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Holland & Knight References (11B of 11)

The attached document is 11B of 11 separate uploads that contain the references cited in Holland & Knight's DEIR Comment Letter.

Additional submitted attachment is included below.

because of the types of customers that may be affected by a transmission-level outage.

For example, parties noted that the following entities could be significantly affected or brought entirely offline if the utility employs transmission-level de-energization: large generators (NCPA); POUs and electric cooperatives that interconnect to the IOU-grid (OSA, NCPA); facilities that interconnect at the transmission level (CCSF); and customers that live in distant jurisdictions that may not live in high fire-threat districts (CCSF, Joint Local Governments). However, as noted by Farm Bureau and SDG&E, the transmission system has some level of built-in redundancies such that resultant outages to customers could be less likely. CSAC notes that the scale and scope of response of a transmission-level de-energization should reflect the scope of the events.

Many parties, such as Public Advocates, CLECA, SCE, CCSF, CMUA, PG&E, SDG&E, NCPA, EPUC, DACC/EUF, and OSA noted that communication and coordination with additional entities is warranted because the impacts of a transmission-level de-energization could be more extensive. Parties note that communication with the CAISO, CalOES's State Operations Center, the reliability coordinator for the Western Electricity Coordination Council and other transmission owners will be likely. OSA, CLECA, EPUC and CCSF note that de-energization of transmission lines could violate North American Electric Corporation (NERC) Reliability Standards and there may be Federal Energy Regulatory Commission (FERC) jurisdictional tariff issues that must be considered. CAISO, in reply comments, notes that they do not own or operate transmission lines; de-energization decisions rely entirely on the transmission owners. However, notice to CAISO is necessary to allow for CAISO to ensure grid reliability.

SCE and PG&E discuss a bit about their risk-based decision-making process to assess wildfire risk of individual transmission lines, and SCE discusses its risk-based decision-making process for transmission-line de-energization. CLECA states that PG&E's risk-based process to assess wildfire risk of individual transmission lines requires more clarity. CASMU notes that both Bear Valley Electric Service and Liberty CalPeco have limited or no transmission lines in their service territories. PacifiCorp is geographically diverse, and its customers are geographically dispersed; therefore, PacifiCorp supports the Staff Proposal's focus on impacts to populations.

CSAC argues if a wildfire exists, de-energization should not be permitted, and re-energization should be required. Similarly, MWDOC requests that the Commission explore what happens if a line is de-energized and a wildfire occurs which could require the need for power. Similarly, MWDOC requests that the Commission explore what happens if a line is de-energized and a wildfire occurs which could require the need for power. City of Malibu notes that water utilities may require generators, and that water utilities must be able to ensure that water needs can be met for firefighting activities. Presumably, CSAC, MWDOC and City of Malibu's comments apply to both distribution-level and transmission-level de-energization events.

Finally, NCAP argues that the Commission must provide "clear direction and clarification regarding the 'power lines' subject to the rules and protocols being addressed [in Phase 1]."[74] NCAP notes that the scope and impact of de-energization can vary significantly depending on whether a distribution or transmission line is being de-energized and how the lines are defined. As an

[74] NCAP Opening Comments at 2.

example, NCPA notes that if the distinction between transmission and distribution lines is based on a 100kV bulk electric system threshold, POUs and electric cooperatives that interconnect on a 60kV line could be seen as distribution level customers, which presumably could impact notice to and coordination with non-IOU customers.

4.7. Reporting (Issue 4)

Resolution ESRB-8 expands the reporting requirements adopted in D.12-04-024 following a de-energization event to all the utilities and adopts additional strengthened requirements. Currently, the electric utilities are required to submit a report to the Director of Commission's Safety and Enforcement Division within ten business days after a de-energization event, as well as after high-threat events where the utility provided notifications to local government, agencies, and customers of possible de-energization though no de-energization occurred.[75] The reports must include a variety of information, for example (but not limited to), a list of all factors considered in the decision to shut off power, the time, place and duration of the de-energization event, the number of affected customers, any wind-related damage to overhead power-line facilities, a description of the notice to customers and any other mitigation measures provided the utility, the local community representative contacted, an explanation if the utility is not able to provide at least two hours of notice prior to a de-energization event, complaints receive by the utility, etc.

The Scoping Memo solicits party feedback on the following question: What information should be provided to the Commission after a de-energization

[75] Resolution ESRB-8 at 5.

event to show that de-energization was used as a method of last resort and that [de-energization] was in compliance with Commission rules?

4.7.1. Staff Proposal

Staff provided the following proposal:

> In the reporting required by ESRB-8 following power restoration, the IOUs should provide information including, but not limited to, an event timeline, decision criteria leading to a de-energization (including an evaluation of alternative actions), all notifications and timing, impacted area, and lessons learned. In addition, the IOUs should explain how the public benefit of the de-energization event outweighed any potential public safety risks.

4.7.2. Parties' Positions

There was consensus among parties that after-the-fact reporting was critical to ascertain the reasonableness of a de-energization event and to facilitate learning for future de-energization events. Many parties stated that de-energization reports should be made public,[76] and first/emergency responders, involved government organizations and others should be allowed to submit their own comments and/or feedback on the de-energization (or anticipated de-energization) event. Comments below are presented first with recommended additional reporting requirements followed by comments regarding party input on reports and report timing and review.

CLECA recommends that, in addition to the reporting requirements set forth in ESRB-8 and the Staff Proposal, the utilities should describe all mitigation measures used to prevent utility-caused wildfire employed in advance of de-energization (for the de-energized area). Public Advocates requests that the utilities demonstrate how the public benefit of de-energization outweighed any

[76] The Joint Communications Parties suggest that confidential information in the report should be made available to interested parties upon execution of a nondisclosure agreement.

potential public safety risks as well as presenting full evaluations of alternatives considered that justify de-energization as the best solution. City of Malibu recommends that the utilities present an analysis of whether the utilities could have reduced the size of the affected area and/or the duration of the de-energization event while still protecting public safety. Many parties suggest that the utilities provide a detailed accounting of how the utilities arrived at the decision to de-energize, including a discussion of alternatives (generally, CSAC, Public Advocates, the Joint Local Governments, CCSF, the Joint Communication Parties, SDG&E and CforAT). City of Malibu requests that the utilities include information on requested delays or modifications from local government and whether the utility agreed to the delay (and if not, an explanation of why). OSA recommends that the number of impacted customers include information on critical facilities and medical baseline customers (how many were impacted and for how long).

RCRC requests that the utilities be required to show what actions were taken to strategically sectionalize areas of risk in order to minimize impacts on utility customers. RCRC also recommends that the utilities present all information and communications with local government agencies to the Commission for review. TURN and CforAT suggest that the utilities provide a report of all known incidents of harm as a result of de-energization. TURN, MGRA and CforAT request that the utilities present information about all wire down or other equipment failures that occurred during de-energization that could have caused ignition both inside and outside of a de-energized area. MGRA suggests that vegetation contact should be included.

Regarding input from affected parties and timing/review of de-energization reports, EBMUD, the Joint Local Governments, CCSF, CASMU

and others recommend that the Commission require the utilities to solicit input from all affected critical facilities, public safety partners, local governments and citizens regarding the effectiveness of notification, communications, lessons learned and recommendations for improvement, if any. The Joint Communication Parties, TURN and CASMU suggest that the water and telecommunication companies should also provide feedback. SDG&E recommends that, if the utilities are to be held to the ten-day deadline for submitting de-energization reports, comments from stakeholders should be submitted to SED after the utility files the report.

Parties recommended that, in addition to de-energization reports being public, they should be subject to a 30-day comment period, posted on the Commission's Daily Calendar and on the utilities' websites. CCSF recommends that the Commission's Safety and Enforcement Division should be required to analyze the utilities' reports and related comments and publish an independent evaluation of each de-energization event. The Joint Communication Parties assert that the Commissions should rule on the reasonableness of each de-energization event; SED should issue a draft resolution for review by the full Commission. In making a determination of reasonableness, Abrams offers that the Commission should review utility actions for results. For example, Abrams argues utility notifications alone should not be a measure of reasonableness; rather, the Commission must evaluate whether the communications were effective. Abrams also suggests that utility de-energization events be measured against other actions taken to reduce risk, showing that de-energization is a measure of last resort. Public Advocates recommends that the Commission adopt a standard reporting template in Phase 2. MGRA concurs noting that

SDG&E's November 16, 2018 report introduced a format for reporting that should be replicated across utilities.

MGRA notes that, to date, the Commission's SED has only reviewed one power shut-off report. Furthermore, MGRA suggests that the Commission should review a utility's decision to de-energize based upon risk of utility infrastructure being a source of wildfire ignition; wildfire risk in and of itself should not be considered adequate justification for a de-energization event. MGRA emphasizes that a determination of reasonableness must rely upon a finding that de-energization increased public safety; liability is not a justifiable reason to de-energize. Finally, MGRA asserts that reports must provide clear and actionable information that can be used to formulate future de-energization protocols and requirements.

PG&E, SCE and SDG&E generally comment that the existing requirements in Resolution ESRB-8 adequately meet the intent of the Staff Proposal and provide sufficient information regarding the timing of key events leading to de-energization and restoration. CASMU, as noted above, generally supports the staff proposal and supports input from stakeholders affected by and involved with de-energization. PG&E recommends that the Commission consider the issue of weighing public benefit against public safety risks in Phase 2. SCE offers that, in addition to the ESRB-8 reporting requirements, it will provide information about protective measures taken before a de-energization event, including: (1) using modified field work procedures for field crews working in high fire risk areas during times of elevated fire danger; (2) blocking reclosers; (3) enabling fast curve relay settings; and (4) sending personnel to the field to monitor actual conditions near electrical lines. SCE will also describe how the "facts on the ground coincided with the risk of ignition in conditions that could

lead to a catastrophic wildfire such that de-energization to prevent a catastrophic outcome was warranted."[77]

5. Adopted De-Energization Guidelines

The Commission adopts the guidelines set forth in this decision in order to promote safe, effective and consistent de-energization of powerlines across the service territories of the electric utilities under the Commission's jurisdiction. The guidelines adopted herein are in addition to the guidelines adopted in Resolution ESRB-8,[78] and the utilities must adhere their de-energization plans to both Resolution ESRB-8 and this decision. The guidelines in Resolution ESRB-8 and this decision will remain in effect unless and until superseded by a subsequent decision. It is expected that the utilities will make every effort to implement these guidelines in advance of the 2019 wildfire season; however, the Commission recognizes that some of these guidelines will take additional time to fully deploy. As such, the utilities are required to submit two reports to the Director of the SED detailing progress towards implementation of the guidelines adopted herein. The electric utilities must also serve copies of progress reports on the service list of this proceeding and post the reports on their websites. The first progress report is due three months after issuance of this decision, and the second is due nine months after issuance of this decision. The Commission's SED may request additional progress reports after these initial reports.

As noted in the Scoping Memo, due to regional variability in topography, weather, and other factors, there is no one-size-fits-all approach for utility

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[77] SCE Opening Comments at 21.

[78] In the event that a guideline adopted in this decision conflicts with a guideline in ESRB 8, the guidelines adopted herein govern.

de-energization. Further, each of the utilities has varying experience with de-energization and must serve diverse territories ranging significantly in size. Therefore, the Commission understands that the utilities must be afforded some flexibility in developing and deploying their de-energization programs. However, it is the intention of the Commission that, by adopting these and future guidelines, utilities, first responders and local jurisdictions will all operate under a cohesive framework using consistent language. This endeavor will ensure that citizens within the utilities' service territories understand and know how to respond to de-energization events, no matter where they may live.

The 2017 and 2018 wildfire seasons evidenced that better warnings and communication are needed – about fire conditions, when those conditions occur, and how the public should prepare – whether de-energization is proactive or not. The focus needs to be more on the growing danger and how generally to respond, and not just when utilities act to prevent potential hazards from their infrastructure. The Commission will need to ensure that the utilities integrate as much as possible with local emergency systems and frameworks and treat de-energization in a similar manner as any other emergency that results in loss of power, such as earthquakes, floods or non-utility caused fire events. The need for shared responsibility between the utilities, public safety partners, and local governments is critical; however, for now, the electric utilities are ultimately responsible and accountable for de-energization communication and notification.

A critical part of making a notification system work for de-energization events is a coordinated and up-front effort to educate the public on how to prepare for wildfire season and de-energization events. These statewide education campaigns should educate the public in advance of de-energization events regarding what is entailed during a de-energization event, what tools are

available to the public during these events, what to do in an emergency, how they may receive information alerts during a power shutoff, and who the public should expect to hear from and when.

A key component to developing an effective and cohesive de-energization program is to report on de-energization experiences and lessons learned. Therefore, the utilities must report back to the Commission through its required ESRB-8 filings, as updated by this decision, on what occurred in advance of and during each proactive de-energization event. In addition, beginning in 2020, the utilities are required to submit with their annual Wildfire Mitigation Plans reports on lessons learned through the de-energization process.

De-energization has far reaching and significant impacts on affected communities. As such, although de-energization is a valuable tool to promote the public safety, it must be deployed by the utilities as a measure of last resort, and the utilities should continue to strengthen their infrastructure to minimize the need for and size of de-energization events. Under no circumstances may the utilities employ de-energization solely as a means of reducing their own liability risk from utility-infrastructure wildfire ignitions, and the utilities must be able to justify why de-energization was deployed over other possible measures or actions.

The guidelines adopted below focus primarily on issues of notice and communication in advance of a de-energization event. The Commission adopts high-level guidelines for communication during the de-energization event itself and during re-energization; however, these issues, among others, will be more fully explored in Phase 2 of this rulemaking. A comprehensive list of the guidelines adopted in this decision is set forth in Appendix A. Appendix B contains a preliminary list of issues to be explored in Phase 2. Appendix C

provides a glossary of definitions and acronyms used in this decision. Appendix D contains a copy of Resolution ESRB-8, and Appendix E includes a copy of SDG&E's November 16, 2018 de-energization report.

In addition to the specific guidelines set forth below, the Commission adopts the following overarching de-energization guidelines:

- The purpose of proactive de-energization is to promote public safety by decreasing the risk of utility-infrastructure as a source of wildfire ignitions.
- The electric investor-owned utilities must deploy de-energization as a measure of last resort and must justify why de-energization was deployed over other possible measures or actions.
- Customers should understand the purpose of proactive de-energization, the electric investor-owned utilities' process for initiating it, how to manage safely through a de-energization event, and the impacts if deployed. To accomplish this, the electric investor-owned utilities must:
    - develop and use a common nomenclature that integrates with existing state and local emergency response communication messaging and outreach, including the California Statewide Alert and Warning Guidelines.
    - develop notification and communication protocols and systems that reach customers no matter where the customer is located and deliver messaging in an understandable manner.
    - communicate to customers in different languages and in a way that addresses different access and functional needs using multiple modes/channels of communication.
- Deploying de-energization requires a coordinated effort across multiple state and local jurisdictions and agencies. Coordination in preparation for de-energization is a shared responsibility between the electric investor-owned utilities, public safety partners, and local governments; however, the electric utilities are ultimately responsible and accountable for the safe deployment of de-energization. The electric investor-owned

utilities must work with the CalOES to integrate their warning programs with the agencies and jurisdictions within California that have a role in ensuring that the public is notified before, during, and after emergencies.

- The electric investor-owned utilities, emergency responders, and local governments need to be seamlessly integrated when communicating de-energization notifications, with the goal that local governments provide supplemental or secondary notifications in the near future. For now, the utilities retain ultimate responsibility for notification and communication throughout a de-energization event.

- The consequences of de-energization should be treated in a similar manner as any other emergency that may result in loss of power, such as earthquakes, floods or non-utility caused fire events. The electric investor-owned utilities must avoid development of duplicative or contradictory messaging and notification systems to those already deployed by first responders.

- The electric investor-owned utilities must coordinate with CalOES and the CAL FIRE to engage in a statewide public education and outreach campaign. The campaign must effectively communicate in English, Spanish, Chinese (including Cantonese, Mandarin and other Chinese languages), Tagalog and Vietnamese as well as Korean and Russian where those languages are prevalent within the utilities' service territories.[79] The campaign must convey, in advance of wildfire season, the immediate and increasing risk of catastrophic wildfires and how to prepare for them, the impacts of de-energization, how the public can prepare for and respond to a de-energization event, what resources are available to the public during these events, what to do in an emergency, how to receive information alerts

[79] This requirement is consistent with the guidance set forth in SB 901. The Commission takes Official Notice, Pursuant to Rule 13.9 of the Commission's Rules of Practice and Procedure, that United States Census data shows that the top three primary languages used in California other than English and Spanish are Chinese (including Cantonese, Mandarin and other Chinese languages), Tagalog, and Vietnamese.

during a power shutoff, and who the public should expect to hear from and when.

- The electric investor-owned utilities must report on lessons learned from each de-energization event, including instances when de-energization protocols are initiated, but de-energization does not occur, in order to further refine de-energization practices. In addition, the utilities must work together to share information and develop best practices across California.
- The electric investor-owned utilities must work together to share information and advice in order to create effective and safe de-energization programs at each utility and to ensure that utilities are sharing consistent information with public safety partners.

5.1. Adopted Definitions

Adopting standardized definitions and customer designations allows the utilities, CalOES (and other state or local government entities), CAL FIRE, local first/emergency responders, local governments, critical facilities, the Commission, customers and all others to operate with a shared understanding and language throughout a de-energization event, including re-energization. In addition, designation as one of the groups set forth below may carry special consideration for notice, both in timing and form (discussed later in this decision,) possible mitigation before, during and after a de-energization event and possible prioritization during re-energization (mitigation and re-energization will be explored more fully in Phase 2 of this proceeding).

The Commission adopts the definitions set forth below for first/emergency responders, critical facilities, public safety partners, and vulnerable populations. The Commission recognizes the adopted definitions as an interim step towards the standardization of language across agencies and anticipates that the adopted definitions will evolve over time. The Phase 1

record also pointed to the need to adopt and standardize other terms in the context of de-energization, such as 'extreme wildfire risk' and 'transmission versus distribution.' The Commission will explore additional refinement of definitions in Phase 2 of this proceeding, and the Commission is actively partnering with CalOES and CAL FIRE to move towards a standard lexicon. The definitions adopted herein will remain in effect unless or until updated by the Commission in a subsequent decision.

5.1.1. First Responders/Emergency Responders

The Commission adopts the following definition for first/emergency responders:

> The term 'first responder/emergency responder' refers to those individuals who, in the early stages of an incident, are responsible for the protection and preservation of life, property, evidence, and the environment, including emergency response providers. The term 'emergency response providers' includes federal, state, and local governmental and nongovernmental public safety, fire, law enforcement, emergency response, emergency medical services providers (including hospital emergency facilities), and related personnel, agencies and authorities.

This definition was widely supported by parties and is an appropriate definition that can be used and understood by all agencies and entities, such as CalOES, CAL FIRE, the Commission, local governments and other affected customers and stakeholders. The definition included in the Staff Proposal is rooted in existing definitions adopted by FEMA,[80] which comports with the Commission's goal to standardize and harmonize nomenclature across federal, state and local agencies and to fit de-energization practices within existing

[80] The proposed definition is cited to both (White House, HSPD 8, 2003) and (Homeland Security Act of 2002, Public Law No. 107-296, section 2, 116.)

emergency response frameworks. The adopted definition does not designate water utilities and communication companies as first/emergency responders, instead designating them as critical facilities and public safety partners that must receive priority notification. Identification of specific first/emergency responders within each jurisdiction will be discussed in subsequent sections.

5.1.2. Public Safety Partners

The Staff Proposal uses the term 'public safety partners' throughout but does not offer a definition for the term. The Commission finds value in the use of the term and views Public Safety Partners as those entities for whom advanced notice is critical to preserve the public safety during a de-energization event, including during re-energization. The Commission adopts the following definition:

> The term 'public safety partners' refers to first/emergency responders at the local, state and federal level, water, wastewater and communication service providers, community choice aggregators (CCAs), affected publicly-owned utilities (POUs)/electrical cooperatives, the Commission, CalOES and CAL FIRE. Public safety partners will receive priority notification of a de-energization event, as discussed in subsequent sections.

5.1.3. Critical Facilities/Critical Infrastructure

As noted earlier in this decision, Resolution ESRB-8 notes that operators of critical facilities and critical infrastructure must be aware of any planned de-energization event. Furthermore, the utilities must assist critical facility and infrastructure customers to evaluate their needs for backup generation and determine if additional equipment is needed, potentially including utility-provided generators for facilities that are not well prepared for a power

shut-off.[81] The Staff Proposal set forth a list of potential critical facilities and critical infrastructure, but did not offer a standard definition for the term. Parties, in comments, mostly responded to the list presented in the Staff Proposal, but few offered an overarching definition. Many parties pointed out overlaps with utility terms such as SCE's 'essential providers,' which SCE lists as those entities that provide a critical service to the public.[82]

The purpose of adopting a standard definition for the term 'critical facilities' and 'critical infrastructure' is to promote coordination between the utilities, local government agencies, first/emergency responders and such facilities that are essential to the public safety.[83] The goal, as noted in ESRB-8, of identifying these facilities and infrastructure is to provide adequate notice before a de-energization event but, equally as important, to assist those facilities to maximize resiliency during de-energization and re-energization by implementing advanced planning.

At this point, the Commission lacks sufficient record and experience with de-energization across the utilities to adopt an overarching definition for critical facilities and critical infrastructure. Parties offered a number of possible expansions and changes to the list; however, the impact of these additions is not yet fully understood. However, it is the Commission's goal to move towards a standardized definition across all utilities. It is also unclear from the record whether it is prudent to adopt a specific list of facilities at this time and require the use of that list across all utilities, exclusive of all other facilities. Therefore,

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[81] Resolution ESRB-8 at 7.

[82] SCE does not include daycares and schools in its list of 'essential providers.'

[83] At this point, there is disagreement on what facilities are essential to the public safety.

the Commission adopts the following interim definition and list of critical facilities and critical infrastructure but notes that this list is not meant to be exhaustive or restrictive. The Commission may examine this definition further in Phase 2 of this proceeding or subsequent proceedings. Identification of these facilities and infrastructure will be discussed in a subsequent section.

> The term 'critical facilities' and 'critical infrastructure' refers to facilities and infrastructure that are essential to the public safety and that require additional assistance and advance planning to ensure resiliency during de-energization events. The Commission adopts an interim list of 'critical facilities' and 'critical infrastructure' but notes that the utilities, in their Wildfire Management Plans (WMP), often list additional or differing facilities than those adopted here. The Commission strives to move towards a standardized definition and designation of critical facilities and critical infrastructure on a going forward basis, and the definition adopted here should not be construed as restrictive. The utilities must use the standard terms 'critical facilities' and 'critical infrastructure' (together critical customers) on a going forward basis in their de-energization procedures and WMPs. Utilities should partner with local government and public safety partners in high fire risk areas to develop a list of critical facilities and critical infrastructure in those areas, and the utilities should be prepared to partner with the Commission to adopt a comprehensive list of types of critical facilities and critical infrastructure in the future.

The Commission adopts the following interim list of critical facilities/infrastructure based upon the Department of Homeland Security's Critical Infrastructure Sectors:[84]

- Emergency Services Sector
  - Police Stations
  - Fire Station

[84] *See* https://www.dhs.gov/cisa/critical-infrastructure-sectors at 21.

  - Emergency Operations Centers
- Government Facilities Sector
  - Schools
  - Jails and prisons
- Healthcare and Public Health Sector
  - Public Health Departments
  - Medical facilities, including hospitals, skilled nursing facilities, nursing homes, blood banks, health care facilities, dialysis centers and hospice facilities[85]
- Energy Sector
  - Public and private utility facilities vital to maintaining or restoring normal service, including, but not limited to, interconnected publicly-owned utilities and electric cooperatives
- Water and Wastewater Systems Sector
  - Facilities associated with the provision of drinking water or processing of wastewater including facilities used to pump, divert, transport, store, treat and deliver water or wastewater
- Communications Sector
  - Communication carrier infrastructure including selective routers, central offices, head ends, cellular switches, remote terminals and cellular sites
- Chemical Sector
  - Facilities associated with the provision of manufacturing, maintaining, or distributing hazardous materials and chemicals.[86]

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[85] Excluding doctor offices and other non-essential medical facilities.

[86] Including Category N-Customers as defined in D.01-06-085.

5.1.4. Vulnerable Populations (Access and Functional Needs Populations)

De-energization can have disproportionate impacts on certain populations. As discussed below, the Commission adopts a definition that comports with that used by CalOES and will henceforth refer to vulnerable populations as populations with access and functional needs (AFN populations). The purpose of identifying AFN populations is to ensure that such populations, as with critical facilities, receive the education and notification they need to maximize resiliency during a de-energization event. Parties provided a variety of comments on the suggested definition in the Staff Proposal ranging from greatly expanding the list to reducing the list solely to those who are wholly dependent upon electricity for life-sustaining service, e.g. SDG&E's Life Support customers. Parties are generally concerned about two main issues: (1) the ability to identify and locate customers that are designated as AFN and (2) the burden and potentially diminishing returns of notifying an expansive list of customers, especially if door-to-door notification becomes necessary.

The Commission, at this juncture, takes a broad approach to defining AFN populations with the goal of identifying and notifying AFN populations and mitigating against the impacts of de-energization on these populations. This will include up-front education of AFN populations in advance of wildfire season such that these customers can be prepared to address the unique impacts of de-energization. The Commission recognizes that the utilities cannot adequately identify all AFN populations at this time; identification will be explored in the next section. However, the Commission expects the utilities to partner with local and state agencies to develop a plan with the goal of identifying and notifying AFN populations on a going forward basis. As with critical facilities and critical

infrastructure, the Commission wishes to adopt a standardized definition across all utilities but recognizes that this definition will need to be further refined as the utilities, the Commission and other public safety partners gain experience with proactive de-energization.

In keeping with the Commission's desire to integrate as fully as possible with existing emergency management frameworks and structures, the Commission adopts the following definition:

> The term 'access and functional needs populations' refers to those populations with access and functional needs as set forth in Government Code § 8593.3. Government Code § 8593.3 lists 'access and functional needs populations as follows: ...the 'access and functional needs population' consists of individuals who have developmental or intellectual disabilities, physical disabilities, chronic conditions, injuries, limited English proficiency or who are non-English speaking, older adults, children, people living in institutionalized settings, or those who are low income, homeless, or transportation disadvantaged, including, but not limited to, those who are dependent on public transit or those who are pregnant.

5.1.5. How Should Entities Be Identified?

Identification of public safety partners, critical facilities and AFN populations in advance of wildfire season is essential to ensure that de-energization occurs as safely and effectively as possible. As noted by the Joint Local Governments, the definition of first/emergency responders adopted herein does not identify the actual agencies that will be contacted first in a de-energization event. Furthermore, as discussed by many parties, including the utilities, identification of AFN populations goes beyond customer information held by the utility. The Commission recognizes that identification of first/emergency responders, critical facilities/critical infrastructure contacts and AFN populations will be an ongoing process that will not be fully complete in

advance of the 2019 wildfire season. However, the utility, in partnership with state and local public safety partners, should continue to identify appropriate points of contacts for all listed populations.[87] The utility should prioritize identification in Tier 2 and 3 fire threat areas followed by adjacent jurisdictions that may be impacted in the event of de-energization. The Commission adopts the following guidelines:

5.1.5.1. Identification of First/Emergency Responders/Public Safety Partners

- The electric investor-owned utilities must work with local and county officials to identify appropriate emergency/first responder points of contact. This may include local government points of contact for jurisdictions that share first responder resources. The electric investor-owned utilities must identify 24-hour contact points and must identify secondary contacts at a minimum and tertiary contacts if possible. The electric investor-owned utilities must also identify primary and secondary means of communication for each contact.
- The electric investor-owned utilities must provide utility personnel 24-hour points of contact, including secondary and tertiary contacts to affected local jurisdictions/first responders.
- The electric investor-owned utilities must identify clear points of contact for all other public safety partners, including affected CCAs, POUs/electric cooperatives, water and communications providers. The electric investor-owned utilities must have 24-hour contacts with secondary contacts at a minimum and tertiary contacts if possible. The electric investor-owned utilities must also have clear points of contact at the Commission, CalOES and CAL FIRE.

[87] The Commission recognizes that the utilities will not be able to identify specific AFN points of contact beyond those customers enrolled in existing utility programs such as medical baseline programs.

- To ensure accuracy of contacts, the electric investor-owned utilities are required to update lists annually at least two months in advance of the start of the wildfire season and conduct communication exercises prior to wildfire season to confirm their ability to rapidly disseminate information. The electric investor-owned utilities should work with points of contact to encourage proactive updating of information in the event of a change, beyond the annual update required of the utilities.

5.1.5.2. Critical Facilities and Infrastructure

- The electric investor-owned utilities must, in addition to developing their own list of critical facilities and infrastructure based on the adopted definition, work in coordination with first/emergency responders and local governments to identify critical facilities within the electric investor-owned utilities' service territories. The electric investor-owned utilities must identify 24-hour points of contact and, at a minimum, secondary points of contact. The electric investor-owned utilities must work together with the operators of critical facilities and infrastructure to identify preferred points of contact (the billing contact may not be the appropriate de-energization contact) and preferred methods of communication.

- To ensure accuracy of contacts, the electric investor-owned utilities are required to update critical facility and infrastructure lists annually at least two months in advance of the start of wildfire season. The electric investor-owned utilities should work with points of contact to encourage proactive updating of information throughout the year in the event of a change, beyond the annual update required of the utilities. The electric investor-owned utilities should prioritize identification of appropriate contacts for critical facilities and infrastructure located within Tier 3 and 2 HFTDs, followed by adjacent jurisdictions that may be impacted in the event of de-energization.

- The electric investor-owned utilities must, pursuant to Resolution ESRB-8, and in advance of the wildfire season, proactively partner with critical facility and critical infrastructure representatives to assess the ability of the critical facility to

maintain operations during de-energization events of varying lengths. The electric investor-owned utilities must help critical facility and critical infrastructure representatives assess the need for backup generation and determine whether additional equipment is needed, including providing generators to facilities that are not well prepared for a power shut off.[88] Advance education of representatives and preparation of critical facilities and infrastructure is imperative to ensure that public safety is preserved during a de-energization event.

5.1.5.3. Access and Functional Needs Populations

Most parties support an expanded definition of AFN populations; however, the utilities express concerns about their ability to identify such populations, including privacy concerns. The Commission understands and appreciates this concern; however, it is important for AFN populations to be identified in order to ensure that these customers are able to prepare for de-energization in a way that fits their needs. For example, it is essential that those customers dependent upon life-sustaining medical equipment that requires electricity[89]are identified so that the utilities and public safety partners can assist those customers in developing a de-energization action plan. It is the goal of the Commission that a means of identifying other AFN populations is developed; however, the Commission recognizes that the utilities will be unable to identify and notice all AFN populations and must rely upon local and state jurisdictions to assist in this effort. This will be an ongoing endeavor, and the Commission will explore identification of and notification methods to AFN populations more fully in Phase 2. Accordingly, the Commission adopts the following guidelines:

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[88] Responsibility for the cost of back-up generation will be explored in Phase 2.

[89] These customers are noted differently in each utility's tariffs but are generally included under the utilities' medical baseline programs.

- The electric investor-owned utilities must make a diligent effort to identify AFN populations within their customer base. The electric investor-owned utilities should review available information including, but not limited to, customers on medical baseline tariffs, CARE and FERA tariffs and customers that require in person notification in advance of service disconnection.[90] In advance of the 2019 wildfire season, the electric investor-owned utilities should seek to identify and expand registration under their medical baseline tariffs.
- In the spirit of shared responsibility, the electric investor-owned utilities should endeavor to partner with local governments and agencies to encourage identification of AFN populations through those agencies. Recognizing privacy concerns, the Commission does not require the electric investor-owned utilities to develop a comprehensive contact list of AFN customers nor to share individual customer information with local jurisdictions; rather, the Commission encourages that, through local agency partnerships, the electric investor-owned utilities and local jurisdictions can together provide up front education and outreach before and communication during a de-energization event in formats appropriate to individual AFN populations. The electric investor-owned utilities must also develop a plan for expanding identification of AFN customers beyond those customers enrolled in existing utility programs in the event that local agency partnerships are unavailable to assist. The Commission acknowledges that identification of all AFN customers is a goal that may not be fully achievable even with assistance of local jurisdictions; however, the utilities must take all reasonable steps within the boundaries of the law towards that goal in order to protect the safety of AFN populations.
- The electric investor-owned utilities must update contact information for medical baseline customers and provide an opportunity for such customers to select alternative means of

[90] *See* D.12-03-054.

contact beyond their preferred means of contact from the utility for billing and other information.

5.1.5.4. All Other Customers

The utility and public safety partners will need to communicate with all customers within the boundaries of a de-energized area (and potentially adjacent jurisdictions) in advance of a de-energization event. The Commission adopts the following guidelines:

> The electric investor-owned utilities must ensure that customer contacts are up-to-date. The Commission recognizes that electric investor-owned utility customer points of contact are necessarily limited, for example a landlord-controlled account will not provide a method of contact for tenants. The electric investor-owned utilities must work with local jurisdictions to leverage all means of identifying and communicating with all people within a de-energized area, including people who may be visiting the area or not directly listed on utility accounts. The Commission expects that this will be an iterative process developed over time.

5.2. Who Should Receive Notification and in What Order of Priority?

Communication of a de-energization event, no matter the cause, is crucial to ensure that the event happens in as safe orderly a manner as possible. There are two main forms of communication: (1) education and public outreach in advance of wildfire season to ensure that procedures and processes are in place with public safety partners and that customers are aware of de-energization and know how to prepare; and (2) notice and communication of a potential, imminent or a suddenly occurring de-energization event. This section will focus primarily on the second form of communication; education and outreach are already occurring and will be discussed further below in this decision.

5.2.1. Who Should Receive Notice?

Depending on the size of the de-energized area and the utilities' ability to segment their grid, de-energization can have a significant impact on a large group of people spread across diverse topographies. It is imperative that all stakeholders potentially impacted by a de-energization event receive notification as far in advance as possible, without causing undue confusion. The Commission adopts the following guidelines:

> Recognizing that there may be times when advance notice is not possible due to emergency conditions beyond the electric investor-owned utilities' control, the electric investor-owned utilities must, whenever possible, provide advance notification to all populations potentially affected by a de-energization event. This includes, but is not limited to, public safety partners, critical facilities and critical infrastructure, AFN populations, and jurisdictions that are not at threat of a utility-caused wildfire but may lose power as a result of de-energization elsewhere on the system.

5.2.2. In What Order of Priority?

Understandably, all affected entities wish to receive notification of an impending de-energization event as far in advance as possible. As noted by SDG&E, the utilities should strive to provide notice with enough time for affected populations to respond effectively, which may include concurrent notification to all affected populations. The Commission finds, however, that whenever possible priority notice should be given to a select group of stakeholders, followed by all other affected populations. Priority notice provides that those who will respond to ensure public safety are sufficiently noticed and adequately prepared. Accordingly, the Commission adopts the following guidelines:

> Consistent with the principles of the SEMS, whenever possible, priority notification should occur to the following entities, at a minimum:[91] public safety partners, as defined herein, and adjacent local jurisdictions that may lose power as a result of de-energization. Notice to all other affected populations, including AFN populations, may occur after the utility has given priority notice; however, AFN populations may require additional notification streams. This guideline is not meant to be restrictive; utilities may provide priority notification to a broader subset of customers, e.g. certain critical facilities, to promote public safety.

The Commission acknowledges that many parties recommended that the Commission require advanced notification of critical facilities and AFN populations. As discussed elsewhere in this decision, public outreach and education events in advance of wildfire season are critical to ensure that such populations are prepared and know how to respond in the event of de-energization. The Commission and the utilities, based upon their statements in comments, wish to provide advance notification whenever possible to all populations; however, it is imperative that priority notification be given to those who will be called on to respond to preserve the public safety.

5.3. How Far in Advance Should Notice Occur?

The Commission recognizes that all stakeholders desire as much time as possible to prepare for a de-energization event. However, there is a balance that must be struck. Notification too far in advance risks causing confusion and/or ambivalence, especially if the utility ultimately decides not to de-energize. The Commission also appreciates that there may be times when de-energization must

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[91] The Commission's adopted definition of public safety partners does not include critical facilities and infrastructure beyond water utilities and communication providers. The utility may, in partnership with first/emergency responders and/or local government entities, identify other critical facilities that should receive priority notice. This guideline is intended to set a floor, not a ceiling for priority notification.

occur with little to no notification in order to respond to an emergency situation, to avoid the risk of a utility-caused wildfire, or because de-energization occurs due to an unforeseen circumstance outside of the control of the utility, such as a natural disaster or non-utility ignited wildfire. Finally, as discussed in the general guidelines and Section 5.4, below, the Commission expects the utilities to endeavor to work with local jurisdictions, CalOES and CAL FIRE to develop a coordinated notification effort that leverages existing emergency notification channels and protocols.

The utilities stated generally that they would provide advanced notice whenever possible, with SDG&E noting that it strives to provide 24-48 hours advanced notice. The Commission is persuaded by parties that it is valuable to adopt a specific notification timeline; however, the utilities must be afforded flexibility to adjust the timeline based upon situational awareness and real-time events that may be out of the utilities' control. The Commission adopts the following guidelines:

> Every effort must be made by the electric investor-owned utilities to provide notice of potential de-energization as early as the electric investor-owned utilities reasonably believe de-energization is likely. At a minimum, notification to public safety partners must occur when a utility activates its Emergency Operations Center (EOC) in anticipation of a de-energization event or whenever a utility determines that de-energization is likely to occur, whichever happens first. In addition, the electric investor-owned utilities must provide notice when a decision to de-energize is made, at the beginning of a de-energization event, when re-energization begins and when re-energization is complete. Electric investor-owned utilities should, whenever possible, adhere to the following minimum notification timeline:

- 48-72 hours in advance of anticipated de-energization: notification of public safety partners[92]/priority notification entities
- 24-48 hours in advance of anticipated de-energization: notification of all other affected customers
- 1-4 hours in advance of anticipated de-energization, if possible: notification of all affected customers[93]
- When de-energization is initiated: notification of all affected customers[94]
- Immediately before re-energization begins: notification of all affected customers[95]
- When re-energization is complete: notification of all affected customers

5.4. Who is Responsible for Notification?

Parties to this proceeding universally agreed that the utility, as the entity calling the de-energization event, should be ultimately responsible for notification of all stakeholders. The Commission, however, also seeks to ensure that the utilities integrate as much as possible with local emergency systems and frameworks and treat de-energization in a similar manner as any other emergency that results in loss of power, such as earthquakes, floods or

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92 Consistent with Resolution ESRB-8, the electric investor-owned utilities must provide notice to the Commission's SED Director.

93 The Commission appreciates that it may not be possible at this juncture to know exactly when a de-energization will occur and to provide this level of advanced notification. However, the electric investor-owned utilities should strive to communicate that de-energization is imminent.

94 In advance of wildfire season, the electric investor-owned utilities must develop a plan for communicating with public safety partners during a de-energization event, recognizing that many communication channels may be affected by the loss of power.

95 Similarly, communication may be affected by the loss of power.

non-utility caused fire events. It is the Commission's vision that notice and communication will primarily come from utilities but with close coordination with local first responders, whenever possible, based upon pre-designed templates and scripts developed by the utilities in coordination with relevant state and local agencies. The Commission supports this approach so that there is cohesive treatment and communication across all emergency events and in recognition that citizens should have consistent experience during de-energization events regardless of their utility provider.

The concept of shared responsibility between the utilities, public safety partners and affected customers is critical; however, for now, the utilities are ultimately accountable for each de-energization event. Affected customers should be afforded advanced notification whenever possible; however, with advanced education and outreach, customers should be prepared well in advance of a de-energization event or any other event that results in the loss of power, such as a non-utility caused wildfire resulting in power loss, to meet their own safety needs. For AFN populations, this includes, to the extent possible, partnering with community-based organizations and other entities to develop plans in advance to ensure that needs can be met in the event of a power loss. The utilities should work with public safety partners and community-based organizations to develop outreach and education materials and plans for AFN populations to prepare for de-energization well in advance of any particular event.

There are public safety implications that must be explored, especially as utilities harden and sectionalize their grid, resulting in more granular de-energization events. Furthermore, local jurisdictions incur costs when they engage in notification and public safety efforts during de-energization, and it is

unclear who should bear the burden of those costs at this time. The Commission also does not have enough of a record to determine at this point if the electric utility or a CCA (or both) should provide notification in jurisdictions where a customer is served by both a CCA and the utility. Finally, the SEMS framework, aside from setting a bottom-up approach to emergency events, acts as a framework for allocating resources across jurisdictions. The utilities are not a governmental agency, and at this juncture, state agencies cannot allocate utility resources in the event of de-energization. The Commission will explore these issues in Phase 2.

Taking the above into account, the Commission adopts the following guidelines for the 2019 wildfire season, recognizing that these guidelines will necessarily evolve over time:

> The electric investor-owned utilities, as the entity with the most knowledge of and jurisdiction to call a de-energization event and subsequent re-energization, retain ultimate responsibility for development of the communication strategy and notification in advance of, during and after a de-energization event. However, the electric investor-owned utilities should immediately begin working with CalOES and local governments to develop notification programs such that, wherever possible, the utilities' notification processes integrate into the SEMS framework, with the goal that local governments provide supplemental or secondary notification in the near future based upon pre-designed templates and scripts developed by the utilities in coordination with relevant state and local agencies. Supplemental notification does not supplant the utilities' responsibility to provide notification to all customers
>
> The utilities must work with the goal of integrating into and leveraging existing outreach and notification systems wherever possible, rather than creating duplicative and potentially conflicting systems to those employed by local jurisdictions/emergency/first responders.

5.5. What Information Should Be Included in Notifications (and Outreach)?

There are two primary timeframes for notification that must occur prior to de-energization, and each has differing information that must be conveyed. The first form of notice comes in advance of wildfire season and includes information that must be shared with public safety partners, critical facilities and the public (advanced outreach and education). The second form of notice occurs in the days and hours preceding a specific de-energization event.

5.5.1. Advanced Outreach and Education

The utilities must work to build relationships with public safety partners, critical facilities, community-based organizations (preferably in partnership with public safety partners) and the public, including AFN populations, in order to ensure that all are as prepared as possible to face a de-energization event if and when it occurs. Accordingly, the Commission adopts the below advanced education and outreach guidelines.

5.5.1.1. Public Safety Partners and Critical Facilities

The utilities must develop partnerships with public safety partners at the local and state level to enable these agencies and entities to sufficiently prepare for de-energization events. The Commission finds that the utilities should share information as broadly and comprehensively as possible to allow public safety partners to conduct parallel planning in advance of the 2019 and subsequent wildfire seasons. For this reason, the Commission is unconvinced by some of the utilities' arguments that thresholds cannot be developed or communicated for strong wind events and extreme hazard conditions (humidity thresholds, fuel dryness, extreme temperatures).

The Commission recognizes that there are a number of factors, including on-the-ground utility employee assessments, that go into calling a de-energization event, and the Commission understands that, at this time, there is some degree of discretion that is necessary. The Commission further recognizes that different utilities are in different places in their development of de-energization programs. However, requiring each utility to share the particular characteristics and thresholds, which likely vary across terrain, that trigger the utility to *consider* de-energization, enables public safety partners, critical facilities and the general public to plan accordingly. Therefore, the Commission requires, as set forth below, that the utilities begin to develop and make available information characteristics and thresholds that the utility uses in considering whether to de-energize. The Commission does not require that the utilities develop standardized thresholds across the state. Finally, the Commission requires that the utilities work with critical facilities and public safety partners to ensure that these entities have the information and ability to communicate they need to respond effectively during a de-energization event. This may include, but is not limited to, sharing information about the number of medical baseline customers in a particular jurisdiction, circuits affected, and de-energization boundaries to the extent possible, as well as providing operational coordination with public safety partners.

The Commission adopts the following guidelines:

- With the goal of having a common understanding of situational awareness among public safety partners throughout California, each electric investor-owned utility must clearly articulate thresholds for strong wind events as well as the conditions that define "an extreme fire hazard" (humidity, fuel dryness, temperature) that the electric investor-owned utility evaluates in considering whether to de-energize. This information may vary

for different jurisdictions and topographies; however, the information must be provided to and be readily available to public safety partners and the public.[96] The electric investor-owned utilities are afforded discretion to evaluate real-time and on-the-ground information in determining whether to de-energize; adoption of thresholds is not determinative of de-energization.

- To aid in preparation, the electric investor-owned utilities must provide, if requested, relevant GIS data, including identification of critical facilities, circuits, and number of medical baseline customers, to local jurisdictions in advance of wildfire season. In addition, the utilities must provide, if requested, operational coordination with public safety partners to ensure such partners have not only the information but also the coordination with the utilities necessary to prepare for de-energization.

5.5.1.2. All Other Customers

Although de-energization is a proactive shutting off of power, any emergency, including a non-utility-infrastructure caused wildfire, can cause a prolonged loss of power. The Commission, therefore, requires that the utilities work with public safety partners, including CAL FIRE and CalOES, to develop outreach and educational materials to make citizens aware of how to prepare for a prolonged loss of power in advance of the 2019 wildfire season.[97] The Commission will not adopt specific language or requirements at this juncture; however, the Commission requires that the outreach and education efforts be a comprehensive and cohesive multi-agency outreach effort that is coordinated with local entities.

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[96] For example, on the utility's website.

[97] The utilities have already begun to partner with Cal FIRE and CalOES to develop and disseminate such materials. See, for example, https://prepareforpowerdown.com/

Finally, the utilities must partner with public safety partners to develop scripted de-energization templates that can be used by public safety partners during a de-energization event. This should include a standardized set of definitions that must be used across all utilities and public safety partners. The utilities should, whenever possible, use the best practices, procedures, and protocols outlined in the California Alert and Warning Guidelines to harmonize with existing emergency notifications.

Accordingly, the Commission adopts the following guidelines:

- In advance of the 2019 wildfire season, the electric investor-owned utilities, jointly, must immediately oversee development and execution of a statewide Public Safety Power Shut-off education campaign, developed in partnership with CalOES and CAL FIRE, that provides education tailored to the needs of stakeholders, including AFN populations, in order to make citizens aware of how to prepare for and obtain information during a prolonged loss of power, including as a result of de-energization. Education and outreach must use best practices outlined in the California Alert and Warning Guidelines to maximize understanding. The electric investor-owned utilities, in coordination with the above-named agencies, must measure effectiveness of education and outreach efforts and adjust efforts accordingly.
- The electric investor-owned utilities must partner with local and state public safety partners to develop scripted de-energization templates that can be used by public safety partners leading up to, during, and after a de-energization event. In order to allow jurisdictions with public alerting authority to send timely and appropriate messages to populations potentially impacted by a de-energization event, the utilities must develop Common Alerting Protocol compliant messages and protocols for use by the designated alert authorities. Whether local jurisdictions choose to utilize their Public Alert and Warning system to notify the public of a de-energization event is at their discretion. The electric investor-owned utilities must also work with state public

safety partners (CalOES, CAL FIRE) to develop definitions to use for communications and a standardized nomenclature based on existing emergency frameworks.

5.5.2. Notification Preceding a De-Energization Event

Equally important as advanced outreach and education is notification to potentially affected entities preceding a de-energization according to the timelines discussed earlier in this decision. Public safety partners will require specific information including the boundaries of the de-energization event, circuits to be de-energized, information regarding customers within the de-energization boundaries (number of medical baseline customers, etc.,) the estimated start date and time of de-energization, estimated length of the de-energization event and estimated restoration timelines.

The Commission is not persuaded by some of the utilities' arguments that it is inappropriate to provide an estimated length of de-energization. While it is impossible to know the exact length of a de-energization event in advance, it is likely that by evaluating advanced weather forecasting and "extreme hazard" thresholds, the utility can develop an estimated length of outage. The utilities must convey this information to public safety partners but may caveat the information as an estimate that is subject to change as conditions evolve in real-time. The utilities must also convey this information to all affected customers but may present it in estimated timeframes, e.g. 2-7 days.

Finally, the utilities must provide all situational awareness information possible to public safety partners, including GIS situational awareness information. The goal is for the utilities to provide GIS REST services; however, the Commission understands this may not be possible in advance of the 2019 wildfire season. Nevertheless, accurate and timely geospatial information that

can be rapidly integrated into public safety partners' existing geospatial awareness tools is critical in facilitating decision-making at the state and local level. The Commission rejects SCE's suggestion that agencies can manually download information from a public website. To require this would necessitate that an additional series of steps be taken in a time-constrained environment, increasing the potential for errors. The Commission does support, however, the inclusion of de-energization boundary maps on the utilities de-energization websites that are accessible to the public.

5.5.2.1. Public Safety Partners

The Commission adopts the following guidelines for information to be communicated with public safety partners in the days and hours preceding a de-energization event:

- The electric investor-owned utilities must convey to public safety partners at the time of first notification preceding a de-energization event information regarding the upcoming de-energization, including estimated start time of the event, estimated duration of the event, and estimated time to full restoration. The electric investor-owned utilities must use the previously established contact channels developed in advance of the 2019 wildfire season and should strive to provide contact according to the timeframes adopted in these guidelines. The electric investor-owned utilities must provide the number of medical baseline customers in the impacted area to first/emergency responders and/or local jurisdictions.
- For the 2019 wildfire season, the electric investor-owned utilities must, at the time of first notification preceding a de-energization event, make available a GIS shapefile via a secure data transfer process depicting the most accurate and specific information possible regarding the boundaries of the area subject to de-energization to all public safety partners whose jurisdictions or service areas will be impacted by the de-energization event, including adjacent jurisdictions or service areas that could lose

power as a result of de-energization in a high fire threat district (HFTD). Going forward, the electric investor-owned utilities must work to provide a secure data transfer of the de-energization boundary in GIS REST format (or other agreed upon format that is rapidly consumable by existing geospatial and situational awareness tools) and must also show affected circuits and any other information that is requested by public safety partners and can reasonably be provided by the utility. The utilities must work towards being able to provide real-time data to public safety partners.

5.5.2.2. All Other Customers

The Commission adopts the following guidelines for information to be communicated with all other customers in the days and hours preceding a de-energization event:

- The electric investor-owned utilities must work with local public safety partners to communicate with all other customers that a de-energization event is possible, the estimated start date and time of the de-energization event, the estimated length of the de-energization event, which may be communicated as a range, and the estimated time to power restoration, which again, may be communicated as a range. Communications should state when the customer can next expect communication about the de-energization event. Communication, consistent with best practices articulated in the California Alert and Warning Guidelines, must answer five key recipient questions: (1) Who is the source of the warning; (2) What is the threat; (3) Does this affect my location; (4) What should I do; and (5) What is the expected duration of the event? Communications must also point customers towards education and outreach materials disseminated in advance of the 2019 wildfire season.
- The electric investor-owned utilities must provide up-to-date information, including a depiction of the boundary of the de-energization event, on their websites' homepage and a dedicated PSPS webpage regarding the de-energization event. The electric investor-owned utilities, in partnership with local

public safety partners, must establish and communicate a 24-hour means of contact that customers may use to ask questions and/or seek information.

5.6. What Methods Should the Electric Investor-Owned Utilities Use to Communicate a De-Energization Event with the Public?

The Statewide Alert and Warning Guidelines (Guidelines) provide guidance and expectations for jurisdictions throughout California to ensure that all available tools are used to alert and warn members of the public about emergencies. The Guidelines state that "it is an inherent responsibility of local government organizations to keep the public informed about natural, human-caused, and technological disasters," and that "a highly effective alert and warning program will use as many delivery methods as possible."[98] Although the Guidelines do not explicitly address de-energization and do not adopt notification and communication methods when there is a loss of power, the Guidelines create a strategy for notice to residents by local jurisdictions. The utilities must partner with local and state public safety partners to develop notification strategies that comport with the Guidelines for all customer groups, recognizing that the utilities retain responsibility to ensure notification of affected public safety partners, critical facilities and infrastructure and customers.

De-energization should be communicated by all available means including, but not limited to, media and broadcast television, social media, phone calls, texts, and in person visits, and multiple methods of communication should be employed. In addition, notifications must be communicated in

[98] Section 11.3.4 Multi-Modal / Multi-Platform Systems, 2019 Statewide Alert & Warning Guidelines.

English, Spanish, Chinese (including Cantonese, Mandarin and other Chinese languages), Tagalog and Vietnamese as well as Korean and Russian where those languages are prevalent within the utilities' service territories. Communication methods must consider the geographic and cultural demographics of affected areas, e.g. some rural areas lack access to broadband services. The utilities, in partnership with local and state public safety partners, must develop notification strategies for AFN populations up to and including in person notification. The Commission will not adopt a list at this juncture of populations requiring in-person notification; however, consideration should be given to medical baseline customers and customers requiring advanced notice in the event of power service disconnection.[99] The utilities should strive to develop a coordinated positive/affirmative notification strategy with public safety partners for pre-designated AFN populations. Pre-designated AFN populations should be determined in coordination with public safety partners, whenever possible. Finally, the utilities, in coordination with public safety partners, must develop a strategy for how communication can occur, if possible, with affected customers once de-energization has begun and during re-energization. Loss of power will likely impact many communication channels. This issue will be explored further in Phase 2.

The Commission adopts the following guidelines:

- The California Alert and Warning Guidelines states that "people rarely act on a single warning message alone. To be effective, warnings should be delivered in various formats via various media, both to increase reliability of warning delivery and to provide a sense of corroboration that will encourage recipients to take protective actions." The electric investor-owned utilities

[99] *See* D.12-03-054

must develop notification strategies for all customer groups affected by de-energization. The electric investor-owned utilities must partner with local and state public safety partners, whenever possible, to develop notification strategies. In order to be effective, notifications should be delivered in multiple formats across several media channels, both to increase the potential a message successfully reaches an impacted population and to provide a sense of corroboration that will encourage individuals to take protective actions. Customer notifications should include, but are not limited to, telephonic notification, text message notification, social media advisories, emails, and messages to agencies that service disadvantaged communities within an impacted area to allow them to amplify any pertinent warnings. Communication methods must consider the geographic and cultural demographics of affected areas, e.g. some rural areas lack access to broadband services. Communications must be delivered in English, Spanish, Chinese (including Cantonese, Mandarin and other Chinese languages), Tagalog and Vietnamese as well as Korean and Russian where those languages are prevalent within the utilities' service territories.

- The electric investor-owned utilities must develop a strategy for how communication will occur with affected customers once de-energization has begun and during re-energization, recognizing that communication channels may be restricted due to the loss of power. The electric investor-owned utilities should develop this strategy in coordination with public safety partners.

5.7. How Should the Electric Investor-Owned Utilities Communicate and Coordinate with Public Safety Partners Before and During a De-Energization Event?

There are two layers of notification and communication that must be addressed by the utilities and public safety partners, both of which require coordination. The first is how (under what principles and frameworks) should notification of and communication with public safety partners occur, and the second is how should public safety partners and utilities communicate with

affected customers. As noted elsewhere, the Commission intends that public safety partners and the utilities work together to address de-energization as they would any other emergency event, despite the utilities having the jurisdictional authority to call a de-energization event.

The Commission supports a framework where the utility embeds in and utilizes existing emergency preparedness and response frameworks, rather than developing redundant or contrary platforms. SEMS is a structure for coordination between the government and local emergency response organizations. It provides and facilitates the flow of emergency information and resources within and between the organizational levels of on-the-ground responders, local government, operational areas, regions and state management. Although the utilities are not government agencies, and state management cannot allocate resources from the utilities, the utilities should, consistent with the principles of SEMS, follow the notification practices included therein, which means that the utilities will be responsible for contacting local public safety officials in impacted jurisdictions, through pre-designated channels prior to and during a de-energization event. The utility must ensure that an impending de-energization event is communicated to local and state officials. The utilities must work with public safety partners to disseminate all information in formats and through processes that are used by public safety partners during other emergencies, including developing messaging aligned with the best practices outlined in the California Alert and Warning Guidelines.

The Commission adopts the following guidelines:

- Consistent with SEMS,[100] the electric investor-owned utilities will be responsible for contacting local public safety officials in impacted jurisdictions prior to and during a de-energization event. The electric investor-owned utilities must communicate an impending de-energization event to local and state officials. The electric investor-owned utilities must work with public safety partners to disseminate all information in formats and through processes that are used by public safety partners during other emergencies, including developing notification messaging consistent with the California Alert and Warning Guidelines. The electric investor-owned utilities must partner with local and state public safety partners to develop notification strategies for all customer groups that comport with the best practices articulated in the California Statewide Alert and Warning Guidelines.
- In advance of the 2019 wildfire season, the electric investor-owned utilities must continue to partner with local jurisdictions, CalOES and CAL FIRE to develop a comprehensive, coordinated and cohesive notification framework including, but not limited to, the electric investor-owned utilities providing notification to public safety partners and public safety partners, to the extent they are willing and able, providing secondary or supplemental notification to the general public. Electric investor-owned utilities retain responsibility to ensure notification of affected customers.
- The electric investor-owned utilities, in partnership with local and state public safety partners, must develop notification strategies for AFN populations up to and including in-person notification. The electric investor-owned utilities should strive to develop a coordinated positive/affirmative notification strategy with public safety partners for pre-designated AFN populations. Pre-designated AFN populations should be determined in coordination with public safety partners, whenever possible, but

[100] PacifiCorp, as a utility that operates across state lines, requests that it operate consistent with NIMS. This is allowable; however, if a provision of NIMS conflicts with SEMS, PacifiCorp must follow the provisions mandated in SEMS.

should include customers on medical baseline tariffs that are dependent upon electricity for the provision of life-sustaining services.

5.8. Coordination with Emergency Response Centers and Incident Command Systems

A safe and effective de-energization event relies in large part on the ability of the utilities and public safety partners to coordinate responses as seamlessly as possible. Although not yet declared emergencies by the State of California, de-energization should be treated as any other emergency that results in a prolonged loss of power. Accordingly, the utilities must avoid developing duplicative and separate response structures and instead seek to integrate into and coordinate with already existing structures and emergency response practices.

The Commission rejects the utilities' arguments that embedding liaisons in local EOCs would be overly burdensome; however, the Commission does appreciate the utilities' concerns about dilution of resources and the possibility of inconsistent decision-making with a dispersed structure. The Commission addresses this issue in the guidelines set forth below. The Commission does agree that, consistent with the principles of the Incident Command System, utilities should not *proactively* embed a liaison unless requested by the local jurisdiction. In fact, if de-energization is not considered an emergency by a local jurisdiction, it is likely that the jurisdiction will not form its own EOC; therefore, it would be futile to require the utility to embed in a non-existent EOC. At this juncture, the utility does form its own EOC; thus, the utility must hold seats in its EOC for local jurisdictional emergency representatives and invite those representatives to sit on its EOC.

On a going forward basis, the Commission envisions that de-energization will be treated as any other incident/emergency. The utilities should coordinate with CalOES, CAL FIRE and local jurisdictions to determine the most appropriate formation and staffing of EOCs in the case of utility called de-energization. Finally, it is imperative that the utilities and public safety partners have a communication strategy for when power is turned-off; loss of power may impact many standard forms of communication such as cellular and internet services.

The Commission adopts the following guidelines:

- If requested by the local jurisdiction, the electric investor-owned utilities must embed a liaison officer at the local or county EOC. When requested, the utility must embed a liaison officer at the State Operations Center for the purpose of assessing and integrating wildfire threat data for decision-making. The liaison officers must be empowered to provide rapid and accurate information from the utilities. To ensure consistency of response across jurisdictions, the electric investor-owned utilities should have a designated lead with decision-making authority located at the utility's EOC with whom embedded liaisons can communicate in real-time to obtain the most up-to-date information. This requirement does not preclude the utilities from developing a centralized communication structure that is amenable to both the utility and local jurisdictions to provide real-time coordination and situation awareness.
- Currently, the electric investor-owned utilities form an EOC during each de-energization event. The electric investor-owned utilities must invite representatives from CalOES, water infrastructure providers, and communication service providers. In the alternative, the utilities may develop a mutually agreeable communications structure with water infrastructure providers and communication service providers in lieu of holding seats in its EOC.

5.9. Requests to Delay De-Energization and to Re-Energize

In the Staff Proposal, Staff suggests that utilities should ensure that their de-energization plans allow for pre-designated first responders with statutory responsibility for impacted jurisdictions to request a temporary delay in de-energization events in exigent circumstances. Party comments make clear that this issue requires further exploration, and the Commission lacks sufficient record to define the terms "pre-designated first responders with statutory responsibility for impacted jurisdictions," "exigent circumstances" and "temporary delay" (i.e. length of delay that can be requested). Noting the concerns of MWDOC and others about the possibility of de-energization amplifying another emergency event,[101] the Commission adopts the following interim guidelines:

- The electric investor-owned utilities should continue to address requests for a de-energization delay on a case-by-case basis. The electric investor-owned utilities must only respond to de-energization delay requests from public safety partners. The electric investor-owned utilities retain ultimate authority to grant a delay and responsibility to determine how a delay in de-energization impacts public safety.
- The electric investor-owned utilities must work with public safety partners in advance of the wildfire season to develop preliminary plans for addressing emergency situations that may arise during de-energization, such as a non-utility caused wildfire that occurs in a de-energized area that necessitates the use of water for firefighting purposes. Although not a request to delay de-energization, such a situation could result in the public safety being better served by utility lines being re-energized.

[101] MWDOC points to the loss of water pressure during a wildfire that can impact the ability of fire fighters to fight wildfires.

5.10. De-Energization of Transmission Lines

De-energization of transmission lines will have different and not yet fully understood impacts as compared to de-energization of distribution lines. For example, de-energization of transmission lines may have impacts on POUs, adjacent jurisdictions and entities such as airports that are often interconnected at the transmission level. Furthermore, some of the small and multi-jurisdictional utilities do not operate any transmission lines and/or are geographically disbursed.

Based upon the record before the Commission, de-energization of transmission lines requires further exploration in Phase 2 including, but not limited to, voltage designation for delineation of distribution versus transmission level de-energization, impacts on small and multi-jurisdictional utilities, notification required for transmission level de-energization (type and timing), and other matters. As noted by CAISO, the utility, as the transmission line operator, retains authority to de-energize transmission lines. The Commission adopts the following interim guidelines for de-energization of transmission lines:

- The electric investor-owned utilities must design interim protocols for the de-energization of transmission lines based upon the impacts to populations across affected jurisdictions including, but not limited to, POUs/electric cooperatives, adjacent jurisdictions and small/multi-jurisdictional utilities and critical facilities interconnected at the transmission level. The utility must solicit input from stakeholders in developing these protocols, and the utilities shall serve the interim protocols on the service list of R.18-12-005 within three months of issuance of this decision.
- In the event of transmission line de-energization, additional coordination may be required with CalOES, CAL FIRE, local jurisdictional public safety partners and the California Independent System Operator (CAISO). The electric

investor-owned utilities must also provide notice to the CAISO of transmission-level de-energization as far in advance as possible. The electric investor-owned utilities must comply with Federal Energy Regulatory Commission (FERC) and North American Electric Reliability Corporation (NERC) reliability standards.

- While the Commission explores development of transmission level notification and communication guidelines, the utilities must employ all relevant notification and communication guidelines adopted herein, in addition to those in Resolution ESRB-8, to the de-energization of transmission lines.

5.11. Post-Event Reporting and Lessons Learned

Resolution ESRB-8 expands the reporting requirements adopted in D.12-04-024 following a de-energization event to all the utilities and adopts additional strengthened reporting requirements. Currently, the electric utilities are required to submit a report to the Director of the Commission's SED within ten business days after a de-energization event, as well as after high-threat events where the utility provided notifications to local government, agencies, and customers of possible de-energization though no de-energization occurred.[102]

The Commission views post-event reporting as a means of facilitating learning and improvement across utilities, state and local public safety agencies and local jurisdictions. Therefore, it is imperative that the utilities provide detailed and accurate information to the Commission and that the Commission review each de-energization event for reasonableness. As with other elements of de-energization, reporting will be an iterative process that will be further developed with time. For example, in Phase 2, the Commission will explore whether to adopt additional reporting requirements and whether to review and

[102] Resolution ESRB-8 at 5.

approve the reasonableness of de-energization events through a formal Commission proceeding. The guidelines adopted below are meant to compliment the requirements in Resolution ESRB-8. Where the guidelines adopted herein conflict with those in Resolution ESRB-8, the guidelines in this decision govern.

- In addition to submitting a report to the Director of the Commission's Safety and Enforcement Division (SED) within 10 business days of power restoration, electric investor-owned utilities must serve their de-energization report on the service lists of this proceeding and Rulemaking (R.) 18-10-007 or their successor proceedings. Service should include a link to the report on the utility's website and contact information to submit comments to the Director of SED. The electric investor-owned utilities must actively contact public safety partners involved in the de-energization event to encourage them to provide feedback. The electric investor-owned utilities must also send a copy of the report to the lead local/county public safety agency for the de-energization event.
- Within 15 days of the electric investor-owned utility serving its post-event report, affected stakeholders, including public safety partners, critical facilities and local residents may serve comments on the electric investor-owned utility's post-event report in order to inform SED's reasonableness review. Comments must be sent to the following address: Safety and Enforcement Division Director, California Public Utilities Commission, 505 Van Ness Avenue, San Francisco, California, 94102. In addition, comments should be served on the service list of R.18-12-005 or its successor proceeding.
- In addition to the reporting requirements in Resolution ESRB-8, the electric investor-owned utilities must provide the following information:

    1) Decision criteria leading to de-energization, including an evaluation of alternatives to de-energization that were considered and mitigation measures used to decrease the risk of utility-caused wildfire in the de-energized area;

2) A copy of all notifications, the timing of notifications, the methods of notifications and who made the notifications (the utility or local public safety partners);

3) If the utility fails to provide advanced notification or notification according to the minimum timelines set forth in these Guidelines, an explanation of the circumstances that resulted in such failure.

4) A description and evaluation of engagement with local and state public safety partners in providing advanced education and outreach and notification during the de-energization event;

5) For those customers where positive or affirmative notification was attempted, an accounting of the customers (which tariff and/or AFN population designation), the number of notification attempts made, the timing of attempts, who made the notification attempt (utility or public safety partner) and the number of customers for whom positive notification was achieved.

6) A description of how sectionalization, i.e. separating loads within a circuit, was considered and implemented and the extent to which it impacted the size and scope of the de-energization event;

7) An explanation of how the utility determined that the benefit of de-energization outweighed potential public safety risks;

8) The timeline for power restoration (re-energization,) in addition to the steps taken to restore power as required in Resolution ESRB-8.

9) Lessons learned from the de-energization event; and

10) Any recommended updates to the guidelines adopted in Resolution ESRB-8 and this decision.

- The electric investor-owned utilities should refer to SDG&E's November 11-16, 2018 de-energization report, issued on December 4, 2018 (Appendix E) as a starting place for a reporting

format until the Commission provides further guidance on a standard report template.

- In addition to de-energization reports, the electric investor-owned utilities are required to submit reports on de-energization lessons learned concurrent with their 2020 Wildfire Mitigation Plans and thereafter, including an evaluation of utility/public safety partnerships. The reports must include a copy of all educational campaigns and outreach made in advance of the wildfire season and an evaluation of their effectiveness. The Commission may consider these reports in other proceedings; however, existing or successor Wildfire Mitigation Plan proceedings are the appropriate place to file these reports at this time.
- The Commission's SED should develop a post-de-energization event reporting template. The template, at a minimum, should include the information requested herein; however, SED has the discretion to request additional information. SED should solicit input from stakeholders on the development of the template. The template should be adopted by the Commission via Tier 3 advice letter.
- The Commission's SED should develop a template for the lessons learned report in advance of the 2020 Wildfire Mitigation Plan submission date. SED should hold workshops to solicit input and facilitate cross-utility and cross-stakeholder learning to inform the development of the reports. The template should be adopted by the Commission via Tier 3 advice letter.
- The Commission's SED will continue to review electric investor-owned utility's de-energization reports pursuant to Resolution ESRB-8. The Commission will consider development of reasonableness criteria in Phase 2.

6. R.18-12-005 Phase 2

This Phase 1 decision primarily addresses notification and communication prior to a de-energization event as well as updates to Resolution ESRB-8. The Commission adopts the guidelines in this decision in order to move the needle

towards a comprehensive, cohesive and well-executed de-energization policy that is easily understood by customers and public safety partners alike. Due to the proximity to the 2019 wildfire season, the Commission necessarily issued this decision under a tight timeline.

De-energization is a rapidly evolving tool that is being developed by many of the utilities in real-time as conditions in California change in unprecedented ways. Much work remains to be done among all partners. The Commission will further examine some of the findings in this decision as well as many other topics related to de-energization in Phase 2 of this rulemaking. A preliminary list of Phase 2 issues is set forth in Appendix B to this decision. This list is not meant to be comprehensive; the Commission may consider additional issues not listed in Appendix B. A final Phase 2 scope will be adopted in a subsequent scoping memo.

7. Comments on Proposed Decision

The proposed decision of Commissioner Picker in this matter was mailed to the parties in accordance with Section 311 of the Public Utilities Code and comments were allowed under Rule 14.3 of the Commission's Rules of Practice and Procedure. The following parties filed and served opening comments on May 16, 2019: Abrams; CSAC; City of Malibu; NCPA; CMUA; TURN; the Joint Water Districts; DACC/EUF; EBMUD; EPUC; POC; Public Advocates; MGRA; NCPA; CWA; CforAT; Western States Petroleum Association; Agricultural Energy Consumers Association; the Joint Communication Parties; CLECA; CESA; the Joint Local Governments; Farm Bureau; PG&E; SDG&E; SCE; and, PacifiCorp. The following parties filed and served reply comments on May 21, 2019: CSAC; CMUA; DACC/EUF; City of Malibu; MGRA; TURN; EBMUD;

EPUC; POC; CWA; CforAT; CCSF; the Joint Local Governments; PG&E; SCE; SDG&E; and, PacifiCorp.

In addition to modifications to the decision to improve clarity and correct typographical errors, the Commission makes the following modifications based upon party comments:

- A new ordering paragraph is added requiring that the electric investor-owned utilities submit two progress reports detailing progress towards implementation of the guidelines set forth in Appendix A to the Director of the SED. The progress reports must be served on the service list of Rulemaking 18-12-005 and posted to the utilities' websites. The first progress report is due three months after issuance of this decision; the second progress report is due nine months after issuance of this decision. The Commission's Safety and Enforcement Division may request additional progress reports after the initial two reports.
- The Commission adds a new Appendix D containing Resolution ESRB-8 and a new Appendix E containing SDG&E's November 11-16, 2018 de-energization report, submitted on December 4, 2019.
- The introduction is adjusted to better reflect that the purpose of de-energization is to protect the public safety from the risk of wildfire caused by utility infrastructure. In addition, citation sources have been updated.
- The overarching guidelines are updated as follows:
    - Addition of requirement for electric investor-owned utilities to justify why de-energization was deployed over other possible measures;
    - Addition of the goal that customers should know how to manage safely through a de-energization event;
    - Clarifying language that electric investor-owned utilities are ultimately responsible and accountable for the safe deployment of de-energization;

- Clarification that, for now, the electric investor-owned utilities retain ultimate responsibility for notification and communication throughout a de-energization event;
- Clarification that the statewide education campaign must be conducted in English, Spanish, Chinese (including Cantonese, Mandarin and other Chinese languages), Tagalog and Vietnamese as well as Korean and Russian where those languages are prevalent within the utilities' service territories.

- The 'Adopted Definitions' guidelines are updated as follows:
  - Clarification that a de-energization event includes the power restoration (re-energization) process;
  - Inclusion of wastewater service providers in the definition of "public safety partners:"
  - Critical Facilities/Infrastructure definition is updated to remove licensed daycare centers, add public health departments and wastewater service providers and clarify that the chemical sector includes Category N customers.
- The "How Should Entities be Identified" guidelines are updated as follows:
  - Electric investor-owned utilities must ensure that emergency/first responder and critical facility contacts are updated at least two months in advance of the start of wildfire season;
  - Additional clarification is provided regarding the identification of AFN populations;
  - The requirement for the electric investor-owned utilities to develop a means for customers to self-identify as a member of an AFN population is removed. The Commission will explore this further in Phase 2;
  - The electric investor-owned utilities must consider how to provide notice to people impacted within a de-energized area but who may not be listed on a utility account.

- The 'Who Should Receive Notice and in What Order of Priority' guidelines are updated as follows:
  - Additional clarification is provided to note that electric investor-owned utilities may provide priority notice to entities beyond those listed in the guidelines.
- The 'How Far in Advance Should Notice Occur' guidelines are updated to provide clarity around which customers should receive notice under each notice time period.
- The 'What Information Should be Included in Notifications and Outreach' guidelines are updated as follows:
  - The electric investor-owned utilities are required to provide operational coordination with public safety partners, if requested, in order to facilitate de-energization preparation;
  - The guidelines are clarified to state that certain information must be provided to public safety partners at the time of first notification preceding a de-energization event;
  - The electric investor-owned utilities must provide a depiction of the boundary of the area to be de-energized on their website homepage and a dedicated PSPS webpage.
- The 'What Methods Should the Electric Investor-Owned Utilities Use to Communicate a De-energization Event with the Public' guidelines are modified to clarify that communications must be delivered in English, Spanish, Chinese (including Cantonese, Mandarin and other Chinese languages), Tagalog and Vietnamese as well as Korean and Russian where those languages are prevalent within the utilities' service territories.
- The 'How Should the Electric Investor-Owned Utilities Communicate and Coordinate with Public Safety Partners Before and During a De-Energization Event' guidelines are modified to clarify that medical baseline customers that are dependent upon electricity for the provision of life-sustaining services should receive positive or affirmative notification, up to and including in person notification.

- The 'Coordination with Emergency Response Centers and Incident Command Systems' guidelines are modified as follows:
    - The requirement for the electric-investor owned utility to embed a liaison in a local or county EOC, if requested, is modified to clarify that this requirement does not preclude the utilities from developing a centralized communication structure that is amenable to both the utility and local jurisdictions to provide real-time coordination and situation awareness;
    - The electric investor-owned utilities are permitted to develop a mutually agreeable communications structure with water infrastructure providers and communication service providers in lieu of holdings seats for these providers in the utilities' EOCs.
- The 'De-Energization of Transmission Lines' guidelines are modified as follows:
    - The electric investor-owned utilities are required to develop their interim transmission de-energization protocols with the input of stakeholders, and interim protocols must be served on the service list of R.18-12-005 within three months of issuance of this decision;
    - The electric investor-owned utilities must employ all notification and communication guidelines adopted in this decision and Resolution ESRB-8 to the de-energization of transmission lines while the Commission explores this issue more fully in Phase 2.
- The 'Post-Event Reporting and Lessons Learned' guidelines are modified as follows:
    - Post de-energization reports must be submitted within 10 business days of power restoration;
    - The electric investor-owned utilities must explain the circumstances that led to a failure to provide advanced notification of a de-energization event, if advanced notification does not occur.

- The electric investor-owned utilities must provide a description of the customers that received affirmative or positive notification;
- The electric investor-owned utilities must report on the timeline for power restoration (re-energization) in addition to the steps taken to restore power as required in Resolution ESRB-8;
- The electric investor-owned utilities must submit individual reports on lessons learned concurrent with their 2020 Wildfire Mitigation Plans and annually thereafter;
- The Commission's SED should develop a post de-energization event reporting template;
- The Commission's SED should develop a template for the lessons-learned reports in advance of the 2020 Wildfire Mitigation Plan submission date.

The Commission also modified Appendix B to provide for greater clarity on Phase 2 issues; however, a final determination of Phase 2 issues will be conveyed in the Phase 2 Scoping Memo. The Commission rejects MGRA's assertion that the Commission committed legal error by not including in the Phase 1 or preliminary Phase 2 scope certain issues that were set forth in the Preliminary Scoping Memo to the OIR. The Preliminary Scoping Memo is meant to present the Commission's initial thinking on the scope of the proceeding. Pursuant to Pub. Util. Code § 1701.1(c), "the assigned commissioner shall prepare an issue by order or ruling a scoping memo that describes the issues to be considered..." Issuance of the Phase 1 Scoping Memo and the upcoming Phase 2 Scoping Memo meet the requirements of § 1701.1(c).

8. Assignment of Proceeding

Michael Picker is the assigned Commissioner and Melissa K. Semcer is the assigned Administrative Law Judge in this proceeding.

Findings of Fact

1. The 2018 wildfire season in California was the most destructive on record.
2. Electric utility infrastructure can be an ignition source for wildfires.
3. De-energization is the proactive shut-off of power to power lines that may fail in certain weather conditions in order to reduce the likelihood that utility infrastructure can cause or contribute to a wildfire. It is a measure that can be used after the electric investor-owned utility has exhausted all other means to protect against the risk of wildfire ignitions as a result of utility infrastructure.
4. Utilities are responsible and accountable for the safe de-energization of power lines and all de-energization notification and communication.
5. Regional variability in topography, weather, and on-the-ground utility employee assessments impact de-energization decisions.
6. The electric investor-owned utilities serve diverse territories ranging significantly in size and topography.
7. The electric investor-owned utilities have varying experience with de-energization.
8. De-energization can have disproportionate impacts on certain populations.
9. Adopting standardized definitions and customer designations allows the electric investor-owned utilities, CalOES, CAL FIRE, other state and local government agencies, critical facilities and infrastructure, public safety partners, the Commission, and the public to operate with a shared understanding and language throughout a de-energization event and during subsequent re-energization.
10. The purpose of identifying critical facilities and critical infrastructure is to provide adequate notice to these facilities and infrastructure prior to a

de-energization event and to assist these facilities and infrastructure to maximize resiliency during de-energization and re-energization.

11. The purpose of identifying AFN populations is to ensure that such populations receive the education and notification they need to maximize resiliency during a de-energization event and subsequent re-energization.

12. Advanced identification of primary, secondary, and if possible tertiary 24-hour points of contact for public safety partners and primary and secondary 24-hour points of contact for critical facilities and critical infrastructure, updated annually at least two months prior to the start of wildfire season, is essential to ensure a safe and effective de-energization event, including re-energization.

13. The electric investor-owned utilities cannot identify all AFN populations within their service territories at this time. Identification of AFN populations may require the assistance of local and state jurisdictions and social service agencies.

14. It is essential to identify customers dependent upon life-sustaining medical equipment that requires electricity so that the electric investor-owned utilities and public safety partners can assist those customers in advance of and during a de-energization and re-energization event.

15. Customer account contacts may not adequately capture all users of electricity within the utilities' service territories or all people that may be impacted within a de-energized area.

16. Advance notice of a de-energization event allows public safety partners, critical facilities and critical infrastructure, AFN populations and utility customers time to prepare for and respond to a de-energization event.

17. Accurate and timely communication with and notification to first responders/emergency responders, state and local government entities, public

safety partners, critical facilities and affected customers within the boundaries of a de-energization event is critical to ensure safe and orderly de-energization.

18. Coordinated responses, including messaging, among electric investor-owned utilities, first responders and emergency responders, public safety partners and state and local jurisdictions/governments is necessary to protect the public safety during a de-energization event and subsequent re-energization.

19. There are two forms of advanced de-energization notification and communication: (1) education and public outreach in advance of wildfire season to ensure that procedures and processes are in place with public safety partners and that customers are aware of de-energization and know how to prepare; and (2) notice and communication of a potential, imminent, or a suddenly occurring de-energization event.

20. Notification of imminent re-energization helps protect the public safety.

21. Priority notification of public safety partners and adjacent jurisdictions that may be impacted by a de-energization event enables those with public safety responsibilities to be adequately prepared.

22. There may be times when advanced notification of a de-energization event is not possible.

23. Adopting an advanced notification timeline, while affording the electric investor-owned utilities flexibility to adjust the timeline based upon situational awareness and real-time events, allows public safety partners, critical facilities and critical infrastructure, and affected customers time to prepare for and respond to an imminent de-energization event.

24. It is difficult to predict in advance the duration or extent of a de-energization event.

25. The electric investor-owned utilities, as the entities with the most knowledge of and jurisdiction to call a de-energization event and subsequent re-energization, are best situated to provide notification in advance of and during a de-energization event and subsequent re-energization.

26. Local jurisdictions are responsible for notification and communication related to other emergency events that result in a loss of power, such as wildfires.

27. Consequences of de-energization and subsequent re-energization should be treated in a similar manner as any other emergency that results in a loss of power.

28. Integrating into and leveraging existing state and local emergency outreach and notification guidelines and systems, such as the California Alert and Warning Guidelines, and developing pre-scripted templates and messages that are Common Alerting Protocol compliant enables a cohesive notification effort and allows local jurisdictions the ability to provide secondary or supplemental notification and outreach.

29. Public outreach and education in advance of wildfire season are critical components to ensure that AFN populations are prepared and know how to respond to a de-energization event or any emergency event that may result in a loss of power.

30. A statewide education campaign will allow citizens to prepare for and obtain information during a prolonged loss of power.

31. Educating public safety partners and the public about the characteristics and factors that the utility considers in determining whether to de-energize, such as high temperatures, high wind speeds, dry vegetation, and low humidity, enables public safety partners and the public to conduct parallel planning and preparation.

32. Informing public safety partners of the geographic boundaries of a de-energization event, the circuits to be de-energized, information regarding customers within the de-energization boundaries (e.g. medical baseline customers and critical facilities/infrastructure), the estimated start date and time of the de-energization event, the estimated length of the de-energization event and the estimated restoration time, will facilitate a coordinated response to these events and enhance public safety.

33. Requiring the electric investor-owned utilities to provide operational coordination with public safety partners, if requested, enables public safety partners to prepare for de-energization.

34. Accurate and timely geospatial information that can be rapidly integrated into public safety partners' existing geospatial tools is critical in facilitating decision-making at the state and local levels.

35. Providing customers with information regarding the timing and estimated duration of a de-energization event in a format consistent with the best practices articulated in the California Alert and Warning Guidelines enables customers to better prepare for these events. In addition, providing customers access to the boundaries of the de-energized area allows them to understand the scope of the de-energization event.

36. The California Alert and Warning Guidelines provide guidance and expectations for jurisdictions throughout California on the tools to use to alert the public to dangerous conditions and warn of emergencies.

37. Whether local jurisdictions choose to utilize their Pubic Alert and Warning systems to notify the public of a de-energization event is at their discretion.

38. Establishing a 24-hour point of customer contact with the electric investor-owned utilities enables customers to have their de-energization questions answered.

39. To be effective, notifications should be delivered in multiple formats via various media, and in English, Spanish, Chinese (including Cantonese, Mandarin and other Chinese languages), Tagalog and Vietnamese as well as Korean and Russian where those languages are prevalent within the utilities' service territories in order to increase reliability of warning delivery and to provide a sense of corroboration that will encourage recipients to take protective actions.

40. Some rural areas may lack access to broadband services.

41. During a de-energization event, customers may not have access to communication channels that rely upon electricity, such as broadband services, cellular services, etc.

42. SEMS is a structure for coordination between government and local emergency response organizations. It provides and facilitates the flow of emergency information and resources within and between the organizational levels of on-the-ground responders, local government, operational areas, regions and state management.

43. Advanced provision of GIS data to local jurisdictions, including the location of non-confidential critical facilities and infrastructure, circuit maps and number of medical baseline customers, will facilitate preparation for future de-energization events.

44. The Incident Command System governs formation and staffing of EOCs.

45. It is possible that a local jurisdiction will not form an EOC for a de-energization event; however, the electric investor-owned utilities will always form an EOC.

46. Requests to delay de-energization currently occur on an ad-hoc basis. Further development of the record is required to adopt standardized de-energization delay parameters.

47. De-energization could exacerbate another subsequent emergency, e.g. if a wildfire ignites in a de-energized area and water infrastructure lacks electricity to provide adequate water services for fire suppression.

48. To date, de-energization has occurred primarily on the distribution system; transmission-level de-energization may become necessary in the future.

49. De-energization of transmission lines may have different and not yet fully understood impacts as compared to de-energization of distribution lines.

50. De-energization of transmission lines will require coordination with CAISO, CalOES and CAL FIRE as well as compliance with FERC and NERC reliability standards.

51. De-energization of transmission lines will require similar notification and outreach efforts as de-energization of distribution lines; however, additional notifications may be needed for downstream communities outside of the target de-energization area.

52. Post-de-energization reporting provides transparent information on the de-energization event and facilitates learning by the utilities, public safety partners and the Commission.

53. Wide service of post de-energization event reports will ensure that impacted public safety partners are provided an opportunity to offer feedback on the de-energization event.

54. SED currently reviews post de-energization reports.

55. Adoption of standardized post de-energization report templates and lessons-learned templates will enable comparison and learning across utilities.

56. Adopting the Guidelines in Appendix A furthers the ability of the electric investor-owned utilities, first and emergency responders and public safety partners to operate under a cohesive framework using consistent language.

57. Submission of status reports will enable the Commission and other public safety partners and all customers to understand the efforts being undertaken by the electric investor-owned utilities to implement the Guidelines set forth in Appendix A.

Conclusions of Law

1. Pursuant to Pub. Util. Code §§ 451 and 399.2(a), the electric investor-owned utilities have the authority to shut-off electric service in order to protect the public safety.

2. D.12-04-024 adopted reasonableness, public notification, mitigation and reporting requirements for SDG&E in the event that SDG&E initiated de-energization.

3. Resolution ESRB-8 extends the reasonableness, public notification, mitigation and reporting requirements of D.12-04-024 to all electric investor-owned utilities and strengthens reporting, public outreach, notification and mitigation guidelines.

4. It is reasonable to afford the electric investor-owned utilities flexibility in developing and deploying de-energization programs while requiring the use of standardized definitions and nomenclature and requiring operation under a cohesive framework.

5. It is reasonable to adopt a definition for first responders/emergency responders that is rooted in definitions adopted by FEMA.

6. It is reasonable to adopt a definition for public safety partners in order to designate entities for whom advanced notice of a de-energization event, including re-energization, is critical to preserve the public safety.

7. It is reasonable to adopt a definition for critical facilities and critical infrastructure aligned with the Department of Homeland Security's Critical Infrastructure Sectors.

8. It is reasonable to adopt the definition for AFN populations set forth in Government Code § 8593.3.

9. It is reasonable to adopt definitions for first responders/emergency responders, public safety partners, critical facilities/infrastructure and AFN populations set forth in the Guidelines in Appendix A.

10. It is reasonable to require the electric investor-owned utilities to identify and maintain accurate 24-hour points of contact for public safety partners and critical facilities/infrastructure, updated annually two months in advance of wildfire season.

11. It is reasonable to require the electric investor-owned utilities to update and expand outreach for enrollment in their Medical Baseline programs and to partner with local governments and social service agencies to identify AFN populations as well as to require the electric investor-owned utilities to take all reasonable steps within the boundaries of the law to identify AFN populations even absent assistance from local governments and social service agencies.

12. It is reasonable to require priority notification of a de-energization event to public safety partners and adjacent jurisdictions that may lose power as a result of de-energization.

13. The guidelines in Appendix A satisfy the requirements of Pub. Util. Code § 8386(c)(7).

14. It is reasonable to require the electric investor-owned utilities, whenever possible, to provide advanced notification of de-energization events according to the timeline set forth in the Guidelines in Appendix A.

15. It is reasonable for the electric investor-owned utilities to, for now, retain responsibility and accountability for notification and communication of a de-energization event and subsequent re-energization and to retain responsibility and accountability for the safe deployment of de-energization and subsequent re-energization.

16. It is reasonable to require the utilities to integrate into and leverage existing local and state emergency notification systems and for the electric investor-owned utilities to coordinate with public safety partners to provide notification.

17. It is reasonable to require the electric investor-owned utilities to provide to local governments, public safety partners, and the public information on the thresholds for strong wind events and conditions that define an "extreme fire hazard" that the utility evaluates in considering whether to de-energize.

18. Official Notice is taken, pursuant to Rule 13.9 of the Commission's Rules of Practice and Procedure, that United States census data shows that the top three primary languages used in California other than English and Spanish are Chinese (including Cantonese, Mandarin, and other Chinese languages), Tagalog and Vietnamese.

19. It is reasonable to require the electric investor-owned utilities to partner with CalOES and CAL FIRE to develop a statewide education campaign that provides education tailored to the needs of customers, including AFN populations, in English, Spanish, Chinese (including Cantonese, Mandarin and other Chinese languages), Tagalog and Vietnamese as well as Korean and

Russian where those languages are prevalent within the utilities' service territories.

20. It is reasonable to require the electric investor-owned utilities to provide public safety partners with the boundaries of a de-energization event, circuits to be de-energized, information regarding customers within the de-energization boundaries (e.g. medical baseline customers), the estimated start date and time of the de-energization event, estimated length of the de-energization event and estimated restoration times, which includes the re-energization start date and time and completion timeframe.

21. It is reasonable to require the electric investor-owned utilities to provide geographic information to public safety partners as set forth in Appendix A.

22. It is reasonable to require the electric investor-owned utilities to partner with local public safety partners to communicate to impacted customers that a de-energization event is possible, the estimated start date and time of the de-energization event, the estimated length of the de-energization event, the geographic boundaries of the de-energization event, and the estimated time to power restoration. Estimates should be updated as necessary.

23. The electric-owned utilities should partner with state and local public safety partners to develop notification strategies that comport with the California Alert and Warning Guidelines.

24. It is reasonable to require the electric investor-owned utilities, in collaboration with state and local public safety agencies, to deliver notifications to all customer groups in multiple formats and through multiple media channels including, but not limited to, telephonic notification, text message notification, social media advisories, emails and messages to agencies that serve disadvantaged communities within an impacted area. Notifications should be

prepared in English, Spanish, Chinese (including Cantonese, Mandarin and other Chinese languages), Tagalog and Vietnamese as well as Korean and Russian where those languages are prevalent within the utilities' service territories.

25. It is reasonable to require the electric investor-owned utilities to develop notification strategies that consider the geographic and cultural demographics of affected areas.

26. The investor-owned utilities, in partnership with local and state public safety partners, should develop notification strategies for AFN populations up to and including in-person notification. The utilities should work with local and state government agencies and public safety partners to determine a strategy for in-person notification when needed.

27. It is reasonable to require the electric investor-owned utilities, in coordination with public safety partners, to develop a communication strategy once de-energization has begun when access to some communication channels may be restricted due to the loss of power.

28. Even though the electric investor-owned utilities are not government agencies, it is reasonable for the utilities to coordinate with local and state agencies consistent with SEMS.

29. It is reasonable to require the electric investor-owned utilities to provide, if requested by local jurisdictions, relevant GIS data for that jurisdiction including identification of critical facilities, circuits and number of medical baseline customers in advance of wildfire season.

30. The electric investor-owned utilities should embed a liaison that is empowered to provide rapid and accurate information regarding the de-energization event in local EOCs and at the state Operations Center, if requested.

31. The electric investor-owned utilities should designate an EOC liaison lead with decision-making authority to coordinate communication with embedded liaisons.

32. When an electric investor-owned utility forms an EOC, it must hold a space for and invite representatives from CalOES, water infrastructure providers, and communication providers.

33. It is reasonable to permit the electric investor-owned utilities to develop a centralized communication structure that is amenable to both the utility and local jurisdictions to provide real-time coordination and situation awareness.

34. It is reasonable to allow the utilities to develop a mutually agreeable communications structure with water infrastructure providers and communication service providers in lieu of holding seats in the utilities' EOCs.

35. It is reasonable to require electric investor-owned utilities to only respond to requests to delay de-energization from public safety partners. The electric investor-owned utilities should retain ultimate authority to grant or deny a delay and responsibility to determine how a delay will impact the public safety.

36. It is reasonable to require the electric investor-owned utilities to work with public safety partners in advance of wildfire season to develop preliminary plans for addressing emergency situations that may arise concurrent with de-energization, such as ignition of a wildfire, where re-energization of energized lines may provide greater public safety benefits.

37. In the event of a transmission-level de-energization, it is reasonable to require the electric investor-owned utilities to provide notice to and coordinate with the CAISO, CalOES and CAL FIRE. The utilities should comply with FERC and NERC reliability standards.

38. It is reasonable to require the electric investor-owned utilities to develop interim protocols for the de-energization of transmission lines and to serve the interim protocols on the service list of R.18-12-005 within three months of issuance of this decision.

39. It is reasonable to require the electric investor-owned utilities to the apply the notification and communication guidelines adopted in the Guidelines in Appendix A to the de-energization of transmission lines.

40. It is reasonable to require the electric investor-owned utilities to submit post-de-energization reports according to the parameters set forth in Appendix A.

41. SED should develop a post-de-energization event reporting template. The template, at a minimum, should include the information requested in the Guidelines in Appendix A; however, SED has the discretion to request additional information. SED should solicit input from stakeholders on the development of the template. The template should be adopted by the Commission via Tier 3 advice letter.

42. SED should develop a template for the lessons learned report in advance of the 2020 Wildfire Mitigation Plan due date. SED should hold workshops to solicit input and facilitate cross-utility and cross-stakeholder learning to inform the development of the reports. The template should be adopted by the Commission via Tier 3 advice letter.

43. SED should assist the Commission, in Phase 2 of this proceeding, to develop reasonableness guidelines for assessing de-energization events.

44. R.18-12-005 should remain open to address additional issues in Phase 2.

ORDER

IT IS ORDERED that:

1. Pacific Gas and Electric Company, San Diego Gas & Electric Company, Southern California Edison Company, Bear Valley Electric Service, a division of Golden State Water Company, Liberty Utilities (CalPeco Electric) LLC and PacifiCorp d.b.a. Pacific Power must follow the guidelines set forth in Appendix A to this decision. These guidelines, along with the guidelines adopted in Resolution ESRB-8 will remain in effect unless and until they are superseded by another Commission decision or resolution.

2. Pacific Gas and Electric Company, San Diego Gas & Electric Company, Southern California Edison Company, Bear Valley Electric Service, a division of Golden State Water Company, Liberty Utilities (CalPeco Electric) LLC and PacifiCorp d.b.a. Pacific Power must continue to follow the guidelines adopted in Resolution ESRB-8 unless superseded by the guidelines adopted in this decision.

3. Pacific Gas and Electric Company, San Diego Gas & Electric Company, Southern California Edison Company, Bear Valley Electric Service, a division of Golden State Water Company, Liberty Utilities (CalPeco Electric) LLC and PacifiCorp d.b.a. Pacific Power must make every effort to implement the guidelines set forth in Appendix A in advance of the 2019 wildfire season; however, some of the guidelines will necessarily take additional time to fully deploy. Pacific Gas and Electric Company, San Diego Gas & Electric Company, Southern California Edison Company, Bear Valley Electric Service, a division of Golden State Water Company, Liberty Utilities (CalPeco Electric) LLC and

PacifiCorp d.b.a. Pacific Power must submit two progress reports detailing progress towards implementation of the guidelines set forth in Appendix A to the Director of the California Public Utilities Commission's Safety and Enforcement Division. Pacific Gas and Electric Company, San Diego Gas & Electric Company, Southern California Edison Company, Bear Valley Electric Service, a division of Golden State Water Company, Liberty Utilities (CalPeco Electric) LLC and PacifiCorp d.b.a. Pacific Power must serve the progress reports on the service list of Rulemaking 18-12-005 and post the reports to their websites. The first progress report is due three months after issuance of this decision; the second progress report is due nine months after issuance of this decision. The Commission's Safety and Enforcement Division may request additional progress reports after the initial two ordered herein.

4. Rulemaking 18-12-005 remains open.

This order is effective today.

Dated May 30, 2019, at San Francisco, California.

MICHAEL PICKER
President
LIANE M. RANDOLPH
MARTHA GUZMAN ACEVES
CLIFFORD RECHTSCHAFFEN
GENEVIEVE SHIROMA
Commissioners

Appendix A

APPENDIX A
DE-ENERGIZATION (PUBLIC SAFETY POWER SHUT-OFF) GUIDELINES

Overarching Guidelines

- The purpose of proactive de-energization is to promote public safety by decreasing the risk of utility-infrastructure as a source of wildfire ignitions.
- The electric investor-owned utilities must deploy de-energization as a measure of last resort and must justify why de-energization was deployed over other possible measures or actions.
- Customers should understand the purpose of proactive de-energization, the electric investor-owned utilities' process for initiating it, how to manage safely through a de-energization event, and the impacts if deployed. To accomplish this, the electric investor-owned utilities must:
    - develop and use a common nomenclature that integrates with existing state and local emergency response communication messaging and outreach and is aligned the California Alert and Warning Guidelines.
    - develop notification and communication protocols and systems that reach customers no matter where the customer is located and deliver messaging in an understandable manner.
    - communicate to customers in different languages and in a way that addresses different access and functional needs using multiple modes/channels of communication.

- Deploying de-energization requires a coordinated effort across multiple state and local jurisdictions and agencies. Coordination in preparation for de-energization is a shared responsibility between the electric investor-owned utilities, public safety partners, and local governments; however, the electric utilities are ultimately responsible and accountable for the safe deployment of de-energization. The electric investor-owned utilities must work with the California Governor's Office of Emergency Services to integrate their warning programs with the agencies and jurisdictions within California that have a role in ensuring that the public is notified before, during, and after emergencies.

- The electric investor-owned utilities, emergency responders, and local governments need to be seamlessly integrated when communicating de-energization notifications, with the goal that local governments provide supplemental or secondary notifications in the near future given the primary or initial notification to the public provided by utilities. For now, the utilities retain ultimate responsibility for notification and communication throughout a de-energization event.

- Consequences of de-energization should be treated in a similar manner as any other emergency that may result in loss of power, such as earthquakes, floods or non-utility caused fire events. The electric investor-owned utilities must avoid development of duplicative or contradictory messaging and notification systems to those already deployed by first responders.

- The electric investor-owned utilities must coordinate with California Governor's Office of Emergency Services and the California Department of Forestry and

Fire Protection to engage in a statewide public education and outreach campaign. The campaign must effectively communicate in English, Spanish, Chinese (including Cantonese, Mandarin and other Chinese languages), Tagalog and Vietnamese as well as Korean and Russian where those languages are prevalent within the utilities' service territories. The campaign must convey, in advance of wildfire season, the immediate and increasing risk of catastrophic wildfires and how to prepare for them, the impacts of de-energization, how the public can prepare for and respond to a de-energization event, what resources are available to the public during these events, what to do in an emergency, how to receive information alerts during a power shutoff, and who the public should expect to hear from and when.

- The electric investor-owned utilities must report on lessons learned from each de-energization event, including instances when de-energization protocols are initiated, but de-energization does not occur, in order to further refine de-energization practices. In addition, the utilities must work together to share information and develop best practices across California.

- The electric investor-owned utilities must work together to share information and advice in order to create effective and safe de-energization programs at each utility and to ensure that utilities are sharing consistent information with public safety partners.

Adopted Definitions

- The term 'first responder/emergency responder' refers to those individuals who, in the early stages of an incident, are responsible for the protection and preservation of life, property, evidence, and the environment, including emergency response providers.

The term 'emergency response providers' includes federal, state, and local governmental and nongovernmental public safety, fire, law enforcement, emergency response, emergency medical services providers (including hospital emergency facilities), and related personnel, agencies and authorities.

- The term 'public safety partners' refers to first/emergency responders at the local, state and federal level, water, wastewater and communication service providers, affected community choice aggregators and publicly-owned utilities/electrical cooperatives, the Commission, the California Governor's Office of Emergency Services and the California Department of Forestry and Fire Protection Public safety partners will receive priority notification of a de-energization event, as discussed in subsequent sections.

- The term 'critical facilities' and 'critical infrastructure' refers to facilities and infrastructure that are essential to the public safety and that require additional assistance and advance planning to ensure resiliency during de-energization events. The Commission adopts an interim list of 'critical facilities' and 'critical infrastructure' but notes that the electric investor-owned utilities, in their Wildfire Management Plans, often list additional or differing facilities than those adopted here. The Commission strives to move towards a standardized definition and designation of 'critical facilities' and 'critical infrastructure' on a going forward basis, and the definition adopted here should not be construed as restrictive. The utilities must use the standard term 'critical facilities' or 'critical infrastructure' on a going forward basis in their de-energization procedures and Wildfire Management Plans. The electric investor-owned utilities should

partner with local government and public safety partners in high fire risk areas to develop a list of critical facilities and critical infrastructure in those areas, and the utilities should be prepared to partner with the Commission to adopt a comprehensive list of types of critical facilities and critical infrastructure in the future.

The Commission adopts the following interim list of critical facilities and critical infrastructure, as aligned with Department of Homeland Security's Critical Infrastructure Sectors:[1]

- Emergency Services Sector
  - Police Stations
  - Fire Stations
  - Emergency Operations Centers
- Government Facilities Sector
  - Schools
  - Jails and prisons
- Healthcare and Public Health Sector
  - Public Health Departments
  - Medical facilities, including hospitals, skilled nursing facilities, nursing homes, blood banks, health care facilities, dialysis centers and hospice facilities[2]
- Energy Sector

[1] *See* https://www.dhs.gov/cisa/critical-infrastructure-sectors at 21.

[2] Excluding doctor offices and other non-essential medical facilities.

- Public and private utility facilities vital to maintaining or restoring normal service, including, but not limited to, interconnected publicly-owned utilities and electric cooperatives

- Water and Wastewater Systems Sector
  - Facilities associated with the provision of drinking water or processing of wastewater including facilities used to pump, divert, transport, store, treat and deliver water or wastewater

- Communications Sector
  - Communication carrier infrastructure including selective routers, central offices, head ends, cellular switches, remote terminals and cellular sites

- Chemical Sector
  - Facilities associated with the provision of manufacturing, maintaining, or distributing hazardous materials and chemicals.

- The term 'access and functional needs populations' refers to those populations with access and functional needs as set forth in Government Code § 8593.3. Government Code § 8593.3 list 'access and functional needs populations as follows: …the 'access and functional needs population' consists of individuals who have developmental or intellectual disabilities, physical disabilities, chronic conditions, injuries, limited English proficiency or who are non-English speaking, older adults, children, people living in institutionalized settings, or those who are low income, homeless, or transportation disadvantaged, including, but not

limited to, those who are dependent on public transit or those who are pregnant.

Who Should Receive Notice and When Should Notice Occur?

Notification and Priority

- Recognizing that there may be times when advance notice is not possible due to emergency conditions beyond the electric investor-owned utilities' control, the electric investor-owned utilities must, whenever possible, provide advance notification to all populations potentially affected by a de-energization event. This includes, but is not limited to, public safety partners, critical facilities and infrastructure, access and functional populations, and jurisdictions that are not at threat of a utility-caused wildfire but may lose power as a result of de-energization elsewhere on the system.

- Consistent with the principles of the State Emergency Management System, whenever possible, priority notification should occur to the following entities, at a minimum:[3] public safety partners, as defined herein, and adjacent local jurisdictions that may lose power as a result of de-energization. Notice to all other affected populations, including access and functional needs populations, may occur after the utility has given priority notice; however, access and functional needs populations may require additional notification streams. This guideline is not meant to be restrictive; utilities may provide priority notification to a broader subset of customers, e.g. certain critical facilities, to promote public safety.

[3] The Commission's adopted definition of public safety partners does not include critical facilities and infrastructure beyond water utilities and communication providers. The utility may, in partnership with first/emergency responders and/or local government entities, identify other critical facilities that should receive priority notice. This guideline is intended to set a floor, not a ceiling for priority notification.

Timing of Notification

- Every effort must be made by the electric investor-owned utilities to provide notice of potential de-energization as early as the electric investor-owned utilities reasonably believe de-energization is likely. At a minimum, notification to public safety partners must occur when a utility activates its Emergency Operations Center in anticipation of a de-energization event or whenever a utility determines that de-energization is likely to occur, whichever happens first. In addition, the electric investor-owned utilities must provide notice when a decision to de-energize is made, at the beginning of a de-energization event, when re-energization begins and when re-energization is complete. The electric investor-owned utilities should, whenever possible, adhere to the following minimum notification timeline:
    - 48-72 hours in advance of anticipated de-energization: notification of public safety partners[4]/priority notification entities
    - 24-48 hours in advance of anticipated de-energization: notification of all other affected customers/populations
    - 1-4 hours in advance of anticipated de-energization, if possible: notification of all affected customers/populations[5]

[4] Consistent with Resolution ESRB-8, the electric investor-owned utilities must provide notice to the Commission's Director of the Safety and Enforcement Division.

[5] The Commission appreciates that it may not be possible at this juncture to know exactly when a de-energization will occur and to provide this level of advanced notification. However, the electric investor-owned utilities should strive to communicate that de-energization is imminent.

- When de-energization is initiated: notification of all affected customers/populations[6]
- Immediately before re-energization begins: notification of all affected customers/populations[7]
- When re-energization is complete: notification of all affected customers/populations

Who Should Be Responsible for Notification?

- The electric investor-owned utilities, as the entity with the most knowledge of and jurisdiction to call a de-energization event and subsequent re-energization, retain ultimate responsibility for development of the communication strategy and notification in advance of, during and after a de-energization event. However, the electric investor-owned utilities should immediately begin working with the California Governor's Office of Emergency Services and local governments to develop their notification programs such that, wherever possible, the utilities' notification processes integrate into the Standardized Emergency Management System Framework, with the goal that local governments provide supplemental or secondary notification in the near future based upon pre-designed templates and scripts developed by the utilities in coordination with relevant state and local agencies. Supplemental notification does not supplant the electric investor-owned utilities' responsibility to provide notification to all customers.

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[6] The electric investor-owned utilities must develop methods of communicating with public safety partners recognizing that communication channels may be affected by the loss of power.

[7] Similarly, communication may be affected by the loss of power.

- The utilities must work with the goal of integrating into and leveraging existing outreach and notification systems wherever possible, rather than creating duplicative and potentially conflicting systems to those employed by local jurisdictions/emergency/first responders.

How Should Different Customer Groups Be Identified?

First/Emergency Responders/Public Safety Partners

- The electric investor-owned utilities must work with local and county officials to identify appropriate emergency/first responder points of contact. This may include local government points of contact for jurisdictions that share first responder resources. The electric investor-owned utilities must identify 24-hour contact points and must identify secondary contacts at a minimum and tertiary contacts if possible. The electric investor-owned utilities must also identify primary and secondary means of communication for each contact.
- The electric investor-owned utilities must provide utility personnel 24-hour points of contact, including secondary and tertiary contacts to affected local jurisdictions/first responders.
- The electric investor-owned utilities must identify clear points of contact for all other public safety partners, including affected community choice aggregators, publicly owned utilities/electric cooperatives, water and communications providers. The electric investor-owned utilities must have 24-hour contacts with secondary contacts at a minimum and tertiary contacts if possible. The electric investor-owned utilities must also have clear points of contact at the Commission, the California Governor's Office of

Emergency Services and the California Department of Forestry and Fire Protection.

- To ensure accuracy of contacts, the electric investor-owned utilities are required to update lists annually at least two months in advance of the start of the wildfire season and conduct communication exercises prior to wildfire season to confirm their ability to rapidly disseminate information. The electric investor-owned utilities should work with points of contact to encourage proactive updating of information in the event of a change, beyond the annual update required of the utilities.

Critical Facilities and Infrastructure

- The electric investor-owned utilities must, in addition to developing their own list of critical facilities and critical infrastructure based on the adopted definition, work in coordination with first/emergency responders and local governments to identify critical facilities within the electric investor-owned utilities' service territories. The electric investor-owned utilities must identify 24-hour points of contact and, at a minimum, secondary points of contact. The electric investor-owned utilities must work together with operators of critical facilities and critical infrastructure to identify preferred points of contact (the billing contact may not be the appropriate de-energization contact) and preferred methods of communication.

- To ensure accuracy of contacts, the electric investor-owned utilities are required to update critical facility and critical infrastructure lists annually at least two months in advance of the start of wildfire season. The electric investor-owned utilities should work with points of contact to encourage proactive updating of information throughout the year in the event of a

change, beyond the annual update required of the utilities. The electric investor-owned utilities should prioritize identification of appropriate contacts for critical facilities and infrastructure located within Tier 3 and 2 high fire threat districts, followed by adjacent jurisdictions that may be impacted in the event of de-energization.

- The electric investor-owned utilities, pursuant to Resolution ESRB-8 and in advance of the wildfire season, must proactively partner with critical facility and critical infrastructure representatives to assess the ability of each critical facility to maintain operations during de-energization events of varying lengths. The electric investor-owned utilities must help critical facility and critical infrastructure representatives assess the need for backup generation and determine whether additional equipment is needed, including providing generators to facilities or infrastructure that are not well prepared for a power shut off. Advance education of representatives and preparation of critical facilities and infrastructure is imperative to ensure that public safety is preserved during a de-energization event.

Access and Functional Needs Populations

- The electric investor-owned utilities must make a diligent effort to identify access and functional needs populations within their customer base. The electric investor-owned utilities should review available information including, but not limited to, customers on medical baseline, California Alternative Rate for Energy Program and Family Electric Assistance Program tariffs and customers that require in person notification in advance of service disconnection.[8] In advance of the

[8] See D.12-03-054.

2019 wildfire season, the electric investor-owned utilities should seek to identify and expand registration under their medical baseline tariffs.

- In the spirit of shared responsibility, the electric investor-owned utilities should endeavor to partner with local governments and agencies to encourage identification of access and functional needs populations through those agencies. Recognizing privacy concerns, the Commission does not require the electric investor-owned utilities to develop a comprehensive contact list of access and functional needs customers nor to share individual customer information with local jurisdictions; rather, the Commission encourages that, through local agency partnerships, the electric investor-owned utilities and local jurisdictions can together provide up front education and outreach before and communication during a de-energization event in formats appropriate to individual access and functional needs populations. The electric investor-owned utilities must also develop a plan for expanding identification of access and functional needs customers beyond those customers enrolled in existing utility programs in the event that local agency partnerships are unavailable to assist. The Commission acknowledges that identification of all access and functional needs customers is a goal that may not be fully achievable even with assistance of local jurisdictions; however, the utilities must take all reasonable steps within the boundaries of the law towards that goal in order to protect the safety of access and functional needs populations.

- The electric investor-owned utilities must update contact information for medical baseline customers and provide an opportunity for such customers to select alternative means of contact beyond their preferred

means of contact from the utility for billing and other information.

All Other Customers

- The electric investor-owned utilities must ensure that customer contacts are up-to-date. The Commission recognizes that electric investor-owned utility customer points of contact are necessarily limited, for example a landlord-controlled account will not provide a method of contact for tenants. The electric investor-owned utilities must work with local jurisdictions to leverage all means of identifying and communicating with all people within a de-energized area, including people who may be visiting the area or not directly listed on utility accounts. The Commission expects that this will be an iterative process developed over time.

What Information Should be Included in Notifications in Advance of and Directly Preceding a De-Energization Event?

Advanced Outreach and Education

- With the goal of having a common understanding of situational awareness among public safety partners throughout California, each electric investor-owned utility must clearly articulate thresholds for strong wind events as well as the conditions that define "an extreme fire hazard" (humidity, fuel dryness, temperature) that the electric investor-owned utility evaluates in considering whether to de-energize. This information may vary for different jurisdictions and topographies; however, the information must be provided to and be readily available to public safety partners and the public.[9] The electric investor-owned utilities are

[9] For example, on the utility's website.

afforded discretion to evaluate real-time and on-the-ground information in determining whether to de-energize; adoption of thresholds is not determinative of de-energization.

- To aid in preparation, the electric investor-owned utilities must provide, if requested, relevant geographic information system data, including identification of critical facilities, circuits, and number of medical baseline customers, to local jurisdictions in advance of wildfire season. In addition, the utilities must provide, if requested, operational coordination with public safety partners to ensure such partners have not only the information but also the coordination with the utilities necessary to prepare for de-energization.

- In advance of the 2019 wildfire season, the electric investor-owned utilities, jointly, must immediately oversee development and execution of a statewide Public Safety Power Shut-off education campaign, developed in partnership with the California Governor's Office of Emergency Services and the California Department of Forestry and Fire Protection, that provides education tailored to the needs of stakeholders, including access and functional needs populations, in order to make citizens aware of how to prepare for and obtain information during a prolonged loss of power, including as a result of de-energization. Education and outreach must use best practices outlined in the California Alert and Warning Guidelines to maximize understanding. The electric investor-owned utilities, in coordination with the above-named agencies, must measure effectiveness of education and outreach efforts and adjust efforts accordingly.

- The electric investor-owned utilities must work with local and state public safety partners to develop scripted de-energization templates that can be used by public safety partners leading up to, during, and after a de-energization event. In order to allow jurisdictions

with public alerting authority to send timely and appropriate messages to populations potentially impacted by a de-energization event, the utilities must develop Common Alerting Protocol compliant messages and protocols for use by the designated alert authorities. Whether local jurisdictions choose to utilize their Public Alert and Warning system to notify the public of a de-energization event is at their discretion. The electric investor-owned utilities must also work with state public safety partners (California Governor's Office of Emergency Services, California Department of Forestry and Fire Protection to develop definitions to use for communications and a standardized nomenclature based on existing emergency frameworks.

Notification Preceding a De-Energization Event

- The electric investor-owned utilities must convey to public safety partners at the time of first notification preceding a de-energization event information regarding the upcoming de-energization, including estimated start time of the event, estimated duration of the event, and estimated time to full restoration. The electric investor-owned utilities must use the previously established contact channels developed in advance of the 2019 wildfire season and should strive to provide contact according to the timeframes adopted in these guidelines. The electric investor-owned utilities must provide the number of medical baseline customers in the impacted area to first/emergency responders and/or local jurisdictions.
- For the 2019 wildfire season, the electric investor-owned utilities must, at the time of first notification preceding a de-energization event, make available a Geographic Information System shapefile via a secure data transfer

process depicting the most accurate and specific information possible regarding the boundaries of the area subject to de-energization to all public safety partners whose jurisdictions or service areas will be impacted by the de-energization event, including adjacent jurisdictions or service areas that could lose power as a result of de-energization in a high fire threat district. Going forward, the electric investor-owned utilities must work to provide a secure data transfer of the de-energization boundary in Geographic Information System Representational State Transfer Service format (or other agreed upon format that is rapidly consumable by existing geospatial and situational awareness tools) and must also show affected circuits and any other information that is requested by public safety partners and can reasonably be provided by the utility. The utilities must work towards being able to provide real-time data to public safety partners.

- The electric investor-owned utilities must partner with local public safety partners to communicate with all other customers that a de-energization event is possible, the estimated start date and time of the de-energization event, the estimated length of the de-energization event, which may be communicated as a range, and the estimated time to power restoration, which again, may be communicated as a range. Communications should state when the customer can next expect communication about the de-energization event. Communication, consistent with best practices articulated in the California Alert and Warning Guidelines must answer five key recipient questions: (1) Who is the source of the warning; (2) What is the threat; (3) Does this affect my location; (4) What should I do; and (5) What is the expected duration of the event.

Communications must also point customers towards education and outreach materials disseminated in advance of the 2019 wildfire season.

- The electric investor-owned utilities must provide up-to-date information, including a depiction of the boundary of the de-energization event, on their websites' homepage and a dedicated Public Safety Power Shut-off webpage regarding the de-energization event. The electric investor-owned utilities, in partnership with local public safety partners, must establish and communicate a 24-hour means of contact that customers may use to ask questions and/or seek information.

What Methods Should the Electric Investor-Owned Utilities Use to Communicate a De-Energization Event with the Public?

- The California Alert and Warning Guidelines state that "people rarely act on a single warning message alone. To be effective, warnings should be delivered in various formats via various media, both to increase reliability of warning delivery and to provide a sense of corroboration that will encourage recipients to take protective actions." The electric investor-owned utilities must develop notification strategies for all customer groups affected by de-energization, and the electric investor-owned utilities must partner with local and state public safety partners, whenever possible, to develop notification strategies.. In order to be effective, notifications should be delivered in multiple formats across several media channels, both to increase the potential a message successfully reaches an impacted population and to provide a sense of corroboration that will encourage individuals to take protective actions. Customer notifications should include, but are not limited to, telephonic notification, text message

notification, social media advisories, emails, and messages to agencies that service disadvantaged communities within an impacted area to allow them to amplify any pertinent warnings. Communication methods must consider the geographic and cultural demographics of affected areas, e.g. some rural areas lack access to broadband services. Communications must also be delivered in English, Spanish, Chinese (including Cantonese, Mandarin and other Chinese languages), Tagalog and Vietnamese as well as Korean and Russian where those languages are prevalent within the utilities' service territories.

- The electric investor-owned utilities must develop a strategy for how communication will occur with affected customers once de-energization has begun and during re-energization, recognizing that communication channels may be restricted due to the loss of power. The electric investor-owned utilities should develop this strategy in coordination with public safety partners.

How Should the Electric Investor-Owned Utilities Communicate and Coordinate with Public Safety Partners Before and During a De-Energization Event?

- Consistent with the State Emergency Management System,[10] the electric investor-owned utilities will be responsible for contacting local public safety officials in impacted jurisdictions prior to and during a de-energization event. The electric investor-owned utilities must communicate an impending de-energization event to local and state officials. The

[10] PacifiCorp, as a utility that operates across state lines, requests that it operate consistent with NIMS. This is allowable; however, if a provision of NIMS conflicts with SEMS, PacifiCorp must follow the provisions mandated in SEMS.

electric investor-owned utilities must work with public safety partners to disseminate all information in formats and through processes that are used by public safety partners during other emergencies, including developing notification messaging consistent with the California Public Alert and Warning System. The electric investor-owned utilities must partner with local and state public safety partners to develop notification strategies for all customer groups that comport with the best practices articulated in the California Statewide Alert and Warning Guidelines.

- In advance of the 2019 wildfire season, the electric investor-owned utilities must continue to partner with local jurisdictions, the California Governor's Office of Emergency Services and the California Department of Forestry and Fire Protection to develop a comprehensive, coordinated and cohesive notification framework including, but not limited to, the electric investor-owned utilities providing notification to public safety partners and public safety partners, to the extent they are willing and able, providing secondary or supplemental notification to the general public. Electric investor-owned utilities retain responsibility to ensure notification of affected customers.

- The electric investor-owned utilities, in partnership with local and state public safety partners, must develop notification strategies for access and functional needs populations up to and including in-person notification. The electric investor-owned utilities should strive to develop a coordinated positive/affirmative notification strategy with public safety partners for pre-designated access and functional needs populations. Pre-designated access and functional needs populations should be determined in coordination with public safety partners, whenever possible, but should include customers on medical

baseline tariffs that are dependent upon electricity for the provision of life-sustaining services.

Coordination with Emergency Operation Centers and Incident Command Systems

- If requested by the local jurisdiction, the electric investor-owned utilities must embed a liaison officer at the local emergency operation center. When requested, the utility must also embed a liaison officer at the State Operations Center for the purpose of assessing and integrating wildfire threat data for decision-making. The liaison officers must be empowered to provide rapid and accurate information from the utilities. To ensure consistency of response across jurisdictions, the electric investor-owned utilities should have a designated lead with decision-making authority located at the utility's emergency operations center with whom embedded liaisons can communicate in real-time to obtain the most up-to-date information. This requirement does not preclude the utilities from developing a centralized communication structure that is amenable to both the utility and local jurisdictions to provide real-time coordination and situation awareness.
- Currently, the electric investor-owned utilities form an emergency operation center during each de-energization event. The electric investor-owned utilities must invite representatives from the California Office of Emergency Services, water infrastructure providers, and communication service providers. In the alternative, the utilities may develop a mutually agreeable communications structure with water infrastructure providers and communication service providers in lieu of holding seats in its emergency operations center.

What Information Should be Included in Post-Event Reporting?

- In addition to submitting a report to the Director of the Commission's Safety and Enforcement Division within 10 business days of power restoration, electric investor-owned utilities must serve their de-energization report on the service lists of this proceeding and Rulemaking 18-10-007 or their successor proceedings. Service should include a link to the report on the utility's website and contact information to submit comments to the Director of the Safety and Enforcement Division. The electric investor-owned utilities must actively contact public safety partners involved in the de-energization event to encourage them to provide feedback. The electric investor-owned utilities must also send a copy of the report to the lead local/county public safety agency for the de-energization event.

- Within 15 days of the electric investor-owned utility serving its post-event report, affected stakeholders, including public safety partners, critical facilities and local residents may serve comments on the electric investor-owned utility's post-event report in order to inform SED's reasonableness review. Comments must be submitted to the following address: Safety and Enforcement Division Director, California Public Utilities Commission, 505 Van Ness Avenue, San Francisco, California, 94102. In addition, comments should be served on the service list of Rulemaking 18-12-005 or its successor proceeding.

- In addition to the reporting requirements in Resolution ESRB-8, the electric investor-owned utilities must provide the following information:

    1) Decision criteria leading to de-energization, including an evaluation of alternatives to

de-energization that were considered and mitigation measures used to decrease the risk of utility-caused wildfire in the de-energized area;

2) A copy of all notifications, the timing of notifications, the methods of notifications and who made the notifications (the utility or local public safety partners);

3) If the utility fails to provide advanced notification or notification according to the minimum timelines set forth in these Guidelines, an explanation of the circumstances that resulted in such failure;

4) A description and evaluation of engagement with local and state public safety partners in providing advanced education and outreach and notification during the de-energization event;

5) For those customers where positive or affirmative notification was attempted, an accounting of the customers (which tariff and/or access and functional needs population designation), the number of notification attempts made, the timing of attempts, who made the notification attempt (utility or public safety partner) and the number of customers for whom positive notification was achieved;

6) A description of how sectionalization, i.e. separating loads within a circuit, was considered and implemented and the extent to which it impacted the size and scope of the de-energization event;

7) An explanation of how the utility determined that the benefit of de-energization outweighed potential public safety risks;

8) The timeline for power restoration (re-energization,) in addition to the steps taken to restore power as required in Resolution ESRB-8;

9) Lessons learned from the de-energization event; and

10) Any recommended updates to the guidelines adopted in Resolution ESRB-8 and this decision.

- The electric investor-owned utilities should refer to San Diego Gas & Electric Company's November 11-16, 2018 de-energization report, issued on December 4, 2018, as starting a place for reporting format until the Commission provides further guidance on a standard report template.
- In addition to de-energization reports, the electric investor-owned utilities are required to submit reports on de-energization lessons learned concurrent with their 2020 Wildfire Mitigation Plans, and thereafter, including an evaluation of utility/public safety partnerships. The reports must include a copy of all educational campaigns and outreach made in advance of the wildfire season and an evaluation of their effectiveness. The Commission may consider these reports in other proceedings; however, existing or successor Wildfire Mitigation Plan proceedings are the appropriate place to file these reports at this time.
- The Commission's Safety and Enforcement Division should develop a post-de-energization event reporting template. The

template, at a minimum, should include the information requested herein; however, Safety and Enforcement Division has the discretion to request additional information. Safety and Enforcement Division should solicit input from stakeholders on the development of the template. The template should be adopted by the Commission via Tier 3 advice letter.

- The Commission's Safety and Enforcement Division should develop a template for the lessons learned report in advance of the 2020 Wildfire Mitigation Plan submission date. Safety and Enforcement Division should hold workshops to solicit input and facilitate cross-utility and cross-stakeholder learning to inform the development of the reports. The template should be adopted by the Commission via Tier 3 advice letter.

    - The Commission's Safety and Enforcement Division will continue to review the electric investor-owned utilities reports pursuant to Resolution ESRB-8. The Commission will consider development of reasonableness criteria in Phase 2 of this rulemaking.

Requests to Delay De-Energization and to Re-Energize

- The electric investor-owned utilities should continue to address requests for a de-energization delay on a case-by-case basis. The electric investor-owned utilities must only respond to de-energization delay requests from public safety partners. The electric investor-owned utilities retain ultimate authority to grant a delay and responsibility to determine how a delay in de-energization impacts public safety.

- The electric investor-owned utilities must work with public safety partners in advance of the wildfire season to develop preliminary plans for addressing emergency situations that may arise during de-energization, such

as a non-utility caused wildfire that occurs in a de-energized area that necessitates the use of water for firefighting purposes. Although not a request to delay de-energization, such a situation could result in the public safety being better served by utility lines being re-energized.

De-Energization of Transmission Lines

- The electric investor-owned utilities must design interim protocols for the de-energization of transmission lines based upon the impacts to populations across affected jurisdictions including, but not limited to, publicly-owned utilities/electric cooperatives, adjacent jurisdictions and small/multi-jurisdictional utilities and critical facilities interconnected at the transmission level. The utility must solicit input from stakeholders in developing these protocols, and the utilities shall serve the interim protocols on the service list of Rulemaking 18-12-005 within three months of issuance of this decision.

- In the event of transmission line de-energization, additional coordination may be required with the California Governor's Office of Emergency Services, the California Department of Forestry and Fire Protection, local jurisdictional public safety partners and the California Independent System Operator. The electric investor-owned utilities must also provide notice to the California Independent System Operator of transmission-level de-energization as far in advance as possible. The electric investor-owned utilities must comply with Federal Energy Regulatory Commission and North American Electric Reliability Corporation reliability standards.

- While the Commission explores development of transmission level notification and communication guidelines, the utilities

must employ all relevant notification and communication guidelines adopted herein, in addition to those in Resolution ESRB-8, to the de-energization of transmission lines.

(End of Appendix A)

Appendix B

Appendix B
Preliminary Phase 2 Issues

1. The following list is a summary of the issues proposed for Phase 2 of R.18-12-005, *Order Instituting Rulemaking to Examine Electric Utility De-Energization of Power Lines in Dangerous Conditions*. This list is non-exhaustive and will be addressed further in a subsequent scoping memo opening Phase 2. Analysis and refinement of definitions and utilization of standard lexicon, including but not limited to:
    a. Critical Facilities
        i. Possible addition of transportation sector and Department of Defense facilities?
    b. AFN populations
    c. Medical baseline
    d. Transmission and distribution lines
2. Evaluate and consider refinement of notification and communication guidelines, including education and outreach, to the public (including AFN populations) and public safety partners and critical facilities/infrastructure.
    a. Guidelines for communication and notification if local jurisdiction does not participate in de-energization event.
3. Consider additional or refined processes for reasonableness review, communication protocols, mitigation measures and reporting requirements established in ESRB-8 and this decision.
4. Create comprehensive documentation of all de-energization protocols and guidelines.
5. Overarching de-energization issues

a. Evaluate the use of proactive de-energization and the extent to which it is being used as a method of last resort
b. Analysis of de-energization criteria and thresholds
    i. Evaluate wildfire conditions and consider whether thresholds (e.g. wind speeds, weather conditions, vegetation dryness conditions, etc.) should be defined across utilities and whether to do so would promote the public safety.
    ii. Consider whether "extreme wildfire conditions" can be defined and whether such a definition would promote the public safety.
c. Consider methods to develop more robust contact information for AFN populations and other priority populations, while still maintaining privacy and legal protections.
d. Consider how de-energization should be evaluated as a strategy against other measures, such as vegetation management, grid hardening, etc.?

6. De-energization of transmission lines
    a. Facilities, such as airports and large industrial facilities, may be connected at the transmission level and be impacted differently than in the case of distribution outages.
    b. Consider coordination with public safety partners, CAISO, FERC, and NERC, as well as compliance with requirements from these entities.
    c. Evaluate transmission de-energization impacts and consider how to mitigate and prepare for those impacts.

Consider how to partner with POUs, electric cooperatives and potentially affected adjacent jurisdictions to prepare for and notice transmission level de-energization events.

7. Communication and Notification
    a. Impact of de-energization on methods for communications with the public.
        i. Communication to all levels (public, AFN populations, first responders, critical facilities, etc.) during a de-energization event? How will the utility communicate information if communication services (broadband, text, VOIP) are down?
    b. Standardization of protocols and messaging across utilities to avoid confusion and increase understanding by customers and public safety partners.
    c. Where CCA territories exist, who should be responsible and accountable for notification, education and communication- the electric investor-owned utility, the CCA, or both?
    d. How should non-residents in the area be notified?
8. Public Education on how to prepare for wildfire season and de-energization events
    a. Practices needed by the utilities and other state partners to educate the public on de-energization and re-energization events, including what is entailed during a de-energization event, what tools are available to the public during these events, what to do in an emergency and how to receive information alerts during a power shutoff, and who the public should expect to hear from and when.

b. How to prepare for wildfire season, including potential de-energization.
c. Metrics to gauge whether public education and outreach efforts are effective.

9. Mitigation Measures
   a. Consider developing criteria on deployment of cooling centers and charging stations.
   b. Evaluate deployment of other power sources to critical facilities and possibly AFN populations.
      i. ESRB-8 requirement to provide back-up generation
      ii. Evaluation of back-up generation options.
      iii. Effectiveness of back-up generation for multi-day de-energization events.
   c. Consideration of cost responsibility for de-energization impacts/losses.
10. Re-energization
   a. Speed at which power is reinstated and timing of re-energization.
   b. Conditions for re-energization.
   c. Communications during a re-energization event.
   d. Safety concerns associated with re-energization.
11. Other Issues
   a. How to address increased localized emissions and carbon dioxide emissions from the use of generators as a result of de-energization/ environmental impact of backup generation usage.
   b. Billing issues.
   c. Requests to delay de-energization.

(End of Appendix B)

Appendix C

APPENDIX C: Glossary of Useful Definitions and Abbreviations

A.	Application
AFN	Access and functional needs populations: consists of individuals who have developmental or intellectual disabilities, physical disabilities, chronic conditions, injuries, limited English proficiency or who are non-English speaking, older adults, children, people living in institutionalized settings, or those who are low income, homeless, or transportation disadvantaged, including, but not limited to, those who are dependent on public transit or those who are pregnant
Alert	A communication intended to redirect the attention of recipients to some previously unexpected or unknown circumstance or event
AT&T	AT&T Mobility Wireless Operations Holdings, Inc., Pacific Bell Telephone Company, and AT&T Corp.
Abrams	William B. Abrams
ALJ	Administrative Law Judge
AR	automatic reclosers
Bear Valley or BVES	Bear Valley Electric Service, a division of Golden State Water Company
CAP	Common Alerting Protocol- a standardized digital message format for interoperable communication of public alerts and warnings; the core technology of the California Alert and Warning Guidelines
CCA	Community Choice Aggregators
California Alert and Warning Guidelines	An integrated, interoperable statewide system-of-systems for public alerting and warning by local jurisdictions and state agencies in California
CAISO	California Independent System Operator

CAL FIRE	California Department of Forestry and Fire Protection
CalEnviroScreen	An online tool developed by California Environmental Protection Agency's Office of Environmental Health Hazard Assessment for mapping California communities that are most affected by many sources of pollution.
CalOES	California Office of Emergency Services
CARE	California Alternate Rates for Energy
CASMU	California Association of Small and Multijurisdictional Utilities - Bear Valley, Liberty, and PacifiCorp
CCSF	The City and County of San Francisco
CCTA	California Cable and Telecommunications Association
CESA	California Energy Storage Alliance
CforAT	Center for Accessible Technology
CLECA	California Large Energy Consumers Association
CMUA	California Municipal Utilities Association
CPUC or Commission	California Public Utilities Commission or Commission
Critical Facilities	Facilities that are essential to the public safety and that require additional assistance and advance planning to ensure resiliency during de-energization events. The terms 'critical facilities' and 'critical infrastructure' can be used synonymously. Police Stations; Fire Stations; Emergency Operations Centers; Medical facilities including hospitals, skilled nursing facilities, nursing homes, blood banks, health care facilities, dialysis centers and hospice facilities; Schools and licensed daycare centers; Public and private utility facilities vital to maintaining or restoring normal service, including, but not limited to, interconnected publicly-owned utilities and electric cooperatives; Facilities associated with the provision of drinking water including facilities used to pump, divert, transport, store, treat and deliver water; Communication carrier infrastructure including selective routers, central offices, head ends, cellular switches, remote terminals and cellular sites (or their functional equivalents); Jails and prisons

CSAC	California State Association of Counties
CTIA	Represents the United States wireless communications industry and companies throughout the mobile ecosystem
CUE	Coalition of California Utility Employees
CUEA	California Utilities Emergency Association
CWA	California Water Association
D.	Decision
DACC/EUF	Direct Access Customer Coalition, Energy Users Forum
De-Energization	Process by which utilities turn off electricity, usually to reduce the risk of utility-infrastructure wildfire ignitions; can be also be used during other emergencies.
EBMUD	East Bay Municipal Utility District
Emergency Response Providers	Includes federal, state, and local governmental and nongovernmental public safety, fire, law enforcement, emergency response, emergency medical services providers (including hospital emergency facilities), and related personnel, agencies and authorities
EOC	Emergency Operations Center
EPUC	Energy Producers and Users Coalition
ESRB-8	Commission Resolution that sets out utility de-energization procedures
Farm Bureau	California Farm Bureau Federation
FEMA	Federal Emergency Management Agency
FERA	Family Electric Rate Assistance Program
FERC	Federal Energy Regulatory Commission

First/Emergency Responder	Individuals who, in the early stages of an incident, are responsible for the protection and preservation of life, property, evidence, and the environment, including emergency response providers. The term "emergency response providers" includes federal, state, and local governmental and nongovernmental public safety, fire, law enforcement, emergency response, emergency medical services providers (including hospital emergency facilities), and related personnel, agencies and authorities.
GIS	Geographic Information System
GIS REST	Geographic Information System Representational State Transfer Service
GO	General Order
HFTD	High Fire Threat District- areas where utility infrastructure and operations will be subject to stricter fire-safety regulations
HHZ	High Hazard Zones
HSPD-8	U.S. Department of Homeland Security Presidential Directive Number 8
I.	Investigation
ICS	Incident Command System- a management system designed to enable effective and efficient domestic incident management by integrating a combination of facilities, equipment, personnel, procedures, and communications operating within a common organizational structure.
IOUs or Utilities	Investor-Owned Utilities
IVR	Interactive Voice Response
Joint Communications Parties	Frontier Communications, T-Mobile West LLC dba T-Mobile, Sprint Communications, California Company and the Small LECs, Comcast Phone of California LLC, and Verizon
Joint Local Governments	Counties of Napa, Sonoma, Mendocino, and the City of Santa Rosa
The Joint Water Districts	Municipal Water District of Orange County (MWDOC), Valley Center Municipal Water District (VCMWD), and Padre Dam Municipal Water District (PDMWD)

Liberty CalPeco	Liberty Utilities (CALPECO Electric) LLC
LGSEA	Local Government Sustainable Energy Coalition
Malibu	The County of Los Angeles, City of Malibu
Medical Baseline	Customers who are eligible for Medical Baseline tariffs receive an additional allotment of electricity and/or gas per month. The tariffs are designed to assist residential customers who have special energy needs due to qualifying medical conditions. There are differences among medical baseline tariffs across the utilities.
Mendocino	The County of Mendocino
MGRA	Mussey Grade Road Alliance or Mussey Grade
MWDOC	Municipal Water District of Orange County
Napa	The County of Napa
NCPA	Northern California Power Agency
NERC	North American Electric Reliability Corporation
NIMS	National Incident Management System
Notification	A communication intended to inform recipients of an unscheduled event for which contingency plans are in place.
OES	Office of Emergency Services
OIR	Order Instituting Rulemaking
OSA	The Commission's Office of Safety Advocates
PacifiCorp	Pacific Power, a division of PacifiCorp
PG&E	Pacific Gas and Electric Company
PHC	Prehearing Conference
POC	Protect Our Communities
POU	Publicly Owned Utility
PSPS	Public Safety Power Shut-Off or De-Energization
Public Advocates	The Public Advocates Office of the California Public Utilities Commission

Public Safety Partners	First responders at the local, state and federal level, water and communication providers, CCAs, affected POUs/electrical cooperatives, the Commission, CalOES and CAL FIRE. Public safety partners will receive priority notification of a de-energization event.
Pub. Util. Code	Public Utilities Code
R.	Rulemaking
RCRC	Rural County Representatives of California
Reclosers	Apparatus that allows an energy line to re-energize
Reverse 911	A public alert system most frequently used by safety organizations to alert individuals and businesses to the risk of danger by sending a recorded voice message to landline telephones and registered cellphones within a defined geographical area.
Santa Rosa	The City of Santa Rosa
SB 901	Senate Bill 901
SBUA	Small Business Utility Advocates
SCE	Southern California Edison Company
SDG&E	San Diego Gas & Electric Company
SED	Commission's Safety and Enforcement Division
SEMS	Standardized Emergency Management System- the system required by Government Code §8607 (a) for managing response to multi-agency and multi-jurisdiction emergencies in California. SEMS provides for a multiple level emergency response organization and is intended to structure and facilitate the flow of emergency information and resources within and between the organizational levels.
Shapefiles/KMZ	Computer file extensions used by GIS software.
Sonoma	County of Sonoma
T-Mobile	T-Mobile West LLC dba T-Mobile
TURN	The Utility Reform Network
UCAN	Utility Consumers' Action Network

Warning	A communication encouraging recipients to take immediate protective action in response to some emergent hazard or threat
WEA	Wireless Emergency Alerts - emergency messages sent by authorized government alerting authorities through a mobile carrier.
WMP or Plan	Wildfire Mitigation Plan

(End of Appendix C)

24 May, 2019

Burning concern: Energy storage industry battles battery fires

Author Garrett Hering

Theme Energy

FM Global conducts fire research on a lithium-ion battery storage system at its research center in West Glocester, Rhode Island.

When a 2-MW battery array in Surprise, Ariz. caught fire and subsequently exploded on April 19, it highlighted a troubling reality for the nascent energy storage industry: the sector's momentum, marked by record numbers of deployments, falling prices and expanding state mandates and incentives, could be derailed by a series of well-publicized and, in some cases, little-known incidents involving runaway fires.

As projects proliferate, driven by demand for solutions to integrate intermittent renewables into grid operations and to offset the need for fossil fuels, the industry is being forced to acknowledge that fires, most of them linked to lithium-ion batteries, are occurring with troubling frequency. Incidents over the past year include the blaze in Arizona along with **more than 20 energy storage systems** that have reportedly caught fire in South Korea, putting the world's hottest energy storage market on ice amid a safety probe. Fires linked to lithium-ion batteries also have hit **Europe** and **Australia**.

The events, particularly in South Korea, have begun to take a toll on energy storage companies. Quarterly financial results of two of the world's biggest producers of lithium-ion batteries, LG Chem Ltd. and Samsung SDI Co. Ltd., both South Korea-based, have suffered, adding urgency to the development of enhanced safety standards.

Forced to suspend battery storage installations in South Korea in January, LG Chem's energy solutions business lost 148 billion South Korean won, or roughly $124 million, in the first quarter of 2019, following seven straight quarters of profits. The company does not expect growth to resume in South Korea until the second half of 2019, after the country's Ministry of Trade, Industry and Energy completes an investigation into the causes of the fires, an audit of installed systems and revision of safety standards.

As part of that process, "400-or-so" projects remained offline as of late April, LG Chem CFO Ho-Young (James) Jeong said in a conference call with analysts. After initially forecasting about 80% growth in its energy storage division this year, "it would be challenging to reach around 50% growth," the CFO said.

Samsung SDI's business was also down in the first quarter: net profits fell to 55 billion South Korean won from nearly three times that a year ago, the company reported April 30.

"Because of the fire issue, the domestic [energy storage] market is struggling," Young-No Kwon, an executive vice president at Samsung SDI, said on an earnings call.

'Something is going to happen'

In the United States, an investigation continues into the April 19 fire and explosion at Arizona Public Service Co.'s 2-MW Surprise Battery Storage System that injured a team of firefighters and caused two other plants to temporarily shut down as a precaution. It was the Pinnacle West Capital Corp. subsidiary's second significant blaze at a lithium-ion battery installation after a pilot project was destroyed in a 2012 fire.

Analysis of the 2012 incident revealed critical system design flaws, including a lack of proper ventilation and an inadequate monitoring system, an APS official said in an email. Those shortcomings were supposedly corrected in subsequent installations, but that did not prevent the latest disaster.

The probe into the April blaze looms large for APS, which plans to add at least 850 MW of batteries by 2025, including at existing and new solar farms, and the U.S. storage industry as a whole, given the current dominance of lithium-ion batteries for new projects.

Analysts at IHS Markit expect grid-connected

Arizona Public Service's 2-MW battery storage project in Surprise, Ariz., before a fire in April took it offline.

Source: Arizona Public Service Co.

storage installations in the U.S. to nearly double to 712 MW in 2019, making the U.S. the world's largest battery storage market, as South Korea struggles to overcome its market collapse in the first half of 2019. More than 2,000 MW of energy storage systems will be coupled with solar arrays in the United States between 2019 and 2023, IHS forecasts.

Amid this surge, product safety and fire experts are stepping up research to understand, prevent and respond to fires at energy storage installations, building partly on research into incidents involving electric vehicles, airplanes and consumer electronics.

"In general, it's a very safe technology," Ken Boyce, a principal engineer at product safety certification, testing and advisory firm UL LLC, said in an interview. Lithium-ion battery cells fail at a rate of only around one in every 12 million, he said. Unfortunately, with billions of cells now being installed each year, that means "something is going to happen," he said.

UL's research into "the physics of failure" have revealed repeated problems with the flammable electrolyte in lithium-ion batteries that can cause "thermal runaway," according to Boyce, when an overheated cell turns into a

self-perpetuating cascade. The problem can be triggered by internal defects or external stress factors, such as temperature, that cause one compromised cell to ignite adjacent ones, risking a large-scale fire.

Boyce calls thermal runaway his top safety concern related to lithium-ion batteries. It can also affect other battery types.

UL is among a host of energy storage stakeholders working on enhanced safety practices through a new initiative launched in Phoenix in April, just days before the APS fire in Surprise. Technology and fire safety experts seek to incorporate lessons learned from such failures into updated codes, standards and products.

Mutual insurance provider FM Global Inc. has conducted fire experiments at its research campus in Rhode Island, working with the National Fire Protection Association, or NFPA, to create guidelines for managing risks associated with warehouse storage of lithium-ion batteries used in consumer electronics. FM Global now is bringing its expertise to understanding and minimizing fires involving grid-connected lithium-ion battery storage systems. The work is helping to inform the NFPA's 2020 update of a code for energy storage installations.

"There is a surge happening and we have to be prepared," said Christian Dubay, a vice president and chief engineer at the NFPA. In addition to developing codes and standards, the non-profit organization has created training programs to help first responders react appropriately to fires involving lithium-ion batteries, which can expose people to burns, electrical shocks and toxic substances.

Lithium-ion alternatives

With a rising number of incidents involving lithium-ion batteries, developers of alternative energy storage technologies are making a case for what they say are more benign chemistries. For example, Lockheed Martin Corp.'s growing energy storage business, which currently integrates systems using lithium-ion batteries from external suppliers, is preparing to launch its own

flow battery. Using external tanks and an aqueous electrolyte solution, the technology is safe and stable, according to Richard Brody, director of sales and marketing for energy storage at Lockheed Martin.

"Unlike lithium ion, we don't have a flammable electrolyte," he said.

"Fires are bad for everybody, but people like the fact that our battery is a fire quencher not a fire starter," said Hugh McDermott, senior vice president of business development and sales for storage startup ESS Inc., a flow battery company backed by German chemicals giant BASF AG.

Some lithium-ion battery alternatives, however, have also gone up in flames, cautioned UL's Boyce, noting a 2012 blaze in Hawaii that involved advanced lead-acid batteries installed at a wind farm.

Still, lithium-ion has fueled the battery-storage revolution and continues to be, by far, the most commonly deployed technology. And industry officials continue to lose sleep over possible future fires.

"Lithium-ion batteries can burn," said Ben Ditch, a fire researcher at FM Global. "The fact is the hazard exists. ... It is something a lot of us have been worried about for some time."

As of May 22, US$1 was equivalent to 1,190.44 South Korean won.