Moore-Love, Karla

From: Moore-Love, Karla
Sent: Wednesday, January 25, 2012 12:49 PM
To: Papaefthimiou, Jonna; Grumm, Matt; Schmanski, Sonia; Crail, Tim; Edwards, Kenneth; Oishi, Stuart
Cc: Cate, Sylvia; Rees, Linly
Subject: FW: LU 11-125536 CU AD; additional materials submitted for the record
Attachments: FCC confirmation of ERP calculation per facility, no limit of 1,000 watt ERP, and antennas exceeding 1,000 watts.pdf

Testimony is attached for Thursday's agenda items 96-97.

Karla Moore-Love | Council Clerk
Office of the City Auditor
503.823.4086

From: Euro Guy [mailto:euroguy_pdx@yahoo.com]
Sent: Wednesday, January 25, 2012 9:15 AM
To: Moore-Love, Karla
Cc: Chris Hill; Neal Sutton
Subject: Re: LU 11-125536 CU AD; additional materials submitted for the record

Thanks Karla,

Attached is anotther document with an e-mail that just came in.

Could you please do the same (forward to all Council Offices and enter into the record) with this document, and also again provide me with an e-mail confirmation to that effect?

Thanks,

Marcel

From: "Moore-Love, Karla" <Karla.Moore-Love@portlandoregon.gov>
To: 'Euro Guy' <euroguy_pdx@yahoo.com>
Cc: Chris Hill <chilltone@gmail.com>; Neal Sutton <nealsutton34@gmail.com>
Sent: Wednesday, January 25, 2012 8:38 AM
Subject: RE: LU 11-125536 CU AD; additional materials submitted for the record

Marcel,

Your email has been received, entered into the record and distributed to all Portland City Council Offices.

Regards,
Karla

Karla Moore-Love | Council Clerk
Office of the City Auditor
503.823.4086

From: Euro Guy [mailto:euroguy_pdx@yahoo.com]
Sent: Wednesday, January 25, 2012 12:44 AM
To: Moore-Love, Karla
Cc: Chris Hill; Neal Sutton; Self
Subject: Re: LU 11-125536 CU AD; additional materials submitted for the record

Karla,

Could you please do the same (forward to all Council Offices and enter into the record) with the 4 attached documents, and also provide me with an e-mail confirmation to that effect?

Thanks,

Marcel

From: "Moore-Love, Karla" <Karla.Moore-Love@portlandoregon.gov>
To: 'Euro Guy' <euroguy_pdx@yahoo.com>
Sent: Wednesday, January 11, 2012 12:10 PM
Subject: RE: LU 11-125536 CU AD; council hearing January 11 (Testimony !)

Marcel,

Your testimony has been received, forwarded to all Council Offices and entered into the record.

Regards,
Karla
Karla Moore-Love | Council Clerk
City of Portland | Office of the City Auditor
1221 SW 4th Ave Rm 140
Portland OR 97204-1900
503.823.4086 | fax 503.823.4571
Clerk's Webpage: www.portlandoregon.gov/auditor/councilclerk

From: Euro Guy [mailto:euroguy_pdx@yahoo.com]
Sent: Wednesday, January 11, 2012 11:21 AM
To: Moore-Love, Karla
Subject: LU 11-125536 CU AD; council hearing January 11 (Testimony !)

Karla,

Please see my written testimony for today's City Council hearing.
Please confirm whether you received this OK. (I'll also plan to bring a hardcopy to submit at the hearing this afternoon, just in case).

Thanks,

Marcel

From: OETInfo <OETInfo@fcc.gov>
To: 'Euro Guy' <euroguy_pdx@yahoo.com>
Sent: Wednesday, January 25, 2012 4:25 AM
Subject: RE: Questions regarding wireless telecommunications facilities

yes

Donald Draper Campbell
Senior Engineer
Federal Communications Commission
Office of Engineering and Technology
Washington, DC 20554
+1 202-418-2405

From: Euro Guy [mailto:euroguy_pdx@yahoo.com]
Sent: Wednesday, January 25, 2012 1:31 AM
To: OETInfo
Subject: Re: Questions regarding wireless telecommunications facilities

Mr. Cambell,

Just to confirm some of the items of our telephone conversation earlier today, amongst other things I understood from you that :

(1) FCC regulations do not place a 1,000 watt ERP limit on wireless communication facilities, but rather define certain thresholds of ERP levels per transmitter.

(2) An antenna at a certain wireless communication facility could easily have a total combined ERP of 5,000 watts and also fall within FCC approved criteria, if for example several carrier and several channels all operate on such antenna.

(3) In order to determine the total maximum ERP of a facility, one would add up the ERP of all channels and all antennas that are part of that facility.

Did I get all of that correct?

Thanks,

Marcel

Moore-Love, Karla

From: Moore-Love, Karla
Sent: Wednesday, January 25, 2012 8:36 AM
To: Papaefthimiou, Jonna; Grumm, Matt; Schmanski, Sonia; Crail, Tim; Edwards, Kenneth; Oishi, Stuart
Cc: Cate, Sylvia; Rees, Linly
Subject: FW: LU 11-125536 CU AD; additional materials submitted for the record
Attachments: Hermans comments on January 11, 2012 Appellant's Legal Memo.pdf; Hermans comments on January 6, 2012 Appellant's Hearings Memo.pdf; White paper regarding "ERP of a facility" in PCC.pdf; E-mail failure notice.pdf

Testimony is attached for Land Use case LU 11-125536 CU AD, returning to Council March 1, 2012.

Karla Moore-Love | Council Clerk
Office of the City Auditor
503.823.4086

From: Euro Guy [mailto:euroguy_pdx@yahoo.com]
Sent: Wednesday, January 25, 2012 12:44 AM
To: Moore-Love, Karla
Cc: Chris Hill; Neal Sutton; Self
Subject: Re: LU 11-125536 CU AD; additional materials submitted for the record

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Thanks,

Marcel

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To: 'Euro Guy' <euroguy_pdx@yahoo.com>
Sent: Wednesday, January 11, 2012 12:10 PM
Subject: RE: LU 11-125536 CU AD; council hearing January 11 (Testimony !)

Marcel,

Your testimony has been received, forwarded to all Council Offices and entered into the record.

Regards,
Karla
Karla Moore-Love | Council Clerk
City of Portland | Office of the City Auditor
1221 SW 4th Ave Rm 140

Portland OR 97204-1900
503.823.4086 | fax 503.823.4571
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From: Euro Guy [mailto:euroguy_pdx@yahoo.com]
Sent: Wednesday, January 11, 2012 11:21 AM
To: Moore-Love, Karla
Subject: LU 11-125536 CU AD; council hearing January 11 (Testimony !)

Karla,

Please see my written testimony for today's City Council hearing.
Please confirm whether you received this OK. (I'll also plan to bring a hardcopy to submit at the hearing this afternoon, just in case).

Thanks,

Marcel

Marcel Hermans
6910 SE Raymond Court
Portland, OR 97206
(E-mail: euroguy_pdx@yahoo.com)

January 25, 2012

City of Portland

Attn: Portland City Council

1221 SW Fourth Ave.

Portland, OR 97201

Re: Case File LU 11-125536 CU AD

RESPONSE TO VERIZON LEGAL MEMO AND HEARING MEMO

Dear Mayor Adams and City Commissioners:

This memo addresses several issues related to the materials submitted by the appellant by letter from Mr. Grillo dated January 11, 2012, "Appellant's legal memo".

In its January 11 Legal Memo, Applicant makes several statements that are incorrect and untrue and which need to be corrected.

1) The first issue the applicant raises is their assertion of "*opponents' view that this wireless facility will create harmful radio frequency emission impacts*". **This assertion by appellant is simply not true!**
   Such claim is not what opponents' position and conclusion are based on, and is not a point at all made by the opponents. Although there are indeed many people opposed to this proposed development -most of whom have not submitted their own testimony- and anyone can't say with certainty whether possibly one or more of those opponents are concerned about harmful

impacts, there isn't any part of opponents' case as submitted into the record that is based on "harmful impacts".

As anyone can confirm from the evidence in the record of this case, the opponents have shown and established that ***the proposed facility does not comply with City Zoning Code*** in several ways ***and*** that applicant's ***application materials did not meet the standard, norm or criteria (incl. substantial evidence, etc.)*** expected and required from these applications. That is the basis of opponents' conclusion that the application should be denied, which conclusion was subsequently confirmed by the Hearings Officer in his decision (Decision of the Hearings Officer, dated 11/2/11, HO 4110025).

2) Applicant asserts that there may be an issue of the City "unreasonably discriminating among providers of functionally equivalent services", by quoting a City staff comment to that effect. Such statement from Staff -which was subsequently adopted by applicant- **incorrectly** claims a connection between *establishing a certain threshold for local zoning code categories*, and *discriminating amongst service providers*. The 1,000 watt ERP threshold stated in zoning code is simply a **threshold** that helps define what criteria facilities operating at higher or lower wattages will have to comply with. ***This threshold applies to all service providers equally, and is therefore not a matter of discrimination, let alone unreasonable discrimination.*** Additionally, zoning code does not prohibit and does not have the effect of prohibiting the provision of personal wireless services. On the contrary, Portland's zoning code very specifically defines the criteria for such services for any facilities operating below 1,000 watts ERP, as well as any facilities operating at ERP's above 1,000 watts, thus providing set criteria for facilities of any range of ERP wattage.

Applicant asserts that other facilities were not held to the proper interpretation of zoning code in the past. There is no evidence in the record to support that assertion. The simple statement that staff's understanding of ERP-threshold criteria in the past was different than the actual correct meaning of zoning code as it was recently confirmed by the Hearings Officer, ***does not mean that any previously permitted facility would have been permitted incorrectly***. It also does not mean that any previously permitted facility would or could not have been permitted in a substantially equivalent manner if the correct interpretation of code would have been applied to its permit review at the time.
And regardless of those points, the City is certainly allowed to *adopt a different interpretation* of its code as long as they don't unreasonably discriminate amongst providers in that. Adoption of the new and correct code interpretation would and should of course ***apply equally to any and all providers, and would therefore not constitute discrimination, let alone unreasonable discrimination, amongst providers.***

Applicant apparently disagrees with us on this point, but from our perspective on justice, we certainly hope that if proof were ever to be found of some wrongful executions, future suspects

in similar cases should not also be executed 'so as to not upset any family members of previously wrongly executed people' who otherwise might think or claim their executed family members were *"unreasonably discriminated against"*.

3) The third point applicant makes in their January 11 memo is that the City and Hearings Officer were wrong because the ***Hearings Officer failed*** to decide which criteria applied and failed to determine there was substantial evidence showing the approval criteria were met. Both claims are untrue and frankly quite discerning.

   It is the responsibility of the applicant to determine what their application constitutes, what City code requires as far as application process and for the proposed development, and what the applicant actually is applying for. It is not up to the Hearings Officer to determine ***what criteria apply***: that is what City zoning code is for and that is what ***is prescribed in City Code!*** City code is very clear about what is required for any RF Transmission Facility within the City, clearly distinguishing between criteria for smaller (< 1,000 watts ERP) versus bigger (> 1,000 watts ERP) facilities. ***It was applicant who failed to provide reliable information as to what their proposed development constitutes.*** As the Hearings officer pointed out, the applicant's application included statements as to the ERP ranging anywhere from 39.28 watts to more than 6,724 watts ERP, thereby stretching from less than 5% of the threshold for code section C to more than 6 times that threshold. ***This is about the applicant's failure to provide reliable information, not about the Hearings Officer's failure to determine what criteria apply!***

   On the second claim from appellant, besides the fact that the Hearings Officer simply could not apply approval criteria ***due to application's lack of reliable information*** regarding the proposed development, he was also faced with portions of the applicant's information clearly being ***illegal materials and therefore not permissible as "substantial evidence".*** Therefore, on that claim too, it's not about the Hearings Officer's failure to find substantial evidence, but rather about ***applicant's failure to provide proper legally acceptable evidence***!

   Not only was it the City's and Hearings Officer's right to deny the application in this case, ***it was and is actually the City's obligation to deny the application*** which was correctly enacted by the Hearings Officer!

From the explanation above it shall be clear that there is no basis for appellant's claim that the Hearings Officer's decision "*likely* violates several provisions of the Federal Communications Act". On the contrary, ***the City acted fully in its rights and as required by its own zoning code, State law and Federal law by denying an incorrect, inconsistent and insufficient application!***

We also like to make a few additional notes related to process:

(1) It's important to point out that applicant is incorrect in the base facts of its assertions, and is again crossing the line of proper and due public process. Applicant claims that "***there is substantial evidence in the record*** that the City....." and then continues with "For example, in the January 5, 2012 staff report....". Since this appeal to City Council was an "on the record" appeal, no new evidence was allowed into the record after the close of the record set by the Hearings Officer at 4:30 pm on October 17, 2011. Although it appears that City Council may have officially reopened the record on the afternoon of January 11, 2012, this does in our understanding not mean that any evidence wrongfully entered into the record (or wrongfully claimed to be part of the record), retro-actively becomes part of the record. This legal memo submitted by appellant on January 11 and referring to a January 5, 2012 Staff Report that is not part of the record, crosses those lines of proper legal process.

Either way, the claim by applicant that there is substantial evidence in the record as to the proposed development meeting City code is incorrect.

(2) Equally importantly, there is no relevant connection between or point to be made by the applicant's statement that "...the City has consistently applied this threshold to include all facilities" and the quoted sentence from the staff report which merely states that "***City staff has*** consistently ***applied ERP as a*** review and permitting ***threshold*** for nearly 1,000 individual wireless telecommunication facilities". City Code indeed prescribes ERP as the unit of measure for setting certain thresholds, so it's only proper for City staff to apply that measure in their review and permitting decisions. We have not analyzed or reviewed the previous reviews/permitting files referred to, but can only *hope that City staff indeed in every case applied ERP as the threshold, since that is what code requires*. Those files are not part of the record, nor do we have reason to believe that City did not apply ERP as the criteria every time.

To be clear and specific: City staff only states here that they ***consistently used ("applied") ERP*** as a measure to check the threshold, and does not at all claim that they applied the rules or threshold ***consistently***! There is no claim (let alone substantial evidence!) in the record that the City staff has applied the ***threshold consistently*** (or more relevantly: consistently in a way that by the Hearings Officer recent ruling could be considered to be incorrectly).

There is a huge and very important and fundamental difference in meaning between "consistently applying something" versus "applying something consistently"!

As an example: "Since 2000, the City has consistently used tax revenues to fund City's Departments" means something totally different than "Since 2000, the City has used tax revenues to fund City's Departments consistently". The first sentence merely states ***that*** tax revenues went to Departments every year since 2000; the second sentence states that there

was ***consistency in how*** tax revenues were split between Departments. Obviously, a very different meaning!

(3) In addition, there is absolutely no issue of concern with, nor is there any conflict between the described historic practices as quoted from the City's staff report and the Hearings Officer's finding that this application should be denied. ***The fact that other permit applications have been processed in the past and in certain situations were approved, has nothing to do and has no bearing at all on the decision by the Hearings Officer to deny this particular application for the reasons he did!***

(4) Furthermore, the applicant incorrectly refers to "the Hearings Officer's ***new*** interpretation" (emphasis added). Unlike the applicant themselves who kept changing and adding new data and interpretations into the record throughout the process, the Hearings Officer has been very clear and consistent throughout. As far as we know and understand, and as supported by the record, the ***Hearings Officer has provided just the one interpretation as requested and required in this case***; there is no ***old*** interpretation versus ***new*** interpretation. The fact that applicant may have made incorrect assumptions as to the correct meaning of City Code must not be misconstrued by claiming the Hearings Officer have ever changed his mind or has made inconsistent interpretations! (In our mind it's not fair to the Hearings Officer, and it's unfair and disingenuous to try to misrepresent the facts that way to City Council and the citizens of Portland.)

Marcel Hermans
6910 SE Raymond Court
Portland, OR 97206
(E-mail: euroguy_pdx@yahoo.com)

January 25, 2012

City of Portland

Attn: Portland City Council

1221 SW Fourth Ave.

Portland, OR 97201

Re: Case File LU 11-125536 CU AD

RESPONSE TO VERIZON LEGAL MEMO AND HEARING MEMO

Dear Mayor Adams and City Commissioners:

This memo addresses several issues related to the materials submitted by the appellant by letter from Mr. Grillo **dated January 6, 2012, "Appellant's Hearing Memo".**

In this January 6 Hearing Memo, Mr. Grillo makes several statements that are incorrect and untrue and which need to be corrected. This letter provides those corrections.

(1) Applicant states that their appeal is centered around three key issues. Although appellant of course is free to chooses what issues to raise in their appeal, ***the three issues*** they elected to raise ***are not necessarily the ones that are crucial to the question at stake in the appeal process as it is defined in City Code***!

The ***main question at stake in this appeal is whether the Hearings Officer was correct*** in his conclusion and determination that this application should be denied based on the substantial evidence in the record. ***If the Hearings Officer was indeed correct in his findings*** that the applicant did not meet the burden of proof to show that the application meets City Code, the application should indeed have been denied by the Hearings Officer, and ***the application (and in this case the appeal) will simply again need to be denied by City Council.***

The possibility that the denial by City Council would have *negative impacts to the appellant*, that it might be uncomfortable and somewhat *awkward for City Staff* who may have personally identified themselves with the history and outcome of this case, or the statements by appellant or certain City Staff that such denial could *potentially have certain undesired consequences*, such as *additional workload for BDS staff* are all ***inconsequential and irrelevant to this main question at stake*** which is: **Was the Hearings Officer correct in his decision?**

We certainly believe that the evidence in the record supports the Hearings Officer's decision, and that therefore the Hearings officer made the correct decision that should be reconfirmed by City Council.

[Note: There are many additional specific factors that contributed to the Hearings Officer's decision to deny the application. All of those can be found in the detailed testimony previously submitted. Please revert back to those parts of the record as needed.]

Item I

I-A) Under their first item I-A the applicant suggests that the City had intended to regulate RF Transmission Facilities differently than they actually did. Appellant suggests *that City did not really mean what it wrote*, and did not write what it meant when it established the subject sections of City code.

Applicant also claims that "*the Hearing Officer struggled*" with his interpretation of code. There is no evidence in the record, nor is there any reason to believe that the Hearings Officer ***struggled*** at all. The City code in this matter is very clear. The Hearings Officer apparently was very easily able to read and interpret the applicable code and ruled accordingly in his decision.

Code applies as it is written, as it should. Even in her May 12, 2000 memo submitted by appellant as attachment to their January 11 memo Ms. Cate states (page 1, second paragraph): "*.....we need to apply the code as it is written until it can be amended...*"!

Only when it is not clear at all what the actual text of the law or code means, does the "legislative intent" possibly come into play as a potential tie-breaker in order to decide between two equally plausible interpretations of code.

Even if the original legislative intent would have been something else than what was enacted as code or law, the main premise of the law is that ***code applies as it is written***.

In this case, it has not been established at all that there is any true ambiguity as to the meaning of "facilities operating at 1,000 watts ERP or less". On the contrary, the meaning of facility and its ERP appears to be clear to anyone in the general public as well as to the applicant and its professional RF Engineering consultants, and also to the rest of the RF industry. It only appears to be City Staff (or more precisely specifically Ms. Cate) who appears to hold a differing view of what this text means.

In this matter, it is important to note that ***applicant as well as their RF Engineering Consultant in all their initial application materials clearly adhered to and bought into the common meaning of facility and ERP, as it being the total ERP of the facility!*** (See Exhibits A-2, A-4, H-28a., etc.) It was not until after applicant was ***very specifically directed by Staff*** (i.e. Ms. Cate) ***to change their submitted engineering report***, that the consultant ultimately submitted a revised report, and even in that revised report it is very clear from the language that the RF Engineer did not want to state that "the facility will operate at less than 1,000 watts ERP" as Staff had requested, but could only go that far as to state "Therefore the facility will operate at less than 1,000 watts (if) ***based on one channel of one antenna***. " Note: Emphasis was <u>not</u> added by us in this rebuttal but was actually added by the Engineer himself in his original report, in fact as a very loud and clear disclaimer as to a required condition in order to be able to support the first part of that statement!! This is very relevant and important, as it shows that the Engineer cannot, did not want, and did in fact not state that "The proposed facility will operate at less than 1,000 watts ERP" period, even though that was what City Staff had asked for.

Additionally, the RF industry has been consistently applying this proper common understanding that ***"the ERP of a facility is the total ERP of all its antennas and all its channels combined"*** when interpreting Portland's City Code. On page 3 of her May 12, 2000 memo Ms. Cate explains a problem of applicants consistently submitting applications with too high ERP values because as she states "....***the values being declared were the total output of all antennas of the facility***". This is yet another very clear sign that that is indeed how the experts in the industry read and interpret the code!

Appellant in its memo refers to "legislative intent" while in fact the only documentation they reference to is material from Ms. Cate. It is Ms. Cate's testimony to the Hearings Officer, and a memo from 12 years ago by Ms. Cate's that are claimed to show the claimed legislative intent. Ms. Cate's sole opinion is not what defines "legislative intent". In order for there to be reason to believe the legislators actually meant something different that what they "accidentally" enacted into law (code), it needs to be established that legislators themselves were of a different opinion of the matter than what ended up in code. The Hearings Officer already reviewed and factored in Ms. Cate's arguments in his review and decision and found those to be none convincing, hence his decision in favor of opponents on this matter.

In this case, we're just dealing with an applicant who admittedly does not like the code as it is written and its implications, and who is now trying to argue that something else was meant than what was actually written.

The appellant's claim that something different was meant than what was actually written in the code is highly speculative.

Just as an example of how speculative this becomes: Appellant claims that "The City's intent was to regulate wireless facilities such as this one through the CUP standards in PCC 33.815.225(C)...". One needs to realize that facilities anything like the currently proposed one didn't even exist at the time the code was written! Per the City's staff report (page 12) the RF industry has undergone dramatic changes since 1996. Some quotes from that page: "The industry experienced explosive growth shortly after passage of the Telecommunications Act of 1996" and "At the same time (in 2009) there were 55.8 million subscribers to mobile internet access services at speeds exceeding 200kbs in at least one direction – which is **more than double the number at the end of 2008.**" (original emphasis; NOT added!). In addition it speaks of 3G, 4G and related services, which all didn't even exist in 1997.

As another example: Someone being cited for driving more than 80 mph on the freeway cannot claim that the intent of the original 55 mph speed limit when it was written into law was merely to define "*a safe speed*" which for his current modern car with air bags, advanced brake control, etc. 25+ years later equates to something in the order of 90 mph. It would be similarly ridiculous for that person to claim that the speed limit was intended to apply to the *average speed* over the trip, instead of to the maximum speed. If the law speaks of a maximum speed of 55 mph, then that is what was meant. Where City code speaks to "facilities operating at 1,000 watts or less" there is no reason to believe the intent was to instead speak of "wireless facilities for cell phone coverage" let alone "wireless facilities for cell phone coverage regardless of its power levels".

Contrary to what appellant claims, ***it is very clear that the intent was to implement some numeric threshold based on radiated power***, since that is specifically included in the definition of the code categories. If as Ms. Cate and appellant suggest legislators intended to define a category for all "Cellular, PCS, and SMRS- services", all they would have needed to do was to write "Facilities for providing Cellular, PCS, and SMRS- services" [and they even could have added "or similar" to that sentence, to provide for future flexibility if they'd wanted to]. Instead, they chose to define the threshold based on Radiated Power levels of the Facility. It's hard to see how that could have been an accident, and not been intentional.....

This becomes even clearer if the situational environment in which the subject 2004 update to zoning code was introduced is taken into account. Staff's memo speaks to the situation when a 100 watts ERP threshold had become obsolete due developments in the industry and new applications mostly exceeding this 100 watts threshold. Therefore, the City would have been very aware of any perceived downsides associated with regulating these facilities based on

radiated power levels thresholds, instead of on functional description (such as cellular phone versus broadcast television). However, ***the City and City Council specifically elected to keep ERP levels as distinguishing factors in City code and use thresholds based on the numeric value of ERP as the deciding factor between code sections***.

Frankly, in light of all of this above, it seems to us that it would be kind of insulting to the City Council members of that time to claim that they were too illiterate or non-articulate or not intelligent enough to know differences in meaning between "Facilities operating at 1,000 watts or less" which is the text they voted to approve versus "Any wireless communication facility regardless of its power level".

I-B) Under item 1-B, appellant asserts that the Hearings Officer overlooked or failed to realize some facts in this matter. Such assertion is far from the truth! The Hearings Officer was correct on this issue as well.

Under 1-B in its memo, appellant states three times in different wording simply that "because federal rules set a limit of 1,000 watts ERP ..... this facility will not exceed the 1,000 watt ERP threshold...". There isn't much more substance or information in that statement than in the statement "Because committing a crime is not allowed by federal law, crimes will never happen in this country". If life was just that simple.....
Additionally, it is simply not true that the FCC limits the power of a facility to 1,000 watts ERP or less! As can be seen in the excerpts of federal code submitted into the record in previous testimony, that assertion by appellant is simply not true!

Appellant further claims that "While the methodology for calculating ERP is not articulated in the City's code, federal rules generally require ERP to be calculated by antenna, by channel, in a given direction."
The methodology of calculating ERP of a facility is not less articulated in City code than calculation of similar numeric concepts of other facilities. Capacity of parking facilities is calculated as the summed capacity of the facility, not as the capacity of one of its parking spots. Floor area of many types of facilities is calculated as the total floor area of subject facility, not just that of that of the highest floor or of the oldest building of the facility. Etc. etc. etc...

Furthermore, FCC very specifically does state that in situations relevant to this particular application, ERP of a facility means and therefore is to be calculated as the total ERP of all the channels of all the antennas of the facility!

As is shown in several documents in the record, FCC regulations clearly states: (see 47 CFR Ch. I (10–1–04 Edition), section 1.1307 (page 326) and/or see link below):

http://www.gpo.gov/fdsys/pkg/CFR-2004-title47-vol1/pdf/CFR-2004-title47-vol1-chapI-subchapA.pdf

"The term power in column 2 of table 1 refers to total operating power of the transmitting operation in question in terms of effective radiated power (ERP), equivalent isotropically radiated power (EIRP), or peak envelope power (PEP), as defined in § 2.1 of this chapter.
For the case of the Cellular Radiotelephone Service, subpart H of part 22 of this chapter; the Personal Communications Service, part 24 of this chapter and the Specialized Mobile Radio Service, part 90 of this chapter, the phrase total power of all channels in column 2 of table 1 means the sum of the ERP or EIRP of all co-located simultaneously operating transmitters owned and operated by a single licensee."

This is of course the same language as the FCC Telecommunications Act of 1996, FCC 96-326, ET Docket 93-62, specifically Appendix C, page 89 & 90, which can be found online here:

http://transition.fcc.gov/Bureaus/Engineering_Technology/Orders/1996/fcc96326.pdf

On top of that, this was also specifically confirmed by e-mail with FCC (see attached e-mail!).

I-C) Under item 1-C, appellant asserts that the applying the correct interpretation of city code namely that a facility which is operating at an ERP of well over 1,000 watts should be categorized under "facilities operating at more than 1,000 watts ERP" would turn City code on its head and create unintended consequences.

Appellant states they "...do not believe it was the City's intent" for these types of facilities to be encouraged to be grouped together. There is no substance or backing of that "belief". In many places does City code encourage collocating of RF facilities, and since collocating and grouping are similar concepts, it again becomes very speculative what City's intent was. This and other beliefs expressed by appellant under 1-C are all highly speculative, unsupported by facts or evidence in the record, and these claims "conveniently ignore" the fact that when referring to "*wireless facilities such as this one*" it speaks to facilities and types of technology that hadn't even seen the light when this latest code (and/or revision) was enacted in 2004 or was conceived in 2000!

Therefore, making such statements as to legislative intent is built on the assumption of visionary powers of our former City leaders that would be far beyond those of the late Steve Jobs. Although we don't want to dismiss that possibility, it certainly seems odd that those same visionary leaders would not have the presence of mind at the same time to just clearly state "cellular, PCS or SMRS facilities" as the code threshold instead of using the description "facilities operating at 1,000 watts ERP or less", or using specific language like "facilities of which the maximum ERP of the one antenna with the highest rated ERP operates at 1,000 watts ERP or less" if any of that is what they actually meant.

If appellant does mean to suggest in this section of their memo that City code in regards to RF Transmitting Facilities needs to be revised and clarified, we certainly agree. Similarly, we believe that the City would benefit from some new policy direction in this area of RF facilities. But

frankly, we believe, and have sensed that City Council appears to feel the same way, that such ***revisions and updates will be required regardless of the interpretation of code and regardless of City Council's decision in this case***. Therefore, some sort of unintended consequences are simply an unavoidable by-product of whatever outcome this case will have, and will need to be addressed by working to update relevant code and policy, not by City Council ruling against the meaning of current code.

The issue of inconsistencies between subsections C and D is just one of several items that we have noticed that would need some code revisions. We are more than happy to assist City Staff by sharing our input, insight and suggestions when the time is right for that. ***The suggestion that by siding in favor of appellant in this case City Council could avoid unintended consequences is in our opinion much too simplistic and naïve.***

If City Council, in an attempt to avoid certain specific unintended consequences called out by appellant, ***were to decide that City code does not mean what it actually says***, but instead means whatever the legislative intent may have been at the time certain sections were enacted, ***it could simply turn any land use case into a chaotic situation***. Cases can no longer be reviewed or decided ***based on the City code***, but would need lengthy reviews and would routinely lead to very difficult and confusing discussions about subjective issues regarding the perceived historic intent.

Furthermore, the ***sense of justice and fairness for Portland citizens would be seriously diminished*** in that case due to the City no longer applying zoning code consistently as it is written, but instead turning it into a contest of who believes to have the most rights claiming to know what the legislative intent was of those behind certain zoning code sections. Or perhaps it would make it into a contest for those who have the deepest pockets to argue their point of view with the highest possible attorney powers.

In addition to that, as far as unintended consequences, there is also the matter of ***the illegal materials that were part of the application materials***. OSBEELS will be investigating Verizon regarding these violations of ORS in this case. The Hearings Officer was informed of the issue of applicant's violations of ORS and declared applicant's materials unreliable; ***City Council could certainly choose to ignore*** the Hearings Officer's findings and instead rule in favor of applicant, and thereby ignore any and all issues regarding ***legal licensing requirements by professionals as set forth in ORS***. However, as far as setting precedence and creating *unintended consequences*, the City would then also open the door to any other applicant to include false claims of professional licensure in official applications, and likely forego proper recourse in such cases. This would not be limited to just Engineers, but would likely include many other professional licenses and certifications. Some people may claim to have a liquor license while in fact they don't; others may submit letters signed by The Fire Marshall while in fact they are not; etc. etc. etc.

Now how is all of that for "unintended consequences"?

Item II

II-A) Under item II-A of their memo, appellant again states that the reason that the proposed facility will operate at 1,000 watts or less is that federal law through FCC has established maximum power limits for wireless facilities that are 1,000 watts or less.

If life were that simple, one might question why there are even courts, or why we'd even need zoning review procedures. The driver cited for going 80 mph on I-205, would simply "prove" that he didn't go that fast because the speed limit is 55 mph and the law states that everyone shall obey the speed limit, therefore he could not and did not break the law or exceed the speed limit.

Furthermore, appellant here again fails to properly distinguish between ***facility*** and ***antenna*** or transmitter. As can be seen by checking the listed reference, the quoted federal regulations in fact do **not** regulate the maximum power of ***facilities***!

II-B) Under II-B appellant claims that there is substantial evidence in the record that the proposed facility will operate at less than 1,000 watts ERP. As explained below, this claim goes wrong in two ways:

(1) the claimed substantial evidence is actually not at all evidence to that effect, plus

(2) there is substantial evidence in the record that actually shows the facility will operate at well above 1,000 watts ERP.

(1) In this section appellant refers in this matter to their Engineer being "... qualified to render such ***opinion***" (emphasis added). Obviously, the matter of determining ERP of a facility is a matter of ***fact*** and not a matter op ***opinion***. What the FCC, the City and the public at large will be looking for is a professional who can ***determine*** the ERP of the facility, not a person who ***has an opinion about*** the ERP!
Furthermore, the Engineer does actually **NOT at all** state that the facility will operate at less than 1,000 watts ERP. The Engineer instead states that "Therefore the facility will operate at less than 1,000 watts (if) ***based on one channel of one antenna***. " Note: Emphasis was not added in this rebuttal but was actually added by the Engineer himself in his original report, in fact as a very loud and clear disclaimer as to a required condition in order to be able to support the first part of that statement!! This is very relevant and important, as it shows that the Engineer cannot, did not want, and did in fact not state that "The proposed facility will operate at less than 1,000 watts ERP" period.

If not already clear from the rest of these proceedings, the reason for that added disclaimer is certainly clear from the Engineer's other statement. In those statements the Engineer openly admits that the 759 watts maximum ERP applies per each channel of each antenna of the facility. The Engineer as well as other application materials are also very clear to the fact that the facility will host at least nine antennas, each operating at several channels! Therefore, the ERP of the facility is clearly more than 1,000 watts ERP. As confirmed by the Hearings Officer (page 11), ***City code does not allow the ERP of an antenna to be divided by the number of channels it operates on*** in order to get below the code's ERP threshold.

(2) At least as important as the ***lack of evidence*** in the record that the facility will operate at ***less*** than 1,000 watt ERP, is the fact that there is actually ***plenty of evidence*** in the record showing that it will operate at ***ERP level well above the 1,000 watts***. Just a sample of exhibits all showing the total ERP of the facility being higher than 1,000 watts:
   a.) The Engineer's report dated March 2011, stating :"I estimate the maximum ERP from the Verizon antennas will be less than 10,000 watts", exhibit A-2
   b.) The applicant's Radio Frequency Transmission Facility Registration Form, exhibit A-4 stating ERP < 10,000 watts
   c.) The Engineer's revised report, August 2011 stating "nine antennas", multiple channels per antenna" and "less than 759 watts for any single channel from any of the (9) antennas"
   d.) The Engineer's additional report, October 2011, speaking of a facility with multiple sectors and "6,724 watts per sector"

II-C) Under II-C, appellant attempts to downplay their conflicting representations as to the ERP of the proposed facility that was noted by many people, including the Hearings Officer. This is an apparent attempt to dismiss the Hearings Officer's findings of lack of credibility in the application materials.
The appellant claims that the reason the later Engineer's report (dated October 2011, exhibit H27) listed a lower ERP than the "less than 10,000 watts" listed in his earlier report (March 2011, exhibit A-3 was simply because "*...more detailed ERP information was then available*". Because of this new information, the facility's ERP had apparently now dropped from "less than 10,000 watts" to "less than 759 watts"! Although the design or application for the facility itself had not at all changed in the mean time, the estimated ERP had suddenly dropped dramatically (from something like 10,000 watts to something in the order of 759 watts! So people are requested to believe that the Engineer had it all well calculated and designed at time of application, upon which there was just some slight refinement that reduced the power to less than 10% of the original estimate.....?

As far as credibility, there is nothing much that can be saved here by applicant, regardless of what explanation they would come up with for this sudden drop in ERP, simply be realizing that applicant submitted knowingly, openly and willingly in multiple separate documents the initial

number of "< 10,000 watts" even though the code clearly uses a threshold of 1,000 watts for that category and type of facility. It was only after opponents clearly showed the conflict in this matter, that applicant suddenly started submitting other reports that were trying to argue that to the contrary the facility was actually operating at less than 1,000 watts ERP.

At the City Council Hearing on January 11, appellant was heard basically explaining that their initial data was not of very high quality (i.e. wrong, inconsistent and unreliable) because they didn't expect any real opposition (i.e. people actually reading and checking the information and challenging the validity of this application against city code). We can only be left to assume or conclude that that then also must have been why applicant blatantly stated in several documents of their initial application that the facility's ERP would be operating in the order of 10,000 watts ERP, though the applicable code section have a threshold of 1,000 watts as its maximum....(?)

On the issue of "credibility" we believe appellant puts the nail in their own coffin by explaining that the ERP wattage (39.28 watts ERP) as listed on the October 4, 2011 Radio Frequency Transmission Facilities Registration Form applies to the *pilot channel* of the facility! They mention that 'in their own defense' even though the form specifically requires applicant to list ***all relevant information of each antenna***!! (see City of Portland's RF Transmission Registration Form, Exhibit A-4 , H28b)

Would anyone's 90,000-BTU furnace be rated as "operating at less than 10 BTU" because its ***pilot light*** is only this poor little tiny flame that cannot possible generate 90,000 BTU of heat output...???
It is ***totally irrelevant, inappropriate and in clear violation of the letter and intent of the subject Form and associated City code*** provisions to claim the ERP of the facility to be 39.28 watts due to a ***pilot channel*** operating at such power output!

"Bye bye credibility.....!"

II-D) Under II-D appellant appears to blame ***the Hearings Officer for not redesigning applicant's proposed facility*** to a form in which its ERP will be reduced to less than 1,000 watts ERP. We find this suggestion very interesting for several reasons:

(1) ***Applicant*** here apparently and implicitly again ***admits that the facility as proposed does not meet the 1,000 watt ERP maximum***. Otherwise this whole point or argument under II-D by appellant as to additional requirements for making the facility fit under that category would be moot to begin with....!

(2) It is ***very inappropriate*** for applicant ***to suggest that the Hearings Officer*** (who just like Mr. Culley is not a registered or licensed Engineer) ***should be (re)designing a RF facility for Verizon***. The burden of proof as to what the facility is and how it meets City code is on the applicant, and so is the burden of designing a proposed facility. In this free country it is applicant's own choice

whether to design a facility that meet or doesn't meet City code, and whether to apply for permits or not for such facility. It is in fact not the job for the Hearings Officer to redesign RF Facilities that don't meet code. We consider it tasteless of applicant to try to blame the Hearings Officer for a series of their own bad judgments.

(3) Yes, there is more, but we're out of time.....

Item III

Under item III appellant is trying to make a case that ***regardless and despite of all the*** issues mentioned above and in the many other documents from the Neighborhood Associations, SE Uplift, multiple neighbors, the state representative, and several others, which are part of the record and that show major ***deficiencies, inconsistencies, violations of ORS, and other problems***, and regardless of the Hearings Officer after a thorough review determining that the application on many aspects does not meet the requirements, the application should just be approved.

Specifically, III-A claims again that the ***Hearings Officer was at fault,*** this time by not determining which criteria applied and by failing to determine there was substantial evidence showing the approval criteria were met. Both claims are untrue and frankly quite discerning.

It is the responsibility of the applicant to determine and demonstrate what their application constitutes, what City code requires as far as application process and for the proposed development, and what the applicant actually is applying for. ***It is not up to the Hearings Officer to determine what criteria apply: that is what City zoning code is for and that is what is prescribed in City Code!*** City code is very clear about what is required for any RF Transmission Facility within the City, clearly distinguishing between criteria for smaller (< 1,000 watts ERP) versus bigger (> 1,000 watts ERP) facilities. ***It was applicant who failed to provide reliable information as to what their proposed development constitutes.*** As the Hearings officer pointed out, the applicant's application included statements as to the ERP ranging anywhere from 39.28 to more than 6,724 watts ERP, thereby stretching from less than 5% of the threshold for code section C to more than 6 times that threshold. ***This is the applicant's failure to provide reliable information, not the Hearings Officer's failure to determine what criteria apply!***

On the second claim from appellant, besides the fact that the Hearings Officer simply could not apply approval criteria due to application's lack of reliable information regarding the proposed development, he was also faced with portions of the applicant's information clearly being illegal materials and therefore not permissible as "substantial evidence". Therefore, on that claim too, ***it's not about the Hearings Officer's failure to find substantial evidence, but rather about applicant's failure to provide proper legally acceptable evidence!***

Not only was it the City's and Hearings Officer's right to deny the application in this case, ***it was actually the City's obligation to deny the application*** which was correctly enacted by the Hearings Officer!

II-B) Under III-B appellant simply repeats their earlier stated opinion that they themselves believe their application materials contain the evidence needed to show approval criteria are met. The main argument this time seems to be that 'Staff said so". By referring to the October 3, 2011 staff report appellant seems to conveniently ignore the due process and other steps and findings of a land use review. As pointed out by opponents and as confirmed by the Hearings Officer the referenced Staff Report contained multiple significant errors, most importantly culminating in the wrong conclusion by staff that substantial evidence had been provided, criteria were met and the application should be approved. The Hearings Officer found none of those three things, and therefore correctly concluded that the application should be denied.

Simply going back to the pre-Hearings-Officer's-decision Staff Report for any of those same issues would totally defy the whole purpose of a Land Use Review and of a Hearings Officer. If the Hearings Officer is believed to be right only in cases where he agrees with Staff, but is wrong and can simply be ignored in case he would rule contrary to Staff recommendations and would come up with an independent decision, then what is the use of the Hearings Officer process in the first place...??

If appellant wants to show or prove the Hearings Officer was wrong, they will have to introduce some very convincing new information or evidence, plus proof why that is new and could not have been reasonably part of the initial application and appellant cannot simply revert back to information that was already reviewed, taken into account and ruled upon by the Hearings Officer and that was actually found to support his decision to deny the application!

Conclusion

Given all the issues and explanation described above, appellant's recommendation and request to approve this application is shown to be severely misguided and inappropriate. ***City Council should give proper credit to City Code, applicable approval criteria, the City's Land Use Review process, and the Hearings Officer's professional judgment and findings that this application should be denied.***

Policy and code updates on the subject of Radio Frequency Transmission Facilities are needed anyway, and obviously sooner rather than later. We recommend the City reconfirms the Hearings Officer's decision to deny this application, which is so clearly filled with issues beyond what can be approved under current code.

The City can then focus on proper updates and revisions of code and policy. Applicant can choose to either submit a valid application for a proposed facility that does meet current code, or they can choose to wait to file their application until after policy and code revision are enacted, if they prefer and believe that approach is in their better interest.

Thank you for your time and interest in this matter,

Marcel Hermans

January 24, 2012

Comments to May 12, 2000 Memo from Sylvia Cate, Re: Effective Radiated Power as a review Threshold in Chapter 33.274

1) The second paragraph of the memo states "...we need to apply the code as it is written until it can be amended..."!

   Although that was in 2000 and we are now in 2012, we fully agree!

2) Under "background" , third paragraph on page 2, the memo describes how the 1997 revisions and amendments to Chapter 33.274 and Section 33.815.225 distinguished between certain facilities based on their power-levels. It refers to ***low-powered facilities*** as either operating at 100 watts or less or operating between 100 and 999 watts, and acknowledges that at least some of those ***requiring certain (land use) review procedures***.

   Note: This is all taking place in 1996 and 1997, so 15 to 16 years ago!

   It also states here that one of the purposes was ***to discourage applications for new towers***.

   It also states that these facilities (note: not "antennas") must meet new approval criteria ...to address the impacts of 'cellular monopoles' .....in or near residential neighborhoods!

3) In the fourth paragraph on page 2, the memo states "Because ***these facilities are extremely low-powered***...." (emphasis added). Therefore, this memo actually makes it quite clear that **the alleged intent (of some City Staff) at the time in 1997 was to base the distinction between threshold categories on power-levels, not on technology type** (such as television versus mobile phone networks) as appellant in this case now attempts to argue. Furthermore, there was a clear intent to only allow within these code sections ***facilities that are extremely low-powered***.

   At the top of page 3 the memo states: "Any facility exceeding these FCC thresholds requires a 'routine environmental evaluation' as further defined by the FCC."

4) We like to point to two other items of great importance:

1) This properly refers to the 1,000 watts value as the FCC ***threshold*** (not a limit!), so it is not that facilities over that threshold aren't allowed or possible. On the contrary, referring to it as a threshold only makes sense if facilities of more than 1,000 watts are also possible and allowed by FCC, so this directly disproves the point that appellant tries to make in stating that FCC simply doesn't allow facilities of more than 1,000 watts, so therefore their facility would by definition be allowed.
2) It refers to a '***routine*** environmental evaluation' thereby also showing that it is quite common for such facilities to exceed that threshold and that those facilities could still be allowed as long as the required environmental evaluation comes out OK.

5) Slightly lower on that same page, Ms. Cate continues with "By my layperson's calculations, this results in these types of facilities being ***limited*** to 1,000 watts ERP or 1,640 watts EIRP". This is one of the areas where Ms. Cate goes wrong in translating or transforming a ***threshold*** into a ***limit***.....

   The memo then continues to describe how registration forms for new facility permits were being continuously submitted based on the "total output of all antennas of the facility.."! This is yet another strong clue and indication that professionals in the RF industry, the ones submitting permit applications, if asked what "the ERP of the facility" is, consistently will state it is the total ERP of all antennas combined!

   Since this was a problem for City Staff in processing the applications properly under code, so Ms. Cate describes how she came up with a "mathematical bridge" that could make the actual problem go away: she notes that dividing the ERP by the numbers of antennas largely makes the problem go away.

   There is no mention at all, let alone properly addressing, of the fact that apparently the industry is telling the City in every single application that ERP of a facility is meant and understood to mean the total ERP of the facility with all its antennas.

   She then continues to describe how she made some judgment calls to keep applications moving, but how she feels that is not a proper way considering the declared ERP often exceeds code thresholds by more than 2 to 4 times. She states she is looking for a way to show that "the declared ERP values were equivalent to the ERP thresholds as defined by the Zoning Code".

   In the next paragraph she describes how "It is difficult to explain in a pre-app why certain provisions apply when it appears that others should".

Conclusion

Therefore, from this memo, it is very clear that:

1) ***The RF industry consistently interpreted "ERP of a facility" to mean the total ERP of the facility with all its antennas***, and not "the ERP of just one of its antennas". Applicants also presumable read City code prior to applying for their permit, and that language did also not sway or change their governing interpretation as to how this is meant. This is even the case after Ms. Cate and/or other staff suggests applicants to divide the ERP by the number of antennas, which doesn't convince applicants but rather as quoted in the memo by "expressing some justifiable frustrations with the situation".
2) So far, ***the only independent source identified that believes the ERP of a facility is that of a single antenna has been Ms. Cate***; anyone else found adopting that view has derived that either directly or indirectly from instructions from Ms. Cate.
3) The City, knowingly facing this issue, did nothing to change the language and reduce any possible confusion, so ***there certainly was no demonstrated intent to change the official City interpretation endorsed by the RF industry, into an interpretation favored by Ms. Cate*** in order to make the code work easier for her.
4) It is very clear that the City's intent was to apply the thresholds in Chapter 33.274 and Section 33.815.225 to ***facilities that are " extremely low-powered "***! Since the currently proposed facility is far from that, ***there was no intent at all to have this proposed facility fit under the lowest possible category in those code sections***.
5) As Staff reported on page 12 in the Staff Report, developments in the RF industry since 1996 have been dramatic, making it very clear that this currently proposed facility could and would never have fit under the intent of City Council when this code was enacted 15 years ago!

Comments to June 14, 2000 Memo from Barry Manning, Re: Code Issues in Chapter 33.274

Comments to January 5, 2012 Letter from Thomas S. Gorton, PE

Unfortunately, Mr. Gorton's letter focuses solely on an issue that is not being disputed in this case and which has no bearing on the Hearings Officer's decision or any of the points raised by opponents in this case.

The letter states that their firm had "been asked to review prior evaluations of the proposed Verizon Wireless personal wireless telecommunications facility "POR Foster" for compliance with Federal Communications Commission (FCC) regulations regarding human exposure to radio frequency (RF) and electromagnetic fields (EMF), and maximum Effective Radiated Power (ERP) limits."

The reason why the Hearings Officer decided to deny the subject application was that it doesn't meet ***Portland City code***, not because it doesn't meet ***FCC regulations***. Therefore, this letter reiterating that the proposed facility would meet *FCC regulations* is ***irrelevant*** and just a matter of noise in these proceedings.

One minor point worth noting though is that Mr. Gorton, just like his colleague Mr. Pinion did before, is to carefully avoid the red-flag or smoking-gun issue of "***ERP of the facility***" which is key in their non-compliance with City code since doing so would be detrimental to their application. Instead Mr. Gorton only refers to "*per channel ERP values*" which has no bearing on City code or the issue at stake in this appeal.....

EXHIBIT 1: Confirmation e-mail from FCC

From: OETInfo <OETInfo@fcc.gov>
To: 'Euro Guy' <euroguy_pdx@yahoo.com>
Cc: Donald Campbell <Donald.Campbell@fcc.gov>
Sent: Wednesday, November 2, 2011 8:34 AM
Subject: RE: Questions regarding ERP of facilities (wireless telecommunications)

Hello Marcel,

The answer to your question depends on the context. For example, Section 22.913 of FCC rules limits the ERP of cellular base station transmitters generally to 500 watts. That limitation is per frequency.

In contrast, for radiofrequency (RF) exposure purposes, we generally do not specify the total ERP for a facility. However, to determine exclusion from further radiofrequency (RF) exposure evaluations we consider the total ERP for multiple antennas and frequencies that are collocated as specified in Section 1.1307(b)(1). For the wireless services using sector antennas, the ERP is summed for all channels and all antennas operated by a single licensee in a single sector in each particular service or frequency band.

Since the spatial regions where our RF exposure limits may be exceeded are typically small, and different licensees and frequency bands were assumed (at the time the RFR rules were written) to not use the same antenna, the intent was to sum the ERP for all the antennas that are practically collocated. For example, consider a tower hosting 5 different licensees, with each licensee operating in a single frequency band and at a different height on the tower. In that case each licensee could independently use the applicable exclusion without consideration of the facilities operated by other licensees.

As you may know, we have proposed changes to our categorical exclusion criteria to deal with the now-common deployments involving multiple licensees and frequency bands (possibly operating from the same antennas), and we may act on these proposals in the future. We emphasize that compliance with our exposure limits is required regardless of categorical exclusion, so it may be prudent to sum exposure from all sources in the area

I hope that this is responsive to your questions. Please contact me if you require further guidance.

Regards,
Donald
Donald Draper Campbell
Senior Engineer
Federal Communications Commission
Office of Engineering and Technology
Washington, DC 20554
+1 202-418-2405

From: Euro Guy [mailto:euroguy_pdx@yahoo.com] Se**nt:** Sunday, October 30, 2011 10:34 PM **To:** OETInfo **Subject:** Questions regarding ERP of facilities (wireless telecommunications)

As it pertains to wireless communication facilities (cell towers, etc.) there is some recent confusion in our community about the proper interpretation and application of Effective Radiated Power (ERP) as it relates to facilities with multiple antennas. It appears that the most common and accepted interpretation of ERP of facilities is similar to how power of facilities is defined and determined in general: The (total) ERP of a facility is the sum of the ERP's of its individual transmitters. (Just like the total power of a "power plant facility" consisting of 4 turbines or generators with output of 500 kW each would be characterized as a "2 MW facility" or a "2 MW power plant.")

1) Is it indeed the interpretation of the FCC that a facility consisting of 10 antennas that each has an ERP of 100 watts should be characterized as a 1,000 watt facility?

2) Similarly, an antenna that transmits on two channels with an ERP of 50 watts each per channel should be characterized as an antenna with an ERP of 100 watt, and not as an antenna with an ERP of 50 watts, correct?

3) And also as a very specific example, a facility consisting of a tower with 10 antennas that are each rated as having an ERP of 50 watts, should ***not*** be characterized as "a facility operating at 100 watts or less"; correct?

It seems very clear from the many FCC regulations, rules, publications and communications that those are indeed the proper and correct interpretations, however due to the confusion in our community I would highly appreciate it if you could confirm those interpretations are correct.

(P.S. I realize that not all channels and all antennas of a facility may necessarily transmit all at the same time, and certainly not do so at their maximum ERP levels, and I also realize that antennas transmitting in different directions not necessarily have overlapping fields of their radiation, but the questions above just pertain to the definition and interpretation of ERP for multi-channel, multi-antenna facilities.)

Thanks,

Marcel

White Paper – by: Marcel Hermans – December 2011

Meaning of "ERP" in Portland City Code

Introduction

In some recent land use cases in Portland, confusion and discussion emerged on the meaning and proper interpretation of "ERP" ("Effective Radiated Power") as used in Portland City Code. In several sections of its zoning code, PCC (Portland City Code) uses certain numeric value thresholds of "ERP" ("Effective Radiated Power") of Radio Frequency Transmission Facilities to distinguish between different types and categories of facilities in order to set different (zoning) code requirements. Amongst other things, several criteria for exemption, approval, conditional use review and development standards are tied to that metric of ERP.

It appears that Portland City staff apparently has been interpreting this portion of City code incorrectly, resulting in several cases in which such facilities were not properly and correctly evaluated against the applicable code.

This white paper provides background and explanation of the proper meaning and interpretation of ERP as used in Portland City Code, and seeks to assist City staff and others in better understanding and correct interpretation of existing rules and regulations as to ERP.

Background

In the recent "Decision of the Hearings officer" for LU 11-125536 CU AD (HO 4110025) dated 11/2/2011, the hearings officer rules on several issues related to ERP, specifically:

> (1) whether the "ERP of a facility" is the ERP of just one single antenna or the ERP of all antennas of that facility, and
>
> (2) whether the "ERP of one antenna" is the ERP of just one single channel of the antenna, or really the ERP of the one antenna (with all its channels included).

On the second issue the hearings officer concluded that the "ERP of one antenna" is indeed that, and is not to be divided by the number of channels that the specific antenna may be operating at [see Page 11 of decision]. Since this interpretation is quite logical and intuitive in itself, and since further explanation

as to that interpretation is included in the hearings officer decision, this paper does not intend to specifically focus on or add to that explanation.

On the first issue, the hearings officer concluded that "the language of PCC 33.815.225 C ('facilities operating at 1,000 watts ERP or less...") ***is subject to two plausible interpretations***. [Page 9]

Furthermore, based on the arguments and evidence submitted to him, the hearings officer found that "***the most plausible interpretation*** of PCC 33.815.225 is that the 1,000 watts threshold for a facility is the ERP for a single antenna". [Page 10 of decision]

As described in this paper, a closer and better look at this issue whether "ERP of a facility" is indeed the total ERP of the facility (as in "the ERP of all the antennas the subject facility contains") or rather should be interpreted to mean "the ERP of just one of those antennas" was performed. That analysis shows that the hearings officer's ultimate conclusion was premature and incorrect. ***Taking into consideration the additional analysis summarized below shows that the only correct interpretation of "ERP of a facility" is the one that determines the Effective Radiated Power (ERP) of a facility by taking into account the radiated power of all components of that facility.***

This paper describes and summarizes several different reasons and arguments which all support this conclusion.

Supporting reasons and arguments

Reason 1: Definition of "ERP", and proper interpretation of language

PCC defines ERP or Effective Radiated Power as: "A calculation of the amount of power emitted from a radio frequency antenna".

The definition in PCC provides for a definition of ERP as transmitted ***from an antenna*** only to define or explain where the power physically originates from (from a antenna): meaning that it is the power at stake here is being emitted from antennas, not from the sun, and not from the lights, the heater, the intercom, the micro-wave oven, or any other component of the facility or its vicinity. It doesn't provide for a specific exclusion in stating it comes from ***one*** antenna.

In this case power comes from an antenna, so the ERP as defined is clearly the ERP of that antenna. If milk is defined as "the liquid coming from the utters of a cow", that doesn't mean that the same liquid from the utters of 10 cows when it's poured in one larger container or tank is no longer milk....! (In the exact same way, ERP from 10 antennas of a facility is still ERP! If ERP coming from one antenna is ERP, then ERP from 10 antennas is also still ERP.)

The definition in PCC just provides for a definition of ERP as transmitted ("radiated") from an ***antenna***. It doesn't provide for an immediate definition of ERP of a ***facility***. A facility with multiple antennas will also

radiate power and do more so than any single antenna of the facility. The power radiated from a facility with multiple antennas will be the total power as radiated from its antennas combined.

If ERP of a facility were meant to refer to the ERP of one specific antenna of the several antennas included in the facility it would have to be specified which antenna would be the one determining the ERP of the facility. That could have been the average ERP of the antennas, the mean, the median, the lowest or the highest ERP value, or it could have been the ERP of the antenna which is the closest to neighboring properties, the one closest to residential areas, or of the one antenna at the lowest elevation of the facility, etc. etc. It could have been the ERP of the antenna that is being used the most throughout the year, the antenna that was installed first or last, etc. etc. Each of these options could have some rationale and arguments of why that makes sense, but the fact is that none of those are specified as the one interpretation that applies. On the contrary, by not specifying or even hinting at which particular option or interpretation applies, it leaves all the other options and possible interpretations open as each being equally logical possibilities, and is therefore not all a true definition or plausible interpretation. In fact, this situation clearly shows that it could never have been the intent of a logical person to come up with that definition if the intent was to have ERP of a facility be the ERP of just one antenna of the facility.

Putting a single focus on "a antenna" in this definition and ignoring all the other context of the world around it is as ridiculous as claiming that the definition "A calculation of the amount of power emitted from a radio frequency antenna" would define ERP not as the actual physical ***power*** being emitted, but rather as the ***calculation*** of that power (i.e. a sheet of paper with some numbers on it, consisting of a calculation). That is what that definition literally states after all, right....? Any logical person would know better on those.

The definition of ERP uses the term "power" also therefore implicitly also deals with the definition of "power".

- ✓ If the power of a light bulb is 60 watts and a light fixture has 3 such bulbs included, the total power from the light fixture is 3 x 60 = 180 watts.
- ✓ If a wind turbine park has 100 turbines that can each generate 500 kilowatts of power, the power the total park can generate equals 100 x 500 = 50,000 kilowatts (equals 50 megawatts).
- ✓ If the average power use of a household in a town with 2,000 households is 1,800 watts, the average power usage of the total town is 2,000 x 1,800 = 3,600,000 watts (equals 3.6 megawatts).

That is simply how the concept of power and calculations of power work: total power of a system or facility is the combined power of its components. This is a very universal and common concept and therefore applies in any situation in general unless specifically excluded. PCC does not contain any language or indications to the contrary, so therefore it should be assume to apply in PCC as well.

Reason 2: Logic

Regulating RF Transmission Facilities based on the power emitted only makes sense if the regulation takes into account the total power emitted by the facility. If that simple rule of logic is not followed, the entire base of the subject regulation becomes meaningless.

All sorts of facilities could be constructed and permitted under rules for "Facilities operating at 1,000 watts ERP or less", without any limits of their emitted power simply by putting many antennas on the facility. Someone intending to construct a facility with an actual physically emitted power (or ERP) of 200,000 watts would simply put 200 antennas on the facility, and still be able to claim the facility's ERP is less than 1,000 watts. Similarly, creating a facility of one million watts ERP would be possible and allowed under those provisions of PCC as well, simply by increasing the number of antennas by another 5 times from there. Any really, it doesn't stop at 1 million watts, it's truly limitless!

Therefore, with that interpretation, the rules of PCC zoning code would basically be explained to mean: "You can establish RF facilities of an unlimited and unregulated amount of power or ERP as long as the antennas you use in the facility have an ERP of 1,000 watts or less."

So PCC would prescribe that a certain facility with 10 antennas of 1,500 watts each would not be allowed under those provisions, yet the exact same facility with exact same footprint, same radiated power, and all the same other features and impacts would be allowed if the number of antennas would be doubled to 20 antennas of 750 watts ERP.

Not only is that contrary to what a logical person would think of this, but in addition that would also be in stark contrast and conflict with the basic principles that PCC or any zoning code is based upon: establishing and applying certain standardized thresholds and criteria to provide a uniform base for planning and development decisions.

ERP is expressed numerically, so therefore by definition it is being used to quantify (or "size") the facility. (In this case by the measure or size of "effective radiated power").

Such quantification of a facility for zoning code purposes does not make any sense at all if it were to be defined on a per-antenna basis, while at the same time not regulating the number of antennas. That would simply make that chapter of PCC moot and useless, because in that case an applicant can construct any size of facility by expanding or increasing the number of antennas. A facility with 8 towers, each carrying 30 antennas of 750 watts ERP would be regulated the same way and in the same categories of PCC as a single antenna on a building, or utility pole.

Reason 3: Meaning of "Facility"

PCC has several sections of its code specifically for "Facilities operating at 1,000 watts ERP or less".

33.274.030 (A through L) provides insight in the meaning and use of different terms such as "facility", "transmitter" and "antenna".

33.274.030 B clearly speaks to an antenna being a ***component of*** a facility: "...antennas, or other components of .. (...).. facilities".

33.274.030 J speaks to "***transmitters*** operating at (...) less than 7 watts transmitter power output..."

33.274.030 I speaks to "***Towers*** (...) or other (...) structures with a transmitter power output of 1,500 watts or less".

PCC also speaks to "***Facilities*** operating at 1,000 watts ERP or less" in many places.

Therefore if PCC had in those instances intended the language to mean "Facilities ***with antennas*** operating at 1,000 watts or less" it should and would have simply stated it that way.

Similarly, if PCC would have intended it to mean "***Antennas*** operating at 1,000 watts ERP or less" or "***Transmitters*** operating at 1,000 watts ERP or less" it could, should and would have simply stated it that way.

Instead, PCC specifically chooses to uses the term "Facility". In all other places where PCC uses the term "Facility" it is meant to be ***the total facility with all its components combined***.

As examples of that:

a) The City's BDS "Radio Frequency Transmission Facilities Registration Form:
The form specifically states: "Please register each facility separately using this form", stating basically one individual form is for just one facility. The form also asks the applicant/owner to fill out the "Number of proposed antennas at site", clearly showing that a facility can incorporate multiple antennas and not just one antenna.

   All of the information of the bottom of that form applies to all the antennas of the facility combined:
   - "Requested Power density" is that of *all the antennas combined* (and *not* just of *one* antenna)
   - "Requested number of proposed antennas" is that of all *the antennas combined* (and *not* just of *one* antenna)
   - "Requested height above ground" is that of the facility with all *the antennas combined* (and *not* just for *one* antenna)
   - And equally so, the "Effective Radiated Power" on the form is clearly that of all the antennas combined!

   If the form would have meant to ask for the ERP of the individual antennas, it would have stated so, and have asked applicant to provide a table or list with ERP of each antenna, so

that City staff can verify the individual antenna's ERP's. That should be especially clear since the form specifically acknowledges that the facility can have multiple antennas.

b) Applications for land use reviews, or building permits, etc. always consider the total facility with the combined impacts of its components. In impact analyses, the impacts of a facility are not the impacts of just one component of the facility. Similarly, the cost of the facility is not the cost of just one of the components or antennas, but rather the total cost of the facility with all its components (added up).

c) Helicopter landing facilities: each facility is regulated as one facility, and not on a per landing-pad basis.

d) Drive-through facilities:

Each facility is regulated on a per facility basis and not on a "per drive-through window"-basis. For example, in 33.224.060 Off-Site Impacts, the noise impacts are per the total facility and not per individual speaker, vacuum cleaner or air compressor.

If "ERP of the facility" were to mean "ERP of an antenna", then why wouldn't in the same way "cost of the facility" be similarly interpreted to mean "cost of an antenna". That is clearly not the case and is not how a logical person would interpret "ERP of a facility".

Therefore, where PCC speaks to "Facilities operating at 1,000 watts ERP or less" it means exactly that, namely the **ERP of the (total) facility** (i.e. the combined –effective radiated- power of the facility), and not the ERP of only a certain part or single component of the facility.

Reason 4: ERP is an Engineering term, so it has an Engineering meaning

ERP is clearly an ***engineering term*** describing a technical concept, and is therefore in its definition based on engineering. Therefore, to get an accurate handle on its meaning, value should be given to how engineers (or specifically RF Engineers) would interpret the term and its meaning.

Planners will have to interpret and apply the code, but as to its intent and meaning, ***the origin of the term*** is of course key, which in this case is ***the engineering realm***, not the land-use realm. It's a term that engineers used in regards to radio frequency transmission concepts and that was at some point used/borrowed by planners in zoning code concepts.

As was shown in LU 11-125536 CU AD, even the applicant's hired certified Professional Engineer clearly stated in its initial report that the ERP of the proposed facility was to be considered the total ERP of all the antennas combined. Only after specifically being instructed and directed (through their client, the applicant) by the city's planner to change the technical report, did the Engineer provide a revised

version stating that ***if calculated based on only one channel of only one antenna*** the ERP would be as the City planner requested/required it to be for that application to move forward. The Engineer was very clear and specific **not** to state anywhere in the report that the ERP of the facility **is** that of one antenna, but instead carefully emphasized that the required ERP would apply ***only if*** calculated the way the City demanded/prescribed, and for its own protection the Engineer even strengthened that disclaimer by specifically emphasizing that language.

Reason 5: Rationale behind FCC language, and the link to PCC

Although the ultimate issue at stake here is in regards to meaning of PCC zoning code and not federal code, very valuable and relevant information and insights can be gained from an analysis of FCC federal code, since there are certain links between federal code and PCC.

FCC regulations of RF Transmission Facilities deal with both ***emission*** levels and ***exposure*** levels of RF facilities. The basic difference between those two is that emission is based on and measured at the point of emission ("outgoing form the source"), while exposure is based on what is received at a certain point or by a person ("incoming at the receptor").

FCC rules claim to properly protect the public from "environmental effects of RF emissions" and in accordance with those rules the FCC include language that states that that specific issue is a federal matter and that local jurisdictions are not allowed to "regulate personal wireless services facilities on the basis of the environmental effects of RF emissions" as long as those facilities meet the FCC regulations. Simply said it means "FCC rules govern in those issues, and local jurisdictions cannot interfere in that".

In accordance with this regulation, PCC includes language that refers to and implicitly adopts the FCC rules or standards as to RF emission standards. PCC on RF facilities also includes lots of other language, which is therefore automatically meant to only regulate aspects of such facilities that are ***not*** based on "the *environmental effects* of RF emissions".

When asked for confirmation, in an e-mail FCC (attached as Appendix A) confirms that for setting exclusion categories like the one used in PCC ("1,000 watts ERP or less") FCC considers the total ERP by summing the ERP for all channels and all antennas:

" ... for radiofrequency (RF) ***exposure*** purposes, we generally do not ***specify*** the total ERP for a facility." [emphasis added].

Furthermore, the e-mail continues to explain:

"However, ***to determine exclusion*** from further radiofrequency (RF) exposure evaluations we **consider the total ERP for multiple antennas** and frequencies that are collocated as specified in Section 1.1307(b)(1). For the wireless

services using sector antennas, **the ERP is summed for all channels and all antennas** operated by a single licensee in a single sector in each particular service or frequency band." [emphasis added].

The rationale for that is simple:

Exposure is calculated based on actual RF exposure numbers, and is regulated as such and for that purpose: to protect the public from levels of exposure that are considered too high. For the purpose of categorizing certain facilities as being a generally low-impact type of facility which are guaranteed not to have the chance of exceeding *exposure* limits, and in order **to define a certain type of facilities to be excluded from *exposure* evaluations**, the FCC uses the ERP (based on ***emissions***) of a facility.

While ***exposure*** depends on many factors; is very dependent on the specifics of a situation and assumptions; and can be very hard to calculate or uniformly categorize for those reasons, ***emissions*** can be determined much easier. The power ***emission*** is determined directly from the technical specification of the feature emitting the power. Therefore, a threshold in emissions is the perfect measure to determine whether any exposure analysis or evaluation is needed.

This is why a light bulb is categorized by a wattage (e.g. 60 watts) based on how much light is emitted (***emission***) and not by how much light the person reading a book receives from the light bulb (***exposure***), since that would be dependent upon how far away the reader is from the light bulb, how much its light fixture concentrates the light towards the reader, how much light from other sources gets to the reader, etc. etc.

Applied to RF facilities this all makes total sense as well if one considers that by the act of setting an exclusion for a facility based on a certain ERP-threshold (e.g. 10,000 watts), the regulator (FCC or PCC) automatically guarantees that any single antenna of the facility can then also not exceed that threshold. If a facility is guaranteed to not cause exceedances of a certain exposure limit as long as the ERP of the facility is below 10,000 watts, then regulating the maximum ***total*** ERP of the facility is the only way to accomplish the goal of defining a safe exclusion category or limit. Regulating just limits of individual antennas could never accomplish or provide such guarantee, since a facility could simply include multiple antennas and therefore still emit much more ERP than the sought limit.

Conclusion is that ***for specifying exclusion categories based on ERP***, the only logical and reasonable method is to base it on the total (added up) ERP of all components of that facility.

Please note: PCC 33.274 uses the 1,000 watt ERP threshold for exactly that purpose: to ***specify exclusion categories*** (e.g. 33.274.030 B.2, 33.274.035, 33.274.050 B, etc.)

Reason 6: Similarities in PCC

The hearings officer in his decision on LU 11-125536 CU AD (HO 4110025) dated 11/2/2011, favored the City staff's interpretation as the most plausible of the two plausible interpretations by substituting the

literal definition of ERP into the language of the code. The problem with that approach in this case was that it resulted in an improper rephrasing of some of the code language which did not take into account the context and therefore the meaning of other terms such as "facility". Contexts, common sense, normal practice and established precedent in PCC interpretations as to use of those and similar terms show that the only correct interpretation is that the ERP of a facility is the total ERP of all its antennas.

The context to be taken into account here is PCC itself, since that is where these terms are being used. The PCC zoning code provides context in dealing with many similar definitions and regulations, which deal with terms and concepts related to size or measurement, total capacity, facility or site, etc.

Following the "rules of construction" that the hearings officer refers to in his decision while referring to the PGE versus BOLI case for the Oregon Supreme Court, 317 Or 606 (1993), the hearings officer attempted to rephrase specific code language by substituting certain terms' definitions, from the PCC definitions section if available, or otherwise from dictionary definition.

There are many sections in PCC zoning code that use concepts that are very similar to facility, antenna, power, and are used in defining criteria and setting thresholds based on such terms and concepts just like is done for Radio Frequency Transmission Facilities.

Below are several examples of code sections with similar purposes and descriptions as those of "ERP", "antenna' and "facility". As can be seen below, taking the City staff's interpretation in those cases would in every single case lead to an interpretation that is clearly not the intent of the code, is not that what a logical person would interpret it to be and is certainly also not how City staff has been applying the code in those cases (examples a through f).

a. Chapter 33.285 Short term housing and mass shelters

33.285.040A "Use regulations, Short term housing" states:
"Expansion or increase of existing facility.
Expansion of ***floor area*** or increase in the number of residents in an existing short term housing facility is processed according to Section 33.815.040, Review Procedures for Conditional Uses. Approval criteria are in Section 33.815.105, Institutional and Other Uses in R Zones."

Floor area is defined as: "The ***total floor area*** of the portion ***of a building*** that is above ground. Floor area is measured from the exterior faces of a building or structure. Floor area includes the area devoted to structured parking that is above ground level."

If the same logic would be followed here on terms "floor area", "building" and "facility", as City staff's interpretation of terms "ERP", "antenna" and "facility', it would mean that the floor area of a short term housing ***facility*** with multiple buildings would not increase or be expanded in case of an expansion of any of its buildings, as long as the floor area of the facility's largest building doesn't expand or increase. (Because "floor area" of the facility is the floor area of the largest ***building*** of the facility, just like the "ERP" of a facility is the ERP of the largest (i.e. highest-ERP) antenna. "Floor area" of the facility is not the total floor area of all buildings in the facility combined, just like ERP is not the total ERP of all antennas of the facility combined.)

Similarly, same Chapter, section 33.285.050B2 Mass Shelters, states: "Maximum Occupancy. Mass shelters may have up to 1 shelter bed per 35 feet of ***floor area***. Adjustments to this standard are prohibited. "

If the same logic would be followed here on terms "floor area", "building" and "mass shelter", as City staff's interpretation of terms "ERP", "antenna" and "facility', it would mean that the maximum occupancy of a mass shelter with multiple buildings would be the 1 bed for every 35 square feet of that shelter's largest building, with no consideration of the presence and capacity of the other buildings of the facility.

b. Chapter 281 Schools and school sites

33.281.050 "Review thresholds for development" states under article B.4:
"When the alterations will not increase the ***floor area*** on the ***site*** by more than 10 percent, up to maximum of 25,000 square feet".

If the same logic would be followed here on terms "floor area", and "site", as City staff's interpretation of terms "ERP" and "facility', it would mean that the ***floor area of the site*** would not even increase or be expanded in case of an expansion of any individual ***building*** on the site, as long as that building is not currently the largest building on the site.
(Because "floor area" of the site is the ***floor area of*** the largest ***building*** of the site, just like the "ERP" of a facility is the ERP of the largest (i.e. highest-ERP) antenna. "Floor area" of the facility is not the total floor area of all buildings on the site combined, just like ERP is not the total ERP of all antennas of the facility combined.)

c. Chapter 33.565 Planned Developments

33.565.310 Mailed Public Notice for Proposed Development, under B.1, states that public notice is required: "When the proposed development will add more than 10,000 square feet of ***gross building area*** to the site;"

Gross Building Area is defined as: "The total ***floor area of a building***, both above and below ground. Gross building area is measured from the exterior faces of a building or structure."

If the same logic would be followed here on terms "gross building area", and "site", as City staff's interpretation of terms "ERP" and "facility', it would mean that a public notice is never required, except when the gross building area of the largest ***building*** at the site (i.e. PDX International Airport) would be increased by 10,000 square feet or more. Any increase of whatever size or magnitude to any other building on the total site would not require a public notice, even if it were a 250,000 square feet increase of such building.
(Because "gross building area" of the site is the ***total floor area of*** the largest ***building*** on the site, just like the "ERP" of a facility is the ERP of the largest (i.e. highest-ERP) antenna. "Gross building area" of the site is not the total floor area of all buildings on the site combined, just like ERP is not the total ERP of all antennas of the facility combined.)

d. Definition of "Crown cover"

Crown Cover is defined as: The area directly beneath the crown and within the dripline of ***a tree or shrub***.

If the same logic would be followed here on terms "crown cover", and "site or green space", as City staff's interpretation of terms "ERP" and "facility', it would mean that the crown cover of a park, forest, site or green space area would be only the area within ***the dripline of*** the largest ***tree or shrub*** within that green space or site.

(Because "crown cover" of the site is the "***area directly beneath the crown and within the dripline of a single tree or shrub"*** chosen to mean the largest ***tree or shrub*** on the site, just like the "ERP" of a facility is the ERP of a single antenna chosen to mean the largest (i.e. highest-ERP) antenna. "Crown cover" of a site is not the total crown cover of all trees and shrubs on the site combined, just like ERP is not the total ERP of all antennas of the facility combined.)

There are many more examples like these in PCC, however the point will be clear from the examples above: Obviously, none of the situations from these examples above make sense, because when one is dealing with a site, facility, or the like, the numeric features of that facility, site, etc. are to be considered on ***an overall combined basis***. The fact that the definition of floor area includes a reference to "a building", the definition of crown cover includes a reference to "a tree" or "a shrub", or the definition of ERP includes a reference to "a antenna" does not eliminate the common practice of summation in any of those cases. In these situations and context, "a building" clearly does not mean "just one building", "a tree" does not mean "just one tree" and "a antenna" does not mean "just one antenna"!

Reason 7: Other specific language in PCC regarding RF Transmission Facilities

There are several other instances and examples in PCC where certain aspects and issues are regulated for Radio Frequency Transmission Facilities based on the ERP of the facility. Those instances alos provide relevant insight in use and interpretation of the terms.

a) Chapter 33.266 Parking and Loading

Table 266-2 specifies parking space by use. The table includes: "Radio Frequency Transmission facilities" as a category. It distinguishes between the two sub-categories:

- "Unmanned facilities operating at or below 1000 watts ERP" and
- "Other facilities".

The minimum required number of parking spaces for the first sub-category is listed as "none", while the second sub-category is listed as "2 per site".

So the code specifies that (in certain situations) facilities with an ERP of more than 1,000 watts require 2 parking spaces while facilities with an ERP of less than 1,000 watts require none.

Using the ERP value as the criterion to distinguish between a smaller facility that doesn't require parking spaces, versus a larger facility that does require parking spaces only makes sense if the ERP is taken as

the ***total ERP of all antennas of the facility***. A facility with many antennas and possibly multiple poles will require parking, but a facility with only one (or possibly a few small) antenna(s) won't.

If the determining ERP value would mean or be interpreted as the ERP of *just one of the antennas*, any possible distinction between a small versus a larger facility would be lost, and this whole requirement about parking in section 33.266 would become moot and senseless.

Reason 8: Origin of the 1,000 watts ERP threshold from FCC regulations

Although the issue at stake is ultimately the meaning of PCC and not the meaning of federal code, there are several links that make review of FCC code relevant in answering the subject questions regarding meaning of PCC.

The threshold of 1,000 watts ERP used in PCC is not an invention or a randomly selected number by City of Portland staff, but rather finds its origin in FCC code. FCC defines categories of facilities that do not require Environmental Assessments, but instead are categorically excluded. In order to define those exclusions, FCC uses the measure of ERP of facilities. This of course is the same concept PCC uses when it defines which facilities are categorically excluded from certain zoning reviews (or from certain requirements). By defining that facilities that remain below the 1,000 watt ERP threshold are allowed by right in certain locations throughout the City, or don't need a specific zoning review, PCC chooses to use the exact same FCC thresholds to define certain exclusion categories. The only logical conclusion can be that the same *definition and interpretation of ERP* would then also apply, since the City clearly adopted (copied without change) the FCC categories and criteria to define its own categories in PCC.

47 CFR Ch. I (10–1–04 Edition), section 1.1307 (page 326) specifically states (see link below):

http://www.gpo.gov/fdsys/pkg/CFR-2004-title47-vol1/pdf/CFR-2004-title47-vol1-chapI-subchapA.pdf

"The term power in column 2 of table 1 refers to total operating power of the transmitting operation in question in terms of effective radiated power (ERP), equivalent isotropically radiated power (EIRP), or peak envelope power (PEP), as defined in § 2.1 of this chapter.
For the case of the Cellular Radiotelephone Service, subpart H of part 22 of this chapter; the Personal Communications Service, part 24 of this chapter and the Specialized Mobile Radio Service, part 90 of this chapter, the phrase total power of all channels in column 2 of table 1 means the sum of the ERP or EIRP of all co-located simultaneously operating transmitters owned and operated by a single licensee."

This is the same language as the FCC Telecommunications Act of 1996, FCC 96-326, ET Docket 93-62, specifically Appendix C, page 89 & 90.

http://transition.fcc.gov/Bureaus/Engineering_Technology/Orders/1996/fcc96326.pdf

"The term "power" in column 2 of Table 1 refers to total operating power of the transmitting operation in question in terms of effective radiated power (ERP), equivalent isotropically

radiated power (EIRP), or peak envelope power (PEP), as defined in § 2.1 of this chapter. For the case of the Cellular Radiotelephone Service, subpart H of part 22 of this chapter; the Personal Communications Service, part 24 of this chapter and covered Specialized Mobile Radio Service operations, part 90 of this chapter, the phrase "total power of all channels" in column 2 of Table 1 means the sum of the ERP or EIRP of all co-located simultaneously operating transmitters of the facility."

Therefore, it is clear that the location and context of where the 1,000 watts ERP threshold that PCC chose to adopt originates from (federal code), very specifically describes that the "total power" as used in the table which contains the 1,000 watts ERP threshold "***means the sum of the ERP or EIRP of all co-located simultaneously operating transmitters of the facility***".

Conclusion

As described in this paper, a closer and better look at this issue whether "ERP of a facility" is indeed the total ERP of the facility (as in "the ERP of all the antennas the subject facility contains") or rather should be interpreted to mean "the ERP of just one of those antennas" was performed. That analysis shows that the hearings officer's ultimate conclusion was somewhat premature and incorrect (or given the lack of full evidence at the time, more properly phrased perhaps just "incomplete").

Taking into consideration the additional analysis summarized in this white paper shows that the only correct interpretation of "ERP of a facility" is the one that determines the Effective Radiated Power (ERP) of a facility by taking into account the radiated power of all components of that facility.

Appendix A: Confirmation e-mail from FCC

From: OETInfo <OETInfo@fcc.gov>
To: 'Euro Guy' <euroguy_pdx@yahoo.com>
Cc: Donald Campbell <Donald.Campbell@fcc.gov>
Sent: Wednesday, November 2, 2011 8:34 AM
Subject: RE: Questions regarding ERP of facilities (wireless telecommunications)

Hello Marcel,

The answer to your question depends on the context. For example, Section 22.913 of FCC rules limits the ERP of cellular base station transmitters generally to 500 watts. That limitation is per frequency.

In contrast, for radiofrequency (RF) exposure purposes, we generally do not specify the total ERP for a facility. However, to determine exclusion from further radiofrequency (RF) exposure evaluations we consider the total ERP for multiple antennas and frequencies that are collocated as specified in Section 1.1307(b)(1). For the wireless services using sector antennas, the ERP is summed for all channels and all antennas operated by a single licensee in a single sector in each particular service or frequency band.

Since the spatial regions where our RF exposure limits may be exceeded are typically small, and different licensees and frequency bands were assumed (at the time the RFR rules were written) to not use the same antenna, the intent was to sum the ERP for all the antennas that are practically collocated. For example, consider a tower hosting 5 different licensees, with each licensee operating in a single frequency band and at a different height on the tower. In that case each licensee could independently use the applicable exclusion without consideration of the facilities operated by other licensees.

As you may know, we have proposed changes to our categorical exclusion criteria to deal with the now-common deployments involving multiple licensees and frequency bands (possibly operating from the same antennas), and we may act on these proposals in the future. We emphasize that compliance with our exposure limits is required regardless of categorical exclusion, so it may be prudent to sum exposure from all sources in the area

I hope that this is responsive to your questions. Please contact me if you require further guidance.

Regards,
Donald
Donald Draper Campbell
Senior Engineer
Federal Communications Commission
Office of Engineering and Technology
Washington, DC 20554
+1 202-418-2405

From: Euro Guy [mailto:euroguy_pdx@yahoo.com] Se**nt:** Sunday, October 30, 2011 10:34 PM **To:** OETInfo **Subject:** Questions regarding ERP of facilities (wireless telecommunications)

As it pertains to wireless communication facilities (cell towers, etc.) there is some recent confusion in our community about the proper interpretation and application of Effective Radiated Power (ERP) as it relates to facilities with multiple antennas. It appears that the most common and accepted interpretation of ERP of facilities is similar to how power of facilities is defined and determined in general: The (total) ERP of a facility is the sum of the ERP's of its individual transmitters. (Just like the total power of a "power plant facility" consisting of 4 turbines or generators with output of 500 kW each would be characterized as a "2 MW facility" or a "2 MW power plant.")

1) Is it indeed the interpretation of the FCC that a facility consisting of 10 antennas that each has an ERP of 100 watts should be characterized as a 1,000 watt facility?

2) Similarly, an antenna that transmits on two channels with an ERP of 50 watts each per channel should be characterized as an antenna with an ERP of 100 watt, and not as an antenna with an ERP of 50 watts, correct?

3) And also as a very specific example, a facility consisting of a tower with 10 antennas that are each rated as having an ERP of 50 watts, should ***not*** be characterized as "a facility operating at 100 watts or less"; correct?

It seems very clear from the many FCC regulations, rules, publications and communications that those are indeed the proper and correct interpretations, however due to the confusion in our community I would highly appreciate it if you could confirm those interpretations are correct.

(P.S. I realize that not all channels and all antennas of a facility may necessarily transmit all at the same time, and certainly not do so at their maximum ERP levels, and I also realize that antennas transmitting in different directions not necessarily have overlapping fields of their radiation, but the questions above just pertain to the definition and interpretation of ERP for multi-channel, multi-antenna facilities.)

Thanks,

Marcel

From: "MAILER-DAEMON@yahoo.com" <MAILER-DAEMON@yahoo.com>
To: euroguy_pdx@yahoo.com
Sent: Monday, January 9, 2012 8:40 PM
Subject: Failure Notice

Sorry, we were unable to deliver your message to the following address.

<kmoore-love@ci.portland.or.us>:
Remote host said: 550 5.7.1 Unable to relay for <kmoore-love@ci.portland.or.us> [RCPT_TO]

--- Below this line is a copy of the message.

Received: from [98.139.215.141] by nm31.bullet.mail.bf1.yahoo.com with NNFMP; 10 Jan 2012 04:40:36 -0000
Received: from [98.139.212.219] by tm12.bullet.mail.bf1.yahoo.com with NNFMP; 10 Jan 2012 04:40:36 -0000
Received: from [127.0.0.1] by omp1028.mail.bf1.yahoo.com with NNFMP; 10 Jan 2012 04:40:35 -0000
X-Yahoo-Newman-Property: ymail-3
X-Yahoo-Newman-Id: 988723.7837.bm@omp1028.mail.bf1.yahoo.com
Received: (qmail 26996 invoked by uid 60001); 10 Jan 2012 04:40:35 -0000
DKIM-Signature: v=1; a=rsa-sha256; c=relaxed/relaxed; d=yahoo.com; s=s1024; t=1326170435; bh=1cZqjySx7n0G5TtSgSKsAoSGi45ImuuPiHU6MgPLIHw=; h=X-YMail-OSG:Received:X-Mailer:Message-ID:Date:From:Reply-To:Subject:To:MIME-Version:Content-Type;
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Date: Mon, 9 Jan 2012 20:40:35 -0800 (PST)
From: Euro Guy <euroguy_pdx@yahoo.com>
Reply-To: Euro Guy <euroguy_pdx@yahoo.com>
Subject: Testimony for Council Hearing 1-11-12, LU 11-125536 CU AD
To: "kmoore-love@ci.portland.or.us" <kmoore-love@ci.portland.or.us>
MIME-Version: 1.0
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Please see attached my testimony for the above referenced=A0case. Please ma=
ke sure this testimony will be included in the file and shared with the Cit=
y Commissioners in order for them to be properly informed and able to make =
the correct decision.=0A=A0=0AThanks,=0A=A0=0AMarcel Hermans=0A6910 SE Raym=
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ill be included in the file and shared with the City Commissioners in order=
 for them to be properly informed and able to make the correct decision.</d=
iv>   Thanks,   Marcel Hermans<=
/div> 6910 SE Raymond Court Portland, OR 97206 </b=
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