# IN THE UNITED STATES DISTRICT COURT FOR THE EASTERN DISTRICT OF PENNSYLVANIA

DOMINION RESOURCES INC., et al. : CIVIL ACTION

:

: NO. 15-224

ALSTOM GRID, INC.

VS.

**MEMORANDUM** 

KEARNEY, J. December 21, 2016

While limited commentary suggests fact finding by industry insiders may be a more just and efficient method of resolving patent disputes, we again applaud an attentive jury in a patent infringement and invalidity trial evaluating software used for smart meter electrical power grids. After the parties' efficient marshalling of discovery under Fed.R.Civ.P. 1, the jury heard persuasive advocacy from talented experienced patent trial lawyers adducing competent evidence. We entered several extensively briefed pre-trial rulings defining the trial scope. The issues could not have been closer and resolution required evaluating witness credibility. After hearing eight days of evidence, the jury found infringement but no lost profits, instead awarding a reasonable royalty based on specific calculations shown at trial arising from one infringing sale. The jury also found the defendant did not meet its burden of showing invalidity of the patent at issue. Defendant now moves for a variety of post-trial remedies and, after again reviewing the trial rulings and the jury's fine work, we deny Defendant's motion in the accompanying Order.

### I. Facts developed during discovery and trial.

Dominion Resources, Inc. and Virginia Electric and Power Company (collectively "Dominion") are electric utilities. With technology advancements, the electric grid in the United States began offering "smart grids" and electric utilities used "smart meters" in consumers' homes. Smart meters produce advanced metering infrastructure ("AMI") used to manage power output and bill consumers. In 2009-2010, Dominion invented a method to use smart meter's AMI to perform conservation voltage reduction ("CVR") to achieve greater energy efficiency. In 2010, Dominion applied for a U.S. Patent and created a product EDGE to market its invention to other electric utilities. Dominion created wholly-owned Dominion Voltage, Inc. (DVI) to market EDGE. Dominion presented its AMI based CVR invention at trade shows in 2011-2012 and in late 2012, Dominion sold EDGE to its first customer. On May 7, 2013, the US Patent Office granted Patent No. 8,437,888 ("883 Patent") to Dominion. The EDGE product practices the '883 Patent on behalf of Dominion.

Alstom Grid, Inc. ("Alstom") supplies a distribution management system ("DMS") software to electric utilities to manage their electric grids.<sup>6</sup> Alstom sells a DMS called eterradistribution.<sup>7</sup> One function of Alstom's e-terradistribution is its lode vol/var management ("LVM") module.<sup>8</sup>

In 2013, Alstom's client, electric utility Duke Energy Corp. ("Duke"), asked if Alstom could upgrade the AMI functionality within the LVM module of its e-terradistribution. On November 7, 2013, Alstom and Duke signed a Statement of Work for several upgrades, including configuring the AMI functionality within the LVM module of Duke's e-terradistribution. Alstom began researching Duke's request and in December 2013, Alstom

received a patent search report flagging Dominion's '883 Patent.<sup>11</sup> Alstom's personnel who reviewed the patent search report overlooked the possible infringement of Dominion's '883 Patent.<sup>12</sup> On July 1, 2014, Alstom and Duke signed a second Statement of Work to begin technical design and testing to configure the AMI functionality within the LVM module of e-terradistribution.<sup>13</sup>

Dominion became aware of Alstom's project to configure the AMI functionality of the LVM module of e-terradistribution in June 2012.<sup>14</sup> Dominion made Alstom aware of its concerns in 2012 and again in summer 2014 after Alstom's patent search flagging Dominion's '883 Patent.<sup>15</sup> On August 11, 2014, Dominion provided Alstom direct notice of the '883 Patent.<sup>16</sup>

Alstom did not believe the AMI functionality within the LVM module of e-terradistribution infringed on Dominion's '883 Patent and continued to configure Duke's e-terradistribution.<sup>17</sup> Dominion and Alstom met throughout late summer and early fall of 2014.<sup>18</sup> Dominion hoped to license its product and understand more about Alstom's project with Dominion.<sup>19</sup> Alstom maintained it did not infringe and refused to provide Dominion more information while executing waivers of confidentiality with Dominion and Duke.<sup>20</sup>

On January 16, 2015, Dominion sued Alstom alleging, among other things, Alstom directly infringed the '883 Patent and Alstom indirectly infringed the '883 Patent by actively inducing Duke's infringement and contributed to Duke's infringement.<sup>21</sup> Dominion alleged Alstom willfully and deliberately infringed its '883 patent.<sup>22</sup>

On October 15, 2015, we held a *Markman* hearing where the parties resolved key disputes by stipulation including inserting "existing" before the claim language of adding and deselecting from the subset of meters used to maximize energy efficiency in a particular area. On

October 28, 2015, we ruled on the parties' disputed claim construction.<sup>23</sup> We ruled, among other things, "configured to" did not require construction and we instruct the jury on its plain meaning.<sup>24</sup>

On October 28, 2015, Dominion filed an Amended Complaint alleging imminent infringement of the '883 Patent under the Declaratory Judgment Act. Dominion alleged Alstom indirectly infringed by inducing Duke's infringement and contributes to Duke's infringement.<sup>25</sup>

Midway through the case in December 2015, Alstom induced Duke's infringement of the '883 Patent by configuring the AMI functionality within the LVM module of Alstom's eterradistribution software and installing it on Duke Energy's system.<sup>26</sup>

On April 4, 2016, Alstom moved for summary judgment seeking, among other things, we dismiss Dominion's loss profit claims for incomplete damage calculations and failure to comply with our March 26, 2015 Order requiring full disclosure of either expert or lay opinion on damages by December 22, 2015.<sup>27</sup> We found Dominion did not comply with our March 26, 2015 Order and ordered Dominion produce detailed financial information on lost profits.<sup>28</sup> We ordered Dominion to produce a 30(b)(6) witness, and to balance prejudice, we ordered Dominion pay all costs associated with the deposition including, if necessary, Alstom's lead counsel's travel and lodging.<sup>29</sup>

On April 4, 2016, Dominion moved to exclude Dr. Chica Nwankpa's expert report because he used a conflicting construction on the "adding" limitation and his "based on comparison" invalidity opinion erroneously required Dominion's patent to describe a mode-based approach.<sup>30</sup> We excluded Dr. Nwankpa's testimony regarding the "adding" limitation because Dr. Nwankpa stated in his expert report and testified to a different claim construction than our October 28, 2015 construction.<sup>31</sup> We also excluded Dr. Nwankpa's expert report and

testimony opining Dominion's patent is invalid because it does not describe or enable a mode-based approach because Dr. Nwankpa's opinion incorrectly required the '883 Patent to enable something broader than the scope of its claims.<sup>32</sup>

On June 24, 2016, we started the jury trial. On July 1, 2016, a jury found the AMI functionality within the LVM module of e-terradistribution, as installed with Duke Energy's systems, literally infringed on Dominion's '883 Patent. The jury found Alstom actively induced Duke's infringement and Alstom willfully infringed on Dominion's '883 Patent. The jury awarded Dominion a reasonable royalty of \$486,000.<sup>33</sup>

On October 3, 2016, after two days of hearings, we entered judgment against Alstom for \$486,000, granted a permanent injunction against Alstom, and awarded enhanced damages against Alstom for \$972,000. We incorporate our October 3, 2016 judgment order, findings of fact, conclusions of law, and memorandum into this memorandum.<sup>34</sup>

### II. Analysis

Alstom now moves for a renewed judgment as a matter of law or a new trial because Dominion did not prove literal infringement of the comparison limitation, the configured limitation, and the add or de-select limitations.<sup>35</sup> Alstom moves we vacate,<sup>36</sup> grant remittitur,<sup>37</sup> or grant new trial because Dominion did not provide constructive notice, we abused our discretion in allowing Dominion's lost-profits testimony, and Dominion failed to present evidence meriting a reasonable royalty award. Alstom moves for a new trial arguing we erroneously admitted evidence of pre-suit negotiations, Alstom and Duke's indemnification agreements, and Duke's refusal to present at DistribuTECH. Alstom seeks a new trial on invalidity because we erroneously precluded Dr. Nwankpa from testifying on "adding" limitation

and "comparison" limitation. Alstom moves we enter judgment or a new trial because there is not sufficient evidence to support the jury finding Alstom willfully infringed. Alstom argues we based our enhanced damages award on erroneous findings and asks we reconsider and reduce or decline to award enhanced damages.<sup>38</sup> Finally, Alstom moves for clarification on the monetary damages of our Judgment Order.

We deny Alstom's motion for judgment, request for new trial, and we affirm our enhanced damages award.

# A. Dominion adduced sufficient evidence for the jury's finding of literal infringement.

There is sufficient evidence of the "comparison" limitation, "configured" limitation, and "add" and "de-select' limitations and to support the jury's finding of Duke's literal infringement. We may grant a judgment as a matter of law "only if, viewing the evidence in the light most favorable to [Dominion] and giving it the advantage of every fair and reasonable inference, there is sufficient evidence from which a jury reasonably could find liability."<sup>39</sup> We may not usurp the jury's role and "weight the evidence, determine the credibility of witnesses, or substitute [our] version of the facts for the jury's version."<sup>40</sup>

#### 1. Dominion adduced sufficient evidence of the "comparison" limitation.

There is sufficient evidence Alstom's e-terradistribution 3.3 as configured in Duke Energy's system met the claim "an energy delivery parameter based on a comparison of a controller target band to the measurement data received from sensors in the subset." Dr. Richard Brown testified, based on Alstom's source code, deposition testimony, and the DNAF guide, the Alstom software "determine[s] that the measured voltage is within the range...it's comparing [the measured voltage] to the range in determining where it is." Dr. Brown also testified "what [Alstom software] will do is it will compare the measured voltage to this range."

Dr. Brown testified Alstom software received both calculated and measured voltages and described various situations where Alstom's software would compare the measured voltages to the range, for example, "[n]ow, in this situation the Alstom software will compare the measured voltage to the range that will say, hey, I'm in the range. Even though the calculation says there's a problem, I know there's not a problem."

Alstom argues there is insufficient testimony of the "comparison" limitation because Dr. Brown testified Alstom's software "does not make a comparison' but rather subtracts the calculated voltage from the measured voltage in order to perform the limit adjustment." Dr. Brown's testimony concerned one situation Alstom's software could encounter. Dr. Brown also testified: "Q: ...Does the way Alstom does the comparison impact your opinion about whether they actually do a comparison between measurement data and the voltage target band? A: No. There are many ways you can do it. The way that you do does not matter, does not affect my opinion."

The jury heard sufficient evidence to find Alstom's e-terradistribution 3.3 as configured in Duke Energy's system met the claim "an energy delivery parameter based on a comparison of a controller target band to the measurement data received from sensors in the subset" and we do not disturb the jury's findings based on the "weight the evidence, determine the credibility of witnesses, or substitute [our] version of the facts for the jury's version."<sup>48</sup>

#### 2. Dominion adduced sufficient evidence of the "configured" limitation.

There is sufficient evidence Alstom's "configured" e-terradistribution 3.3 on Duke Energy's systems to meet the '883 patent claim language. Underlying its challenge to the sufficiency of evidence, Alstom challenges our construing "configured to" to have its plain meaning. Alstom argues because the parties disputed the meaning of "configured to" we were

required to resolve the dispute.<sup>49</sup> Alstom is correct and we resolved the parties' dispute in favor of Dominion in our October 28, 2015 Order when we ruled the plain meaning of "configured to" needed no construction.<sup>50</sup>

Alstom attempts to manufacture a second dispute by using Dominion's objection to a jury instruction containing the phrase "configured to", however, Dominion's objection in full states "Dominion objects to this paragraph to the extent it mischaracterizes the facts and allegations in this case. For example, the last sentence is incomprehensible." Alstom performs a loose reading of Dominion's objection and responds "Alstom [] agrees with Dominion that the Court should instruct the jury regarding the meaning of "configured to." This second dispute is not a real dispute between the parties we are required to resolve and construe the plain meaning under O2 Micro. In line with our October 28, 2015 Order, we did not construe "configured to" and it went to the jury under its plain meaning.

The jury heard Dr. Brown, Dr. Nwankpa, and Ms. Leslie Ponder, among others, testify how Alstom configured e-terradistribution 3.3 on Duke's Energy systems. The jury understood the "plain meaning" of "configured to" and heard sufficient testimony to find Alstom's "configured" e-terradistribution 3.3 on Duke Energy's systems met the '883 Patent claim language. We do not disturb the jury's findings based on the "weight of the evidence, determine the credibility of witnesses, or substitute [our] version of the facts for the jury's version." 54

# 3. Dominion adduced sufficient evidence of the "add" and "de-select" limitation.

There is sufficient evidence Alstom's e-terradistribution 3.3 as configured in Duke Energy's system met the claim language requiring "adding to the existing subset" or "deselecting from the existing subset." Dr. Brown testified Alstom's software met the "adding or de-selecting to/from the existing subset" limitation because "you're adding to the subset. So if

you get a voltage violation alarm from a meter that's outside of the subset – now the subset, those are the meters that are sending – that you are requesting voltage information from."<sup>56</sup> Additionally, Dr. Brown testified an Alstom employee, Dr. Kuntz, testified if there was a voltage violation alarm he "would expect both of those meters to then be put into the bellwether set" if configured.<sup>57</sup>

Alstom argues Dr. Brown's testimony "is not credible" because Alstom's software clears its memory before and after an LVM run. Dr. Brown testified "Q: Now it step two it says, 'Memory cleared.' Does that mean that the subset no longer exists, in your opinion? A: No, it doesn't. You have the blue meters that you're sending out data to and the blue meters are coming back. The subset exists." Dr. Nwankpa also testified "Q: So – but the meters exist, and they are sending back data, but the register was erased, that is the basis? A: Yes." 60

The jury heard sufficient testimony regarding whether Alstom's software met the "add" and "de-select" limitations of the claim language. We do not disturb the jury's findings based on the "weight of the evidence, determine the credibility of witnesses, or substitute [our] version of the facts for the jury's version."

#### B. We do not vacate the damages award or grant a remittitur or a new trial.

We do not vacate the damages award because it is supported by substantial evidence and not "contrary to the limits established by law." We do not grant a remittitur because the verdict is supported by evidence and the award does not exceed the amount to make Dominion whole. 63

## 1. Reasonable royalty is not precluded by 35 U.S.C. § 287.

The jury's royalty award is proper because Dominion provided Alstom with notice on Dominion patent and Alstom's potential infringement on August 11, 2014. "The determination of a reasonable royalty...[is based] on what a willing licensor and licensee would bargain for at hypothetical negotiations on the date infringement started." In *LaserDynamics*, the defendant

liable for active inducement of infringement in August 2006 but underlying direct infringement by defendant's end users began in 2003.<sup>65</sup> The Federal Circuit held "in the context of active inducement of infringement, a hypothetical negotiation is deemed to take place on the date of the first direct infringement traceable to [defendant]'s first instance of inducement conduct" in 2003.<sup>66</sup>

While Alstom and Duke did not literally infringe on Dominion's patent until December 2015, Alstom received direct notice of Dominion's patent on August 11, 2014 and continued working together to configure Alstom's e-terradistribution 3.3 as installed on Duke's systems to infringe on the '883 Patent.<sup>67</sup> The jury's award of reasonable royalty from August 11, 2014 is proper because it is supported by substantial evidence and not "contrary to the limits established by law."

Alstom argues Dominion cannot recover damages because it did not mark EDGE under 35 U.S.C. § 287 at the time Alstom sold the infringing functionality to Duke on November 5, 2013. Alstom's attempt to make November 5, 2013 the sale date is undermined by witness testimony showing the November 5, 2013 agreement described for a long term project. Dr. Paul Kuntz of Alstom testified "Q: And e-terra 3.3 was first released in January of 2015, right? A: I believe that date is correct, yes. Q: And the decision to change e-terra so that it could receive voltage measurements from AMI smart meters was not until July or August of 2014, right? A: Yes."

Ms. Melanie Miller of Duke testified "Q: And I think you testified on direct that the future discussions began in 2013; is that true? A: Correct. Q: And then it actually didn't get implemented until 2015...?" A: Correct." "Q: ...Alstom was comfortable with Duke continuing with its upgrade or deployment...? A: [Alstom was] comfortable with us moving

forward. Q: That was sometime between December 2nd, 2014, and when you upgraded ultimately in December of 2015 right? A: Yes."<sup>71</sup>

On November 5, 2013, Alstom did not sell Duke a copy of the infringing AMI functionality within the LVM module for Duke to take home and install like a consumer buying a copy of Microsoft Office. Instead, Alstom and Duke agreed to a long term implementation plan. Alstom and Duke's witnesses testified the physical upgrades did not begin until Summer or late Fall 2014. Mr. Jesse Gantz testified Alstom and Duke signed a Statement of Work on July 1, 2014 for Phase 1 of DMS "Enhancements for Operational Usage of Advanced Metering Infrastructure (AMI) Data SOW 1 – Technical Design and Testing." Alstom's argument it sold the infringing product to Duke on November 5, 2013 before Dominion marked EDGE and without knowledge of Dominion's '883 Patent is not credible given the testimony of its own witnesses. We properly rejected Alstom's argument before and during trial and we do so again now.

We properly allowed the jury to determine a reasonable royalty award. The royalty award is proper because it is supported by substantial evidence and not "contrary to the limits established by law."

#### 2. Dominion's lost profit testimony is proper.

We properly allowed Dominion to present lost profits testimony and Alstom suffered no prejudice from our ruling as the jury found no lost profits. Our "power to grant a new trial motion is limited to those circumstances 'were a miscarriage of justice would result if the verdict were to stand."

Alstom moved for summary judgment seeking, among other things, we dismiss Dominion's lost profits claim for incomplete damage calculations and failure to comply with our

March 26, 2015 Order requiring full disclosure of either expert or lay opinion on every issue on which Dominion bore the burden of proof by December 22, 2015.<sup>75</sup> We allowed Dominion to produce detailed financial information for present lost profits by May 9, 2016 and produce a 30(b)(6) witness by May 13, 2016. We ordered Dominion to pay all costs associated with the deposition, including, if necessary, Alstom's lead trial counsel's travel and lodging.<sup>76</sup> Alstom had over a month and a half after receiving the financial statements and 30(b)(6) testimony to prepare a defense to Dominion's lost profit claim. In fact, Alstom prepared such a strong defense the jury found Dominion did not suffer lost profits.<sup>77</sup>

Alstom argues we prejudiced it when we "allow[ed] Dominion to "advance a damages theory on the eve of trial." However, Dominion sought lost profits and/or reasonable royalty in its Amended Complaint filed on October 27, 2015. We denied Alstom's attempt to withdraw its jury demand because according to Alstom, Dominion only sought equitable relief. We clarified in our April 1, 2016 Order "[p]laintiffs seek lost profits subject to dispositive or *in limine* motions. Alstom's argument is belied by the docket, and we find Alstom suffered no prejudice from Dominion's lost profits evidence.

Alstom also rehashes the argument Dominion could not prove it was entitled to the lost profits of a related entity.<sup>81</sup> However, the jury did not award lost profits; it awarded a reasonable royalty. Alstom cannot claim prejudice.

Alstom had full knowledge of Dominion's lost profit claim long before the start of trial and Dominion's late production of financial statements and 30(b)(6) witnesses did not prejudice Alstom because the jury did not award lost profits. This is not a circumstance "were a miscarriage of justice would result if the verdict were to stand." 82

#### 3. The jury's reasonable royalty award is proper.

The jury heard sufficient evidence to support its \$486,000 reasonable royalty award.

Judgment as a matter of law is not appropriate because the record is not "critically deficient of the minimum quantum of evidence" to support the reasonable royalty award. 83

Mr. Todd Headlee testified EDGE's software license is priced from 150,000 to 500,000 and Dominion now charges \$10 per meter. For Dominion's lost profit calculation, Mr. Headlee testified the Duke project involved 500,000 meters and Dominion would have charged \$8 a meter (the same price Dominion charged similarly sized Pacific Gas & Electric). Mr. Headlee testified Dominion also lost the \$500,000 for the server license fee and the total lost profits calculation is \$4.5 million dollars, applying the profit margin it becomes \$990,000. Bearing in mind "a reasonable royalty analysis 'necessarily involved an element of approximation and uncertainty'", we find the jury's award of \$486,000 supported by Mr. Headlee testimony of a range of prices for the software license, a hypothetical price for meters, and a 22% profit margin. Mr. Headlee testified he would have expected to charge Alstom \$4.5 million for EDGE and make a \$990,000 profit. The jury's award is not "so outrageously high or so outrageously low as to be unsupportable as an estimation of a reasonable royally". We deny Alstom's request for new trial. Be

# C. We do not grant a new trial because evidence is properly admitted.

We properly admitted Dominion's Ms. Doswell's testimony regarding limited pre-suit negotiations, Duke and Alstom's indemnification agreement, and Duke's decision not to present the AMI technology at DistribuTECH. "[A]bsent a showing of substantial injustice or prejudicial error, a new trial is not warranted and it is the court's duty to respect a plausible jury verdict."

# 1. We properly admitted limited pre-suit negotiations after Alstom opened the door.

Alstom argues it is prejudiced because we "permitted Dominion (over Alstom's objections) to introduce evidence of pre-suit discussions" after Dominion's legal counsel contacted Alstom. Alstom claims this admission allowed Dominion's Ms. Doswell's prejudicial testimony Alstom doesn't "currently believe its infringing, but they could anticipate that they would be in the future" and Alstom's conduct was "disingenuous" and "not ethical."

Alstom's argument is disingenuous because it invited the objected testimony. Where a party alleges erroneous admission of evidence after opening the door, the admission of this evidence, "if there was any error at all, it was invited error and cannot now be the basis for reversal." Alstom presented Mr. Atkinson's testimony of viewing Ms. Doswell's actions as a threat in a specific meeting. This testimony required us to amend our ruling. Because Alstom offered this testimony and opened the door, we ruled Dominion could respond through Ms. Doswell's testimony regarding the same meeting. We explained "[w]e are going to amend our Order, I believe that Mr. Atkinson's testimony we just heard on the record today concerning threats he viewed from Ms. Doswell, 'viewed it as a threat' can be responded to." Alstom agreed Mr. Atkinson's testimony regarding threats opening the door for Ms. Doswell's testimony. Alstom argued then "to the extent that Ms. Doswell is going to be permitted to get on the stand and say Mike Atkinson threatened me that they were going to sue us and invalidate our patents. I don't understand why we would not be permitted to use her handwritten notes that make it very clear that Mike Atkinson said to her, we would love to get a resolution, that he was looking for a solution for a problem with a customer."

Alstom is not prejudiced by the admission of Trial Exhibit 76 and Ms. Doswell's accompanying testimony Alstom didn't "currently believe it's infringing, but they could

anticipate that they would be in the future." Alstom admitted Mr. Atkinson's testimony he did not think Alstom was infringing on Dominion's patent. Alstom also represented it was "confident" Mr. MacDonald would testify Alstom did not believe they were infringing in September 2014. We ruled Ms. Doswell could testify to the first line of Trial Exhibit 76 including the language Alstom does not "currently believe it's infringing, but they could anticipate that they would be in the future. There is no prejudice to Alstom because Alstom represented Mr. MacDonald would offer rebuttal testimony to Ms. Doswell and Alstom had the opportunity to cross examine Ms. Doswell. A close review of trial transcripts show Alstom choose not to cross examine Ms. Doswell regarding Trial Exhibit 76. Alstom's witness Mr. MacDonald rebutted Ms. Doswell's testimony and testified neither he nor any other Alstom representative stated Alstom does not "currently believe it's infringing, but they could anticipate that they would be in the future."

Alstom's argument our ruling allowed Ms. Doswell's "disingenuous" and "not ethical" testimony lacks merit. Ms. Doswell's use of the word "disingenuous" comes directly from Trial Exhibit 347, an email she sent to Mr. MacDonald and "not ethical" comes from her description of what she meant by disingenuous in her e-mail. Alstom did not object to introducing Exhibit 347 at trial, and nothing in it suggests an offer or discussions of settlement under Fed. R. Evid. 408.

Alstom cannot argue in favor of the admission of evidence and open the door to the admission with its witnesses and then complain it is prejudiced by the admission of the same evidence. 102

#### 2. We properly admitted Duke's and Alstom's indemnification agreement.

Alstom claims we erred by admitted an indemnification agreement between Duke and Alstom. Alstom's objection is waived because, on its direct examination of Ms. Melanie Miller, Alstom solicited testimony regarding the indemnification agreement. Alstom cannot now object to Dominion's cross-examination testimony of Ms. Miller on subject matter it solicited on direct examination. Alstom's cites testimony admitted "over...repeated objections." Alstom did not object to Dominion's indemnification question to Ms. Miller and objected to one indemnification question of Mr. MacDonald, but we ruled the foundation for the indemnity question had been laid already. 105

# 3. We properly admitted Duke's and Alstom's failure to present at DistribuTECH.

Alstom argues prejudice from admitting evidence of Duke's decision not to present at DistribuTECH. Before trial, we held "absent foundation from a competent witness from Duke Energy relating to Alstom's specific direction to Duke Energy tending to show willfulness...Dominion may not adduce evidence of Duke Energy's decision not to present at the 2015 DistribuTECH conference." At trial we clarified, absent a proper foundation, no witness could testify *why* Duke decided not to present "however, the fact that [Duke Energy] did not appear, certainly any witness...who was there can testify Duke Energy did not present at the conference."

Dominion examined Ms. Doswell regarding the 2015 DistribuTECH conference within the limits of our ruling. Ms. Doswell testified she received the abstracts for the conference including a presentation by Duke Energy and Alstom. Ms. Doswell testified to her personal knowledge Dominion filed the lawsuit in mid-January and she learned Duke and Alstom would not present at DistribuTECH a day or two after Dominion filed the lawsuit. 109

Alstom cites to three examples of prejudicial testimony. Two cites<sup>110</sup> are to Mr. Phillip Powell's extensive testimony of Dominion's patent claim language and Duke, Alstom, or DistribuTECH are never mentioned. The third cite is to Dominion's closing argument "[t]he copresenters were both Duke and Alstom. They didn't go. They didn't show. Alstom didn't show, Duke didn't show." Alstom did not object to Dominion's statement. Absent a objection, "it is clear that a party who fails to object to errors at trial waives the right to complain about them following trial." 12

- D. We properly excluded Dr. Nwankpa's testimony regarding the "adding" and "comparison" limitation.
  - 1. We properly excluded Dr. Nwankpa's testimony regarding "adding" limitation.

We properly excluded Dr. Nwankpa's testimony on the "adding" under 35 U.S.C. § 112 because he used a conflicting construction of our October 28, 2015 Claim Construction Order which would lead to jury confusion, lacked proper basis, and does not fit the proof. During our *Markman* hearing the parties <u>agreed</u> to construe "adding to the subset" to insert existing before subset so the claim construction is "adding to the *existing* subset." <sup>113</sup>

"An expert must '[compare] the construed claims to the prior art'...[and] to testify regarding how the prior art related to the claims as construed." Alstom is not prejudiced by exclusion of expert testimony beyond "how the prior art relates to the claims as construed" because we "did not deprive [Alstom] of any evidence it was entitled to introduce" instead our ruling "avoided possible jury confusion by ensuring that the invalidity inquiry focused on the relationship between the prior art and the claims, as construed by the court."

Dr. Nwankpa opined in his expert report "Dominion asserts that dynamic selection of a strategic group of meters and the mere receipt of an exception report would suffice to meet [the

adding] limitation."<sup>116</sup> While Dr. Nwankpa recited our claim construction in his expert report, he did not apply it and testified at his deposition our claim construction for "adding" "is not the opinion I used in writing this validity report. The opinion I used to write the validity report is, again, having to do with Dominion asserting that dynamic selection of a strategic group of meters and a mere receipt of an exception report would suffice to meet limitation for adding."<sup>117</sup>

Because Dr. Nwankpa's expert report and testimony went beyond "how the prior art relates to the claims as construed", Alstom is "not deprive[d] of any evidence it was entitled to introduce" and Alstom is not entitled to a new trial. 118

# 2. We properly excluded Dr. Nwankpa's testimony regarding "based on comparison" limitation.

We properly excluded Dr. Nwankpa's expert report and testimony claiming invalidity "based on a comparison" claim not involving a model or system on the ground Dominion does not meet the description and enablement requirements of 35 U.S.C § 112.<sup>119</sup>

Dr. Nwankpa claims invalidity because Dominion's patent specifications do not describe or enable a model-based approach and detailed circuit model-driven distribution management system (DMS). To meet Fed. R. Evid. 702, an expert opinion claiming patent invalidity for failing to properly describe and/or enable a claimed invention must properly analyze the specification with regard to the claimed invention.

Dr. Nwankpa opined Dominion's patent specification is invalid because it did not describe and enable the accused model-based system. "The [patent] specification 'need not enable anything broader than the scope of the claims." On May 16, 2016, we found Dr. Nwankpa's opinion "unreliable and not admissible as to enablement of the 'based on a comparison' limitation" and precluded his testimony unless Dominion offered model based testimony as trial. 121

Dominion did not offer model based testimony at trial. Alstom's two examples of Dominion's "model-based testimony" fall short showing Dominion offered model based testimony at trial. Alstom cites Dr. Brown's testimony responding to how e-terradistribution and the LVM operate when "it's not running the AMI functionality" and Dr. Brown explains "Yes. So the model is within the big box. This is core to the distribution management system. Then the LVM can do conservation voltage reduction using the voltage estimates that come from the DMS system." Alstom's other cited testimony is to its own re-cross examination of Dr. Brown. It is not Dominion's evidence. 123

We properly excluded Dr. Nwankpa's expert report and testimony claiming invalidity "based on a comparison" claim not involving a model or system. We do not grant Alstom a new trial.

### E. Dominion adduced sufficient evidence of Alstom's willful infringement.

There is sufficient evidence for the jury to find Alstom willfully infringed on Dominion's patent. We may grant a judgment as a matter of law "only if, viewing the evidence in the light most favorable to [Dominion] and giving it the advantage of every fair and reasonable inference, there is sufficient evidence from which a jury reasonably could find liability." <sup>124</sup>

The jury heard testimony in December 2013 Alstom employees received a patent search report flagging Dominion's '883 Patent as "relevant potential risk" and did not further research the issues. The jury heard testimony in 2011, Dominion's Phillip Powell presented the '883 Patent at a trade show attended by Alstom employee Ethan Boardman. 126

The jury heard Dominion's Mr. Powell attended a 2012 trade show and saw Alstom's AMI functionality presentation and Mr. Powell told Alstom its concept closely tracked Dominion's patent pending software. The jury then heard the same thing happened again in

2013, except this time after the trade show Dominion's Mr. Powell tried to schedule a follow up meeting with Alstom to discuss the '883 Ptent.<sup>128</sup>

The jury heard Alstom and Duke signed a statement of work in July 1, 2014 to begin the technical design of the infringing software. The jury heard after Alstom had several instances of indirect notice of Dominion's '883 Patent, on August 11, 2014 it had direct notice from Dominion it might be infringing. The jury heard testimony after Alstom had notice, Alstom kept offering to meet with Dominion and provide information but Alstom would not provide information and asked Duke Energy not to provide Dominion information. 131

The jury heard Duke Energy and Alstom signed an indemnification agreement for any infringement litigation and they canceled their trade show presentation featuring the AMI functionality within the LVM module of e-terradistribution shortly after Dominion filed this lawsuit.<sup>132</sup>

We do not recite all the evidence relevant to our jury's finding of willfulness but our sampling confirms we may not grant a judgment as a matter of law because "there is sufficient evidence from which a jury reasonably could find liability." <sup>133</sup>

### F. We properly granted injunctive relief and an award of enhanced damages.

Alstom asks us to reconsider our grant of injunctive relief and reduce our award of enhanced damages because we failed to adopt its findings and conclusions. We thoroughly considered Alstom's filings and oral argument before grating injunctive relief and awarding enhanced damages.<sup>134</sup>

Alstom also argues quarterly certificates are improper under Rule 65 because they are overly burdensome, without legal basis, impermissibly alter the nature of post-judgment proceedings, and does not bring about closure and repose. We do not find any language of Rule

65 prohibits quarterly reports and Alstom does not offer us a more specific argument. They also argue Dominion has the burden to raise non-compliance under *TiVo Inc. v. EchoStar Corp.*<sup>135</sup> *TiVo* concerns contempt hearings after a party allegedly violated an injunction order. The Federal Circuit ruled "[w]hat is required for a district court to hold a contempt proceeding is a detailed accusation from the injured party setting forth the alleged facts constituting the contempt." We see nothing regarding the impropriety of quarterly reports and other courts use certifications to ensure compliance. <sup>137</sup>

Our award of enhanced damages and injunction are wholly based on evidence. We deny Alstom's request for reconsideration.

### G. We confirm our monetary judgment is for \$972,000.

Our October 3, 2016 Order entered judgment "in the sum of **486,000** based upon the jury's verdict finding reasonable royalties arising from Defendant's willful infringement of Plaintiffs' patent."<sup>138</sup> We then entered a judgment "in the sum of **972,000** representing enhanced damages under 35 U.S.C § 284 arising from Alstom's egregious and willful infringement after being placed on notice of Dominion's patent."<sup>139</sup> As both parties properly understood from our Memorandum, we doubled the jury's award so the total judgment against Alstom is **\$972,000**.

### **III. Conclusion**

In the accompanying Order, we deny Alstom's motions for judgment as a matter of law, new trial, and request for reconsideration and affirm the July 1, 2016 jury verdict and our October 3, 2016 Judgment Order. We again affirm the value of a jury in resolving patent disputes presented by talented experienced patent trial lawyers.<sup>140</sup>

<sup>&</sup>lt;sup>1</sup> We incorporate our October 3, 2016 Findings of Fact. ECF Doc. No. 295 ¶¶ 19-22.

<sup>&</sup>lt;sup>2</sup> *Id.* ¶ 23.

<sup>&</sup>lt;sup>3</sup> *Id.* ¶ 31-35

<sup>&</sup>lt;sup>4</sup> *Id*. ¶ 41.

<sup>&</sup>lt;sup>5</sup> *Id*.

<sup>&</sup>lt;sup>6</sup> *Id*. ¶ 28.

<sup>&</sup>lt;sup>7</sup> *Id*. ¶ 29.

<sup>&</sup>lt;sup>8</sup> *Id*. ¶ 30.

<sup>&</sup>lt;sup>9</sup> *Id.* ¶ 42-43.

 $<sup>^{10}</sup>$  Id. ¶ 48.

<sup>&</sup>lt;sup>11</sup> *Id.* ¶ 50.

<sup>&</sup>lt;sup>12</sup> *Id.* ¶ 51.

<sup>&</sup>lt;sup>13</sup> *Id.* ¶ 57.

<sup>&</sup>lt;sup>14</sup> *Id*. ¶ 34.

<sup>&</sup>lt;sup>15</sup> *Id*. ¶ 34, 58.

<sup>&</sup>lt;sup>16</sup> *Id*. ¶ 60.

<sup>&</sup>lt;sup>17</sup> *Id.* ¶ 62-64.

 $<sup>^{18}</sup>$  *Id.* ¶ 70-81.

<sup>&</sup>lt;sup>19</sup> *Id.* ¶¶ 69, 75, 77.

 $<sup>^{20}</sup>$  Id. ¶¶ 77-81.

<sup>&</sup>lt;sup>21</sup> *Id*. ¶ 82.

<sup>&</sup>lt;sup>22</sup> *Id*.

<sup>&</sup>lt;sup>23</sup> ECF Doc. No. 96.

<sup>&</sup>lt;sup>24</sup> *Id*. at 3.

<sup>&</sup>lt;sup>25</sup> *Id*. ¶ 94.

<sup>&</sup>lt;sup>26</sup> *Id*. ¶ 95.

<sup>&</sup>lt;sup>27</sup> ECF Doc. No. 34; 178.

 $<sup>^{28}</sup>$  *Id*.

 $<sup>^{29}</sup>$  *Id*.

<sup>&</sup>lt;sup>30</sup> ECF Doc. No. 144.

<sup>&</sup>lt;sup>31</sup> ECF Doc. No. 96 at 3, 190 at 3.

<sup>&</sup>lt;sup>32</sup> ECF Doc. No. 190 at 6.

<sup>&</sup>lt;sup>33</sup> ECF Doc. No. 295.

<sup>&</sup>lt;sup>34</sup> ECF Doc. No. 340-41.

<sup>&</sup>lt;sup>35</sup> As our trial occurred in the Third Circuit, the Federal Circuit reviews denial of judgment as a matter of law, motion for new trial, denial to vacate jury's damage award, denial of remittitur, and the admissibility of evidence under the Third Circuit's standards. *Power Integrations, Inc. v. Fairchild Semiconductor Intern., Inc.*, 711 F.3d 1348, 1355 (Fed. Cir. 2013). We grant a judgment as a matter of law "only if viewing the evidence in the light most favorable to the nonmovant and giving it the advantage of every fair and reasonable inference, there is sufficient evidence from which a jury reasonably could find liability. *Mancini v. Northampton County*, 836 F.3d 308, 314 (3d Cir. 2016)(*quoting Lightning Lube, Inc. v. Witco Corp.*, 4 F.3d 1153, 1166 (3d Cir. 1993). We grant a motion for new trial if "the verdict is inadequate as a matter of law or if the size of the verdict is against the weight of the evidence. However, new trials on the basis that the verdict was against the clear weight of the evidence 'are proper only when the record shows that the jury's verdict resulted in a miscarriage of justice or where the verdict, on the record, cries out to be overturned or shocks our conscience." *New Market Inv. Corp. v. Fireman's Fund Ins. Co.*, 774 F. Supp. 909, 917 (E.D.Pa. 1991)(*quoting Williamson v. Consolidated Rail Corp.*, 926 F.2d 1344, 1353 (1991).

We vacate the damages award if it is not supported by substantial evidence and not "contrary to the limits established by law." *Power Integrations*, 711 F.3d at 1356 (*citing Thabault v. Chait*, 541 F.3d 512, 532 (3d Cir. 2008) *and Scott v. Baltimore & O.R.Co.*, 151 F.2d 61, 65 (3d Cir. 1945).

<sup>&</sup>lt;sup>37</sup> "Remittitur is appropriate if the Court "finds that a decision of the jury is clearly unsupported and/or excessive." *McDermott v. Party City Corp.*, 11 F. Supp. 2d 612, 620 (E.D.Pa. 1998)(quoting Spence v. Board of Educ. Of Christina Sch. Dist., 806 F.2d 1198, 1201 (3d Cir. 1986); see 11 Charles A. Wright & Arthur R. Miller, Federal Practice and Procedure: Civil § 2815 (1973).

<sup>&</sup>lt;sup>38</sup> We grant reconsideration if the party shows: (1) an intervening change in the controlling law; (2) the availability of new evidence that was not available when the court granted the motion []; or (3) the need to correct a clear error of law or fact or to prevent manifest injustice." *Max's Seafood Cafe ex. Rel. Lou-Ann, Inc. v. Quinteros*, 176 F.3d 669, 677 93d Cir. 1999).

<sup>&</sup>lt;sup>39</sup> *Mancini*, 836 F.3d at 314 (*quoting Lightning Lube*, 4 F.3d at 1166).

 $<sup>^{40}</sup>$  *Id*.

<sup>&</sup>lt;sup>41</sup> ECF Doc. No. 1-1 at 13.

<sup>&</sup>lt;sup>42</sup> N.T. June 28, 2016 AM pp. 56:9-57:14.

<sup>&</sup>lt;sup>43</sup> *Id.* p. 62:18-19.

<sup>&</sup>lt;sup>44</sup> N.T. June 28, 2016 AM pp. 65:25-66:3.

<sup>&</sup>lt;sup>45</sup> Alstom truncates Dr. Brown's full statement of "that step itself does not make a comparison." See N.T. June 28, 2016 PM p. 35:14.

<sup>&</sup>lt;sup>46</sup> ECF Doc. No. 349-1 at 4.

<sup>&</sup>lt;sup>47</sup> N.T. June 28, 2016 PM pp. 97:25-98:5.

<sup>&</sup>lt;sup>48</sup> Mancini, 836 F.3d at 314.

<sup>&</sup>lt;sup>49</sup> See O2 Micro Int'l Ltd. v. Beyond Innovation Tech. Co., 531 F.3d 1351, 1362 (Fed. Cir. 2008).

<sup>&</sup>lt;sup>50</sup> ECF Doc. No. 96 at 3.

<sup>&</sup>lt;sup>51</sup> ECF Doc. No. 261 at 10.

<sup>&</sup>lt;sup>52</sup> ECF Doc. No. 265 at 4.

<sup>&</sup>lt;sup>53</sup> O2 Micro, 531 F.3d at 1362.

<sup>&</sup>lt;sup>54</sup> Mancini, 836 F.3d at 314.

<sup>&</sup>lt;sup>55</sup> ECF Doc. No. 96 at 3; ECF Doc. No. 1-1 at 12-13.

<sup>&</sup>lt;sup>56</sup> N.T. June 28, 2016 AM p. 78:10-14; see also p. 79:3-6; p. 79:17-80:1; p. 84:14-19.

<sup>&</sup>lt;sup>57</sup> *Id.* at p. 80:22-25.

<sup>&</sup>lt;sup>58</sup> ECF Doc. No. 349-1 at 15. The credibility of Dr. Brown's testimony is the sole province of the jury.

<sup>&</sup>lt;sup>59</sup> N.T. June 28, 2016 AM p. 90:13-18.

<sup>&</sup>lt;sup>60</sup> N.T. June 30, 2016 PM p. 605-8.

<sup>&</sup>lt;sup>61</sup> Mancini, 836 F.3d at 314.

<sup>&</sup>lt;sup>62</sup> See Power Integrations, Inc, 711 F.3d at 1356 (citing Thabault v. Chait, 541 F.3d at 532 and Scott, 151 F.2d at 65.

<sup>&</sup>lt;sup>63</sup> See id. (citing Starceski v. Westinghouse Elec. Corp., 54 F.3d 1089, 1100 (3d Cir. 1995).

<sup>&</sup>lt;sup>64</sup> LaserDynamics, Inc. v. Quanta Computer, Inc., 694 F.3d 51, 75 (Fed. Cir. 2012) (quoting State Indus., Inc. v. Mor-Flo., Inc., 883 F.2d 1573, 1580 (Fed. Cir. 1989).

<sup>&</sup>lt;sup>65</sup> *Id*.

<sup>&</sup>lt;sup>66</sup> *Id*.

<sup>&</sup>lt;sup>67</sup> JA\_002424.

<sup>&</sup>lt;sup>68</sup> Power Integrations, 711 F.3d at 1356.

<sup>&</sup>lt;sup>69</sup> N.T. June 29, 2016 PM p. 27:20-28:1.

<sup>&</sup>lt;sup>70</sup> N.T. June 29, 2016 AM p. 54:4-10; see also N.T. June 29, 2016 AM p. 31:12. "We started talking about [the upgrade] in 2013."

<sup>&</sup>lt;sup>71</sup> N.T. June 29, 2016 AM p. 93:1-10.

<sup>&</sup>lt;sup>72</sup> Trial Ex. 253, JA 009112.

<sup>&</sup>lt;sup>73</sup> Power Integrations, 711 F.3d at 1356.

<sup>&</sup>lt;sup>74</sup> Olefins Trading, Inc. v. Han Yang Chem Corp., 9 F.3d 282, 289 (3d Cir. 1993)(internal citations omitted).

<sup>&</sup>lt;sup>75</sup> ECF Doc. No. 178; ECF Doc. No. 34.

<sup>&</sup>lt;sup>76</sup> ECF Doc. No. 178.

<sup>&</sup>lt;sup>77</sup> ECF Doc. No. 295.

<sup>&</sup>lt;sup>78</sup> ECF Doc. No. 349-1 at 20.

<sup>&</sup>lt;sup>79</sup> ECF Doc. No. 94 at 10 ("pursuant to 35 U.S.C. § 284, appropriate compensatory damages amounting to no less than reasonable royalties and/or lost profits"). Also Dominion sought damages in its first Complaint. *See* ECF Doc. No. 1 at 8-10.

<sup>&</sup>lt;sup>80</sup> ECF Doc. No. 139.

<sup>&</sup>lt;sup>81</sup> ECF Doc. No. 349-1 at 13.

<sup>82</sup> Olefins, 9 F.3d at 289.

<sup>&</sup>lt;sup>83</sup> TI Group Automotive Systems (North American), Inc. v. VDO North America, L.L.C., 375 F.3d 1126, 1133 (Fed Cir. 2004)(quoting Gomez v. Allegheny Health Servs., Inc., 71 F.3d 1079, 1083 (3d Cir. 1995)).

<sup>&</sup>lt;sup>84</sup> N.T. June 27, 2016 AM p. 65:16-24.

<sup>&</sup>lt;sup>85</sup> N.T. June 27, 2016 AM p. 73:14-74:1.

<sup>&</sup>lt;sup>86</sup> N.T. June 27, 2016 AM p. 74:1-20.

<sup>&</sup>lt;sup>87</sup> Lucent Technologies, Inc. v. Gateway, Inc., 580 F.3d 1301, 1336 (3d Cir. 2009)(quoting Unisplay S.A. v. American Electronic Sign Co., Inc., 69 F.3d 512, 517 (Fed Cir. 1995)).

<sup>&</sup>lt;sup>88</sup> Lindemann Maschinenfabrik GmbH v. American Hoist & Derrick Co., Harriss Press & Shear Div., 895 F.2d 1403, 1406 (Fed Cir. 1990).

 $<sup>^{89}</sup>$  Wells v. Loizos, No. 06-2320, 2015 WL 685126 at \*2 (E.D.Pa. Feb. 18, 2015)(internal citations omitted).

<sup>&</sup>lt;sup>90</sup> ECF Doc. No. 349-1 at 25.

<sup>&</sup>lt;sup>91</sup> ECF Doc. No. 349-1 at 25.

<sup>&</sup>lt;sup>92</sup> Estate of Edward W. Knoster v. Ford Motor Co., 200 Fed.Appx. 106, 112 (3d Cir. 2006)(quoting U.S. v. Console, 13 F.3d 641, 660 (3d Cir. 1993)).

<sup>93</sup> N.T. June 24, 2016 PM p. 42:6-10.

<sup>&</sup>lt;sup>94</sup> N.T. June 24, 2016 PM p. 41:1-11. "The Court: All right. Ms. Jones, he did testify that he thought it was a threat in the meeting with Ms. Doswell. Ms. Jones: I'm not sure, your Honor, that the opening opened the door on this--. The Court: That may have. Ms. Jones: That may have. Frankly, if we are going to use the document, we just ask that it be used in its complete form."

<sup>95</sup> N.T. June 24, 2016 p. 44:20-45:2.

<sup>&</sup>lt;sup>96</sup> ECF Doc. No. 276-5 at 2. "Q: And do you know, when you described we were doing different things, it that a reference to Alstom doing different things than Dominion? A: Yes. Because, again, we did not believe, as it was explained to me, that, you know, we were infringing...."

<sup>&</sup>lt;sup>97</sup> See N.T. June 24, 2016 PM p. 59:17-60:6.

<sup>98</sup> N.T. June 24, 2016 p. 55:5-15.

<sup>99</sup> N.T June 24, 2016 PM p. 60:21-61:5.

<sup>&</sup>lt;sup>100</sup> N.T. June 30, 2016 AM pp. 35:22-36:21.

<sup>&</sup>lt;sup>101</sup> N.T. June 24, 2016 p. 115:3-117:21.

<sup>&</sup>lt;sup>102</sup> See Knoster, 200 Fed.Appx. at 112 (quoting Console, 13 F.3d at 660).

<sup>&</sup>lt;sup>103</sup> N.T. June 29, 2016 AM pp. 35:18-38:5.

<sup>&</sup>lt;sup>104</sup> ECF Doc. No. 349-1 at 19.

<sup>&</sup>lt;sup>105</sup> N.T. June 30, 2016 p. 81:15-17. Alstom's Attorney Jones later objected to Mr. MacDonald's testimony as cumulative of Ms. Miller's and we overruled the objection because it was not cumulative as to Mr. MacDonald. *See* N.T. June 30, 2016 AM p. 84:19-24.

<sup>&</sup>lt;sup>106</sup> ECF Doc. No. 238.

<sup>&</sup>lt;sup>107</sup> N.T. June 24, 2016 PM pp. 22:24-23:2.

<sup>&</sup>lt;sup>108</sup> N.T. June 24, 2016 PM pp.143:21-146:7.

<sup>&</sup>lt;sup>109</sup> N.T. June 24, 2016 PM pp. 146:25-147:18.

<sup>&</sup>lt;sup>110</sup> N.T. June 24, 2016 AM pp. 12:20-32:10; 33:25-38:15

<sup>&</sup>lt;sup>111</sup> N.T. July 1, 2016 AM pp. 29:25-30:2.

<sup>&</sup>lt;sup>112</sup> Waldorf v. Shuta, 142 F.3d 601, 629 (3d Cir. 1998)(internal citations omitted).

<sup>&</sup>lt;sup>113</sup> ECF Doc. No. 96 at 3.

<sup>&</sup>lt;sup>114</sup> TiVo, Inc. v. EchoStar Communications Corp., 516 F.3d 1290, 1311 (Fed. Cir. 2008)(quoting Helifix, Ltd. v. Blok-Lok, Ltd., 208 F.3d 1339, 1346 (Fed. Cir. 2000)(emphasis added)).

<sup>&</sup>lt;sup>115</sup> *TiVo*, 516 F.3d at 1311-12.

 $<sup>^{116}</sup>$  Dr. Nwankpa's Dec. 22, 2015 expert invalidity report at ¶ 165, (ECF Doc. No. 144-6); Nwankpa Dep. At 454 (ECF Doc. No. 144-5).

<sup>&</sup>lt;sup>117</sup> ECF Doc. No. 144-5 at 38-39.

<sup>&</sup>lt;sup>118</sup> *Id.* at 1311-12.

<sup>&</sup>lt;sup>119</sup> "The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art which it pertains, or with which it is most nearly connected, to make and use the same."

<sup>&</sup>lt;sup>120</sup> Inline Connection Corp. v. AOL Time Warner Inc., No. 02-272, 2007 WL 275928 at \*4 (D. Del. Jan. 29, 2007)(quoting Netrino Dev. Corp. v. Sonosite, Inc., 410 F. Supp. 2d 529, 542 (S.D. Tex. 2006)).

<sup>&</sup>lt;sup>121</sup> ECF Doc. No. 190 at 6.

<sup>&</sup>lt;sup>122</sup> N.T. June 28, 2016 AM p. 38:8-14.

<sup>&</sup>lt;sup>123</sup> Alstom cites "see also id. 4P at 107:7-8" When we review N.T. June 28, 2016 PM p. 107:7-8 we find Dr. Brown's final answer to Mr. Haslam's re-cross stating "I never said it ignored it. It does not matter though."

<sup>&</sup>lt;sup>124</sup> Mancini, 836 F.3d at 314 (citing Lightning Lube, 4 F.3d at 1166).

<sup>125</sup> ECF Doc. No. 280-4 at 6.

<sup>&</sup>lt;sup>126</sup> N.T. June 23, 2016 AM p. 136:24-139:22.

<sup>&</sup>lt;sup>127</sup> N.T. June 23, 2016 AM p. 141:23- 142:3.

<sup>&</sup>lt;sup>128</sup> N.T. June 23, 2016 PM p. 142:12-143:7.

<sup>&</sup>lt;sup>129</sup> JA\_009112.

<sup>&</sup>lt;sup>130</sup> JA\_002424.

<sup>&</sup>lt;sup>131</sup> See e.g., JA\_002536-37; JA\_002539; JA\_001995; JA\_002545; N.T. June 30, 2016 AM p. 73:2-7.

<sup>&</sup>lt;sup>132</sup> See JA 002544-45; JA 002542; N.T. June 29, 2016 AM p. 34:13-35:14.

<sup>&</sup>lt;sup>133</sup> Mancini, 836 F.3d at 314 (citing Lightning Lube, 4 F.3d at 1166).

<sup>&</sup>lt;sup>134</sup> ECF Doc. No. 340.

<sup>&</sup>lt;sup>135</sup> 646 F.3d 869 (Fed. Cir. 2011)(en banc).

<sup>&</sup>lt;sup>136</sup> *Id.* at 881.

<sup>&</sup>lt;sup>137</sup> See e.g., United States Department of Justice v. Daniel Chapter One, 89 F. Supp. 3d 132, 144 (D.D.C. 2015), aff'd, 650 Fed.Appx. 20 (D.C. Cir. 2016).

<sup>&</sup>lt;sup>138</sup> ECF Doc. No. 341 at 2.

<sup>&</sup>lt;sup>139</sup> ECF Doc. No. 341 at 2.

This resolution demonstrates the fallacy of suggesting "...jurors, mostly people of only average education and intelligence, cannot properly decide complex cases, particularly technological disputes." Paul R. Michel & Dr. Michelle Rhyu, *Improving Patent Jury Trials*, 6 Fed. Circuit B.J. 89, 90-91 (1996).