

1 it's going to be negative. The only way to insure the best, the most positive  
2 impact on property values and on people and your constituents is to vote no and  
3 I do recommend you do that. Any questions?

4 SHEEHAN: Thank you Ron. Next, CARE?

5 CARNEY: I will introduce Dr. Cindy Kelley, who's coming as  
6 soon as her power point is up. She is an orthopedic surgeon who also works in  
7 oncology which is cancer.

8 KELLEY: Sorry about that. My name is Cindy Kelley and I live  
9 at 1513 Copper Rose Drive in Golden and I am an orthopedic oncologist  
10 specializing in care of cancer patients and fellowship commission in (inaudible)  
11 oncology as (inaudible) certified.

12 SHEEHAN: Doctor. could you put the microphone right to your  
13 mouth so that people in the back can hear. Thank you.

14 KELLEY: So tonight we wanted to talk about the examination  
15 or examine the health risks associated with exposure to electromagnetic  
16 radiation and as you know, we've talked about radiation over and over. It's a  
17 funny thing because you can't touch it, you can't feel it, you can't smell it and  
18 you can't taste it but it definitely has effects. (Next slide.) In very high doses  
19 radiation can cause immediate cellular death and that's what we hoped to  
20 achieve when we're treating somebody with radiation therapy for cancer in of  
21 itself. In lower doses it can cause disturbances within the cells causing systems  
22 to malfunction but not necessarily acute cell death and references have been  
23 made to ion transport problems particularly the calcium and gene transcription

1 problems. So the health effects of electromagnetic fields that have been  
2 documented are brain cancer, childhood leukemia, birth defects, pregnancy  
3 loss. There was a inaudible study on a physical therapist population where their  
4 exposure was between .04 and .56 microwatts per centimeter squared. Sleep  
5 disturbances have been documented. Altered calcium ion movement in brain  
6 cells causing disturbances in mentation and altered children's performances  
7 both mental and physical at levels between zero and .4 microwatts per  
8 centimeter square and I think this is important to note considering the proximity  
9 of the towers to Ralston Elementary School and other schools. This (inaudible)  
10 has demonstrated itself in plants and animals having been exposed to EMS  
11 showed distinct growth changes and alteration in cellular enzymes. These are  
12 the workhorses within the cells that cause the cells to operate and function at  
13 normal levels. Both human and animal cells have demonstrated modulation of  
14 gene expression, changes in the transcription pattern and protein synthesis.  
15 Basically these are DNA effects and alterations in the DNA within the cell.  
16 Continuing off the literature review there is available data that suggests that RF  
17 radiation should be considered a carcinogenic risk and this was a position taken  
18 within the EPA early on in 1990 when there was really actually much less  
19 evidence of the potential harmfulness of exposure to EMF radiation. Statistically  
20 significant dose response relationships exist for the physical therapist group that  
21 we just talked about, (inaudible) and the Polish military study. In this chart that  
22 you can see here are the exposures ranging from .2 microwatts per centimeter  
23 square to 20 and then the risk ratio on the right hand side is the risk of cancer

1 and development in this population going as high as almost 14 times what you  
2 would expect. The community levels that are proposed after erection of this  
3 tower will be 1 to 20 microwatts per centimeter squared and our population living  
4 in the exposed field would fall right onto that chart that we just looked at. There  
5 are now more than 60 major studies declaring the dangers of EMF and it's  
6 exposure and in the Swedish population and by their government, it has been  
7 declared a hazard and they have instituted mandates concerning public  
8 exposure. Sorry. So if cancer risk is to be reduced, the exposure should be  
9 limited to less than .1 microwatts per centimeter squared and if miscarriage risk,  
10 sleep disturbance, children's performances and chronic fatigue is to be reduced,  
11 the limits should be even lower .01 microwatts per centimeter squared. Under  
12 the extended exposure conditions RF signals averages of 5 microwatts per  
13 kilogram are capable of inducing chromosome damage and human lymphocytes  
14 and that was just addressed in the previous or a couple of previous talks. An  
15 increase in a number of micronucleated cells have been well documented in bio  
16 electric magnetic and this is an alteration in the brain or the internal sort of  
17 portion of the cell that controls the cell. So we're seeing DNA effects and  
18 micronucleated cells which are clearly abnormal. So there's a lot of focus on  
19 kids and why are they more susceptible or why do they keep coming up in these  
20 studies? Well there are probably three reasons. One is that they continue to  
21 grow and their cells are being subjected to this radiation over and over causing  
22 accumulative, thank you, accumulating effects. Their surface to body ratio, body  
23 mass ratio is higher so they have more skin covering their little weight than we

1 as adults have and then living in a situation where they are chronically exposed  
2 to radiation continues on to be accumulative effects. So with childhood  
3 leukemia and EMF there have been numerous reports with regard to positive  
4 association in dose response relationship with relative risk estimates from 1.5 to  
5 2.7 for past exposures. Their significant dose response relationships in three  
6 studies and these observations can't be explained by misclassification of  
7 exposure for (inaudible) selection bias. And confounder effects would hardly  
8 explains such results and that's a question that was asked earlier about how do  
9 you know that these populations don't have additional problems or exposure up  
10 there causing these problems. The possible causal nature cannot be dismissed  
11 and that was published in the American Journal of Preventive Medicine. The  
12 Italian study that was just touched on before demonstrated a 2.24 increase in  
13 leukemia in children living within six kilometers of Vatican radio and TV  
14 transmission towers and in the Australian study you also have an increase in  
15 childhood leukemia and death due to TV tower radio frequency exposure.  
16 Eighteen studies of childhood cancer and residential exposure to EMF have  
17 been conducted and there's a preponderance of positive results in more than  
18 you would expect by chance. When all these studies are pooled the average list  
19 of leukemia, lymphoma which is cancer of the lymph node system and nervous  
20 system tumors are statistically significant. There were excesses or an excess  
21 number of leukemia and central nervous system cancers in people employed in  
22 occupations where there is substantial use of electricity such as electricians,  
23 utility line workers and telephone company employees and that analysis which is

1 a compilation of many smaller studies putting all the big numbers together  
2 regarding occupational exposure to EMF, leukemia and brain cancer reported a  
3 modest but statistically significant increase in cancer risk. Current regulatory  
4 standards are based solely on the thermal effects of the RF radiation at the  
5 cellular level. Like Dr. Frankel said, putting your head in a microwave oven.  
6 Evidence from Moscow and other community studies suggest that exposure as  
7 low as two microwatts per centimeter squared may have long term health  
8 effects. And the focus of more recent animal studies exploring the possible  
9 carcinogenicity of EMF exposure has been the role of EMF as a promoter of  
10 malfunction within the cells. The development of cancer is probably multi-  
11 factorial. We've touched on that before. It's not one event that causes  
12 (inaudible) to develop cancer. Carcinogenesis is a multi-step process that  
13 requires at least two genotoxic events in a critical pathway but is facilitated by  
14 non genotoxic proliferative events for effect on target cells. EMF with  
15 oncogene carcinogenesis that exerted either direct or indirect effects on target  
16 cell turnover. In work spanning over a decade and more than nine projects  
17 Goodman and Henderson reported an increased transcription of oncogenes  
18 which is a cancer gene so the DNA mutated and now it's forming a cancer gene  
19 as opposed to normal genes in your body and other specific messenger RNA  
20 sequences in several types of cells exposed to low frequency magnetic fields.  
21 To touch a little bit on latency and what that is, it's basically a delayed effect of  
22 exposure to a harmful substance and we draw the analogy between the sun and  
23 UV exposure. The first time you're exposed to the sun you're not going to

1 develop skin cancer, but it's that repetitive exposure that causes these  
2 cumulative effects. We can look at the tobacco industry. Initially there was  
3 thought to be no link between tobacco use and cancer and now that point was  
4 made over and over and over with the government substantiating it and now the  
5 link between these two processes is clear cut. To touch a little bit on my clinical  
6 experience, I take care of cancer patients day in and day out. And oftentimes  
7 when a parent brings in a child and you know their child is diagnosed with  
8 cancer, the first thing they want to know is why. Did we eat something? Did we  
9 expose the children to something? Have they drank something that they  
10 shouldn't be exposed to? And in this situation a child presented with leukemia  
11 living within the proximity to a tower with this kind of EMF I would have to say  
12 that there is a direct correlation between these two processes. So we have risk  
13 versus benefits. Even when you are walking across the street and the risk here  
14 is the health hazard to the community both real and perceived versus the benefit  
15 and I put benefit in quotation marks for better resolution on the TV screen. I  
16 don't think there's too much question as to what most people would choose.  
17 The implications for public policy I think are pretty clear. The risk of EMF  
18 exposure with erection of the new towers is sufficiently significant and the  
19 exposure sufficiently widespread that actions to limit new exposures are  
20 warranted. Too many approaches for lowering our exposure to EMF or personal  
21 changes in your own habits and societal increase the distance of the source of  
22 EMF from your people. The cost of mitigation and litigation relating the power  
23 line cancer connection have risen into the billions of dollars and they threaten to

1 go much higher. Avoiding additional costs and locating the proposed tower to  
2 an alternate site that's less inhabited seems to be the most prudent thing to do.  
3 When it is possible to reduce your EMF exposure at a reasonable cost and low  
4 inconvenience, future disease can be substantially reduced and this was from  
5 public health reports in 1996. The evidence justifies prudent avoidance of  
6 unnecessary community exposure. So in conclusion there is a discrepancy  
7 surrounding the allowable safe levels of exposure to all sources of electro-  
8 magnetic radiation. I think that point has been well made over and over with a  
9 possible association with cancer, fetal loss where (inaudible) is miscarriage and  
10 other factors. Prudence in the design and placement of a new tower system is  
11 imperative. The conclusive alarming scientific evidence linking EMR and the  
12 development of cancer and other health problems in children and developed at  
13 the same levels as super tower will be met. After exposure to EMR there's  
14 significant patterns of increase incidences in childhood leukemia and brain  
15 cancer, spontaneous abortion and other harmful effects. The biochemical and  
16 physiologic reactions and alterations of the cellular level and tissue level have  
17 been documented. I think personally it is unconscionable that the Jeffco  
18 Commissioners would expose an unwilling community of constituents to the  
19 effect of EMR until it's unequivocally proven safe. Like Dr. Frankel said, you  
20 don't know if you have a temperature or a fever unless you actually measure it.  
21 I would ask you what would you say to the children of our community in the  
22 future if this tower is put up and suddenly there's a rash of development of  
23 childhood leukemia and cancers. Why put your constituents at risk all for better

1 TV viewing when certainly there are other acceptable sites available? Will we  
2 leave Jefferson County if the proposed towers are erected? There's no  
3 question. I have two young children and my husband and I have talked about it  
4 and just as Ron Selstad has said numerous people have said to him that they  
5 would leave the community. Thank you. Questions?

6 SHEEHAN: I appreciate your supporting the representative but  
7 please don't applaud. We're not trying to make this a competition here. We're  
8 just trying to get the facts of the issues. Questions Commissioners about this?

9 SHEEHAN: Okay. Thank you Doctor.

10 VENNITTI: Good evening Commissioners. My name is David  
11 Vennitti.

12 SHEEHAN: David Cannetti? Spell your last name.

13 VENNITTI: V-e-n-n-i-t-t-i.

14 SHEEHAN: Oh it's on the screen here. Sorry.

15 VENNITTI: It should be there.

16 LAWRENCE: Now it's on.

17 VENNTTI: I reside at 44 Lookout Mountain Circle and tonight  
18 I'm representing Lookout Mountain (inaudible) I'm an electrical engineer. (Next  
19 slide please.) And the last three years or so I've been taking RF measurements  
20 in Jefferson County and surrounding communities and basically providing  
21 concerned citizens with RF exposure data and help them in some mitigation  
22 techniques. (Next slide please.) Interference starts much less than what the  
23 permissible exposure is 200 megawatts per centimeter squared. The FCC