BEFORE THE PUBLIC UTILITY COMMISSION

OF OREGON

IN THE MATTER OF IDAHO POWER COMPANY'S, PETITION FOR CERTIFICATE OF PUBLIC CONVENIENCE AND NECESSITY.	**Docket: PCN 5** **Intervenor Cross-answering and Rebuttal Testimony** **Sam Myers**

Date: March 20, 2023

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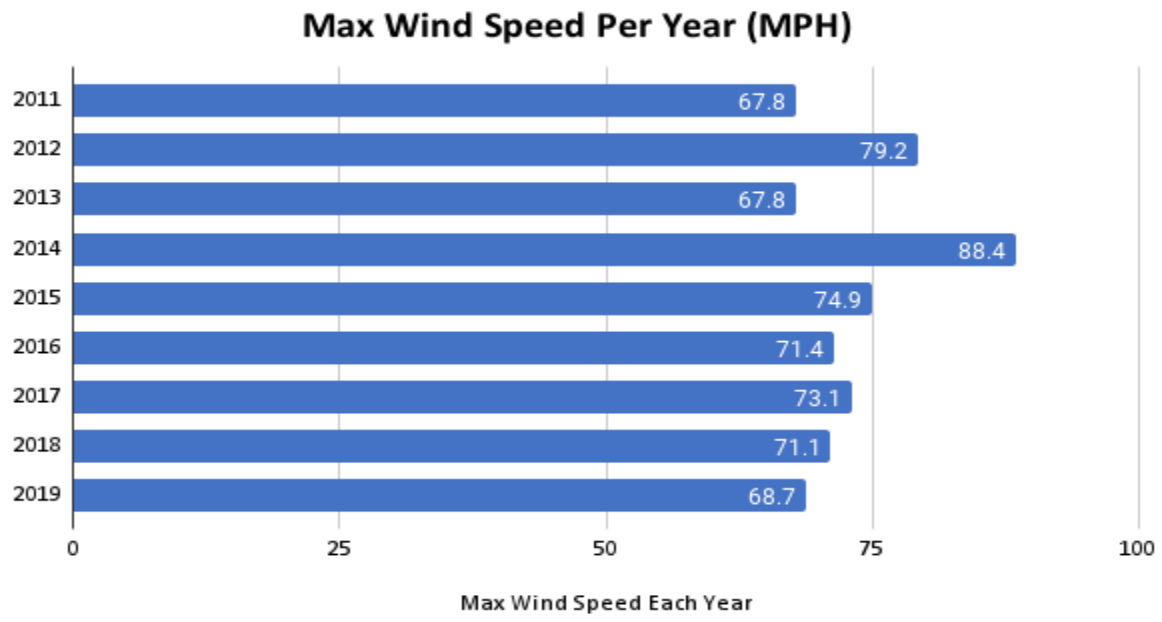
Basic Wind Speed

I appreciate Mr. Stipple's testimony concerning transmission line tower design. He uses various data from ASCE that references local charts for Umatilla and Morrow County to make this critical determination of 85 mph basic wind speed which is used to specify wind pressures and max wind speeds. This determination is the starting point on which the towers are designed from. The chosen 85 mph distinction carries an MRI distinction of 100 years based on ASCE charts that Mr. Stipple provides. This means that wind speed at 85 mph should only be seen once in 100 years which would be a 7.7% chance of a 85 mph wind event happening in the next 8 years. In my amended testimony, we source wind data from a commercial wind metering tower that was placed on Carpenter Butte (0.6 miles from proposed transmission line) in 2011 and taken down in 2019. This wind metering tower recognized speeds of 88.4 mph at 164' high and is recorded at several other elevations on the tower on December 11th, 2014. As seen in the graph below we had two wind events: the first was in 2012 at 80 mph and the second was in 2014 at 88 mph. The probability of a 50 year event and a 100 year event taking place within two years of each other suggests that the basic wind speed is underrated and we are eclipsing the ASCE's derived basic wind speed. In other words, the winds at this location are much stronger and more frequent than the 85 mph/100 year MRI classification that is specified. The applicant has repeatedly stated they "have met the most stringent standards"; however, it appears that those standards have been intentionally lowered in this case.I contend that this initial determination of 85 mph is not an adequate number for our location as a design wind speed.



Mr. Stipple continues to describe how the design wind speed is the driving factor of the wind pressures that are applied to the tower. These pressures increase by 30% at the height of 180 feet compared to base pressures. Mr. Stipple describes the choice of a BPA (STD-DT-000035) for lattice tower loading with a maximum wind speed of 120 mph on the towers and 100 mph on the wire. He goes on to explain that the BPA has done large meteorological studies in several states. Unfortunately, the study was conducted in 1964, which raises doubt to the accuracy of the BPA's climate data due to the 60 year time lapse. It's important to gain a perspective of the amount of time transmission lines have been in use in the Pacific Northwest, which is relatively short. We simply have not experienced all the climatic conditions that our area will throw at us.

Line Design: MRI Differences

I believe the IPC has chosen a substandard max wind load speed of 100 mph for conductors and 120 mph for towers. For example: ASCE standards, when applied to our area, indicate a 120 mph rating would have a MRI of 10,000 years; whereas the Oregon Building Codes show a 120 mph rating would have a MRI of 700 years. Furthermore, the 100 mph MRI for the conductor would fall somewhere between 10 year MRI and 300 year MRI in the Oregon Building Codes. It is important to make the distinction between the two very different scales that exist between ASCE and Oregon Building Codes. Simply put, the ASCE MRI range points are scaled lower than the Oregon Building Code MRI ranges for this region. This allows users like IPC to use lower design wind speeds and still have fairly large MRI values which is misleading. I believe a more reasonable choice of the design wind speed should be from the Oregon Building Codes chart that better represents the local area for current and future conditions. The standard is referenced from Oregon Building Codes chart entitled "LRFD ultimate design wind speed". Transmission lines should be carried into the risk category III which is defined by; "impact on extended disruption in service can have on the public" and places the final maximum wind load speeds at 130 mph for our location in Morrow County. Mr. Stipple has chosen a standard that lowers the basic wind speed to begin the design process. Clearly, IPC's claim to use only the most "stringent" standards does not apply to this project.

Tower Failure: Weather Related

In literature from BPA we see that there is a failure rate among 115 kV and 500 kV towers as demonstrated in Figure 3-1 (below).

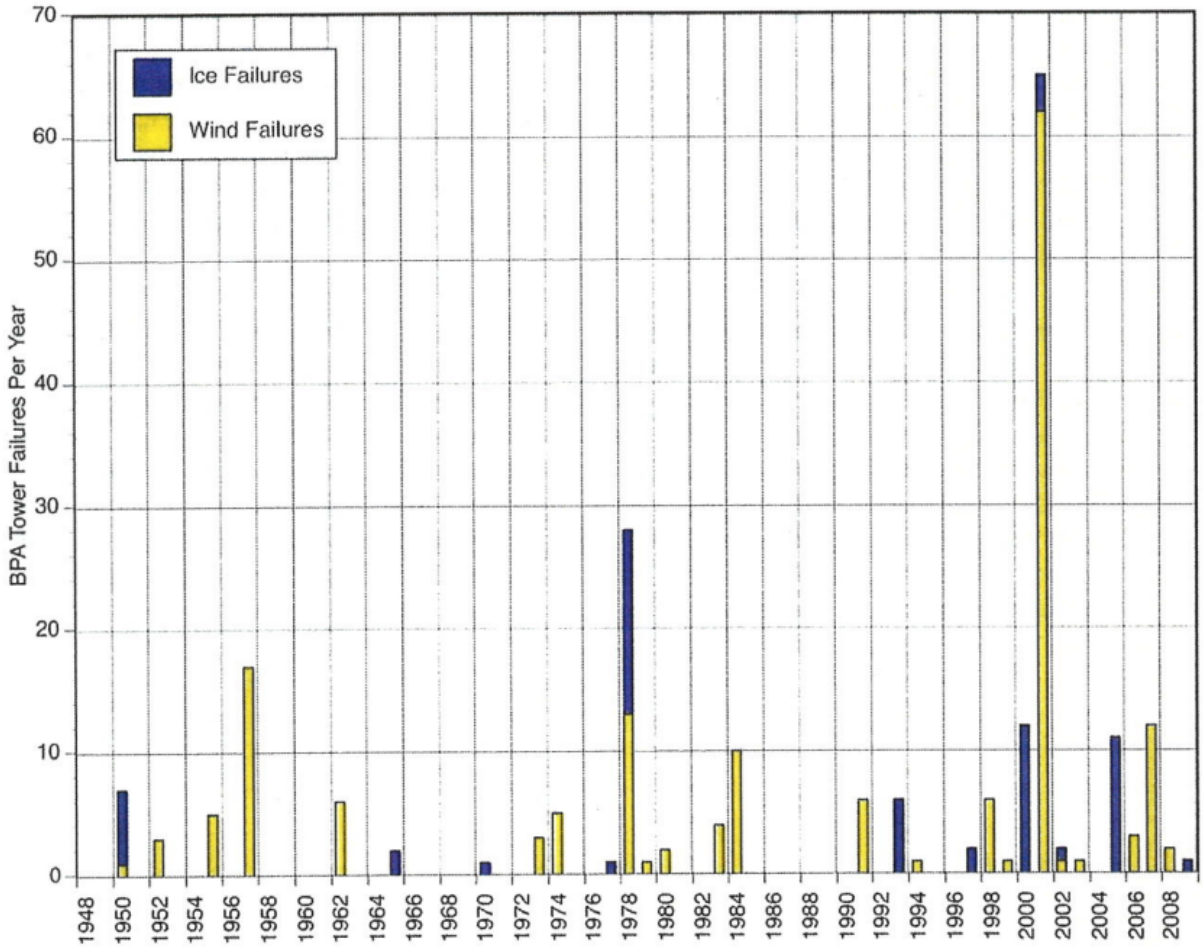


Figure 3-1 Reported Tower Failures (BPA), 1948 - 2009

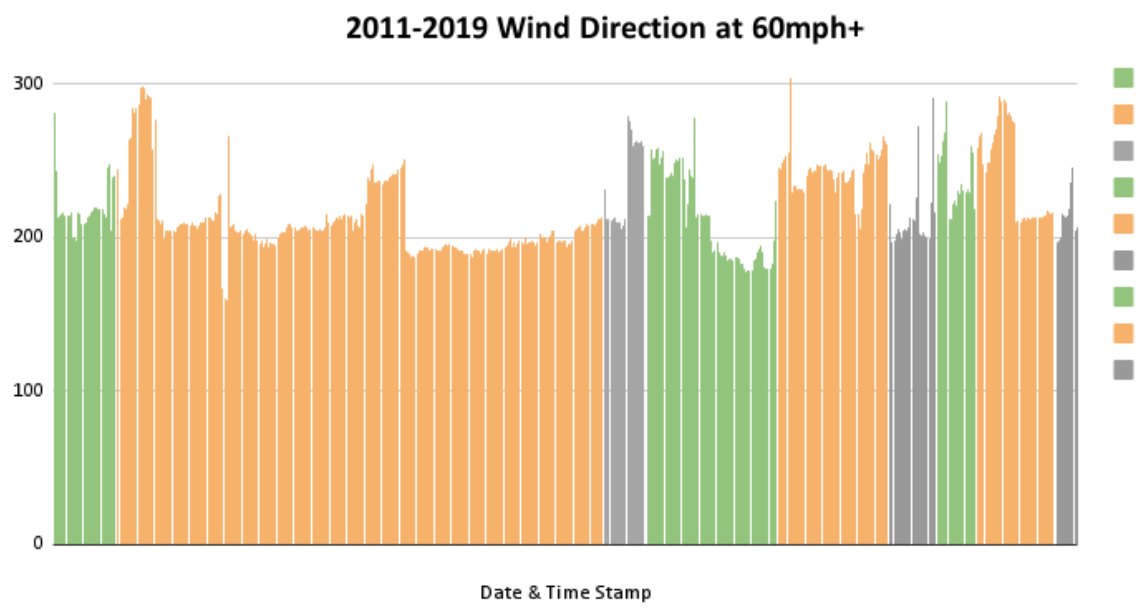
The data in Figure 3-1 is thought to be nearly complete for steel lattice structures. The data in Figure 3-1 may omit data for damaged wood pole-type structures if the construction crews effected repairs without specifically reporting said repairs to the BPA transmission group. Most of the damage in Figure 3-1 was for towers on 115 kV to 500 kV lines, and could be due to wind- or ice-plus-wind-induced overloads on specific above ground members or foundation failures; in a few cases, the damage was caused by wind-induced fallen trees. Damage due to landslides, snowslides, vehicle impact, airplane impacts or other non-weather related causes is not included in Figure 3-1.

BPA's current home page states, "Grid Modernization is BPA's sole key strategic initiative. The grid modernization portfolio includes 35 projects designed to increase automation, improve accuracy, and enhance the optimization and reliability of the grid." They describe ongoing efforts toward enhancing the

optimization and reliability of the grid whose tower resiliency is at the top of the list. This juxtaposes the statements made in Idaho Power's reply, that there are very rare failures. Figure 3-1 appears to indicate that tower reliability is not as assured as we would be made to believe.

Wind Attack Angle

An ASCE study on Fragility Analysis suggests premature tower failures can occur from specific wind attack angles and incorrect max wind speed ratings on transmission towers. ASCE has recently started the use of fragility tests to determine performance-based design guidelines for transmission lines in high wind regions that include structural and reliability factors. In this study they conclude that this particular design tool may be new in the industry but does provide guidance in determining wind effects on transmission line towers when specific wind attack angles are applied. They find that a wind attack angle of 67.5° presents a dramatic increase in fragility to the tower and a collapse can happen at much lower winds speeds than the original tower maximum wind speeds design. The graph below is the weather direction data sourced from a commercial wind tower on Carpenter Butte, 0.6 miles from the proposed B2H transmission line that was in operation from 2011-2019. The change of colors indicate the year change starting from 2011.



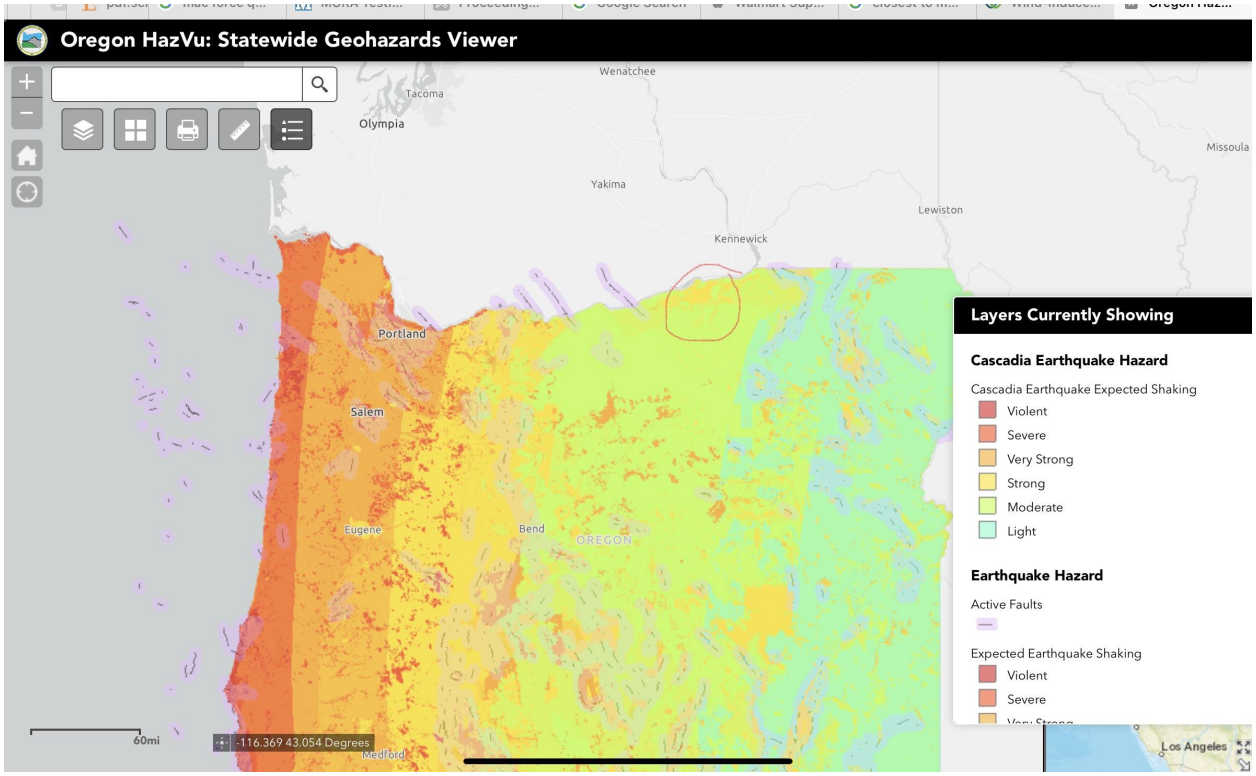
Legend - North = 0° - East = 90° - South = 180° - West = 270°

From the collected data, the winds primarily come from out of the South East which lines up on the 67.5°(202.5°) and 45°(225°) attack angle to the transmission towers. This will leave the transmission

tower more susceptible to wind failures. This chart shows the sheer number of 60+ mph occurrences that is consistent with commercial wind areas. We seek to show the frequency of wind events that a potential transmission line would need to resist. Our location will have a large number of high winds within the attack angle range. Our concern is that the current tower and line types wouldn't withstand the attack angle stress on a continual basis.

Seismic Factors

IPC, in their final order September 7, 2022 (page 121), quotes a standard from the ASCE "guidelines for electrical transmission line structural loading", it reads as follows: "transmission structures need not be designed for grounded use vibration caused by earthquake motion, because historically transmission structures have performed well under earthquake events and transmission structure loading is caused by wind ice combinations of broken wire, horses, exceed earthquake loads". IPC claims to have prepared for extreme environmental events but has added no additional loading in preparation for a Cascadia earthquake. The Cascadia Seismic event is characterized as imminent and will have a dramatic impact across the entire state. This event is forecasted to produce a magnitude 9.0 or higher earthquake. IPC has described that there may be some overlapping of loadings between ice, wind, etc.; however, we are due for a catastrophic earthquake in Oregon which actually elevates the seismic hazards in all locations of Oregon. There is no history in our settlement of Oregon that can tell us how the Cascadia event will impact transmission lines. We simply must be prepared and have done our due diligence by designing all structures to handle the largest earthquake in our lifetimes. It is also important to note that Cascadia elevates the hazard level to "Very Strong" near Boardman where the transmission line begins its journey Southward.



Upon investigation, sandy soils under strong seismic forces can liquefy and render their foundations unstable, additionally it should be noted that the B2H line crosses multiple active faults within Oregon. Active faults are shown in the map above. Faults are seen south of Pilot Rock, near LaGrande and near Baker City. It is concerning that IPC has made the decision not to raise their risk category from Category II to Category III in the structural design to resist"extreme events ." However, the data suggests no consideration has been applied to this event.

I would like to cite the study: "Earthquake Risk Study for Oregon's Critical Energy Infrastructure Hub"(https://www.oregongeology.org/earthquakes/CEI-Hub-report.pdf) by Yumei Wang, DOGAMI, Steven F. Bartlett, University of Utah, and Scott B. Miles, Western Washington University, published August 2012. The study underscores the damage that will occur in the Portland area due to high-voltage electric substations and transmission lines. It goes on to refer to a recent unpublished BPA Cascadia earthquake scenario study which determined that the existing transmission system in their main grid would require somewhere between 7 to 51 days to make emergency damage repairs to the transmission line system in Oregon and Washington from a magnitude 9.0 Cascadia earthquake. Ignoring the seismic event entirely raises questions about the reliability of the B2H transmission line.

Extreme Weather

Oregon on average experiences three tornadoes per year. This may seem insignificant; however, we do have a record of a cyclone that touched down in Morrow County on June 14th, 1888. It was reported to begin near Jordan Butte west of Lexington, Oregon and disappeared near Pine city at Buttercreek, traveling a distance of about 20 miles. This is recorded in the "History of Umatilla and Morrow County" published in 1902. It describes the destruction and path of the cyclone that devastated a number of homes and claimed several lives. The cyclone's path traveled northeast through Sandhollow and on to Pine City. The cyclone's path crossed where the now B2H Transmission Line is proposed to be. Considering the severity of the damage reports, this severe weather phenomenon seems likely to have caused significant damage to the transmission lines if it were to happen today. This is another example showcasing the severity of weather events in Morrow County.

Extreme weather is another component that must be considered. At globalchange.gov there is an article called "Fourth National Climate Assessment: Chapter 4 - Energy, Supply, Delivery, and Demand" which addresses the nationwide impact on energy
infrastructures from extreme weather. The Assessment goes on to describe the principal contributor to power outages is extreme weather, which includes; high winds, thunderstorms, hurricanes, heatwaves, intense cold periods, intense snow/ice events, and extreme rainfall. These events are clearly outlined as a national concern. Instead of taking these significant considerations into account, Idaho power has claimed that B2H has been engineered to withstand "extreme events". However we see no additional loading additions in the design process to make provisions for extreme events. By limiting the maximum wind speed to 120 mph, and choosing to forego any seismic or wind attack angle considerations they have limited the ability of the towers to resist extreme events resulting in costly longer term power outages, tower failure and line fault events. Several studies outline the costs associated with power outages, concluding that they are costly and should take necessary steps to reduce the likelihood

Tower Failure Studies

Incorrect Max Wind Load Speed Rating

In this abstract; "Methodology for Conducting Extreme Event Model Simulations"(https://www.geengineeringsystems.com/ewExternalFiles/Wind%20and%20Ice%20Tower%20Report.pdf), G&E Engineering Systems Inc. California, Principal Investigator John Eidinger, P.E., S.E., published September 2015. The abstract analyzes a collapsed 500 KV tower on the Hatwai-Dorshak 500

KV circuit, on November 6, 2010. The collapsed tower was located between Pullman, Washington and Moscow, Idaho. In the report, the tower was a Bonneville-owned 28MV tower. The wind conditions surrounding the collapse were determined by wind meters from the surrounding airports at Lewiston and Moscow. This tower experienced maximum sustained wind speeds of 47 and 48 mph. This particular tower type was designed to have a maximum wind speed capacity of 127 mph determined by BPA which this analysis was performed in 2008-2009. After studying the events that transpired, the BPA concluded that the original structural calculation of strength capacity of this particular tower of 127 mph was too high and a "more realistic" strength capacity for this particular model is actually 100mph. The major concern here is that many of the companion towers still in place are vastly under-rated and may collapse. This event underscores the need to perform due diligence by thoroughly analyzing older BPA design models using the latest fragility tests to verify wind loading speeds and possible wind attack angle problems. Due diligence must be made to verify that the lattice towers that Idaho Power is using throughout the B2H project will handle the wind loads.

Wind Induced Vibration

Research article entitled; "WIND-INDUCED COUPLING VIBRATION EFFECTS OF HIGH-VOLTAGE TRANSMISSION TOWER-LINE SYSTEMS"(https://www.hindawi.com/journals/sv/2017/1205976/) by Meng Zhang, Guifeng Zhao, Lulu Wang, and Jie Li, Published 10 Dec 2017. The study focuses on wind-induced vibration responses of a given tower-line system which are analyzed using a finite element model which is verified by comparing results with field measurements. They discuss a high voltage transmission line failure that happened in China from high wind events in the years of 2007, 2010, and 2013. The towers that failed were of the same design. The study concludes that vibrations on conductors induced by wind significantly increased as the wind speed increased. They also go on to say that these specific towers underwent high winds at a 90° wind attack angle causing the severest induced vibration on the towers. The vibration induced stress levels decreased as the attack angle decreased, or became more parallel to the lines. Engineers and utility companies must ensure that tower structures can handle the increased vibration caused by certain attack angles. These studies were done in 2014 and are relatively new and are a valuable tool to move forward in building a transmission grid that will have great reliability.

At this point I'd like to request that the fragility study be performed on the given BPA standardized lattice tower 00035. This could provide valuable information into the wind attack angle effects which we have shown can be significant in our location.

Highest Available Tower Standards

I believe that any newly constructed transmission line should be built to a NSITA – 222 H. set of standards. A newly established set of standards applies to communication towers which fall into a Category III. Category III is defined as; "buildings and other structures that represent a substantial hazard to human life in the event of failure, such buildings do include public facilities". This standard, if followed, would bring the max wind load speed up to 130 mph. It would bring a much higher confidence level into the general public concerning transmission lines that traverse these extreme wind zones, like those in Morrow and Umatilla Counties.

Lautenberg Rebuttal

In my rebuttal to Mr. Lautenberg, I object to the inference that there has been a formal fire risk analysis, especially in the Morrow County area. As proof of my assertion, in a recent workshop, zoom meeting titled; 2023 Wildfire mitigation plans. I discovered from the presentation that a formal risk assessment having to do with agriculture risks from fire in agriculture crops under the B2H line has not been completed, and that those risks have not been formally analyzed or published.

Mr. Lautenberg references the Public Safety Power Shutdown(PSPS) and its benefits which I fully agree with. However, I object to the inference that Mr. Lautenberg states that the Public Safety Power Shutdown is an actual fire risk assessment. I object to the inference that Mr. Lautenberg makes an automatic shutdown or fault sensor system that also serves as a risk analysis assessment for our area. Again I believe EFSC did not analyze the wildfire risk in this area.

I object to Mr. Lautenberg's assertion that the 500 kv lines are unlikely to start fires. The term "unlikely" is not the same as zero chance. I object to Mr. Lautenberg's position that ignitions are not substantial. Within Mr. Lautenberg's Rebuttal, Table I - pg 21-24, summarizing ignitions, we discover a number of ignitions do happen which support the possibility of an ignition event. These ignitions only have to happen 1 time in a 60+ mph event which as the data shows there are 60 mph+ events happening multiple times a year. Due to the coupling of only a few factors converging at a given point in time could cause a major fire event, I assert that my main concern does still exist. This fire ignition possibility is a critical part of my personal risk assessment of B2H and at this point it remains a valid concern.

I object to Mr. Lautenberg's assertion on page 48 that part of IPC's Wildfire Mitigation Plan contains a formal wildfire Risk Analysis, because it does not. Mr. Lautenberg goes on to describe a completely

different risk computation which involves a history of existing fires in relation to other assets. The risk computation does not include agriculture as part of the assets component.
I will also object to Mr. Lautenberg's claim that my Opening Testimony and Exhibits was filed late. I must insist that I received approval on a filed extension from the ALJ. The approval was granted by the ALJ on Feb 2, 2023.

I reject the inference that there is no risk of dust devils around the B2H line. The phenomena presents itself yearly but also with varying degrees of intensity. In its most prominent form it could be very dangerous causing a fault to ground. The denial exerted on this risk from IPC only validates my continued belief that IPC does not understand the weather conditions, climatic dynamics, or farming practices that would be present underneath B2H. Furthermore on page 50 I would agree that the dust devil risk is small, nevertheless it remains a risk.

I object to Mr. Lautenberg's response on pages 56 and 57 to my request for a soil damage mitigation policy. Mr. Lautenberg references the Hearing Officers response to my soil mitigation concerns as follows: "Hearing officer and council found that Idaho power adequately addressed these concerns in its agriculture lands assessment, fire prevention, and suppression plan, wildfire mitigation plan, and PSPS plan". I argue and object to these listed assessments and plans because they do not contain a fire risk analysis and furthermore, they have no formal risk analysis of potential soil damage from B2H. Therefore, his argument is irrelevant.

Mr. Lautenberg references an earlier Contested Case rebuttal of my soil damage concerns in the footnotes on page 57. Mr. Lautenberger's quotes the earlier rebuttal by Mr Mark Madison that reads as follows; "historically wildfires in the area near Mr. Myers agriculture operations have been relatively small and quickly contained given the improbability of a project related wildfire disrupting Mr. Myers agriculture operations. There is no need for Idaho power to have a soil. Mitigation plan in place…." I continue to object to Mr. Mark Madison's contention and will enter into evidence the following documents from Morrow County. Those documents are listed below under; Wildfire Frequency and Magnitude

Soil Damage & Infiltration Rates

The argument I present for IPC to develop a soil damage mitigation plan stems from a lifetime of interfacing with our local cropping system, and recognizing the factors that contribute to soil health and soil destruction. The potential soil damage is a real impact factor that IPC does not currently mitigate for. I would like to offer a more simplified explanation of the poor infiltration rate experienced on our soils

that occurs after a fire. I refer to lowered infiltration rates in the technical article within my "Amended Opening Testimony". These lower infiltration rates are magnified in our cropping system after a fire. Infiltration rates are impacted by several factors; firstly the wheat plants in our area are generally smaller in stature because of the lower rainfall. Secondly the plant is completely dead prior to harvest at which time the plant crown and root structure are beginning to decay. Plus the lowest leaves on the plant structure dry and fall to the ground, leaving mostly stems and heads. Thirdly the root structure of the wheat plant has very fine roots, the corresponding root hairs are even smaller. These 3 factors create a more restrictive sealing layer at the soil surface after a fire. Mostly because any large organic matter residue is gone. The combustion process leaves behind a fine ash material which works with the charred soil to pack tightly around the dead plant structures and soil surface creating a restrictive barrier. This seal creates a blockage to water, consequently water cannot move into the soil very fast. While the water remains on the soil surface it can easily evaporate before it is captured into the soil itself. We have to make note again that after a fire almost all organic material above the soil surface is gone. Only the fine ash residue remains, in turn reducing our organic percentage, which also impacts future yield potential. Other soil systems are less impacted by fire because they contain a much higher organic percentage and the roots that remain are much larger producing some pathways for infiltration. Consequently the soils with a higher organic percentage and larger roots systems do not suffer as much from reduced infiltration rate after a fire. Additionally irrigated soils in our area recover from the reduced infiltration rates because more abundant water applications break down the sealing characteristics much quicker than dryland soils.

John E. Myers Testimony - March 18, 2023

For many years we have battled rye in our wheat fields. We were eliminating the problem by pulling or cutting / packing the heads out of the field in sacks. But one spot we just could not control and fire seemed to be the only solution. We were using a crop / fallow cropping system and during the 1981 wheat harvest of Township 1 North, Range 27 East - Sections 17 and 8, we decided to combine / harvest the wheat up to the edge of the rye patch which was near the Southwest corner of section 8. After harvest we

had a 5+ acre patch of dense rye with stunted wheat that was ringed with two passes of our disc plow. On the morning of August 11, 1981, with a gentle southerly flow of air we ringed the patch with fire. We used the water truck to control fire in the disced area through the next 3 or 4 hours. At this time we judged the operation a success.

- **1 year later** (in a fallow condition) I noticed when rod weeding, a much finer soil texture which lifted very easily in the wind. Well of course, we burned all the straw which would have been incorporated into the soil. That fall we seeded wheat, as usual.
- **2 years after the burn**, now at harvest time, that burn patch had sparsely populated, half height, stunted wheat plants with shriveled kernels. With the microbes and organic matter destroyed in that soil, not even weeds grew! We had to admit the decision to burn was a mistake in that it destroyed many soil properties. Now we had to approach this soil MUCH differently, with limited tillage.
- **4 years after the burn** the wheat population was better but still suffered half height, stunted plants. I believe we fertilized the entire field with anhydrous ammonia that following fallow year.
- **6 years after the burn** we could tell the soil was healing. The wheat was yielding 70 - 75% of close-by wheat in the same field.

- The **8th year** was much better. This semi arid region cannot produce yearly crops. Healing of our fire impacted soil can only be accomplished over 4 to 5 crop / fallow sequences, which even at the 10th year we could still see the distinct area of the fire.

I spoke with Cascade Agronomics on March 6, 2023 and they have a "Screened Steer Manure" product that they apply on various soils with various conditions / requirements and replenishes microbes and organic matter. The Rep. recommended for a fire repair treatment, 10 tons per acre. The cost per acre of product, application and trucking the product to the field is $436.50 per acre.

These fire acres of which I testify are exactly under the proposed B2H transmission line at mile 25 - 26 in section 8, Township 1N Range 27E.

Respectfully Submitted,

John E. Myers, Pres. Myers Farm Co., Inc.

Long Term Financial Implications

It is imperative that IPC and PUC understand the financial implications of wheat as it matures and is harvested. We can use this last harvest as a guide. Considering a 250 foot ROA for one mile = roughly 30 acres. Our yield was roughly 50 bushels per acre. Total bushels of 1,515 bushels, applied to a farm gate cash price of 8.00/bushel which equals a total value of $12,120.00. This is a high revenue year for sure, this higher than normal average yield per acre helps to increase our 10 year average yield per acre.

Now let's consider a fire scenario where the power line ignites at a mid point across the 1 mile square field of 640 acres. At the point of ignition the fire gets carried by winds across the field creating a pie shape. Let's consider out of the 640 total acres, 35% of the field burns. That would be a total of 224 acres. From the values used above, the grain lost in the fire has a value of $89,600.00. The actual farm revenue lost then becomes a function of the insurance covered values less actual harvested production value. In this example I use a 10 year average yield per acre of 35. Which is close to that of our farm.

Calculating insurance covered value,=

(Coverage level 80%)x market price (derived by insurance co.) @ 8.24/bu. x (10 year average roughly 35 bu/ac) x 640 ac.= 147,660.00

Calculating our remaining acres to be harvested, 640 total ac - 224 burned acres = 416 ac harvested.

Calculating harvested production value,=

416 harvested ac. x 50bu/ac (actual) yield x market price @ 8.24/bu = $171,392.00.

For our scenario we would have no loss to claim because the harvested yield was so good it actually made up for the bushels lost in the fire. Our harvested value of 171,392.00 was bigger than the insured limit of 147,660.00. However we did not have a chance to capture the revenue of the lost bushels. Anytime we have an above average yield, we depend on capturing the grain to sell as revenue but, we also benefit by increasing our 10 year bushel/acre yield average. Our 10 year average yield/acre serves as a set point for crop insurance revenue coverage. A respectable average helps to stabilize crop insurance coverage at a base level. This gives us slightly more financial stability. The bigger problem now comes to light, the crop insurance still bases the average yield for the crop year from the entire field, not just the harvested acres. Now instead of installing a yield of 50bu/ac for the given year a much lower yield average is entered into the 10 year insurance record. The reduced yield/acre average is calculated below.

Calculation of annual bu/ac yield including both harvested and burned acres;
50bu/ac x 416 ac / 640 ac=. 32.5 bu/ac
At this point the entire 10 year cumulative average yield/acre is slightly reduced. This in turn reduces our future crop revenue base value. Many scenarios exist in farming, it is fantastic to have a revenue safety net that we can afford. The problem with this scenario is that we lost grain in a fire that was not our fault. Would there be any compensation? Plus even if our 10 year average yield was reduced by 1 or 2 bu. That revenue loss could be felt for 4 or 5 years. It is possible to experience a $5,000.00 rev loss per year to a 1 bushel reduction in the 10 year average yield number.

We usually purchase fire insurance to cover fire incidents but, now it will become a required purchase. Having to deal with a new fire risk potential.

The challenge to our fire scenario is not over. After being fallowed the burned acres will have a 21% yield reduction at the next harvest cycle. Again this will present itself as having fewer bushels to sell but, it will also drag down that year's yield per acre average and consequently reduce the 10 year average yield. The cycle repeats itself over again and again as the soil slowly recovers. Yield reductions will last over 6 years. Any fire creates long term consequences but, adding another potential fire starter into our area simply adds more risks to our operation.

Wildfire Frequency and Magnitude

Wildfire

Wildfire Summary

Wildfire History and Location in Morrow County

Morrow County, along with much of eastern Oregon has had experience with wildfires in the past several years. The prevailing easterly wind and the drought conditions, which exist off and on throughout the western U.S., have exacerbated wildfires in this region. The number of fires in Morrow County, from 1984 to 2003, ranged from 13 in 1993 to 105 in 1999 with a total of 873 fires during this time period burning more than 213,000 acres. Twenty-nine fires burned 300 acres or more during that period and of those, six were 5,000 acres or more. In July and August of 2000 the Governor signed a Determination of Emergency Conflagration Act Due to Fire in Morrow County. The fire that occurred at this time was the "Willow Creek Fire" which started at the junction of Eight Mile Road and Four Mile Canyon in Gilliam County and spread out of control to Morrow County.

WILDFIRES IN MORROW COUNTY 2013 TO 2018, >50-ACRES IN SIZE

Acreage Size Class	Total Acres Burned	Number of Fires
A 50-100	1430	12
B 101-500	4270	9
C 501-1000	5448	7
D >1000	151995	9
Total	163240	37

(Wildfires <50-acres in size not represented in this chart.)

Above graph found at: https://www.co.morrow.or.us

I object to Mr. Mark Madison's rebuttal because it is inaccurate. These two sources reveal the size and frequency of fires we face in Morrow County. 163,240 acres is the equivalent to 255 square miles burnt, which is the equivalent to a burned area 16 miles x 16 miles.
Or on a yearly average for the 6 years = 42 square miles or an area of 6.5 X 6.5 miles burnt per year.

I would also like to enter as evidence the documented Red Flag Warnings issued for our weather zone. The National Weather Service divides areas into zones. No. 641 covers all of the B2H pathway within Morrow County. Red Flag Warnings are described below.

Red Flag Warning

A Red Flag Warning means warm temperatures, very low humidities, and stronger winds are expected to combine to produce an increased risk of fire danger.

-If you are allowed to burn in your area, all burn barrels must be covered with a weighted metal cover, with holes no larger than 3/4 of an inch.

-Do not throw cigarettes or matches out of a moving vehicle. They may ignite dry grass on the side of the road and become a wildfire.

-Extinguish all outdoor fires properly. Drown fires with plenty of water and stir to make sure everything is cold to the touch. Dunk charcoal in water until cold. Do not throw live charcoal on the ground and leave it.

-Never leave a fire unattended. Sparks or embers can blow into leaves or grass, ignite a fire, and quickly spread.

We have requested and received from the NWS all of the Red Flag warnings issued in the months of June - August for the years of; 2018, 2019, 2021. The months of July - September for the year; 2020, 2022. We added into those specific years only the days which had a warning attached to that day, if the warning covered 3 days we then counted only those 3 days for the given issuance. Our totals are as follows;

- 2018 = 16 days
- 2019 = 14 days
- 2020 = 19 days
- 2021 = 16 days
- 2022 = 12 days.

This data does not include the months of May or October in any of the years, nor does it include the month of June in 2020, 2022. It is quite possible to have Red Flag warnings issued for these months, however the data that we have compiled serves to underscore the risks we face.

Neighboring States Identify Wheat as a Wildfire Risks

Both of the nearby counties of Gilliam and Waco list wheat as a wildfire hazard risk.

(UGBs) to provide for urban uses and limit urban-type development on rural resource lands outside of UGBs (State of Oregon, 2020).

County Emergency Management

Gilliam County has recently reviewed their completed Natural Hazard Mitigation Plan (University of Oregon, 2018). This plan addresses wildfire in its Risk Assessment section which has the following to say about the subject:

- Wildfire hazards exist throughout the county but are particularly notable in areas where wheat, other crops, and natural vegetation exist, which includes most of the county.

Table 2.1: Wasco County Hazard Overview

Hazard	General location
Severe Weather	Countywide. Now, includes tornado. Other hazards in this in this category include ice storm, snow storm or blizzard, and windstorm.
Drought	Countywide
Flood	Many rivers in Wasco County historically flood every few years. These include the White River, the Deschutes River, the John Day River, and the Columbia River.
Wildfire	The entire County is vulnerable to the effects of wildfire. However agriculture, forest/woodland areas, and individuals living in wildland urban interface (WUI) zones are at the greatest risk.
Earthquake	A subduction zone earthquake could have impacts Countywide. Crustal quake events are most likely near The Dalles and northeast of Condon where identified faults exist.
Volcano	Wasco County may be impacted by a volcanic eruption at any time (particularly Mt Hood, but also would be impacted by Mt Adams or Mt St Helens eruptions).
Landslide	Wasco County has several areas where landslides have taken place and many areas that are susceptible to landslides. The slopes above the Columbia River are particularly susceptible.

Source: Wasco County NHMP Steering Committee, Updated October 2017

From: Wasco County Website

Fire Potential Index

I object to the fire Potential Index as described in the Wildfire Mitigation Plan. This model raises serious questions about the accuracy of using offsite data to model an area that is mostly misunderstood now. I object to the accuracy of a seven day forecast model. Information for PSPS has to be available in under 60 minutes to effectively react to extreme events. I also object to the in-house manipulation that is clearly suggested in the report, IPC claims to have the right to make; "Regional adjustments to critical limits for the upper wind speeds may occur after further discussion with subject matter experts from each of the regional operations". In our weather service zone 641. winds show up in an instant, our relative humidity can drop below ignition thresholds in a matter of hours. The only way to have correct data is with an onsite weather station. Again I object to the notion that regional assessment of such a dynamic area would be accurate. A better option would be to hire a 3rd party company to deliver uniform weather data without corporate bias. Utility companies need more accountability. IPC could easily manipulate wind data to avoid the responsibility of damage claims against them, under certain circumstances. It is time to look at Utility companies as having; 'conflict of interest" issues. I believe it's time to address those issues.

Wildfire Concern

Another wildfire concern centers around changes with dryland fallow practices in Morrow County. Many farmers are now using a Chemical fallow system vs. the traditional tillage system. Chemical fallow uses strategic applications of herbicides to control vegetation growth instead of tillage. The goal is to limit vegetative growth during the fallow spring/summer months. The vegetative control sequesters the soil moisture within the soil so it can be used the next year. The reason I mention this new chemical system is because it does not disturb the stubble from prior harvest, thus the stubble remains a flammable risk hazard vs. the tillage system which produces a much less flammable landscape. Consequently the area has much fewer fire breaks throughout the landscape. This increases the fire risk within the region and should be considered in any risk analysis.

Conclusion

The testimony provided by Mr. Colburn, Mr. Stipple, and Mr. Lautenberger has been valuable to review. Their statements have brought much-needed insight into the engineering and placement of the B2H transmission line. That said, there are significant discrepancies in the information that they have provided, and the actual data. Based on wind speed measurements taken near the proposed transmission

line, IPC has chosen an underrated design wind speed for the B2H project. The adamant statement that Idaho Power only uses the most "stringent standards" in their development of the transmission line is underscored by their use of the lower ASCE requirements instead of the Oregon Building Code. Furthermore, tower failure has not been adequately addressed by Idaho Power as it relates to wind attack angle(fragility testing), extreme weather, seismic factors, incorrect max wind load speed, and wind induced vibration. Additionally IPC has failed to incorporate the latest directives toward building a more reliable transmission line. As a whole the energy industry is trending towards preventing failures and power outages by "Hardening transmission line structures". IPC seems to be unaware of this trend.
IPC should perform the following tasks;

1. Elevate the design speed to 120 mph, as per Oregon Building Codes, Category III standard. (700-year MRI Basic Wind Speed)..
2. Elevate max wind load speeds for towers and conductors to 130 mph or more, as per Oregon Building Codes, Morrow County site specific, for Category III building, perform the latest Fragility tests and re-evaluate max wind load speed capacities on all the towers used, add seismic loadings into the design, incorporate designs and equipment that produce lower noise levels.
3. Formally publish a wildfire risk assessment including wheat (ag) as an asset.
4. Developing and integrating a soil damage mitigation and rehabilitation plan
5. Source weather modeling for forcast needs, to an independent contractor due to potential conflict of interest issues.
6. Use a alternative route to the south to the south of Gleason Butte, (as per amended filing)
7. Recognize the need for significant nuisance payments made yearly and integrate into a plan.

I hereby declare that the above statements are true to the best of my knowledge and belief, and I understand that they are made for the use as evidence in administrative court proceedings and are subject to penalty for perjury.

Sincerely,

/s/ Sam Myers

Sam Myers ,