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Re: CA 2022-WMPs
CalAdvocates-PacifiCorp-2022WMP-07

Please find enclosed PacifiCorp's responses to Cal PA data requests 7.1-7.6.

If you have any questions, please call me at (503) 813-7314.

Sincerely,

_____/s/_____
Pooja Kishore
Manager, Regulation

CalPA Data Request 7.1

2022 WMP Update submission - On p. 140 of PacifiCorp’s 2022 WMP update, figure 7.2 indicates an increase in the number of fire risk events related to equipment failures, contact from objects, and other.

- (a) Please provide an explanation for the increase in risk events from 2020 to 2021, for each of the following outage causes:
 - i. Equipment Failures
 - ii. Contact from object
 - iii. Other

- (b) Please provide a breakdown of the number of risk events by HFTD area for 2020 and 2021 as shown below.

	2020			2021		
	Systemwide	HFTD Tier 3	HFTD Tier 2	Systemwide	HFTD Tier 3	HFTD Tier 2
Equipment Failures						
Contact from Object						
Other						

- (c) What were the 3 most frequent types of equipment failure in 2021?
- (d) What was the most frequent type of object to contact a conductor in 2021?
- (e) As used in Table 7.2 on p. 140, how is “other” defined?

Response to CalPA Data Request 7.1

Referencing PacifiCorp’s 2022 Wildfire Mitigation Plan (WMP) Update, the Company responds as follows:

- (a) The data in Figure 7.2 is generally used to identify most commonly occurring risk drivers and not to identify trends in risk events. Caution is advised when only comparing data year-by-year, as it may not be indicative of a trend or significant difference. Trends and observations derived from small data sets can be misleading or not meaningful. Additionally, PacifiCorp has yet to install a significant amount of covered conductor or implement all initiatives on full circuits or segments. The combination of mitigation strategies on entire circuits or segments is often needed to

Despite PacifiCorp's diligent efforts, certain information protected from disclosure by the attorney-client privilege or other applicable privileges or law may have been included in its responses to these data requests. PacifiCorp did not intend to waive any applicable privileges or rights by the inadvertent disclosure of protected information, and PacifiCorp reserves its right to request the return or destruction of any privileged or protected materials that may have been inadvertently disclosed. Please inform PacifiCorp immediately if you become aware of any inadvertently disclosed information.

- begin to realize the benefits. Furthermore, between 2020 and 2021, PacifiCorp began to implement Elevated Fire Risk settings. While important to mitigating the risk of wildfire, these settings can have an inverse relationship with reliability and an increase in outage events.
- (b) PacifiCorp does not currently have the data segmented in this manner and PacifiCorp’s subject matter expert (SME) is out unexpectedly for a family emergency. The PacifiCorp resource with the source file for this data has been out on leave, but is expected to return this week. PacifiCorp is seeking an extension to June 3, 2022 to re-analyze and map this data to provide the breakout in this specific way.
- (c) Keeping in mind that equipment failure can sometimes be the result of external factors or other impacting causes, the three most frequent types of equipment failures in 2021 were:
1. Fuse damage or failure
 2. Connection device damage or failure
 3. Conductor damage or failure
- (d) The most frequent type of contact from object associated with outage risk event data in 2021 is vegetation contact.
- (e) “Other” is defined as any event which does not align with the other risk event categories from the quarterly data report (QDR) non-spatial data. For an example of “other”, there may be a situation where there are high winds, smoke or flooding which causes an outage, for these scenarios the event would be classified as “other.”

CalPA Data Request 7.2

2022 WMP Update submission - On p. 142 of PacifiCorp's 2022 WMP update, PacifiCorp states the following:

PacifiCorp has encountered challenges related to limited field resources, particularly as it related to construction activities. The business plans to address these challenges through the hiring on [sic] additional contractors, as described in Section 9.3 starting on page 255.

- (a) Which specific wildfire mitigation initiatives have been adversely impacted by the resource challenges referenced in the above quote?
- (b) Given the resource challenges referenced in the quote above, please explain why PacifiCorp increased total WMP initiative spending from \$33.4 million in 2021 to \$96.8 million in 2022.
- (c) If any, identify any efficiency gains or technology that PacifiCorp will deploy in 2022 to lessen the adverse impact of the resource challenges discussed on page 142.

Response to CalPA Data Request 7.2

Referencing PacifiCorp's 2022 Wildfire Mitigation Plan (WMP) Update, the Company responds as follows:

- (a) Initiatives referenced in the above quote include covered conductor installation, distribution pole replacement and reinforcement, expulsion fuse replacement, and installation of system automation equipment.
- (b) Many of the grid hardening projects being worked are multi-year projects, so where the engineering (internal lower cost) may take place in one year, the construction (more expensive component of spend) can take place in the next year. The increased spend accounts for many grid hardening projects progressing to the construction phase. A typical line rebuild project, consists of scope, design, and permitting phases which take several months to complete and are the relatively lesser cost phases of a project. Typically, the largest spend is realized during the construction phase, which can happen in a different year than the engineering work, an example timeline is presented in the graphic below. As PacifiCorp has now progressed into the construction phase on many projects, actual costs are now available. As described in the 2021 Change Order, significantly higher than anticipated costs are being realized and forecasted spend has been adjusted to incorporate this cost increase.



- (c) PacifiCorp’s resource challenges have been largely due to obtaining dedicated internal resources, extending the initiation/engineering phase of the programs. PacifiCorp plans to address this issue through a Construction Contractor Partner. Currently grid hardening efforts are supported by operations, procurement, engineering, environmental and real estate support functions which are shared resources with other programs. Projects are managed individually. However, with the updated contract management strategy to have a Construction Contactor Partner, the partner will have fully dedicated teams to provide: project management, project controls, project reporting, engineering, estimating, permitting, environmental surveys, land acquisition, public engagement, material procurement, material management, construction, post construction inspections, equipment commissioning and inspection, as well as maintenance program development. This strategy will also allow for a significant ramp up to secure dedicated resources that can be shared throughout the program. PacifiCorp is confident that with this additional contract management strategy, additional resources will support significant improvements in project delivery and increase efficiency.

CalPA Data Request 7.3

2022 WMP Update submission – On p. 195 of PacifiCorp’s 2022 WMP update, PacifiCorp states that:

In addition, inspectors identify for pruning or removal fast-growing vegetation that is likely to violate minimum clearance distances before the end of the current growing season.

- (a) Are the inspectors who perform this work for PacifiCorp described in the quote above certified arborists?
- (b) Are the inspectors who perform this work described in the quote above PacifiCorp employees or contractors?

Response to CalPA Data Request 7.3

Referencing PacifiCorp’s 2022 Wildfire Mitigation Plan (WMP) Update, the Company responds as follows:

- (a) Inspectors who perform the pre-listing work (identification of trees for pruning or removal) are certified International Society of Arboriculture (ISA) arborists or currently in process of becoming certified (studying for ISA certification exam or gaining needed work experience prior to taking the exam). In both cases, the inspectors’ field supervisor holds ISA certifications and oversees their work.
- (b) Inspectors that perform this work are typically contractors.

CalPA Data Request 7.4

2022 WMP Update submission – On p. 197 of PacifiCorp’s 2022 WMP update, PacifiCorp describes its audit process where:

PacifiCorp currently uses internal staff with ISA certifications to conduct post-work audits of routine maintenance, readiness patrol corrective actions, and pole clearing. PacifiCorp also conducts ad hoc tree crew audits or crew visits where a PacifiCorp forester engages with the vegetation management contractor, such as a crew leader, and/or supervisor to review work and/or discuss opportunities for improvement.

- (a) How many ad hoc tree crew audits were conducted in 2021?
- (b) Please disaggregate the figure in part (a) by HFTD tier, as defined above in definitions P through S.
- (c) Were HFTD areas prioritized over other areas for ad hoc tree crew audits in 2021?
- (d) How many ad hoc tree crew or post-work audits found that corrective action was needed in 2021?
- (e) How many supplemental tree trimming or removal jobs occurred in 2021 as a result of an ad hoc tree crew audit?
- (f) Please describe PacifiCorp’s process for making improvements after an ad hoc tree crew audit, including whether ad hoc tree crew audits lead to supplemental tree trimming/removal, retraining of contractors, process changes, or all of the above.

Response to CalPA Data Request 7.4

Referencing PacifiCorp’s 2022 Wildfire Mitigation Plan (WMP) Update, the Company responds as follows:

- (a) PacifiCorp currently does not have centralized means to track ad hoc crew visits. These are conducted by PacifiCorp foresters during visits with tree crews during normal business or through electronic communication. These visits may be discussions where work specifications, timesheets, program processes, etc., may be reviewed with the tree crews and contractor management. The PacifiCorp forester may also complete a safety review in conjunction with these visits when in the field and fill out a Tree Crew Inspection form (hard copy).
- (b) PacifiCorp currently does not have centralized means to track ad hoc crew visits.

- (c) PacifiCorp currently does not have centralized means to track ad hoc crew visits.
- (d) In 2021, PacifiCorp post work audits were transitioned to use a mobile data management software. Based on this dataset, 58 distribution and transmission lines were post-work audited that resulted in a correction activity identified (audit exception). PacifiCorp currently does not have centralized means to track ad hoc crew visit findings.
- (e) PacifiCorp currently does not have centralized means to track ad hoc crew visit findings.
- (f) Opportunities for improvement that are discussed with tree crews during tree crew visits may also be reviewed with contractor management during recurring conference calls or in-person meetings. Opportunities for improvement are discussed and followed up on during meetings and other interactions with contractor management to drive continuous improvement and adherence with program processes to implement the work. These interactions may lead to training opportunities with staff and process changes/refinements.

CalPA Data Request 7.5

2022 WMP Update submission – On p. 208 of PacifiCorp’s 2022 WMP update, PacifiCorp states that: Implementing and continuously improving this program requires advanced investigation of fault events to understand the nature and type of faults and whether this program is properly mitigating these events.

- (a) Does PacifiCorp have the capability to conduct an “advanced investigation of fault events” as referenced on page 208?
- (b) If answer to (a) is no, why not?
- (c) Does PacifiCorp retain a consultant or contractor to perform “advanced investigation of fault events” as referenced on page 208?

Response to CalPA Data Request 7.5

Referencing PacifiCorp’s 2022 Wildfire Mitigation Plan (WMP) Update, the Company responds as follows:

- (a) PacifiCorp has significant experience with fault event investigation using traditional protection and control schemes. When a fault is detected, regional operators notify and dispatch operations professionals and technicians to locate and troubleshoot the cause of outages to restore power. This traditionally involves patrols and visual confirmation of the outage cause, such as car-hit-pole. Outage records are created and, where needed, additional investigation is conducted such as material failure analysis. With new programs, such as those discussed in both Section 7.3.6.1 and Section 7.3.6.2, the company is leveraging different protection and control schemes to mitigate wildfire risk. These can include the disabling of reclosing, as included in Section 7.3.6.1, or the use of Elevated Fire Risk (EFR) settings discussed in Section 7.3.6.2. Both of these initiatives will most likely result in additional outage events, many of which may be the result of momentary contact that will not allow for visual confirmation of the outage cause. Therefore, with these programs, PacifiCorp will need to think differently about fault investigations, which could include additional patrols or the interrogation of additional fault data from relays or other coordinating devices. To limit the impact this can have, PacifiCorp is also deploying communication fault indicators as discussed in Section 7.3.2.3. Incorporation of these fault indicators will also require a change to fault investigation practices but ultimately mitigate the impact to customers associated with changes to protection and control schemes and settings to mitigate wildfire risk, not include visual confirmation result in visual confirmation of the outage cause. With either of these programs, PacifiCorp will need to understand outage records and investigate faults differently.

- (b) Not applicable.
- (c) Not at this time. The regional operations supervisors will leverage new fault indicator data and direct the PacifiCorp technicians to the location of a fault for the initial investigation and how to restore the outage. PacifiCorp's field engineering group and technical support groups will analyze the additional information from newer technologies surrounding the fault to better characterize the causes and locations.

CalPA Data Request 7.6

2022 WMP Update submission – On p. 222 of PacifiCorp’s 2022 WMP update, PacifiCorp (in describing its emergency protocols) mentions its Emergency Coordination Center:

The protocol includes activation of an Emergency Coordination Center (ECC), communication with local public safety partners, and implementation of additional monitoring activities. The ECC is staffed by specialized staff who assemble during de-energization warning and implementation to provide critical operations support through the collection and analysis of data.

- (a) When emergencies occur in PacifiCorp’s California service territory, is PacifiCorp’s ECC located in California?
- (b) How does PacifiCorp intend to balance ECC resources between California and other parts of its territory, if simultaneous wildfire events should occur in separate states?
- (c) Is PacifiCorp’s ECC staff trained in the Incident Command Structure (ICS) system?

Response to CalPA Data Request 7.6

Referencing PacifiCorp’s 2022 Wildfire Mitigation Plan (WMP) Update, the Company responds as follows:

- (a) No, PacifiCorp’s primary Emergency Coordination Center (ECC) locations are located in Portland, Oregon and emergency coordination will be coming from there if emergencies occur in California.
- (b) PacifiCorp prepares for this type of scenario where multiple emergencies occur simultaneously. Additional personnel have been added in various roles to continue to support redundancy. The Company can draw from operations organizations in multiple states, including personnel in Salt Lake City, Utah. In the event that simultaneous wildfire events should occur in separate states, PacifiCorp will make resource assessments based on existing conditions during a response. If needed, mutual assistance may be requested to fill any resourcing gaps to ensure coverage of all situations and ongoing events.
- (c) PacifiCorp’s ECC staff are trained in the Incident Command Structure (ICS) system as part of their training and adherence to the National Incident Management System (NIMS) guidelines which includes the ICS processes.