From:	▮▮▮▮▮▮▮▮▮▮▮▮▮▮
To:	▮▮▮▮▮▮▮▮▮▮▮▮▮▮▮▮▮▮▮
CC:	▮▮▮▮▮▮▮▮▮▮▮▮▮▮▮▮
Sent:	12/1/2020 11:05:58 PM
Subject:	Re: [FYI] Meeting request to discuss historical weather PSPS lookback

My general sense is that even with 2019 criteria, 2016 was the only year without PSPS events out of 30 years, that it is a 1 in 30 year occurrence to not have PSPS. I wish it was more frequent than that 🙂

The 2020 guidance does result in less events than the 2019 guidance, for example, dropping out multiple of the weakest events from 2019.

Kind regards,

▮▮▮▮▮▮▮▮▮▮▮▮▮▮

From: ▮▮▮▮▮▮▮▮▮▮▮@p▮
Date: Tuesday, December 1, 2020 at 9:15 PM
To: ▮▮▮▮▮▮▮▮▮▮▮▮▮▮▮▮▮▮@p▮▮▮▮▮▮▮▮▮▮@p▮▮▮▮▮▮▮▮▮▮▮▮▮▮▮
▮▮▮▮▮▮▮▮
Cc: ▮▮▮▮▮▮▮▮▮▮▮@p▮▮▮▮▮▮▮▮▮▮▮@p▮▮▮▮▮▮▮▮▮▮@p▮▮▮▮▮▮
Subject: RE: [FYI] Meeting request to discuss historical weather PSPS lookback

▮▮▮▮▮▮
Thanks this is helpful. Can you explain a bit more why we would exclude 2015 and 2016 from an average # of events per year? Seems like zeros are part of the data too? Could the higher frequency of PSPS-free years in the 10-year vs. 30-year reflect the "tighter" criteria we used in 2020 over 2019?

Thanks,

▮▮▮▮▮▮

From: ▮▮▮▮▮▮▮▮▮▮@p▮▮▮▮
Sent: Tuesday, December 1, 2020 8:30 PM
To: ▮▮▮▮▮▮▮▮▮▮▮▮▮▮▮▮▮▮▮▮▮▮▮▮▮▮▮▮▮▮▮▮
▮▮▮▮▮▮▮▮
Cc: ▮▮▮▮▮▮▮, ▮▮▮ ▮▮▮ ▮2▮▮g@pg▮.com▮
Subject: Re: [FYI] Meeting request to discuss historical weather PSPS lookback

The 30 year distribution only study is based on 2019 guidance and models. We chose a 10 year study this year as we wanted to focus on more detailed review of these events with the first time such a study was completed for transmission. 10 years is a good sample of where events are likely to occur. I will note with no events in 2015 and 2016, and noting 2016 was the only years in the 30 year study with 2019 guidance that did not have any events, the average number of event over the 10 year may be slightly underestimated. Combining the 10 year study with the 2020 actual PSPS event impacts, and excluding 2015/2016 from calculating average number of events would likely be more appropriate for high level analysis of number of events expected per year.

There are efforts to assess if strong diablo wind events that drive PSPS events are becoming more frequent, or stronger with climate change ▮▮▮▮▮ knows more than me), but we have not yet noticed a clear long term trend, other than noting that several of the strongest events have occurred in the last 3 years.

Kind regards,

From: ███████████████████████████
Date: Tuesday, December 1, 2020 at 7:53 PM
To: ███
████████████████████
Cc: ███████████████████████████████
Subject: Re: [FYI] Meeting request to discuss historical weather PSPS lookback

████████,

██████ also shared with me data based on a 30 year look back.
1) is it same methodology described above?
2) If we are using lookbacks to target mitigation s for the future, Should we be using 10 or 30 year data? Usually more data is better but not sure in this case if climate change means the last time years are better predictor than the last 30?

Get Outlook for iOS

From: ████████████████████████
Sent: Tuesday, December 1, 2020 7:35:40 PM
To: ██
Cc: ██
Subject: Re: [FYI] Meeting request to discuss historical weather PSPS lookback

Hi ████████,

The 10 year study was completed this year based on approved 2020 PSPS guidance, summarized below. The criteria was calculated for every grid cell for distribution, and every transmission structure, for every hour, for 10 years representing over 1 trillion data points processed to find hours exceeding guidance for at least 3 hours in a row to create the event criteria. The distribution cells were then used to create polygons for each of the events and input into the PSPS viewer to intersect with assets create distribution playbooks. The transmission lines were passed to Quanta to complete power flow studies to add direct + and in-direct impacts.

Please don't hesitate to let me know if you have any further questions.

Logic	Variable
	Distribution Large Fire Probability (LFP_D):
&	$LFP_D = FPI*OPWp - (scaled * 10^6)$
&	Fire Potential Conditions
	Transmission Large Fire Probability (LFP_T):
&	$LFP_T = FPI*OA - (scaled * 10^3)$ Note: OA is Operability Assesment model probability o given wind gust
&	Fire Potential Conditions
&	**Fire Potential Conditions:**
&	Fire Potential Index (FPI)
&	Sustained Wind Speed mph
&	Dead Fuel Moisture (DFM) 10hr

&	Dead Fuel Moisture (DFM) 100hr
&	Dead Fuel Moisture (DFM) 1000hr
&	Relative Humidity (RH)

Plus (+)	**Black Swan Conditions:**
&	Fire Potential Index (FPI)
&	Wind Gust mph
&	Sustained Wind Speed mph
&	Dead Fuel Moisture (DFM) 10hr
&	Dead Fuel Moisture (DFM) 100hr
&	Dead Fuel Moisture (DFM) 1000hr
&	Relative Humidity (RH)

| Plus (+) | **Transmission Asset A Tag** |
| & | Fire Potential Conditions |

Plus (+)	**Transmission Vegetation Risk Index:**
Plus (+)	Count of fall-in trees on a line with a Tree Risk Score greater than 74 (99.7th percentile)
Plus (+)	Count of fall-in trees on a line with a Tree Risk Score greater than 64 (95th percentile)
&	Fire Potential Conditions

Kind regards,

From: ███████████████████████████████
Date: Tuesday, December 1, 2020 at 3:26 PM
To: ███████████████████████████████████████ -
Cc: ██
Subject: [FYI] Meeting request to discuss historical weather PSPS lookback ·

Hi ██████████,

████████████████ and I are working at examining the PSPS event frequency, both actual events and those based on the 10-year and 20-year historical lookbacks that your team has put together. We'd appreciate a few minutes of your time to better understand how you had approached in putting together the historical lookbacks (which criteria had been used, etc.). Given the likely PSPS event this week, I put some time on the calendar for next week. We're compiling an analysis with a 12/11 deadline, so if the time I proposed doesn't work, please propose another time before 12/10.

Looking forward to chatting with you soon.

Thanks,

████████