

1 effect will this have on our schools computers sound equipment, and
2 communications at Shelton? We don't know conclusively the health effects of
3 this additional radiation. However, there are studies being done worldwide that
4 suggest that our legal limits are far too high. Until we have more research that is
5 done not in the interest of the broadcasters but in the interest of the health and
6 safety of the citizens we ask you to not let our children and our families be
7 unwilling subjects in this potentially tragic experiment. Please oppose the
8 construction of the Lake Cedar's Group super tower. There are far too many
9 unknown risks to the students and citizens of Jefferson County. Thank you.

10 HOLLOWAY: Now are we going to go by this list?

11 CARNEY: Yes. We are now in order. Dr. Henry Lai. I
12 would like to do an introduction of him right now. It is my pleasure tonight to
13 introduce to you a scientist who has traveled from the University of Washington
14 in Seattle to testify without charge to us who has become quite renowned for his
15 research on the biological effects of electromagnetic radiation. In fact he was
16 interviewed by 20/20 extensively yesterday. Dr. Henry Lai is in the Department
17 of Bio-engineering. He has over 60 published papers. You'll see his biography
18 in there, the list goes on and on. He is on the Board of Directors of the Bio-
19 electromagnetic Society. He has done research for the office of Naval Research
20 on the neural-physiological and behavioral effects of microwave exposure, which
21 is a form of electromagnetic radiation. He has done research for the National
22 institute of Health, Environmental Health Science on DNA damage from
23 electromagnetic radiation, neural effects and the effects on the brain physiology

1 and behavior. He has done a great deal of public service. He worked on the
2 American National Standard Institute. He worked as a consultant to the City of
3 Seattle on their study of Telecommunications. He worked on a program an
4 exchange program with the Soviet Union. He was part of the radiation study
5 section of the National Institute of Environmental Health. He investigated
6 possible health effects of the Pay Paw Radar in Cape Cod which is a military
7 radar of a great deal of power. And he has come all this distance to share with
8 you what he knows about electromagnetic radiation. And the types of radiation
9 that is proposed by Lake Cedar Group includes not only digital TV and FM but
10 also microwave antennas. It's on Page 1 of the ODP, two-way radio stations
11 and Channel 9's Doppler Radar and any other radars that may be added. So,
12 Dr. Henry Lai!

13 HOLLOWAY: Dr. Lai, just one moment before you start. We can't
14 have you blocking the doors so there are seats here so if you would please
15 come down and find seats. Is this the only room that we've got? The other
16 hearing room is not open? Thank you.

17 LAI: My name is Henry Lai. L-A-I. I am with the
18 Department of Bio-Engineering in the University of Washington, Seattle, State of
19 Washington. I am talking to as a scientist who has done research in this area
20 for last 20 years. First I will give you some, an overview of what we have found
21 in the last 20 years on the biological effects of the radio frequency radiation.
22 Now we have done research on DNA's and we have extensively done research
23 on the effect of the functions of the nervous system. We have found that the

1 radiation is a form of stress to animals and it can effect learning and memory
2 functions. And there's a whole group of data that shows that the radiation can
3 interact with medications and cause the medication to become more potent or
4 less potent. First let me tell you something about the DNA study that we did in
5 1993. Now the DNA molecule is like two pieces of spaghetti twisted together.
6 What we discovered is that when the DNA is exposed to a low level, low
7 intensity radio frequency radiation they break up into small pieces. Next slide.
8 Okay I'm going to show you slides. Can we turn the lights down a little bit.
9 Okay. Now, on top here the green dot is how the normal DNA would look like is
10 basically a form of ball shaped particle. Now when this DNA is exposed to a low
11 intensity radiation the DNA breaks up into pieces. Now on the lower part the...
12 on the left side the DNA was exposed to a very low intensity radiation and you
13 can see it on the right of this green dot the small pieces of green particle come
14 out from the DNA ball. Now on the left the right side this is a high intensity of
15 radiation. And you can see that more of the DNA breakup and more particles
16 come out from the ball. Now what are the significance of DNA damage?
17 Normally DNA can be repaired by the body. But nerve cells, cells inside the
18 brain have a low capacity of repairing and this type of breaks can cause cell
19 death. The cell can die and another possibility is that mutation can occur and
20 the cell becomes cancerous. Another type of consequence is so called Neural-
21 degenerative diseases such as Alzheimer disease, and Huntington disease, and
22 Parkinson disease. Next slide. We also find that the exposure to radio
23 frequency radiation can cause increases in free radical formation. Now free

1 radical has been known to in more the aging process and a lot of another
2 diseases. So the consequence of exposure of the radiation can be ready
3 (inaudible) on health. Next slide. Okay, five years ago you asked me the
4 question, when people live close to a cell tower or a transmission tower would
5 that cause any health effects. If you asked me the question five years ago, I
6 would say no, there would be no effect at all. But in the last five years there
7 have been quite a lot of research came out that shows that exposure to really
8 low intensity radiation at a level which is one to 200 feet from a normal cell tower
9 can cause biologic effect. Now I have listed I hope people can see this very
10 well, I have a list of paper and investigations into table, this table, the next slide.
11 Now the effect, many types of effects have been discovered in the last five to six
12 years on really do low intensity radiation. This includes churches, and cell
13 functions. There are two studies in schools, the children have problem learning
14 and now there are two other points I want to make. One is that the effect seems
15 to be cumulative, the longer you are exposed the more the effect will occur. And
16 another thing is that when we are exposed to a radiation from a transmission
17 tower the exposure is long term, it's a chronic exposure that means the person
18 who live close to the tower can be exposed to the radiation, 24 hours a day.
19 Now this has not been studied very well. But, if the effects are cumulative
20 eventually this long-term exposure can cause some kind of health effects.
21 Thank you very much.

22 HOLLOWAY: Thank you. Do you have any questions?

23 Thank you. Dr. Pardos?