

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25

SUNFISH LAKE/XCEL ENERGY PUBLIC HEARING ON XCEL

TRANSMISSION LINE FEBRUARY 4, 2001 7:00 P.M.

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25

MAYOR TIFFANY: Does anyone from Xcel wish to speak at this time?

MR. CALLAHAN: As I said before, we have Chuck Stroebel here from the Minnesota Department of Health. If it pleases the Council, we would ask him to speak in terms of the EFM research.

MR. STROEBEL: Good evening. I'm Chuck Stroebel. I work at the Minnesota Department of Health, and I've been working at the Health Department for about eight years, and I do a variety of different activities relating to assessing exposures to a number of different environments and procedures.

And one of my responsibilities in that is to advise the Commissioner on technical issues related to EMF, so I'm responsible for tracking the EMF research in published journals, attending conferences and consulting with federal and state health agencies on EMF and also agencies such as US

1 Environmental Protection Agency, the National
2 Institute of Environmental Health Sciences and the
3 National Toxicology Health Program.

4 In addition to that, I'm responsible for
5 answering questions from the public and other state
6 and local agencies. I'm honored to be here today to
7 provide some answers to your questions if you have
8 any and also to provide some context on the
9 Department of Health position on EMF, and I'm
10 committed to being here for each and every one of
11 you and providing the best objective scientific
12 information that I have at this point in time.

13 The Department's position is clearly
14 stated in our January 2000 EMF assessment which I
15 understand is part of the public record. And this
16 position has been reaffirmed in several letters from
17 the Commissioner and Assistant Commissioner to the
18 Power Line Task Force.

19 The Department's position is also stated
20 on our web page, and I have some hard copies that
21 are available here that I can share with you back at
22 my chair there. The website is continually reviewed
23 and updated as appropriate to reflect current policy
24 on EMF. So if you ever want to check on that, you
25 can look at that location.

1 I'm wondering if you'd like me state
2 the Department's current position or if that's
3 already part of the record?

4 MAYOR TIFFANY: We have your 2000
5 decision position paper that was produced and three
6 letters from the Commissioner or Assistant
7 Commissioner to the Power Line Task Force. Those are
8 all part of record.

9 MR. STROBEL: Okay. So that will be
10 sufficient. I do want to say that this position
11 reflects not just my personal opinion but the
12 consensus of a team of scientists at the health
13 department and it's across divisions, sections and
14 units and individuals that have expertise and
15 doctorate level training in environmental
16 epidemiology risk assessment, toxicology and
17 statistics.

18 This expertise is particularly
19 important as we work to identify the strengths and
20 limitation of research on many important health
21 issues that work on behalf of the state to ensure
22 that we're protecting public health.

23 I don't want to debate the merits of
24 individual EMF studies tonight. This is not the
25 forum for that activity, and as you mentioned, you

1 have volumes of studies that we can look at. There's a
2 lot out there. We could literally be here all night
3 doing that.

4 I will tell you that the Department's
5 position is supported by a vast body of research and
6 not just a select set of studies and testimony that
7 have been provided by the Power Line Task Force. I
8 also assure you that the Department's position is
9 consistent with the views of expert scientists and
10 federal state agencies such as the National
11 Toxicology Program, the National Institute of
12 Environmental Health Sciences and the US
13 Environmental Protection Agency.

14 It has been suggested that there's some
15 hallmark research or new set of studies which have
16 established a cause and effect relationship between
17 magnetic fields and Leukemia. And these new findings
18 are likely to result in a new scientific consensus
19 or new department or federal policy on EMF. This is
20 not true.

21 New EMF studies are ongoing and published
22 in journals every month as you know. And at this time
23 there's insufficient evidence for a cause and effect
24 relationship between magnetic fields and Leukemia or
25 any other adverse health effect.

1 New studies which are likely to continue to
2 be brought forward by various groups must be put in
3 the context of the vast body of research that's been
4 conducted to date with EMF and must undergo a author
5 assessment of their strengths and limitations.

6 I have recently contacted individuals
7 affiliated with the National Institute of
8 Environmental Health on EMF and the RAPID Program
9 which is the main federal agency that's sponsoring
10 research and backing this issue, and in light of
11 just finding out about the new research that's been
12 published if there's been any change in that federal
13 policy.

14 I discussed the California EMF report
15 and other new studies, and I was informed that there
16 was no change in the NIEHS policy as stated in the
17 1999 report. In fact, NIEHS dramatically reduced
18 their funding on EMF and are focused on a lot of
19 other emerging environmental health issues at this
20 point in time.

21 In June, I also attended the Annual Bio
22 Electromagnetic Society meeting which happened to
23 occur in St, Paul this year which was an added
24 benefit. We didn't have to travel to get there.
25 There were a lot of scientists that came just

1 literally a couple blocks from the Health Department,
2 and it included over 200 scientific abstracts and new
3 research and other fields in the electromagnetic
4 spectrum.

5 I had an opportunity to speak with
6 individuals from federal health agencies and a
7 number of different researchers from around the
8 world, and while there were many interesting
9 hypotheses presented at the meeting, it was apparent
10 that there was no scientific consensus that magnetic
11 fields cause Leukemia.

12 It is my understanding that you've heard
13 testimony by Dr. Havas and others, but there is a
14 consensus emerging regarding state level exposure to
15 magnetic fields. Some sight 2 miliGauss, some say 4,
16 some say 16, some say 1000 and the numbers kind of
17 jump all over the board, and that should be a red
18 flag right there.

19 While there is evidence that field several
20 thousands of milliGauss interfere with some case
21 makers, there is currently no agreement on a federal
22 or state health based standard for magnetic fields and
23 cancer. And this is due in part to the fact that
24 there is inadequate scientific evidence that has
25 developed such a standard, given the uncertainties

1 that there is even a relationship.

2 We do not even know what aspect of the
3 field would be potentially dangerous. Is it the
4 direction of polarization? Some really fundamental
5 questions are missing and have not been answered
6 related to the development of the standard.

7 The area of the department where I work
8 routinely develops standards for the state of
9 Minnesota, and we have a team of toxicologists that
10 evaluate the data and we are the unit that does
11 that activity, and it includes many chemicals that
12 are known to cause cancer.

13 I can assure you that it's highly
14 unlikely given the current state of knowledge that
15 there will be any agreement at the federal and state
16 level on magnetic field exposures simply because the
17 data are really lacking.

18 In testimony that's been provided, I've
19 seen references to a long list of health effects
20 from EMF including Alzheimers, miscarriages, brain
21 tumors, suicide, depression, Parkinson's, childhood
22 Leukemia, and the lists goes on.

23 It's important to recognize that the
24 scientific evidence to link magnetic fields and
25 childhood Leukemia and fields with other effects is

1 qualitatively different.

2 In many cases there is conflicting
3 evidence, no dose response relationship, small sample
4 sizes and no supporting laboratory data even at very
5 high exposure levels.

6 Epidemiological studies by themselves
7 don't provide evidence for a causal relationship
8 between magnetic fields and cancer or any other
9 adverse health effects. And that is exactly what's
10 being suggested by testimony provided here.

11 Nearly every day we hear about new studies
12 in the media, and I know I can appreciate that it's
13 hard sometimes to kind of sort through all that and
14 really know where things are at in terms of -- you
15 hear red wine is good for you and you hear red wine
16 has no effect or antioxidants reduce your risk of
17 cancer or they have no effect.

18 And I think we get a lot of conflicting
19 messages in the media about different health issues
20 and certainly EMF has been one of those, so I can
21 appreciate how this is a difficult decision for each
22 and every one of you. It's not a straightforward
23 easy thing, but it highlights the importance of
24 evaluating the studies and really knowing the
25 limitations, and there's sometimes limitations with

1 the epidemiological research that has been conducted
2 to this point.

3 And that brings me to an important point
4 that these epidemiological studies that have been
5 cited need to be viewed in the context of
6 laboratory studies that have been tested under a
7 controlled experimental condition with animals.

8 And these studies have consistently failed
9 to support a relationship between magnetic fields and
10 Leukemia even at high exposures as I mentioned
11 earlier, tens of thousands of milliGauss.

12 In addition, these studies have failed
13 to establish a plausible biological method for how
14 magnetic fields can cause cancer. You've heard
15 testimony that there are papers out there that have
16 hypotheses related to different effects, but there
17 really isn't an understood scientific consensus for
18 how magnetic fields could cause or initiate or
19 promote cancer.

20 And the lack of supporting laboratory
21 data raises considerable doubt in my view and in the
22 view of many scientists at the Health Department
23 about the weak evidence in association of magnetic
24 fields and Leukemia.

25 And in summary, while the possibility of

1 some effect in EMF cannot be entirely dismissed, the
2 evidence is extremely weak. The Health Department
3 will continue to track the EMF research and as we do
4 with many important issues and to provide
5 information to the public regarding EMF sources and
6 exposures. And as I mentioned, we recently developed
7 a website in an effort to provide information to the
8 public about EMF.

9 I appreciate having an opportunity to be
10 here tonight, and I'm available to answer
11 questions, and certainly if something doesn't get
12 answered to your satisfaction tonight, I can be
13 contacted at any point in time.

14 MAYOR TIFFANY: You mentioned that the
15 position paper that was produced by the Department of
16 Health was a team effort by various members of the
17 department. What were their qualifications?

18 MR. STROEBEL: There are individuals with
19 doctorates in environmental epidemiology, toxicology
20 and expertise in risk assessments and statistics in
21 a variety of other areas.

22 MAYOR TIFFANY: And these people have had
23 formal training?

24 MR. STROEBEL: Yes.

25 MAYOR TIFFANY: Would it be the position

1 of the Department that the possibility remains
2 that EMF may some day prove to be a health hazard?

3 MR. STROEBEL: The possibility cannot be
4 entirely dismissed at this time, but I would say
5 that it's unlikely.

6 MAYOR TIFFANY: A great deal of the
7 testimony that's already been put into the record
8 deals with the literature that's come out just in
9 the last year, and I believe the two cases for that
10 remark in those reports have been the meta-analysis
11 where we combine previous studies involving
12 childhood Leukemia and EMF, and the other was the
13 California PUC which I don't even know if it's still
14 in a draft form or not. I believe those are the two
15 major developments in the past calendar year. I
16 think you've already answered that your department
17 hasn't used those, but what about other state health
18 departments? Have other state health departments or
19 the NIEHS looked at the new data and made any
20 conclusions? Have they published anything?

21 MR. STROEBEL: Wisconsin recently put out
22 a public information brochure on EMF, and so it's
23 fairly recent. I think it was within the last year.
24 It's on their website. I can get that information to
25 you. The information on that website is consistent

1 with our position.

2 Also the state of Virginia recently --
3 I think it was their Health Department produced a
4 report to their legislature on EMF which is
5 consistent with our position. And as I said, our
6 position is consistent with the NIEHS which is
7 the federal health agency that sponsors research
8 and published the 1999 report which is the most
9 recent large scientific committee that's reviewed
10 the literature.

11 MAYOR TIFFANY: Let's call it the landmark
12 study, the report of the NIEHS is now almost three
13 years old, so that's been criticized for being out
14 of date because it does not incorporate the recent
15 literature. Did I hear you say that you've been in
16 contact with people at the NIEHS? Have they been
17 keeping on top of this? Do they have any positions?

18 MR. STROEBEL: Absolutely. I've been
19 speaking with individuals at NIEHS and the EMF RAPID
20 Program, and they've assured me that there's no
21 change in federal policy on this issue based on
22 the new research.

23 And they are in the process of developing a
24 new public information brochure which they said was
25 going to be on line in November or December, but I

1 have not seen it on their website yet, but I was told
2 that there has been no change.

3 MAYOR TIFFANY: One other question I had, I
4 believe the testimony that was given at the Mendota
5 Heights Planning Commission is that in experimental
6 situations, EMF has been found to be a cancer
7 promoter. Do you know if those levels of EMF
8 exposures are comparable to what's experienced in
9 the real world?

10 MR. STROEBEL: The levels that are -- as I
11 said, the animal studies have been done to look
12 specifically at Leukemia which is the primary end
13 point that has shown up as an association in some of
14 the epidemiological studies.

15 The animal studies have consistently
16 not shown adverse effects -- I'm sorry, not shown
17 a relationship between the fields and Leukemia.
18 And those exposures are done at levels of tens of
19 thousands of milliGauss.

20 MAYOR TIFFANY: Now consistently shown
21 that, because the testimony given in Mendota Heights
22 is that there have been experiments that show breast
23 cancer cells grow faster under the influence of EMF.

24 MR. STROEBEL: There's a distinction here. When I'm
25 talking about laboratory studies, there's

1 two different types. There's the in vivo that are
2 done in animals typically for cancer, and there's in
3 vitro which is laboratory studies that are done on
4 cells and tissue cultures. And the ones that I've
5 been referring to the animal in vivo ones that have
6 been conducted by the National Toxicology Program
7 recently or it was a year or so ago. They're really
8 recognized as a leading authority on what causes
9 cancer and what doesn't, and they have a panel of
1 expert scientists. In fact, one person in our unit
0 is on that federal committee that reviews
1 carcinogens and establishes the classification.

1 So in terms of -- there's kind of a
1 mixed set of studies on cells and tissue cultures
2 which some show an effect of one sort or another and
1 some that basically, you know, is not replicated in
3 another laboratory, so that raises some real
1 questions about whether it was something in those
4 particular conditions that were causing the effect.

1 The other question is whether those
5 experiments in cells and tissue cultures are really
1 relevant to what happens in the human body. That's a
6 real valid scientific question. We know that it's
1 not the same, but a lot of times, those are the
7 kinds of studies that are done initially, kind of a

1 screening to investigate a possible mechanism, and
2 then we look to other types of studies like animal
3 studies and human studies to collectively look at the
4 whole body of evidence.

5 MAYOR TIFFANY: You keep referring to
6 childhood Leukemia. Is it correct that the NIEHS
7 study in '99 identified EMF as a possible
8 carcinogen strictly because of the relationship
9 with Leukemia, or were there other diseases too
10 that prompted that conclusion?

11 MR. STROEBEL: I believe it was the
12 childhood Leukemia. That's been the real focus.

13 MAYOR TIFFANY: Then would you pick up on
14 the meta-analyses that were reported in the past
15 year or so where they combined other studies to get
16 larger numbers because, thank god, childhood
17 Leukemia hasn't occurred (inaudible) so we've got
18' problems with numbers.

19 Would you tell us what your analysis is
20 on that as far as the statistical validity of those
21 reports and why they haven't changed the Department
22 position?

23 MR. STROEBEL: That's a very good
24 question. There were two studies. There was
25 Greenland, et al. and Anders (phonetic), et al. that

1 did -- two different studies that did meta-analyses
2 on looking at childhood Leukemia specifically, and
3 we did an in depth analysis of those two studies,
4 and really they're very limited in terms of --
5 basically the reasons the researchers did that is
6 they didn't have very many cases in the individual
7 studies in the high exposure category.

8 So what they did is they took a whole set
9 of studies, nine or ten, I think one of them was 15
10 or so and combined them in a group to do some kind
11 of meta-analysis.

12 Well, those types of studies are
13 interesting and kind of exploratory, but you run
14 into problems where you have different exposure
15 methodologies or different designs in the studies
16 and you're combining them, and it's important to
17 recognize the limitations of those kinds of studies.

18 And even when you look at the high
19 exposure categories, the number of cases in the high
20 exposures is relatively low and that reduces the
21 statistical power. So I would say that while I found
22 those papers interesting and they were certainly
23 conducted in good peer review journals, there are
24 many several strengths about them as well, they need
25 to be viewed in the context of their limitations and

1 certainly I think the Commissioner stated in her letter
2 to the Power Line Task Force some of the pitfalls and
3 the limitations of epidemiological studies in terms of
4 establishing cause and effect -

5 MAYOR TIFFANY: Were those papers reviewed
6 by qualified people at your department, people that
7 were trained in statistical analysis and
8 epidemiological methods?

9 MR. STROEBEL: Yes. Those papers were
10 reviewed by Mr. Williams who is our environmental
11 epidemiologist, and we also met with individuals over
12 at the University of Minnesota Pediatric Cancer
13 Center, an individual physician who has served in
14 different capacities with the NIEHS in federal
15 committees and is very well connected with
16 researchers in the United Kingdom and around the
17 country and his name is Les Robinson, and he read our
18 conclusions and our assessment and said that this is
19 consistent with his position and the position of his
20 colleagues and the people that he knows.

21 And he also had reviewed the studies
22 that we were just talking about, the meta-analyses.
23 And he investigates a lot of different health --
24 just basically focuses -- one of his primary focus
25 is on childhood cancer, so he's looking at a lot of

1 different potential causes and research is now
2 shifting to some other areas that are important.

3 MAYOR TIFFANY: One last question. The other
4 major piece that's been presented in some detail is
5 the California PUC study, and would you tell us your
6 analysis of that, what conclusions one can draw and,
7 again, why does that report not change the
8 department's position?

9 MR. STROEBEL: I really don't want to get
10 into the details of the California study. I would
11 say that it's really important to keep in mind that
12 that's a draft report, and my understanding is that
13 -- I would say that there's been some fairly broad
14 criticism of that report.

15 I've participated in a conference seminar
16 with Raymond Noitra (phonetic) who was the author of
17 that report or one of the three authors, and I'm
18 also aware that there was a Science Advisory Panel
19 in September, and there were some pretty heavy
20 criticism of the report.

21 I've made direct requests to get the
22 comments from the panel, and I've been unsuccessful
23 to this point and I'm continuing to request their
24 comments so I can review those and find out what the
25 various opinions and the understanding is of the

1 report.

2 But at this point, the report is a draft,
3 and I think it's important to keep that in mind and
4 it's not consistent with, in many cases I think,
5 with what other health departments are doing and
6 certainly California has invested a fair amount of
7 money in their program and they really put an effort
8 forward with that. But I would say that it's very
9 important to keep in mind that it's not a final
10 California Department of Health policy. And any
11 attempt to construe it that way is -- I don't think
12 that's really fair on my judgment.

13 MAYOR TIFFANY: Other questions?

14 MR. BENNETT: Mr. Stroebel, I believe in
15 three correspondences that we keep referring to, the
16 most recent on December 20, you pretty much said
17 what you said in all those other statements or the
18 statements have been made that the evidence that EMF
19 causing problems or is a cause and effect of
20 childhood Leukemia and everything is extremely weak.

21 Mr. Conant's group brought together a
22 number of additional studies. I'm assuming that by
23 your position here tonight, again that your position
24 today is the same as December 20. You don't feel it
25 has any -- it doesn't -- you don't show concern over

1 it as being a problem with the way you've stated
2 it so far. Is that right?

3 MR. STROEBEL: That is correct.

4 MR. BENNETT: Secondly, are you familiar
5 with the existing line that goes through Sunfish
6 Lake now, the existing power line?

7 MR. STROEBEL: I know there is an existing
8 line going through, and I know that the magnetic
9 field is going to be reduced substantially.

10 MR. BENNETT: And you're familiar too with
11 the proposal that's been made that they double
12 circuit the line and the fact that Xcel has said
13 that it will reduce the likelihood of EMF and
14 probably reduce it substantially?

15 MR. STROEBEL: Yes.

16 MR. BENNETT: The Power Line Task Force
17 disagrees with that statement obviously, and it's
18 still your position that the new line going through
19 would be a healthful benefit to anybody around,
20 that it would reduce EMF?

21 MR. STROEBEL: This is something that's
22 done in many cases. The new technology for a power
23 line can substantially reduce the magnetic field
24 level, and that's fairly well established and it's
25 done around the country. And so I think -- and I

1 think that's a reasonable -- that's certainly a
2 reasonable approach to this.

3 And the level is actually fairly
4 substantially reduced, but the point can be made too
5 that the level will go up over time potentially as
6 the current or if the current goes -- if the demand
7 goes up.

8 MR. BENNETT: Greater usage
9 of electricity.

10 MAYOR TIFFANY: Okay. Any other
11 questions?

12 MR. STODDART: Thanks for coming tonight. Is
13 Minnesota -- are there any states that have a
14 substantially different position on EMF than
15 Minnesota, or is everybody in agreement on this?

16 MR. STROEBEL: I would say that states vary
17 in their level of technical expertise to develop
18 standards and evaluate data, and so some states are
19 more actively involved in the environmental health
20 risk assessment area and some are not. I would say
21 the Minnesota Health Department from my experience is
22 fairly high up there, and of states that really have
23 -- you know, have a position on the issue, there are
24 probably some states that don't have a formal
25 position on EMF. But of the ones that I know about,

1 Virginia and Wisconsin and Massachusetts, our position
2 is consistent.

3 MR. STODDART: Do you know of any states
4 where this proposal was presented to your counterpart
5 or Department of Health would say you can't do it?
6 There's too much of an unknown.

7 MR. STROEBEL: It's hard for me to say
8 what another state would do.

9 MR. STODDART: But is there an outlaw, is
10 there a rebel somewhere that says we don't have
11 enough hard data, but our gut tells us that we
12 wouldn't want to live underneath these things. MR.
13 STROEBEL: The only report is the California report,
14 draft report, that's come out. Other than that, I'm
15 not aware of anything from other states that would
16 indicate that.

17 MR. STODDART: As a scientist, does it
18 kind of spark your interest as to why there's so
19 much interest with EMF?

20 MR. STROEBEL: Yeah, it does. For years
21 this issue has been a public concern and I take that
22 seriously, and that's one of my responsibilities is
23 answer calls from the public and I do that every
24 day. And so it's just people -- I think there are
25 fears because there's an invisible thing out

1 there, and I think sometimes that can lead to the
2 perception that there are risks, and certainly there
3 has been some research that substantiates an
4 association, so the possibility can't be entirely
5 dismissed. But it's like many, many, many
6 environmental health issues, we can't prove the
7 absence of a risk, but we think that the evidence is
8 really very weak at this point in time.

9 MR. STODDART: What evidence or what
10 report would it take for your department to
11 say, Xcel, these things can't be within 200
12 feet of a living soul?

13 MR. STROEBEL: The first thing it would
14 take some confirming laboratory data in animals
15 which are well established for cancer biolab -

16 MR. STODDART: That doesn't exist?

17 MR. STROEBEL: That does not exist. The
18 National Toxicology Program has sponsored a very
19 large study that was done in '99 at extremely high
20 levels of exposure 20,000-30,000 milliGauss, and
21 there's not evidence of Leukemia or adverse effects.
22 What also would be important in terms of
23 epidemiological studies -- you know, what really
24 could be done, but I don't know if there's really
25 the money or the interest or what, but a very large

1 prospective epidemiological study looking at higher
2 exposures. That's something that could be done,
3 because the number of cases as I mentioned in the
4 high exposure categories is so small that there's
5 very little statistical power.

6 MAYOR TIFFANY: How could you study higher
7 exposures if most of the people are not exposed to
8 levels of over a half milliGauss?

9 MR. STROEBEL: That's exactly the problem.

10 MAYOR TIFFANY: Let me take you back on
11 Mr. Stoddart's question about other health
12 departments. Does anybody have a standard? Has any
13 health department created any standard in terms of
14 levels of milliGauss or distance from lines that
15 would in any way apply to our deliberations here?

16 MR. STROEBEL: There's not a health-based
17 standard for magnetic fields with cancer in any
18 state that I'm aware of. There certainly is not a
19 federal -

20 MAYOR TIFFANY: So what you're saying is
21 that those state departments that have looked at this
22 issue have not found results different from yours.

23 Is that what you're saying?

24 MR. STROEBEL: They have not developed
25 standards, health-base standards for magnetic fields

1 with cancer to my knowledge. There's not a state out
2 there that has done that for cancer.

3 MR. FARIS: I have a question. When you
4 talk about the high exposure test, over how long a
5 period of time are these animals or cells exposed to
6 the high frequencies?

7 MR. STROEBEL: Typically it would be done
8 over a two-year time period, and that's the way
9 those studies have been done.

10 MR. FARIS: At the Minnesota Health
11 Department, have you yourselves done any studies
12 as to EMF in Minnesota along the power lines?

13 MR. STROEBEL: What kind of studies? MR.
14 FARIS: Have you done any epidemiological studies as
15 to the frequency of some of the health concerns that
16 we've talked about which is breast cancer,
17 Parkinson's disease, Leukemia, any of those, have
18 you measured or taken any kind of a census as to
19 those who live close to the power lines whether or
20 not they themselves who live there probably more
21 than two years have experienced any of those kinds
22 of diseases?

23 MR. STROEBEL: To my knowledge, we haven't
24 sponsored or participated directly in any research,
25 but what we do is we track the latest research that's

1 published by institutions around the country in the
2 world.

3 MR. FARIS: Would there be a way to
4 request a study such as that from the
5 Minnesota Health Department?

6 MR. STROEBEL: As we mentioned earlier -I
7 mean, the question that remains is whether high
8 exposure levels cause cancer or Leukemia, and what
9 would be needed is a -- it would be very expensive
10 to do a study of that kind, and, in fact, it would
11 be difficult to probably identify individuals that
12 would be in that higher exposure category, and it
13 would have to be carried out -- if we do a
14 prospective study, you do that over many years. The
15 cost of that would be fairly substantial, and there
16 would have to be quite a commitment from the
17 legislature or some other institution, perhaps the
18 NIEHS or someone like that.

19 MR. FARIS: I think in this process we've
20 identified about 200 homes that are very, very
21 closely situated to the power lines where in many of
22 them, there's a very high incidence of those types of
23 diseases, and it's surprising to me that no one has
24 ever studied that. Like you had said before, animals
25 are different than people, of course, you don't want

1 to purposelessly expose people to high frequencies.
2 But if people are on a natural course being exposed,
3 it would be interesting to have a study, 200 I don't
4 think would be as expensive. It's a thought and if
5 you came up with a way that we could maybe request
6 that kind of study to be done with those 200 or more
7 homes that are closely situated, I'd like you to let
8 me know.

9 MR. STROEBEL: Okay.

1 MAYOR TIFFANY: Isn't that the way this
0 whole thing got started when there was a cluster of
1 childhood Leukemia cases in Colorado, and people did
1 look at this. What councilwoman is talking about is
1 an epidemiological study. And what you're telling us
2 is these are going on all the time all over the
1 world, so people are looking at clusters of disease
3 or concentrations and unusual incidents of disease,
1 is that correct, related to EMF?

4 MR. STROBEL: Can you say that again?

1 MAYOR TIFFANY: Are you saying that all over the
5 world epidemiological studies are going on to try to
1 identify clusters of diseases that might be related
6 to a factor such as EMF and publishing results in
1 journals?

7 MR. STROEBEL: Absolutely. Those studies
1

1 are done all around the world looking for a number
2 of different adverse effects, not just childhood
3 Leukemia. As I mentioned, evidence for a lot of
4 those other effects is very -- it's extremely weak,
5 and it's inconsistent.

6 The strongest evidence that is available
7 is the childhood Leukemia in terms of an
8 association, and even that evidence is weak.

9 MAYOR TIFFANY: From a statistical basis?

10 MR. STROEBEL: Yes.

11 MAYOR TIFFANY: How do you define weak?

12 MR. STROEBEL: Weak in terms of the
13 strength -- the odds ratio. You typically see
14 studies that have an odds ratio of 1.2, 1.3,
15 sometimes 2. Those are fairly weak associations.

16 MR. FARIS: But if you get over 2, isn't that a
17 stronger association?

18 MR. STROEBEL: As you go up, you get a
19 stronger -

20 MAYOR TIFFANY: How strong is the
21 association with childhood Leukemia?

22 MR. STROEBEL: In the range of 1 to 2.

23 MAYOR TIFFANY: 1 would be no effect and 2 would be --
24 what was the category? Isn't this really complicated
25 by the fact that scientists aren't sure

1 what to study? Whether it's a low exposure over a long
2 period of time, short time high intensity exposures,
3 ranges of exposures. We heard about windows of
4 exposures between 2 and 20 or something that members
5 have shown around, frequency. I think what you're
6 saying is earlier the leverage on that is that if you
7 were to design an epidemiological study, you're not
8 quite sure what you would want to measure. Is that
9 correct?

10 MR. STROEBEL: That is correct. That's a
11 real problem when you're studying a field versus like
12 a contaminant where it's a physical thing. With a
13 field you have a lot of different factors like
14 (inaudible) and polarization, whether it's an
15 intermittent exposure, strength of the field. And
16 the fact is we really don't know what aspect of that
17 field -- that's one reason this thing really isn't
18 out there.

19 MAYOR TIFFANY: One other study that's
20 fairly recent that you didn't comment on had to do
21 with spontaneous abortions, and I think there they
22 concurred that brief high intensity, very, very
23 brief even momentary of over a certain level of
24 MilliGauss is correlated with an increased incidence
25 of spontaneous abortions. Can you comment on that?

1 MR. STROEBEL: I really didn't want to get
2 into individual studies tonight, but I will say that
3 the California studies I think are interesting and
4 they certainly are something that we're going to be
5 taking a look at more closely, and I think they will
6 probably spur more research in that area in terms of
7 generating a scientific question and inquiry.

8 The assertion that 40 percent of
9 miscarriages are due to magnetic fields seems a
10 little bit outrageous to me, and when you look at
11 those studies, there are issues in terms of their
12 limitations and the conclusions that can be drawn.
13 One of those studies, and it was the Lee, et al.
14 that had a fairly low response rate, and that
15 leads to the potential for selection bias.

16 And I don't know if you saw, but there's
17 been some criticism or some comments in journals
18 from -- one comment that I saw was Dr. David Savits
19 (phonetic), University of Carolina Chapel Hill, and
20 he's been an author of several EMF research
21 articles, and he was critical about those studies
22 and basically said that we need to certainly look at
23 this issue more closely, but he had some concerns
24 about the conclusions that could be made.

25 MAYOR TIFFANY: That study was also

1 reviewed by epidemiologists and statisticians in your
2 department?

3 MR. FARIS: Why did you caution us about
4 the California report as being a draft report? What
5 is it that we need to be aware of?

6 MR. STROEBEL: Well, it's draft in the sense
7 that it was released -- you know, in any scientific
8 process, it's important -- peer review is a really
9 important process, and that's why we have things like
10 Science Advisory Boards or panels, and that's done at
11 the state level or at the federal level, and it's an
12 important thing to get those comments because people
13 have different levels of expertise in different areas,
14 and a peer review just makes the document that much
15 stronger and compelling.

16 MR. FARIS: At what process is it in right
17 now?

18 MR. STROEBEL: My understanding, I looked
19 on their website this morning, they're receiving
20 public comment, and I know they had a Science
21 Advisory Panel meeting on September 7, and I've made
22 two direct requests for the proceedings of that and
23 I have not received it at this time.

24 MR. STODDART: If you had your EMF meter
25 here, what would we be experiencing right now?

1 MR. STROEBEL: It's hard to say because
2 different appliances -- but it's common around
3 appliances to gets exposures to tens of hundreds
4 of milliGauss.

5 MR. STODDART: Sitting in front of your
6 computer at work?

7 MR. STROEBEL: Computer, your monitor,
8 operating vacuum cleaners or electric blankets,
9 clock radios by your head, those kinds of things.
10 The magnetic fields are in our environment and
11 household appliances and the wiring inside the house
12 can often contribute substantially to the exposure
13 relative to a power line.

14 MR. STODDART: So short of being in the
15 Boundary Waters, we're exposed to some EMF.

16 MR. STROEBEL: Absolutely.

17 MR. STODDART: And how much with the new
18 power lines being 80 feet in the air, if I were
19 standing right underneath the double circuit, about
20 what level would I be exposed to?

21 MR. STROEBEL: There are estimates from like
22 the NIEHS has a brochure, and that one they have
23 estimates from different power lines. I don't have
24 it. I have it back at my chair, and maybe Xcel could
25 answer that.

1 MR. STODDART: Ballpark figure? 50, 200?

2 MR. STROEBEL: It varies by the line. It
3 depends on the circumstance.

4 MAYOR TIFFANY: It depends on the current.
5 That's in table 3.6 I think. I think I know this thing
6 by heart, I've spent so much time with it.
7 They showed the expected calculated milliGauss
8 levels at certain amperages going through the lines.
9 Right under the line, you really get zapped, but
10 then as you go out further, it falls off.

11 If it helps you any, one of the reasons I
12 had to turn the air conditioner on is they told me
13 when they let us use this room, there's 135 light
14 bulbs in this room. Does that change your opinion
15 about the EMF exposure in here?

16 MR. STROEBEL: I think it's also important
17 to point out that the fields we're talking about here
18 are 60 hertz frequency. And there's a whole range of
19 different fields along the spectrum, and we're also
20 exposed to EMF from radios, cell phone, rays from the
21 sun are much higher frequency. 60 Hertz is a very low
22 frequency, and there is -- it's nonionizing so in the
23 sense that we know that it's not capable of causing
24 direct DNA damage or causing mutation or cancer. But
25 the assertion is that it's possibly a

1 promoter, and that's been investigated in some
2 laboratory studies on tissue cultures.

3 MAYOR TIFFANY: Any other questions?

4 Okay. Thank you very much. Please don't go away if
5 you can spare the time because we may have
6 questions later on. Then we can do any order of
7 presentation one wishes.

8 Roger, you indicated that you'd like
9 to put a few people -

10 MR. CONANT: That's right. I would like
11 to respond just to a few comments. Mr. Stroebel has
12 been on for 55 minutes now, and I'd like to make a
13 couple of points.

14 First of all, I think we, in the
15 literature that we distributed to you, we
16 mentioned Chuck Stroebel has been a problem to us
17 all along. We've met with him and he's resolute
18 closed-minded and often not quite precise.

19 He said a lot of things and I want to
20 mention just a couple. I want to respond to a couple
21 of points. First of all, he suggested that the
22 material that we distributed to you, all the studies
23 that we distributed to you were somehow selected.
24 Well, they were of course, but we told you how they
25 were selected. We chose government only studies

1 produced in the last year and a half, and that was the
2 standard.

3 As far as we know, we have picked all of
4 the government studies produced either by or for
5 government, and we did that quite intentionally
6 because we didn't think with respect to government,
7 that there would be any bias in the studies.

8 Mr. Stroebel said a lot of things about
9 he's talked to this person or he's talked to that
10 person. May I suggest that that sort of information
11 is unverifiable and I would even suggest
12 inappropriate for a forum like this.

13 We've been very careful whenever we have
14 cited anybody to give you the precise citation or
15 actually had the person there. He talked about the
16 EMF RAPID Study. The EMF RAPID Study was concluded -
17 - was finished in the middle of 1998, and so
18 therefore, there can be no involvement in that. That
19 project is completed. However, that project, in
20 fact, did recommend that power companies reduce EMF
21 associated with transmission power lines. That was a
22 specific recommendation there.

23 He just said that because EMF is
24 nonionizing that it doesn't impact DNA. At the
25 Planning Commission, we had Dr. Martin Blank speak.

1 Dr. Martin Blank is one of the founders of and the
2 past president of the Bio Electromagnetic Society,
3 and that's the society that held the meeting last
4 July that Chuck went to.

5 I hope you've had a chance to read the
6 testimony. You have the transcript or perhaps even
7 seen the video which we've distributed to you, but
8 Dr. Blank pointed out that DNA is mediated by
9 electricity going through it, and that, in fact, the
10 magnetic fields from the electricity do, in fact,
11 interrupt DNA in studies that are replicable, in
12 vitro studies that are replicable and have been
13 repeated many times.

14 We also had Magda Havas, and she is the
15 author of more than 60 studies. Perhaps you saw the
16 video that she prepared or the papers that she
17 prepared or perhaps you even saw the testimony
18 that we have in full in the transcript.

19 Magda Havas talked at length about animal
20 studies where Chuck inaccurately said that there had
21 not been found animals studies and point the evidence
22 in animal studies at normal levels. In point and
23 fact, in her` papers and she emphasized the fact that
24 there are tons of such studies that have found
25 replicable and statistically significant findings.

1 And finally he poo-poo'd the California
2 project. I guess on several grounds. First of all, he
3 said that it had not been peer reviewed. It has been
4 extensively peer reviewed by names of scientists who's
5 names appear in the documents that you have. It was
6 also peer reviewed in the department, and the research
7 was conducted only by Ph.D.s and not with people with
8 master's, people with advanced degrees.

9 He also talked a lot about the none --
10 the weak nature of the findings or the fact that
11 -- and we agree with this that there's not 100
12 percent identification of the cause between
13 magnetic fields and the resulting disease.

14 The California -- and we distributed
15 papers. The California research addressed the points
16 that Chuck has made extensively. And may I remind you
17 that the California project was the result of \$7
18 million worth of original research, and the results
19 of that original research are -- again, you have a
20 copy of that. And it addressed almost all the points
21 that he's made, but let me just read you one or two
22 sentences from that report.

23 He said, well, there's not a mechanistic
24 explanation, so we should poo-poo everything. The
25 California report said on Page 36, "The demands on

1 experimental mechanistic effects be detected in
2 residential levels of exposure is a stringent
3 requirement that many recognized chemical pathogens
4 would not be able to meet."

5 On Page 34, it says, "Give the
6 complexities of the characteristic of exposure,
7 the nature of biological processes and the
8 epidemiology of diseases associated with EMF
9 exposure. The fact that these mechanisms are still
10 tentative and controversial cannot be used as an
11 argument against causality."

12 He referred to what he characterized as
13 the low incidence of -- low incidence of the disease
14 -- allegedly low incidence of the disease
15 associated. Again, the California project addressed
16 this subject extensively.

17 And what it said was that in California by
18 extrapolating from architectural -- he's referring to
19 the 4 percent incidence of Leukemia. While 4 percent
20 sounds like a low number, "The annual number in
21 California would not be trivial if applied to these
22 base-line instances of mortality rate of various
23 conditions that receive degrees of confidence greater
24 than (inaudible - reading from document.)

25 Table 2 shows the mortality expected in

1 about 9.6 million Californians younger than 20 and the
2 23.4 million Californians over 20 years old from these
3 causes of death, and the causes of death are the ones
4 that are identified in the California study.

5 Of these deaths, some fraction might be
6 affected by EMF. While the spontaneous abortions and
7 Alzheimers deaths are estimated using rates from
8 special studies, the other deaths are derived
9 from 1998 vital statistics.

10 Even if the miscarriages are not
11 treated as deaths, one is left with about 28,700
12 deaths. 4 percent of this is about 1,150 deaths.
13 40 percent, 60,000 miscarriages and 24,000 deaths.

14 In other words, they're saying that in
15 California EMF from all causes, not just power
16 lines is attributable to 1,150 deaths and 24,000
17 miscarriages, and in Minnesota, that would imply
18 a yearly total of 135 deaths and 2,800
19 miscarriages. This is not a small factor at all.

20 Chuck said that the associations are not
21 well identified, are not well established. The
22 California study -- the California project reviewed
23 literally hundreds of studies and it found two of
24 these correct ORs in the range of Leukemia of about
25 two, but higher with other diseases and also higher

1 with nighttime exposures to EMF.

2 But they found that the probability that
3 the associations that they found were not due to
4 chance were .0004. In other words, 4 chances out of
5 10,000. I regret that the Department has
6 aggressively taken such an action, but I will remind
7 you that we have had experts here and that the
8 research that we have given you is valid research.
9 It represents the state-of-the-art as it is today.
10 We have given you more than ample data based upon
11 the research provided in epidemiological journals of
12 the highest integrity, and that research finds just
13 exactly what we have told you, that there is, in
14 fact, a strong association between EMF and selected
15 diseases; and that there is at least substantive
16 reasons to believe that EMF is not causing -- in
17 Magda Havas' eye, that it is promoting cancer and
18 other serious diseases.

19 And again, it is I think too bad that we
20 have a Health Department that is walking around and
21 putting its head in the sand and is, in fact, acting
22 as a partner to the utilities in this matter, and I
23 regret that: But I will remind that this department
24 has no special expertise. It doesn't devote any
25 special research like other departments do, and that

1 we are talking about a national problem. There's
2 nothing unique about EMF except for our line which we
3 believe is a very unusual line in this country.

4 But except for that, there is nothing
5 unusual about EMF, and our department has no
6 special qualifications to expound upon this and
7 that organizations such as the World Health
8 Organization which I've documented for you change
9 their position and now finds that there is a
1 relationship between EMF and serious disease and
0 are now -- the World Health Organization is warned
1 about power lines, and again, you have the data
1 that represents the change in their position.

1 The same thing is true of the National
2 Radiological Board in the UK which three years said
1 there was no such relationship says there is now a
3 relationship. It says in a sense, don't worry about
1 it to the UK, but the reason they don't worry about
4 it is they have higher voltages, therefore lower EMF,
1 and they already have laws that prevent power lines
5 from being built near people.

1 But again, all of these senior health
6 organizations are changing their opinions. You have
1 the documentation. You can see that, in fact, there
7 is a generally recognized association and danger

1 association with low frequency magnetic fields which
2 is the topic today. And I only regret that our
3 department is demonstrating itself to be so slow to
4 recognize that having said that, you also have
5 documentation that the department has articulated
6 concern over our very line, and said the unique
7 characteristics of our line, the southeast metro
8 line, are a subject for concern and worthy of
9 additional research. With that, perhaps we mentioned
10 that there were several physicians, and I know Phil
11 Murray.

12 MR. MURRAY: Neighbors and friends, my name
13 is Phil Murray. I'm a long-time resident of Sunfish
14 Lake, happen to be sited between Tim Stoddart and
15 Frank Tiffany along Salem Church Road.

16 I am here actually not to add anything in
17 the way of science to what you've already heard. I
18 know you've been deluged with more than you could
19 ever hope to really process or really understand hope
20 to really process or really understand deeply.

21 However, I feel it's important that as
22 kind of an average Joe in the trench so to speak,
23 just an average guy on the street that has however
24 been paying attention to this debate and this
25 proposal since it was initiated some two and a half

1 years ago, that the council get a little bit of a
2 perspective from someone like myself.

3 And I stand here also not as a physician
4 that is educated in the details and the nuances of
5 EMF stuff, because I'm not. I understand some of the
6 science. There's a lot of it. Actually, Frank, I
7 know you've delved into it deeply. You understand a
8 lot more of it than I do, but I have learned quite a
9 bit as I've read and listened and been paying
10 attention. But I do not stand here as an expert in
11 any way.

12 Roger has done an extraordinary job
13 trying to sift through some of this process and
14 present it to all of us. But as I said, I think it's
15 important that you hear from somebody other than the
16 leader of the Power Line Task Force.

17 You've heard debate back and forth from
18 legitimate experts. Mr. Stroebel I think has done a
19 good job of presenting some of the other stuff.
20 Roger has done a very thorough job.

21 And I recognize also as I stand here and
22 sort of make these comments that for the five of you,
23 this must be a very difficult situation you're in. It
24 reminds me of a trial. You guys are like the jury and
25 you've got expertise and expert witnesses on both

1 sides of the coin, and how the hell do you sort all
2 this out. It's very conflicted. Way more conflicted
3 than I ever understood two and a half years ago.

4 I also need to acknowledge that as I make
5 these few remarks, I do not come here either as
6 totally unbiased or neutral from the get go. When I
7 first was apprised of this plan or this proposal to
8 upgrade and make these towers so much higher and so
9 much more prominent, I was absolutely appalled by the
10 notion.

11 And my objection at that point really had
12 much more to do with the esthetics of it. It just
13 seemed to me then and still does now that it was
14 outrageous that a power line company could ram
15 something so unesthetic and so unappealing and so
16 objectionable through a beautiful residential
17 community as we have here in Sunfish Lake. That knee-
18 jerk sort of visceral reaction is still with me.

19 It has also been of some concern that
20 the property values, I know may be addressed in a
21 little bit more detail later, is a very real issue.
22 Having said all that, where I'm coming from, I have
23 to tell you that as I've listened to what Roger has
24 presented, as I listened to what Mr. Stroebel
25 presented, the sort of over-arching thing for me,

1 there are a number of elements in this that I've paid
2 attention to and understand are -- there's been some
3 debate about them, the California project seemed
4 pretty solid, very statistically significant, and I
5 thought it was true. The reversal of the position
6 World Health Organization to me seemed to be a
7 significant reversal. How do you come up with evidence
8 or arguments to counter that to explain that away? I
9 don't know.

1 The same reversal of physicians from
0 1998-2000 by the UK National Radiologic Protection
1 Association also carried a lot of weight with me. I
1 haven't heard anybody including Mr. Stroebel that's
1 really specifically countered that evidence.

2 However, the over-arching bit of testimony
1 or information that I was privy to hearing came from
3 Magda Havas, and she has been referenced on a number
1 of occasions by Roger tonight. She as you know is a
4 Canadian scientist, actually one of the pioneers of
1 the whole research that had to do with acid rain, a
5 very well recognized woman with the Canadian National
1 Research Council; that over eight years ago got
6 involved with this field of EMF.

1 She studied it extensively. She said it
7 took her three years to make up her mind on where to

1 fall on this, but she has clearly made up her mind
2 over the last few years and has written extensively
3 on it, and obviously is out trying to spread the
4 information that she has to share.

5 The information that she presented
6 though that had to do with the statistical validity
7 and the association, not necessary causality, but
8 the association between the variance levels of EMF
9 fields that have been referred to 2-4 milliGauss in
10 the instances of childhood Leukemia, 12 milliGauss
11 in the instance of possible association of breast
12 cancer, and the 16 milliGauss is an association of
13 miscarriages.

14 She presented that in a very moderate,
15 reasoned, knowledgeable, low-key way. She wasn't
16 proselytizing. She wasn't preaching. She was very
17 believable. And I came away from those encounters
18 and her presentations thinking, my god, I haven't
19 heard anything from any other point of view that
20 would counter or is able to counter what she said,
21 and she made the points about the in vitro and in
22 vivo evidence about the effects of EMF on the
23 replication of estrogen dependent cancer cells in
24 vitro and the effects of the model of rats that
25 had breast cancer and the influence of EMF on

1 accelerating the progression of rare cancer
2 activity. She had a lot of pretty solid, I thought
3 anyway, information, so I look to her as my sort of
4 neutral, objective source of information. She has no
5 particular axe to grind with Xcel or certainly not
6 with our citizens here, and I have not heard
7 anything that Mr. Stroebel presented tonight that
8 would really counter or dissuade me from the
9 veracity of what she had to say.

1 I happen to agree with what Roger just
0 said about disputing the conclusions or the
1 objections on the conclusion that Mr. Stroebel said
1 about the California results. The fact that it's
1 still being open to public commentary does not
2 change that P value of .0004 that had to do with her
1 results. Or the California results.

3 So I stand here again as just an
1 interested but very concerned citizen. She made one
4 other comment in that last presentation that I
1 thought was very interested. I know you are aware of
5 this, but this is something I wasn't aware of,
1 apparently obviously courtesy of the internet, there
6 literally is interest in this particular process
1 here tonight in our community around the world.

7 This is a very important decision which I

1 don't envy the five of you having to make. But it
2 has followed far beyond Sunfish Lake potentially. It
3 has the likelihood of affecting our community for
4 many, many years to come, and my own personal
5 probably biased, but nevertheless with some
6 substantial information now conveyed to me, is that
7 this council even though the causality of this
8 cannot be absolutely proven in scientists, there is
9 such a cloud of concern, suspicion raised by very
10 substantive bodies about this issue that I do not
11 think it would be prudent for the Council to approve
12 this permit.

13 Roger just asked me to present my
14 credentials. I don't have any. I'm a physician at
15 Abbott Northwestern. I'm an interventional
16 radiologist. I work with radiation but not from a
17 power line, so again, I'm not here as any kind of
18 expert, but I am here as an interested and
19 concerned and semi-knowledgeable person.

20 MAYOR TIFFANY: I'd like Mr. Stroebel to
21 come back to the podium please. I think while the
22 issues are current in our minds, we'd like to get
23 clarification if you can. Dr. Murray referred to two
24 things that I was not aware of having read this mass
25 of material, maybe I've read too much, but one is a

1 report from just October of 2001 from the World
2 Health Organization, and it references the other one
3 that Phil mentioned the UK Radiation Protection
4 Board. He characterized both of those as reversals
5 as though both organizations were saying that there
6 is evidence of a definite harmful effect. Do you
7 read it that way?

8 MR. STROEBEL: No, I don't. I looked at
9 the World Health Organization website about a month
10 ago unless there's something new on there, and my
11 understanding is that they're undergoing a review of
12 the evidence. The World Health Organization is doing
13 that. But I wasn't aware that they made any
14 conclusions or reversals.

15 MAYOR TIFFANY: What about the UK
16 Radiation Protection Board?

17 MR. STROEBEL: I'm not aware of any
18 reversal.

19 MAYOR TIFFANY: Okay. And then also
20 reference was made to the studies in animals that
21 does show promotion of estrogen dependent breast
22 cancer cells. Again, are we talking about an
23 abundance of evidence or a few studies? Can you help
24 us on that?

25 MR. STROEBEL: I think it's important,

1 there are -- with any particular health end point, you
2 have to look at the replicability of the different
3 studies, whether they're reproduced in different
4 settings and different laboratories, and that's really
5 an important finding. You have to look at the
6 different conditions.

7 And you know, you also have to look at the
8 epidemiological studies that have looked specifically
9 at breast cancer to see if there's an increased
10 incidence with exposure, and I'm aware of a large
11 occupational study that was done that found no
12 association between breast cancer and EMF levels. I
13 can provide that.

14 MAYOR TIFFANY: One final question about a
15 point Dr. Murray raised, in the California study, and
16 I'm certainly not a statistician and I don't intend to
17 be, is the -- you give that figure of .0004
18 probability of heaven knows what, is that not in
19 itself subject to peer review by other statisticians
20 that would look at the raw data and see if we agree
21 with those conclusions, or is that pretty well fixed
22 in the study?

23 MR. STROEBEL: It's up to the
24 interpretation of the study, of the researchers, and
25 California you can see in some issues where they

1 estimate the number of cancers that people will get
2 from different exposures whether it's air toxics, and
3 they've done that on some other issues, and in my
4 view, that is an over-interpretation of the data and
5 what kinds of conclusions can be made especially in
6 the context of EMF research without supporting
7 consistent replicated laboratory studies in animals.

8 MAYOR TIFFANY: What I'm really asking
9 is when the California study is finally subjected
10 to peer review, are the conclusions likely to be
11 different from what you know so far?

12 MR. STROEBEL: It's hard to say. I think
13 what is important here is -- I think it's probable
14 that there will be changes in my experiences of
15 reports and things like that. As we've developed
16 health risk limits for contaminants in the air, for
17 example, we go through a peer review process and
18 have a work group, and throughout that whole
19 process, there is substantial comments and changes
20 that happen throughout that process.

21 So I think it's important -- you know,
22 there obviously has been some peer review of the
23 California report. There was a Science Advisory
24 Panel, and I've had difficulty getting the comments
25 from that. It's my understanding that there was

1 quite a bit of conflict, or maybe conflict is not the
2 right word, but there was certainly not a consensus
3 about the wording in the report and the way it was
4 presented and the conclusions that were made by the
5 researchers.

6 And I would also say that my main point was
7 not so much about peer review. It shouldn't be really
8 construed to be California policy until it's a final
9 report, and it hasn't had an opportunity to be really
10 evaluated by researchers around the country.

11 MAYOR TIFFANY: Other questions of
12 Mr. Stroebel? Okay. Thank you very much. As long as
13 we're on the same theme, do you have other people
14 that you wish to speak on the subject?

15

16

17

18

19

20

21

22

23

24

25

1

2

3

4

5

6

7

8

9

10

11

12

13

14 MAYOR TIFFANY: We'll bring the meeting
15 back to order.

16 MR. CONANT: We're going to return to the
17 medical aspect of it, if you will. By the way, note
18 that Chuck Stroebel did say that the grant of the
19 California project was peer reviewed and he didn't
20 know about the WHO or the National Radiological
21 (inaudible), but you can always refer to material
22 we gave you, or if you wish us to, you can look on
23 our website where they're both covered.

24 Next in our panoply of outstanding
25 physicians is Steve McCue.

1 MR. BENNETT: Are all this information
2 that we're be handed, is that going to be part of
3 the record?

4 MAYOR TIFFANY: Tim, can we get a ruling
5 on that?

6 MR. KUNTZ: Yes. The general rule followed
7 by the Planning Commission was rather than make
8 determinations of relevance or materiality, anything
9 that would be submitted would become part of record,
10 and I note that you were just given something
11 perhaps from the Chuck Stroebel presentation, and
12 I've asked Cynthia to get a copy of that and make it
13 part of the record.

14 MAYOR TIFFANY: Okay. Thank you.

15 MR. MCCUE: Thank you, Frank. I appreciate
16 the chance to address the Council. I'm Steve McCue.
17 I'm a fairly long-time resident of Sunfish Lake. I
18 don't have any expertise with EMF. I am a practicing
19 physician in St. Paul in obstetrics and have over
20 the years noticed the literature go by about
21 computer terminals, electric blankets, heaters in
22 waterbeds and microwaves and how this might
23 influence the presentation.

24 It's all been a lot of smoke and never any
25 real substance. Recently Roger educated me a little

1 bit on some of the things that have come out in this
2 past year particularly the California study, and
3 it's interesting to see that the numbers are fairly
4 significant when you talk about almost doubling the
5 miscarriage rate to 1.8 and the 16 milliGauss number
6 that was thrown out when we're looking at people up
7 around 64 along this line for their exposure. That
8 seems just, to somebody that's not very tuned into
9 this in a big way, a large number and kind of a
10 scary number.

11 And the obstetrical story with the
12 exposure and miscarriages is a little interesting
13 because the cell mass starts out when we all begin
14 as a blastocyst (phonetic) that trophoblast
15 (phonetic) that nourishes it along with the early
16 embryo is incredibly sensitive to environmental
17 toxins among other things.

18 The cell mass is growing in a geometric way
19 as are the cells proliferating, and it just seems to me
20 to be a pretty good yard stick of exposure just looking
21 at the miscarriage rate. I think the other thing that
22 was interesting to me was that we haven't seen any real
23 numbers in general defects, only miscarriages, but I
24 see this study as a real red flag, something that
25 demands further confirmation and

1 maybe exploration, and I would contend that looking
2 at something as a weak study is something that would
3 be perceived by somebody that isn't living near one
4 of these lines. Thank you.

5 MAYOR TIFFANY: Thank you. I'd like to
6 complete the testimony on the health issues of
7 electromagnetic fields. I'm very, very doubtful that
8 we're going to finish this thing up tonight, and we
9 need to if we're going to have our regular City
10 Council meeting.

11 I'm anticipating that we may have to
12 recess this hearing to a date later this month and
13 still meet our deadline to wrap the whole thing up to
14 closure in early March. So as long as we have the
15 expertise here tonight, I'd like to concentrate the
16 rest of the testimony until we run out of time on the
17 EMF issue. Do you have other people?

18 MR. CONANT: We do. We have actually two
19 more to go. We have Dr. John Lamey.

20 MR. LAMEY: Thank you for letting me address
21 the Council here. They gave me three minutes, so I
22 hope I can get done in three minutes.

23 I graduated from the University --

24 MAYOR TIFFANY: Just give your name for the sake
25 of the record.

58 MR. LAMEY: I'm Dr. John Lamey. I live at
2 55 Windy Hill Road, lived here in Sunfish Lake for
3 24 years. I practice in Inver Grove Heights as a
4 general family medicine practitioner. And in the
5 last year or so with the controversy, I thought I'd
6 do my own individual research and investigation and
7 carne up with the same conclusion that probably the
8 Council already has after listening to all the
9 testimony is that the EMF does cause not only the
10 brain cancer and miscarriages and increase in
11 Leukemia, but Lou Gehrig's disease. It's a
12 demyelinating peripheral nervous condition. It's
13 fatal.

14 And in addition to that, brain tumors. I
15 have a couple patients that have brain tumors
16 recently diagnosed that live not under the line, but
17 near the line. And because of the nearness -- I live
18 about 200 yards from the line, I'm very concerned
19 about it. And listening to the rhetoric tonight from
20 the Public Health Department, it reminded me of the
21 discussion that was had a few years back about
22 smoking not causing lung cancer, and I think we all
23 know how that turned out.

24 So this may similarly ten years from now
25 turn out to have the same conclusion that it was

1 cancer causing whereas right now we're hearing from
2 the Health Department that it's a very low risk.
3 The other thing as in medicine as in any other walk
4 of life, we try to, if we find out there's a danger
5 to our patients or neighbors in the public, we try
6 to warn them to stay away from those dangers. And
7 since there is the minimal doubt and some probable
8 doubt here no matter how minimal it is, I think
9 that all of us especially when you vote, you should
10 definitely consider -- because if there is a
11 minimal doubt, to vote down Xcel's request to raise
12 the line.

13 MAYOR TIFFANY: Thank you very much.

14 MR. CONANT: Arnie Svendsen.

15 MR. SVENDSEN: Good evening. My name is
16 Arnie Svendsen. I live at 1 Sunfish Lane. I've
17 resided there since 1983. I'm a board certified
18 orthopedic surgeon, and I'd like to take a few
19 minutes of your time to take you a little bit a
20 way through biological effects of EMF at the
21 cellular level.

22 You have heard contradictory testimony
23 as to whether tMF can affect biological systems at
24 cellular levels. I hope to present information
25 tonight that will be useful in your deliberation.

1 I'll try to be brief but more importantly, I'll
2 try to be accurate.

3 I will focus on the clinical applications
4 of EMF to fractured healing, that is, the use of EMF to
5 produce biological response in bone. Specifically I
6 will discuss the use of EMF to affect healing in
7 nonunions of the tibia since that is the most
8 frequently used application of EMF in orthopedics.

9 First, a couple of definitions. Tibia
10 as most of you are aware is the large weight-
11 bearing bone in the lower extremity between the
12 knee and the ankle also known as the shin.

13 Nonunion is a term used to describe a
14 fracture of a bone with no evidence of healing. In
15 the tibia, this is after nine months of
16 immobilization, at this point it is assumed the
17 normal reparative process is unable to respond or
18 does so inadequately.

19 Nonunions which is a very difficult
20 treatment problem, and the most common remedy is
21 surgical bone grafting which is a major operative
22 procedure with its associated risks. It was for
23 these reasons that research was directed for a
24 possible non-operative solution, and EMF bone

25

1 As with many occupations, orthopedic
2 surgeons rely on journals for current information on
3 their specialty, and the one most widely read is the
4 highly respected Journal of Bone and Joint Surgery.
5 I will make reference from this journal tonight.
6 First, a little bit of history. The first
7 documentation of the use of direct perempt
8 (phonetic) to elicit healing of a nonunion appears
9 in a French scientist's literature in 1812. Other
10 authors describe encouraging results, but despite
11 success, that technology disappeared from mainstream
12 medical research by the end of 19th century because
13 claims of its efficacy had remained unsubstantiated.

14 Interest in electrically induced bone
15 growth was rekindled by Yasuda (phonetic) and Yasuda,
16 an orthopedist in the Japanese literature in 1957,
17 they postulated that electrical signals similar
18 to those generated by mechanical stress could
19 enhance fractured healing.

20 These reports encourage both lab and
21 clinical research on electrically induced bone
22 formation and healing with the use of various forms
23 of electrical stimulation.

24 However, the clinical effectiveness of bone
25 graph growth stimulation proved to be easier to

1 demonstrate than the mechanism or mechanisms of
2 action of electrically induced osteogenesis or new
3 bone formation.

4 Next I'd like to refer to the three
5 papers. The first is by Dr. Basset, et al., and
6 that's on the screen right here. This is a paper
7 published in 1981, and I want to focus on these
8 three papers over a period of 21 years that
9 demonstrate to you the evolving nature of the study
10 of cellular effects of external EMF.

11 Dr. Basset's study was conducted at
12 the New York Hospital, Columbia Presbyterian
13 Medical Center and the Orthopedic Research
14 Laboratory of Columbia University. This was a
15 clinical study of 127 tibial nonunions based on
16 systematic 25-year investigation of bioelectric
17 phenomenon in the skeletal system and their role
18 in regulating the cellular elements.

19 This involved in vivo and in vitro testing
20 which were successful and confirmed by other labs.
21 They achieved 87 percent success rate with this
22 surgically noninvasive method. Dr. Basset's 127 cases
23 was part of a larger study of 1,000 cases in which
24 the overall success rate was 80 percent. This study
25 was done under strict protocol with strict coil

1 placement as the source of the EMF and a pulse
2 generator which was plugged into a standard 110 volt
3 outlet.

4 And I quote Dr. Basset in his article,
5 "Even at the early stage of development, this new
6 noninvasive method for modifying cell behavior in
7 the skeletal system has expanded our ability to care
8 for complex and challenging nonunions. Suffice it to
9 say that physical mechanisms are more clear at this
10 stage than our fundamental cellular mechanisms."

11 The next article published in 1987 also
12 in the Journal of Bone and Joint Surgery by Leroy
13 Levine, an orthopedist Massachusetts General
14 Hospital and Dr. Grazinski (phonetic) who is a
15 scientist at the MIT Department of Electric
16 Engineering and Computer Sciences.

17 Their article's current concept review
18 of electrical stimulation to repair of bone was just
19 that. It was a review of the history of the process,
20 the ongoing clinical investigation and research into
21 the subject, and I quote their study, "While many
22 positive effects have been reported, a clear
23 understanding of invasive mechanisms relating to
24 osteogenesis has yet to emerge. Resolution of the
25 issue of mechanism is central to understanding the

1 validity of the fundamental hypothesis that
2 endogenous current produce by deformation of bone in
3 vivo acts as a signal to osteo cells.

4 This article was a challenge to the
5 scientific community at large that more intense
6 research was needed. As a by-product, computer
7 technology, research methodology and technique
8 refinement as well as ongoing discoveries (inaudible)
9 project, more information is becoming available.

10 The final article was published October
11 2001 in the Journal of Bone and Joint Surgery, and
12 this is a study by Carl Brighton and his associates
13 at the University of Pennsylvania, Department of
14 Orthopedic Surgery and Bioengineering.

15 This was an in vitro study showing the
16 five chemical pathways that are activated in the
17 signal transduction with the application of electric
18 magnetic field to bone cells. A simplistic review of
19 the study shows that DNA content was measured after
20 24-hour exposure with externally applied EMF.

21 I don't know how well you can see that,
22 but what they determined after a 24-hour exposure
23 to electromagnetic fields, they found an increase
24 in intracellular calcium. They found an increase in
25 cytosolic calcium and they found an increase

1 activated by skeletal calmodulin. Calmodulin is a
2 substance known to promote nucleotide cythesis
3 (phonetic) and cellular proliferation.

4 To quote the authors, "There is now solid
5 evidence that there are distinct transduction
6 pathways for mechanical stimulation and that
7 electrical stimulation with electromagetic coupling
8 leads to a proliferative response to bone build.
9 Electro stimulation is finally moving beyond the
10 black box image that it's had for too many years.
11 These studies provide a theory of basic cellular
12 mechanisms to augment the clinical reports of the
13 efficacy of electro stimulation and bone repair."

14 I hope this information has been of help
15 to you. I urge you to consider carefully the
16 testimony of Drs. Martin Blank and Magda Havas
17 before the Steering Committee in March of 2001
18 regarding the ongoing research into gene alteration
19 by electromagnetic fields. The decision you make
20 tonight will have ramifications on the present and
21 future residents of our community. Thank you.

22 MAYOR TIFFANY: Thank you very much,
23 Arnie. What were the milliGauss that is necessary to
24 facilitate bone healing?

25 MR. SVENDSEN: The study by Basset and

1 others in the mid 1970s used a 2000 milliGauss
2 source. They applied this for ten hours a day, and
3 the average duration for healing was about 5.2
4 months.

5 At the present time, the state-of-the-art
6 is an Orthologic 1000 bone stimulator for alternating
7 current, it produces 400 milliGauss, direct current
8 200 milliGauss. The patient uses this for 30 minutes
9 a day, so they reduce that from ten hours to 30
10 minutes and they reduce the milliGauss from 2000 to
11 400.

12 MAYOR TIFFANY: So 400 is the smallest
13 dose that will initiate bone healing?

14 MR. SVENDSEN: At the present time.

15 MAYOR TIFFANY: Any questions of Dr. Svendsen?
16 Okay, anyone else that cares to testify on
17 the whole EMF and health issue?

18 MR. CONANT: That's all we have,
19 Mr. Mayor. I'll just sum up in about three sentences
20 what we see on EMF. This is the conclusions of the
21 EMF project, and again to repeat, that's the 7
22 million dollar project that's been completed by the
23 Department of Health in California, and they say
24 that it's more than 50 percent possible which we
25 call probable that EMF at residential levels causes

1 childhood Leukemia, adult brain cancer, spontaneous
2 abortion and ALS which is Lou Gehrig's disease which
3 of course is what (inaudible) passed away with and
4 she had a daily exposure of over 50 milliGauss on
5 average.

6 Two of the categories they weren't quite
7 sure whether it was greater than 50 percent which
8 we call probable or less than 50, so they divide it
9 and that's female breast cancer and adult Leukemia,
10 and then they thought that there was at least some
11 possibility, maybe not an association, but the
12 causation, that it causes Alzheimer's disease, male
13 breast cancer, childhood brain cancer, heart and
14 suicide.

15 And then I want to finally end up with a
16 quote. This is from Ben Wartenberg's study done for
17 this California study. It appeared in the January
18 2001 issue of the Journal of Bio Electromagnetic
19 Study. It was done for the California study. Ben
20 Wartenberg is with the Robert Jones Foundation in
21 New Jersey with the hospital there and he also was a
22 prime researcher on the 1996-97 National Research
23 Council study that at that time was seen as not
24 finding an association; although, has been
25 subsequently reversed so that it does find an

1 association.

2 He wrote the following and this was
3 presented to the committee. "Many people believe
4 there are no data to support an association between
5 residential magnetic field exposure and childhood
6 Leukemia. To the contrary. That that is strongly and
7 relatively consistently supported by the
8 association; although, the estimated magnitude of
9 the risk is moderate. If one chooses to use the
10 summary estimate for interpolation given the
11 widespread exposure to magnetic fields, they suggest
12 perhaps as much as a 15 to 25 percent increase in
13 childhood Leukemia which is a large and important
14 public health impact."

15 MAYOR TIFFANY: That's the end of the
16 testimony you have.

17 MR. CONANT: Regarding EMF. We will be
18 talking about other topics.

19 MAYOR TIFFANY: I'm still troubled by
20 Dr. Murray's presentation in which he stated, I
21 think I heard him clearly, that the World Health
22 Organization and the UK National Radiation
23 Protection Board had reversed their previous
24 recommendations or previous findings that said there
25 was no effect but now concludes that there is an

1 action is justified.

2 I would expand that question to make it
3 more generic than the question I asked you earlier.
4 Are there any state, national, international health
5 organizations that have concluded that EMF is a
6 definite health hazard and that we should introduce
7 or insist upon strict regulatory controls?

8 MR. STROEBEL: I'm not aware of any state
9 or federal health agency that has made that
10 conclusion.

11 MAYOR TIFFANY: What about the two reports
12 that Dr. Murray referenced?

13 MR. STROEBEL: Well, the World Health
14 Organization is in the process of conducting one. I
15 don't think they've made conclusions.

16 MAYOR TIFFANY: And the UK National
17 Radiation Board?

18 MR. STROEBEL: I'd need to go back and look
19 at exactly what those -- I know they came up with some
20 standards and reviewed the research, and I believe
21 that their conclusions are on our website. It's one of
22 those conclusions of expert scientific committees, and
23 that was in the recent last two years that that's been
24 public.

25 MAYOR TIFFANY: I think you mentioned the

1 state of Virginia had made some kind of report.
2 Could you briefly elaborate on that?

3 MR. STROEBEL: Yeah. The state of Virginia,
4 the legislature requested the Health Department to
5 conduct a review of the research, and it was as recent
6 as within the last year. And their conclusions were
7 basically that they're very consistent with ours in the
8 sense that there's a weak association and some studies,
9 other studies show no association, and there's
10 insufficient evidence to establish a cause and effect
11 relationship at this point in time between magnetic
12 fields and Leukemia.

13 MS. FARIS: When you said that you were
14 not aware of any studies or any like World Health
15 Organizations coming up with some rigorous
16 standards, does that mean that you -- that it
17 absolutely does not exist and that you have read
18 every single thing that is on the table, or does
19 that mean that you're just plain not aware of it?

20 MR. STROEBEL: It's possible there's
21 something out there, but in terms of health based
22 standards, there are numbers out there based on
23 different things, but it's important to make a
24 distinction whether it's a health based number or
25 not, and I think it's highly unlikely that there's

1 any state that has a truly health-based standard
2 for magnetic fields for cancer.

3 MS. FARIS: Are you affirmatively stating
4 that you absolutely know that the World Health
5 organization has not made a reversal on their
6 previous stand?

7 MR. STROEBEL: The last time I looked at
8 their website which was a month ago as I was
9 developing the web page, and there's a link to that
10 World Health Organization on our web page, they were
11 in the process of initiating a review. I wasn't
12 aware that there has been any conclusion or
13 reversal. I think that's highly unlikely. My
14 understanding was that the process was being
15 initiated.

16 MS. FARIS: Where did that reversal come
17 from? I have too much paper. Who can tell me?

18 MAYOR TIFFANY: Dr. Murray I think mentioned that.

19 MR. STROEBEL: Frank, you have a fact sheet
20 too from the World Health Organization?

21 MAYOR TIFFANY: That you just passed out.

22 MR. STROEBEL: Well, I just saw one up
23 there.

24 MAYOR TIFFANY: That's right. That's part
25 of the official filing for the packet. It's a report

1 from the October of 2001 from the World Health
2 Organization to my reading did not change anything
3 conclusively.

4 MR. STROEBEL: So there's no indication of
5 a reversal in that fact sheet?

6 MAYOR TIFFANY: No.

7 DR. MURRAY: The World Health Association or
8 World Health Organization posture 1988 based on an --
9 excuse me, 1998 fact sheet said, "EMF field levels
10 around transmission and distribution lines are not
11 considered a health risk." Then in the October of
12 2001 fact sheet it says, "The World Health
13 Organization recommends that power line siting
14 decisions should consider ways to reduce people's
15 exposure.'" further the international agency for
16 research and cancer which is the WHO organization or
17 sub-body characterized EMF as a group 2B carcinogen
18 with a quote, "Fairly consistent statistical
19 association between a doubling of risk of childhood
20 Leukemia and EMF exposure greater than 4 milliGauss."

21 Therefore, the World Health Organization
22 recommends again, "Power lines siting decisions
23 should consider ways to reduce people's exposure."

24 MS. FARIS: I have a question for you if
25 you could educate me a little bit. EMF, is that

1 completely different than radiation?

2 DR. MURRAY: EMF is a part of the -- the
3 kind of radiation that we use in medicine is a part
4 of electromagnetic spectrum, but electromagnetic
5 radiation incorporates anything from radio waves to
6 microwaves to ultra violet energy to infrared
7 energy to the light spectrum. The whole spectrum of
8 electromagnetic energy is included.

9 MS. FARIS: I know that last week a study
10 came out that said that mammograms themselves may
11 cause breast cancer to women because of the
12 radiation intensity. I don't know, but there is some
13 question then as to whether or not that is possible.
14 But would that not also apply down the road to EMF?

15 DR. MURRAY: Yes, it could. The potential
16 for repeated mammograms to end up actually causing
17 the disease that it's supposed to uncover has been a
18 concern for a long time, and, in fact, has been the
19 source of a good deal of research to try and figure
20 out ways to reduce radiation exposure for women
21 undergoing mammograms. So I think that there may be
22 indeed be an analogy between that concern and what
23 we're talking about here.

24 MAYOR TIFFANY: So your analysis of the
25 World Health Organization report confirms what

1 everybody else is saying, that it's prudent to reduce
2 EMF exposure wherever possible.

3 DR. MURRAY: Absolutely. They do in that
4 they came up with a pretty concrete or specific
5 exposure level. Fairly consistent statistical
6 association between a doubling of childhood Leukemia
7 and EMF exposures greater than 4 milliGauss. So
8 implicit in that if that number is there, implicit in
9 that along with their recommendation, it seems to me
10 to avoid siting homes next to EMF exposure areas
11 would be the logic; that you'd want to have a home
12 where exposure is going to be less than 4 milliGauss.

13 MAYOR TIFFANY: So everybody would agree
14 without any dispute that wherever possible EMF
15 exposure should be reduced?

16 DR. MURRAY: Right.

17 MS. FARIS: Were you part of compiling the
18 data on the homes that are under the power lines in
19 Sunfish Lake?

20 DR. MURRAY: No.

21 MS. FARIS: Are you familiar with results
22 of that?

23 DR. MURRAY: Roger I'm sure knows about
24 that, but I don't.

25 MS. FARIS: What was the finding on that?

1 Again, I have it in a paper. I've been through it,
2 but I can't find it.

3 MR. CONANT: Well, this is actually CAI
4 developed the data, and I think it's generally
5 agreed to, but at the edge of the right-of-way what
6 we're seeing under the present line, you saw it in
7 the graph there at peak time exposures, we're
8 talking about -- let me get the graph back out.

9 MAYOR TIFFANY: Is that your question or
10 was your question the diseases that have been
11 associated with the line?

12 MR. CONANT: The question was what are the
13 milliGauss? What is the exposure? This is CAI data
14 of 109 milliGauss and the estimates are that it will
15 go down to 58. There is a reduction if that's the
16 implication that there is a reduction, and in that
17 sense you're saying that's just what the World
18 Health organization and these others are saying and
19 the NIEHS reduce it. But we're saying reduction is
20 only temporary.

21 It's going to go back up and in any
22 event, nobody was envisioning that even after the
23 reduction the resulting milliGauss would be far
24 above the standards. Now, what then if they don't
25 put the new line in, we're stuck with the old line.

1 of the natural question. And the answer to that in
2 our way of thinking is that we will deal with the old
3 line, and it is our objective to get the old line out
4 in addition, but that's not part of the process.

5 MS. FARIS: But I did read something where
6 someone had at least taken some kind of a census of the
7 homes that are under the line and any of the
8 diseases that some of those people have experienced.

9 MR. CONANT: Yes. Ingrid can speak to
10 that better than I can. The diseases, Ingrid, that
11 people have associated with under the line.

12 MS. CONANT: I'm Ingrid Conant. Starting
13 from the east going west, you have one home with
14 multiple miscarriages, then you have Parkinson's
15 disease, then you have Lou Gehrig's disease, then
16 you have breast cancer, then you have Parkinson's
17 disease, then you have breast cancer, then you have
18 stomach cancer, then you have bladder cancer, then
19 you have a blood disease, then you have breast
20 cancer. You just go down the line.

21 MS. FARIS: Is there anyone under the line
22 that doesn't have one of those diseases?

23 MS. CONANT: No.

24 MAYOR TIFFANY: Roger, could you come back
25 to the podium because there's one thing you said that

1 I'd like to follow-up on. You said the levels that
2 were shown on the graph were above the standard.
3 What is the standard?

4 MR. CONANT: The standard is exactly what
5 Phil was referring to. That's essentially the same
6 issue that there is a very consistent now pattern in
7 the literature saying that exposures above 2 to 4
8 milliGauss double the risk of childhood Leukemia.
9 Above 12 milliGauss enhance the risk of breast
10 cancer and above 16 milliGauss enhance the risk of
11 miscarriages substantially, and that is a very
12 constant theme.

13 It is remarkable indeed how consistent
14 those numbers have gotten over the last year. So the
15 standard that I think any reasonable person would
16 establish is that you want to not put -- you want to
17 put people in environments where they do not have
18 average exposures above those levels.

19 MAYOR TIFFANY: My question about
20 standard, has any state or regulatory body
21 established a standard?

22 MR. CONANT: No. No state or regulatory body
23 has established a standard. That's not surprising
24 since this is new information and the new approach if
25 you want to think of that, the research

1 has just emerged in the last year and a half or so.
2 So it's almost premature as -- our own department of
3 health is establishing every day. It takes these
4 departments awhile to come up with standards;
5 however, the whole objective and purpose of the
6 California project is to come up with standards, and
7 it is almost sure that within the next year, we will
8 indeed get standards out of the California project.
9 There is more to the California project than just
10 the health effects that we've discussed here.

11 They're also doing quite a bit of
12 analysis on the issue of how much should you pay to
13 reduce the EMF for people, and they've already
14 established that a human life irrespective of the age
15 is worth \$6.5 million. So that's the first step
16 towards coming up with standards.

17 The next step is to find the risk ratio
18 and the lives that will be saved and then the third
19 is to come up with an actual concrete standard of
20 what you want to do. So within a year, I think we
21 will see a standard, but of course, that's not
22 going to be of any help to us in this particular
23 process here.

24 MR. BENNETT: He just brought up something
25 that I guess I'd like to follow up on a little bit,

1 and that was that you inferred that your concern over
2 the double circuited line, once that's in, it would
3 be pretty permanent and you said something to the
4 effect our goal is to eliminate the existing line,
5 and I think that's what you said anyway, and that
6 you'd take care of that.

7 It's my understanding though that didn't
8 you appeal to the Department of Health or PUC or
9 somebody to remove that line and that was not
10 possible?

11 MR. CONANT: We went through the PUC and
12 asked them to have the present line removed on the
13 grounds that it was a health risk, and the PUC did,
14 in effect, two things. One is that it wasn't going
15 to do that, but that, in fact, we had raised some
16 genuine questions.

17 I personally spent more than 7 hours one
18 on one talking to the PUC on this issue. And they
19 said we're not convinced, but we're going to do two
20 things, we're going to set up an interdepartmental
21 task force to investigate the issue and they did set
22 that up and presumptively, although I've not heard
23 much about it, that the department is -- that that
24 task force is still engaged in its labor.

25 The second thing they said very explicitly

1 was, look, we're not sure, but on the other hand, if
2 there's a change in the science, we invite you to
3 come back. And, in fact, we fully intend to go back
4 to them, and what we're waiting for indeed is the
5 publication of the final California study, and maybe
6 even wait until the PUC has completed its work
7 because we're utterly confident at that point that
8 they will come up with sufficient information to make
9 a convincing case to get the present line removed. So
10 indeed we do have plans to go back to the PUC to
11 accept their invitation to go back and revisit the
12 issue with them.

13 MAYOR TIFFANY: Okay. Anything else on
14 the whole EMF issue then? Before we end this,
15 Mr. Stroebel, are there any last minute remarks
16 you wish to make? Okay. Thank you very much.

17

18

19

20

21

22

23

24

25

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25

MR. KAMPMEYER: Michael Kampmeyer. I live on the other side of the city and I'm not affected by the power lines. I'm an attorney in St. Paul, and I have sued NSP on occasions, been very successful, obtained significant multi-million dollar verdicts, and I do not hesitate to sue NSP at this point. I'm not doing that because I'm nearing retirement, so I'm not here for that purpose.

I'm just suggesting that don't be afraid of going to court. Don't be afraid of resolving this issue. These people have very significant potential injury and damages against everybody, not only NSP, but the city and anybody else involved that causes this situation to continue.

I mean, I've only been to -- this is the second meeting I've been to, so I don't have much factual information about this whole thing, but I get a little irritated just sitting here listening to some of the information that's -- Mr. Stroebel should be subjected to cross-examination on his opinions. "Not to my knowledge, not to my knowledge." Well, what is his knowledge and what knowledge is available that can determine this

1 whatever fact-finding body is listening to this.

2 So my position is not one of an
3 advocate. I'm not interested in any of your
4 litigation. I just say, don't be afraid to go to
5 court. This matter may have to be resolved in court,
6 and fine. That's fine. Then the parties get together
7 and they resolve this thing, and these people are
8 protected down the road.

9 I get a little animated, I'm sorry, but
10 it does concern me, and I see litigation down the
11 road, class actions against the city by all of these
12 people who apparently one death is worth \$6 million.
13 Well, what the hell is the cost of burying some
14 lines or whatever has to be with these. I'd love to
15 cross exam people if I were still in the business,
16 and I have before. And they look pretty silly, I'll
17 tell you that. Look at the overall picture. There's
18 a lot more to be done to what you're doing and
19 probably a lot more testimony.

20 MAYOR TIFFANY: Thank you very much. I
21 appreciate your comments.

22

23

24

25