EUGENE WATER & ELECTRIC BOARD
AMI INFORMATION SESSION
ROOSEVELT OPERATIONS CENTER
JULY 23, 2013
6:00 P.M.

Commissioners Present: John Simpson, President; John Brown, Vice President; James Manning and Steve Mital. Commissioner Helgeson was excused.

Others Present: Roger Gray, Jeannine Parisi, Mark Freeman, Lena Kostopulos, Joe Harwood, Jared Rubin, Anne Kah, Matt Sayre, Frank Lawson, Sue Fahey, Lance Robertson, Brad Taylor, Harvey Hall, Mel Damewood, Kim Morgan, Jeff Klupenger, Jeannine Parisi and Taryn Johnson of the EWEB staff; Vicki Maxon, recorder.

Jeannine Parisi, Community & Local Government Outreach Coordinator, introduced herself and thanked everyone for attending, and reviewed the purpose, agenda, and expectations for the information session.

She explained that the purpose of tonight's information session is to provide more in-depth, detailed information about radiofrequency transmissions to the EWEB Board of Commissioners to help them make a future decision about modernizing equipment and moving toward remote reading of "smart meters." This special meeting was scheduled in response to a request from Dr. Paul Dart and his colleagues to give a presentation to the Board about their research findings as presented in their June 2013 report, and it was also an opportunity to respond to the Board's request for a deeper dive into radiofrequency technologies.

Ms. Parisi thanked everyone for attending tonight and reminded the audience that this is an information session only, which means there will be no public comment period tonight, but there will be an opportunity for extended public input at the August 6 Board meeting. It also means the Board will not be entering into deliberations about whether this is a good or bad idea, nor will they take any action tonight. In fact, Board action on this entire project has been postponed until the fall to give everyone more decision space, and that also creates at least two more opportunities for community members to share their reflections on tonight's meeting.

She then reviewed her "asks" for the presenters, Board and audience, and also asked all the members of the audience to respect each other and be patient and cooperative during tonight's session.

President Simpson introduced Dr. Peter Valberg, whose presentation was via webinar:

"Dr. Peter Valberg is a principal in health risk assessment at Gradient, an environmental consulting firm that evaluates human health risks from various environmental sources.

Dr. Valberg specializes in quantitative analyses of exposure, dose-response, and health risk for both substances and ionizing and non-ionizing radiation.

His educational background includes both an M.A. and Ph.D. degree in Physics from Harvard University, and an M.S. degree in Human Physiology from the Harvard University School of Public Health. He served for 25 years as a faculty member at Harvard in the Department of Environmental Health, teaching physiology, toxicology and electromagnetism.

Among the research grants that he directed was one funded by the National Cancer Institute on magnetic field effects in cells. He also served on the Harvard Advisory Committee on EMF and Human Health and the Harvard University Peer Review Board on Cellular Telephone Technology and Human Health.

Dr. Valberg has also served on advisory panels for the National Institutes of Health, the Health Effects Institute, Department of Energy, National Academy of Sciences, the Environmental Protection Agency, and the World Health Organization.

Of particular note, he worked with the World Health Organization on the health effects of cellular telephone technology, a study that was published in the journal *Environmental Health Perspectives*.

Dr. Valberg is based out of Cambridge, Massachusetts and we welcome him via webinar to our meeting tonight."

Dr. Valberg's webinar can be viewed on EWEB's website, www.eweb.org.

Following Dr. Valberg's webinar, the Commissioners asked Dr. Valberg several questions.

Regarding the cellular phone studies that Dr. Valberg mentioned in his webinar, Commissioner Mital stated that the Board has heard public input regarding studies that show that there has been an increase in brain cancer detected on whatever side of the head people hold their cellular phones against. He asked Dr. Valberg for his opinion. Dr. Valberg replied that there may have been a study that briefly indicated that, but only one study out of many indicated that. He added that if one looks at the research papers, the increased incidence of brain cancer on one side of the head turned out to be a flash in the pan and did not hold up under close examination when the broad spectrum of data was looked at.

Vice President Brown stated that many cellular towers are in close proximity to schools, multifamily dwellings, apartments, etc. He asked Dr. Valberg to review the level of radiofrequency that a regional cellular tower emits compared to the amount of radiofrequency that a smart meter emits. He clarified that he is asking about a cellular tower that is within 100 feet of a home vs. a smart meter that is attached to a home.

Dr. Valberg replied that his answer is a generality because cell towers are site-specific, but that, generally, a typical cellular tower emits 200 to 300 watts of radiofrequency, depending on how many consumers are using it at one time, compared to a smart meter, which emits 1.5 watts. He added that the radiofrequency levels fall off with distance, and that the siting of a cell

tower is important, as the more there are in a certain area, and the lower their energy output is. As the number of cell towers proliferates, everyone's radiofrequency exposure lessens, but in the case of radio waves, they may actually be at a higher level than a cell tower further away, similar to the light from a lighthouse.

President Simpson stated that Food and Drug Administration (FDA) and Federal Communications Commission (FCC) regulations require cell phones to have a specific absorption rate of less than 1.6 watts/kg. He asked Dr. Valberg to comment on that.

Dr. Valberg replied that the energy star on a cell phone is much higher, as the transmitter has about 2-3 watts of power, and when one holds a cell phone next to their head, the actual energy star they get depends on how far the nearest base station is. When one compares holding a cell phone within millimeters of one's head compared to a smart meter transmitting 1.5 watts very intermittently from three feet away, the amount of energy star is very low. Dr. Valberg added that he would have to do an exact calculation, but he estimates that a cell phone transmits approximately 2-3 watts while a transmitter for a smart meter 2-3 feet away transmits approximately 1 watt, and the absorbed energy would drop off quite dramatically as well.

Commissioner Manning stated that he uses a Bluetooth and that it is always in his ear. He asked what the difference in transmission is between a Bluetooth and a smart meter.

Dr. Valberg replied that a Bluetooth is built to transmit from one's ear to wherever one's cell phone is located—maybe a distance of three feet (for example, to one's pocket), and a smart meter is further away than three feet, so the rule of thumb would be that a Bluetooth is weaker.

Commissioner Mital stated that character studies and some other studies have proven that smart meters do not affect molecular functions. He wondered if there are other studies on smart meters interacting with human tissue that the first four or five studies didn't address.

Dr. Valberg replied that there has been some thought that the way the carrier rate is modulated may make a difference, i.e., the difference between AM and FM signals, etc., but that all studies have indicated that the important things are frequency and the amount of energy delivered, and what is absorbed by the body. He added that there a variety of theories, but the bottom line is that none have panned out, and that it seems that intensity of radiofrequency and particularly photon energy have become the most important factors.

President Simpson introduced Paul Dart, M.D.

"Dr. Paul Dart is a graduate of South Eugene High School. He received his medical degree from the Mayo Medical School in Rochester, Minnesota in 1984.

Dr. Dart completed a Family Practice internship at Oregon Health Sciences University and a fellowship in Allergy and Environmental Medicine with the Human Ecology Action Foundation in Chicago, Illinois.

He began private practice in 1986 and has been practicing in Eugene full-time since 1988. His practice is limited to osteopathic manipulation and allergy/environmental medicine.

Dr. Dart is a member of the Cranial Academy of the American Academy of Osteopathy and, until 2007, held a membership with the American Academy of Environmental Medicine (among other memberships).

He has specialized training in Allergy and Environmental Medicine as well as extensive training and teaching experience in the field of Osteopathic Manipulation.

Over the past 18 months, Dr. Dart and five other local medical professionals have compiled a research report for the Board on the health effects of radiofrequency transmissions, which he will summarize for us tonight. I'd like to thank all those involved in developing this report for their efforts.

At Dr. Dart's request, his presentation will be broken into two segments with a brief break in between. Questions from Commissioners will be held until the completion of the second segment."

Dr. Dart's presentation can be viewed on EWEB's website, www.eweb.org.

Following Dr. Valberg's webinar, the Commissioners asked Dr. Valberg several questions:

President Simpson stated that one of Dr. Dart's report recommendations is that EWEB minimize the radiofrequency level of any AMI system. He asked Dr. Dart if the Sensus smart meter would meet their recommendation.

Dr. Dart replied that it is possible that it would, however it would depend on how it is used, i.e., requiring that the meter transmit four times a day in order to record data would be too much. He noted that in-house appliances that run on the Zibi network (constant chatter) are not appropriate or safe, and that broadband would be better.

President asked Greg Armstead, AMI Project Manager, if EWEB is locked in to a certain number of transmittals per day.

Mr. Armstead replied that they are not locked in, and that they have several options to choose from.

Commissioner Mital asked if there have been laboratory studies on electromagnetic hypersensitivity that confirm people's ability to sense elevated radiofrequency levels.

Dr. Dart replied that there have been, and that some studies have shown that ability and some have not. He explained that it depends on radiofrequency design and how well other exposures are controlled. He added that having a problem and knowing what causes it aren't the

same issues, and that the problem is that some people have reactions for hours and some do not, so it is hard to have "crisp" controls.

Vice President Brown thanked Dr. Dart for his presentation. He noted that the vast majority of the studies mentioned were done in Europe and that all involved either radar or cell tower radiofrequency exposure. He added that everyone gets exposure from AM/FM radio frequencies, and that, after tonight's presentation, it is his understanding that Dr. Dart and his colleagues are not opposed to smart meters, but that they want EWEB to use technology that will maximize capacity and minimize exposure. He wondered why the FCC hasn't regulated radiofrequency exposure from AM and FM radio. Dr. Dart replied that that is a good question.

Commissioner Manning noted that electrical outlets in the United States are 110-volt and that outlets in Europe and other countries are 120-volt. He asked Dr. Dart if he has United States data that is comparable to the European data.

Dr. Dart replied that he doesn't believe that electrical outlet voltage is the issue, and that those standards are international. He added that cell phones were first manufactured in Europe and that concerns about their radiofrequency exposure levels first arose in Sweden. He noted that European countries are several years ahead of the United States in worry and exposure, and that digital signals are better than analog signals.

President Simpson stated that the power rating of an AM/FM or television station is larger than an AMI system's would be, so he assumes that Dr. Dart and his colleagues would be against the installation of a new radio station or television station on the grounds of his presentation. President Simpson added that with his interpretation of the difference in signal strength between those two, and since the FCC has continued to allow radio stations to be installed, he doesn't understand why an AMI system would be seen as that much of a risk, as each meter would have a 1 to 1.5 watt transmitter, would not transmit at the same time, and would be low background, and that would pale in comparison to a 1000-watt radio station. He asked how Dr. Dart would reconcile those differences.

Dr. Dart gave the example of the cell tower in University Park having a background level of 5 watts, and that the new Amazon cellular tower is up to 15 watts, but that there is only so much power per minute and that it transmits in brief milliseconds, so the actual signal is comparable to being 200 to 250 feet from a cell tower.

Dr. Valberg acknowledged that President Simpson raises a good point that we are immersed in radio transmitters everywhere—for fiber optics, fire, police, medicine, and cell towers, and that the duty cycle for smart meters is quite small while the duty cycle of others is quite continuous. He said that Dr. Dart and he differ in that he feels the amount of energy of a duty cycle is an important parameter. He explained that if the meter is only on for a total of 10 seconds per day, even with that time spread out, the amount of energy that comes from those sources is much attenuated. In terms of the radiofrequency environment, we get a lot of exposure from TV, satellite radio and GPS systems, and the whole radio spectrum is used more efficiently than it used to be, and technology is allowing a narrower and narrower bandwidth for

the same amount of transfer. Dr. Valberg summarized by saying that he believes that the predominant source of radiofrequency in our environment is more likely to be from other than smart meters.

Ms. Parisi thanked the audience for their patience and cooperation and said that staff looks forward to hearing from them at the August 6 Board meeting. She added that tonight's presentations will be available on EWEB's website and that they can e-mail their comments to the Board or list them on the green sheets that were distributed at tonight's meeting.

She then asked Mr. Armstead to offer some closing comments.

Mr. Armstead stated that all utility projects have risk—financial, technical, safety and others—and that these choices are hard ones to make, with no perfect answer or solution. He acknowledged that the public input regarding AMI has urged staff to minimize radiofrequency and take the least-risk approach, and that staff concurs.

He reaffirmed the Board's commitment to managing risk around safety, health, privacy and cost, to protecting customer choice, and use tonight's presentations as a tool for the Board to evaluate the project.

Mr. Armstead reiterated that the August 6 Board meeting would provide an opportunity for extended public input, a project update for the Board, and further Board deliberation; and that, tentatively, the October 1 Board meeting will provide an opportunity for further public input and Board deliberation, and a Board decision regarding AMI.

He asked the audience to e-mail any additional questions they may have for either of tonight's presenters, and staff will forward those to the presenter, collect the answers, and return them as a package. He added that follow-up questions and answers will be posted on EWEB's website shortly afterward. He also asked the audience to e-mail or call with any other information they would like to know that staff can address in the AMI update at the August 6 Board meeting.

Vice President Brown confirmed that copies of the public's questions will be forwarded to General Manager Gray and all the Commissioners.

Vice President Brown then voiced concern about the water technology portion of the AMI project. Mr. Armstead suggested that representatives from Sensus attend a future Board meeting in order to present that information.

The information session adjourned at 9:00 p.m.

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Assistant Secretary President