

**EXHIBIT NO. \_\_\_(JAD-1T)**  
**DOCKET NO. UE-121697/UG-121705**  
**DOCKET NO. UE-130137/UG-130138**  
**WITNESS: DR. JEFFREY A. DUBIN**

**BEFORE THE  
WASHINGTON UTILITIES AND TRANSPORTATION COMMISSION**

WASHINGTON UTILITIES AND  
TRANSPORTATION COMMISSION,

Complainant,

v.

PUGET SOUND ENERGY, INC.,

Respondent.

DOCKET NOS. UE-121697  
and UG-121705 (*consolidated*)

WASHINGTON UTILITIES AND  
TRANSPORTATION COMMISSION,

Complainant,

v.

PUGET SOUND ENERGY, INC.,

Respondent.

DOCKET NOS. UE-130137  
and UG-130138 (*consolidated*)

**PREFILED REBUTTAL TESTIMONY (NONCONFIDENTIAL) OF  
DR. JEFFREY A. DUBIN  
ON BEHALF OF PUGET SOUND ENERGY, INC.**

**DECEMBER 19, 2014**

**REVISED  
FEBRUARY 5, 2015**

1 significance level from one hundred percent give the probability  
2 that the hypothesis is not true. Because, even with a large sample,  
3 it is quite possible to obtain results differing from a coefficient's  
4 true value, it is conventionally thought that there must be a very  
5 high probability that the coefficient is not zero before it can be  
6 conclusively claimed that the variable associated with the  
7 coefficient has a definite effect on the dependent variable.

8 This does not mean that only results significant at the five percent  
9 level should be presented or considered. Less significant results  
10 may be suggestive, even if not probability probative, and suggestive  
11 evidence is certainly worth something.<sup>38</sup>

12 Relaxing the confidence level (or raising the significance level used to test  
13 hypotheses) fails to address the fundamental problem with weak evidence. If a  
14 confidence interval provides considerable support for two opposing positions, it  
15 has little evidentiary value. Dr. Adolph's proposal to this Commission to raise the  
16 significance level reflects a "flawed understanding".

17 **Q. Do you agree with Professor Fisher?**

18 A. Absolutely.

19 **Q. What standards are adopted by courts that the Commission might review  
20 regarding the relationship of preponderance of evidence and statistical  
21 significance levels?**

22 A. According to Professor Michelle Mello, courts have generally required that  
23 statistical evidence of discrimination meet the 95% criterion for statistical  
24 significance in order to be deemed to have satisfied the plaintiffs burden of proof  
25 under the preponderance standard:

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<sup>38</sup> *Multiple Regression in Legal Proceedings*, 80 Colum. L. Rev. at 717-18 (emphasis added).