

1 the people in the geophysics department, somebody in the university allowed, I  
2 believe it was Sprint, to build a cell telephone tower on the campus and that's  
3 the thing that's giving them the most trouble right now, the interference  
4 from...that they're getting in their equipment from this cellular telephone tower.  
5 So I would conclude at that point and just say that we are working with them and  
6 I think we're going to be able to work out our differences.  
7 Okay. Thank you.

8 RAGONETTI: Madame Chair in the interest of time we conclude  
9 our presentation now. And we'd like to reserve time for rebuttal after public  
10 comment and presentation by others. And at that time we'll address the staff  
11 and Planning Commission conditions but Mr. Carl's description of our position  
12 on those conditions is substantially accurate. Thank you very much for your  
13 attention.

14 HOLLOWAY: We'll take...what? Alright. Let's take about a 15  
15 minute break. When we get back we will hear from Dr. Hoffman. He will not be  
16 able to be here for the other hearings so we need to take the testimony and then  
17 we'll go on. So about 15 minutes. Where's Dr. Hoffman? Alright. Well he used  
18 to be right here. Okay. Tim, will you tell Dr. Hoffman he's next so that...

19 CARL: Yes. Dr. Hoffman?

20 HOLLOWAY: Thank you.

21 HOFFMAN: My name is Dr. Richard Hoffman. I've been the  
22 Chief Medical..

1 HOLLOWAY: Can I have you spell your last name and your  
2 address?

3 HOFFMAN: H-O-F-F-M-A-N. Address 4300 Cherry Creek Drive  
4 South, Denver Colorado 80246. I've been the Chief Medical Officer of the State  
5 Health Department since May 1998, State Epidemiologist since February 1987.  
6 I arrived in Colorado in July of '86. I have worked previously for five years for  
7 the Centers for Disease Control, three, the three prior to coming to Colorado  
8 were for the National Center for Environmental Health at CDC where my area of  
9 concentration was on health effects of exposure to dioxin. I'd like to make a few  
10 comments regarding this study that we conducted along with Jefferson County  
11 Health Department and with consultation from Dr. Reif at Colorado State  
12 University. The first I want to say is that I don't see things nearly as definitively  
13 or clearly as Dr. Cole and Dr. Bushberg stated in their presentations. Dr. Cole  
14 presented information about the limits of epidemiology. In my view  
15 epidemiology is most challenged when we're trying to understand long term  
16 health effects from low dose exposure. And in the studies that we've been  
17 talking about defining who is exposed and who is not exposed and what amount  
18 of exposure they've had over a course of many years has been not possible.  
19 And that causes major limitations in our ability to use epidemiologic data and  
20 draw definitive conclusions. There's been a lot of discussion earlier this evening  
21 about the standard, the safety standard, 200 microwatts per square centimeter.  
22 I've tried to and have my staff help me look at what is the basis for this standard.  
23 I can't say that I'm at the original documents for this but it appears to me that it is

1 based on acute health effects not based on long term risk of cancer. Generally  
2 when we deal with a standard for cancer protection it is expressed in terms such  
3 as we do not want an excess cancer risk of 1 in 10,000 or 1 in 100,000 over the  
4 course of a person's lifetime. We don't want to increase their risk by that much.  
5 And none of the material I saw was presented that would make me think that's  
6 the kind of standard that is being used. That kind of makes sense. I don't think  
7 the data are strong enough to set a number that would increase your cancer risk  
8 by 1 in 10,000 over the course of your lifetime. I don't think we have enough  
9 information to set that kind of standard yet. So as they say all that we can tell is  
10 that this 200 microwatts per square centimeter is a standard based on acute  
11 short term health effects. And there's a lot of difference in those kinds of  
12 standards. If you take two aspirin that would be safe. If you take 100 aspirin at  
13 one time you should be in the emergency department fighting for your life. If you  
14 take two aspirin every once in a while it won't cause any harm. If you take two  
15 aspirin every day for months and months and months and years it may cause  
16 bleeding in your stomach. So the degree of exposure and the length of  
17 exposure is very important in epidemiology in terms of drawing conclusions. Dr.  
18 Cole said that we in our study were doing a fishing expedition. I want to say that  
19 we used totally standard approach that's used throughout the country  
20 recommended by the Centers for Disease Control. We had to use our existing  
21 data which is the Central Colorado Cancer Registry. But the types of cancers  
22 that we selected to study in our first study from June of 1998 were based on  
23 published literature about potential associations of radio frequency exposure

1 with cancer. So it wasn't so mindlessly fishing. When we did our follow up  
2 study, the one that was released February 17<sup>th</sup>, 1999 it was based on  
3 information brought to us by members of the community and of course we serve  
4 the community and we looked into their concerns. We could not study every  
5 single type of cancer because this lock group analysis done in February of 1999  
6 meant that we had to go back and essentially take the person who had cancer  
7 their street address and figure out which block group it is. And that was quite  
8 labor intensive so to do that for all types of cancer from the original study and  
9 still meet deadlines for trying to get a report out so that they could be considered  
10 by the County Commissioners was not possible. Nevertheless brain tumors  
11 were something that had been mentioned in the literature and so it seems totally  
12 appropriate to me that the one thing that we studied. I was the person who  
13 knowing that this was a controversial asked the CDC to review the report back in  
14 January. Met with them in Atlanta and that is why the letter is sent back to me  
15 but I think some of the sentences had been lifted out of context. It's been  
16 asserted that our study was not did not demonstrate a causal relationship. I just  
17 want to make it clear it didn't say that there was not an effect. It didn't say that  
18 there was an effect. It did not reach a conclusion but that is not the same as  
19 saying there's nothing there. It just did not reach a definitive conclusion. I  
20 happen to differ with Dr. McGeehan's sentence that's been extracted from the  
21 letter that says, "we are not convinced that there is in fact a cancer cluster in this  
22 population". It might be you can't take away the statistics. There is a  
23 statistically significant increase rate of malignant brain tumors in males in Block

1 Group 3. There is a statistically significant increase rate of benign tumors in  
2 females in Block Group 2. Those statistics will not go away. The issue is  
3 though can you combine Block Groups 2 and 3. Is it associated with radio  
4 frequency emissions from the towers? And the CDC letter talks about some of  
5 the problems or limitations in trying to draw that conclusion. We, in our report,  
6 also listed off those kinds of limitations. For example, we interviewed families in  
7 Block Group 3 where there were persons who had brain cancer and a number of  
8 them had worked in occupations such as an airplane pilot or weather radar or  
9 computer software which had been associated with an increased cancer risk.  
10 And the one possible idea of dealing with this interview data is to say you know  
11 what that explains it. That's entirely...the entire...and that explains why they got  
12 cancer. They worked as a pilot or electrician or radar. But another alternate  
13 explanation is that you take radio frequency emissions from the antennas plus  
14 their occupation and their risk was magnified greatly and that's why they  
15 developed cancer. My point is I don't know whether to discount it because of  
16 their occupations or that increased their risk when you add it in additional cancer  
17 potential promoter. So the study won't answer that. That's a limitation of the  
18 study but it also I just want to make the point you can't draw definitive conclusion  
19 about that one way or another. I heard Dr. Cole talk about multiple  
20 comparisons. That's where if you essentially if you do enough statistical tests  
21 you are going to find one that is statistically significant. Our report we were quite  
22 careful about that. We recognized that far in advance and in our report we  
23 counted up those tests and we did 24. I heard testimony that we did something

1 like 150. Our count was 24 tests were done. If it was all due to pure random  
2 chance at the usual scientific level, less than one would have been statistically  
3 significantly elevated but instead we found two that were and none that were  
4 not. I was interested in Dr. Cole's statistics because he was actually doing a lot  
5 of statistical tests that we had not done and one of them was the one you saw  
6 about that radio frequency emissions in other Block Groups besides 2 and 3  
7 might actually lower your risk. I just want to say that's not one that the State  
8 Health Department and Jefferson County did. That was something that he must  
9 have done by examining the data himself prior to coming here. We made  
10 recommendations at the end of the report. Oh, one other point about the  
11 occupations, I think logically there's a problem in saying that there's no health  
12 effect, no cancer caused by radio frequency emissions. You know pretty much  
13 making a statement there's nothing causal there and then saying that people  
14 who were in certain occupations you have to discount them because those  
15 occupations which have electromagnetic frequency exposure, their cancer is  
16 caused by those occupational settings. You can't have it both ways. You can't  
17 say it's true occupationally but not true in a residential setting. So that's a  
18 concern of mine. Now at the end of our report we said that there were...we  
19 gave a number of recommendations, one of them was for more studies and  
20 potentially to look at other health outcomes. I just want to say from my  
21 experience with dioxin and I'm on the National Advisory Committee on childhood  
22 lead poisoning prevention, both of those, that you do need to look at other health  
23 outcomes. I heard Dr. Cole talk about that lead doesn't cause cancer. That's

1 true. I don't know the information that does. But it sure does a lot of other  
2 harmful effects and so we have to keep our minds open to all potential health  
3 effects. In the dioxin area we studied all sorts of problems with the immune  
4 system, the skin, the blood cells, etc. so we knew there was a problem with  
5 studying people over a long time to see if they develop cancer. They move in.  
6 They move out. It's hard to get a handle on the population but as a result we  
7 looked at shorter term things and it may be that we need studies of people who  
8 are exposed to radio frequency emissions to look at other health outcomes  
9 besides cancer. We also said in our report that there was no need for residents  
10 to move, to have catscans or MRI scans of their brain etc., but I heard you ask  
11 the question earlier would I live there. I just want to answer I don't know the risk  
12 myself. Would I live on Lookout Mountain? I don't know what the risk is. I can't  
13 quantify the risk exactly but it's our view in our agency that there is...there are  
14 some studies that have been published that indicate that there may be an  
15 association and it's on that basis that we have evolved to a position consistent  
16 with what Dr. Johnson put in his transmittal letter to you dated February 17<sup>th</sup>, in  
17 which he talked about trying to achieve as low as reasonably achievable  
18 exposure to radio frequency. And that would be our position as well, that you  
19 need to examine all the possible alternative sites and include in that what  
20 Lookout Mountain and I'm pleased to hear that that is being discussed this  
21 evening and try to make a decision based on a review of all the available  
22 options. And with that I will stop.

23 HOLLOWAY: Do you have any questions?

1           LAWRENCE:                Yeah. I don't have any right now. Maybe when it  
2           comes to some other point later.

3           HOFFMAN:                    Thank you.

4           HOLLOWAY:                    Thank you. Okay. I guess you're going to ...are you  
5           going to start with Karen Bull?

6           CARNEY:                      She...we're rearranging witnesses because of the  
7           lateness of the hour. I guess it's me.

8           HOLLOWAY:                    Okay. Deb?

9           CARNEY:                      Good evening. My name is Deborah Carney. I live  
10          at 21789 Cabrini Boulevard, Golden Colorado and I represent CARE. And I'm  
11          having trouble with one of the computers. Could be interference.

12          HOLLOWAY:                    Could be they need to screw it in the back?

13          CARNEY:                      If Gary Pruitt's in the house I could use his help?

14          Canyon Area Residents of the Environment is an amalgamation of 30 some  
15          homeowner's group in the central mountains. It's purpose is to preserve and  
16          enhance the community and the environment. We have about 10,000 residents.  
17          We ask that the audience even though we all feel the strain of living with the  
18          burden of uncertainty over this super tower that we give the Commissioners a  
19          chance to hear the rational basis for our fears. We ask that everyone please  
20          remain quiet during these presentations and please remain respectful and let's  
21          refrain from applause because we have a lot of ground to cover. Those who are  
22          against this super tower would you please stand up and raise your hand.

23          HOLLOWAY:                    Oh whoops. I forgot to swear anybody in didn't I?