in the David Higgs case?
A. David Higgs climbed up a readily climbable pole adjacent to a school ground to retrieve a kite that had gotten entangled in exposed supply lines across the school yard.
Q. What was the voltage?
A. 7620.
Q. And what about the Montanez case; what were the facts surrounding that injury?
A. Montanez was a man who worked as a truck driver for an electrical contractor and misunderstood directions, went out to a site accompanying a lineman to disconnect a service, attempted to climb and disconnect what he thought was

secondary conductors and contacted conductors in the range of 7000 volts. I don't recall whether it was a 13.2, 13.8.

Q. What were the circumstances surrounding the injury in the Schleft case?

A. Schleft was a transformer platform mounted in the school yard, installed in the school yard in the late 1940's. Conduits were attached to those poles with straps located approximately three foot on centers. Two boys during the summer climbed the pole, got up on the platform. One of them contacted exposed electrical line five feet or so above the platform, fell off the pole, was injured.

The other boy climbed down the same way he went up. That's a readily climbable.

Q. And Gary Andrews?

A. Gary Andrews was a lineman working for TVA who was injured in a fall from a large pole, transmission pole. This is more in the line of practices within the line industry for linemen.

Q. How about in the Chavez case?

A. Chavez Grado case?

Q. Yes.

A. Southwestern Public Service?

Q. Right.
A. Four men were attempting to unload, deliver and unload a large irrigation water tank on an agricultural property, a pecan farm actually. The electrical supply lines had sagged to the point where they contacted the tank.
Q. So it was a clearance case?
A. Maintenance. Maintenance, clearance and inspection primarily. And two men were killed.
Q. How about the Alarcon?
A. Alarcon was a case in a subdivision wherein an older boy, Mr. Alarcon, tied the tennis shoes of a younger boy together, threw them up on a power line. Then by moving some boxes and a grill and materials over to a wall, jumped up on the roof of a house, jumped across approximately 40 inches of space onto a power line, grabbed the telephone conductors, climbed up to the top of the pole and was fooling around at the top of the pole and slid down onto the phase conductor while standing on the neutral conductor.
Q. And the Aitken?
A. That was a case in which a man was attempting to move a citizen's band antenna, actually with motorized radials on it, and the antenna got

away from the man on top of the roof after the man on the ground let go of it and fell into a powered line, injured him.

Q. Phillips?

A. Phillip was a case in which two men were working for a sign company. One man was up on a ladder, an uninsulated ladder, replacing the lamps in the sign and contacted the exposed power line, 7200 volts, and was electrocuted.

Phillips was his assistant on the ground, who ran, jumped onto the truck, ran up the ladder to attempt to retrieve his injured work mate, received an electrical shock because his injured work mate was still in contact with the line, fell some 25 feet to the ground, striking his head on the curb and actually dying of traumatic injuries but precipitated by the electrical shock.

Q. The Knoll case?

A. Knoll was a case in which a man who was operating as a rigger in a large precast concrete foundry, even though it's not steel, but it was a concrete precast operation in Colorado Springs in which a large crane, four-legged crane device with a 60-foot long

strong back, is what it's called, picked up a double T or picked up a large piece of concrete or some forms and contacted a -- I believe it was 6900-volt delta system. And he was injured because of the pallet. The electricity actually entered into his hand and exited his foot..

Q. And, finally, the Rodriguez case?

A. Rodriguez was a cement finisher working on a five-story parking structure in Denver. He was using a 20 or 25-foot long bowl float handle, which is an aluminum handle, extension handle. And he contacted an exposed power line at 7620 in the alley adjacent to the structure. The -- again my opinion is that the electrical shock caused him to fall approximately five stories, striking his back on a railroad track and severing his spine. I believe the death was really from the fall rather than the electricity.

There is one other that I've just remembered in talking about that that I hadn't discussed earlier.

Q. Okay.

A. The name of Mignardot, M-i-g-n-a-r-d-o-t. This is for deposition. That has not been taken to

trial. The utility involved is Kit Carson Electric Cooperative.

Q. K-i-t --

A. Kit Carson. K-i-t and then C-a-r-s-o-n.

Q. Where is that case pending?

A. In New Mexico. And my client represents the injured party.

Q. How was this Mr. Mignardot injured?

A. He was a commercial painter, painting contractor, that while painting a water tank on a school yard, or for a school facility, contacted an electrical line with the extension of his roller and fell to the ground and was injured thereafter. But he did sustain both electrical and traumatic mechanical injuries.

Q. Have you published any articles, Mr. Bybee?

A. No, sir. Not concerning electricity. When I was working for Reynolds Electric, I did author some articles on bidding and field practices. But that's well over 20 years ago.

MR. WEAVER: Let me take a couple minutes. I think we're about done.

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(Thereupon, a recess was had.)

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MR. WEAVER: That's all the questions I have. Thank you, Mr. Bybee.

ROGER W. BYBEE

C E R T I F I C A T E

The State of Ohio,) SS:
County of Cuyahoga.)

I, Lynn D. Thompson, a Notary Public within and for the State of Ohio, authorized to administer oaths and to take and certify depositions, do hereby certify that the above-named ROGER W. BYBEE, was by me, before the giving of their deposition, first duly sworn to testify the truth, the whole truth, and nothing but the truth; that the deposition as above-set forth was reduced to writing by me by means of stenotypy, and was later transcribed into typewriting under my direction; that this is a true record of the testimony given by the witness, and was subscribed by said witness in my presence; that said deposition was taken at the aforementioned time, date and place, pursuant to notice or stipulations of counsel; that I am not a relative or employee or attorney of any of the parties, or a relative or employee of such attorney or financially interested in this action.

IN WITNESS WHEREOF, I have hereunto set my hand and seal of office, at Cleveland, Ohio, this _____ day of _____, A.D. 19 ____.

_____

Lynn D. Thompson, Notary Public, State of Ohio
650 Engineers Building, Cleveland, Ohio 44114
My commission expires January 21, 1990