

Decision 16-05-036 May 26, 2016

**BEFORE THE PUBLIC UTILITIES COMMISSION OF THE STATE OF CALIFORNIA**

Order Instituting Rulemaking to Develop and Adopt Fire-Threat Maps and Fire-Safety Regulations.

Rulemaking 15-05-006  
(Filed May 7, 2015)

**DECISION ADOPTING FIRE MAP 1**

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## **DECISION ADOPTING FIRE MAP 1**

### **1. Summary**

This decision adopts Fire Map 1 that was developed by the California Department of Forestry and Fire Protection in collaboration with the Commission's Safety and Enforcement Division and the many parties in this proceeding. Fire Map 1 depicts areas of California where there is an elevated hazard for the ignition and rapid spread of power-line fires due to strong winds, abundant dry vegetation, and other environmental conditions. These are the environmental conditions associated with the catastrophic power-line fires that burned 334 square miles of Southern California in October of 2007. A copy of Fire Map 1 is in Appendix A of today's decision.

Fire Map 1 will serve as the foundation for the development of Fire Map 2, which will delineate the boundaries of a new High Fire-Threat District where utility infrastructure and operations will be subject to stricter fire-safety regulations. Importantly, the development of Fire Map 2 will address fire hazards associated with historical power-line fires besides the October 2007 fires in Southern California. These other power-line fires include the Butte Fire that burned 71,000 acres in Amador and Calaveras Counties in September 2015.

Today's decision directs the parties to immediately commence the preparation of a work plan for the development of Fire Map 2.

### **2. Regulatory Background**

In response to devastating wildfires in 2007 that were reportedly ignited by power lines, the Commission in Rulemaking (R.) 08-11-005 adopted regulations to reduce the fire hazards associated with overhead power lines and aerial communication facilities in close proximity to power lines (referred to herein as "power-line fires"). Many of the fire-safety regulations adopted in

R.08-11-005 apply only to areas where environmental conditions pose an elevated hazard for the ignition and rapid spread of power-line fires (referred to herein as “high fire-hazard areas”).

In order for fire-safety regulations to be deployed effectively and at least cost, it is essential to have accurate maps of high fire-hazard areas. To this end, the Commission in R.08-11-005 issued Decision (D.) 12-01-032, which adopted interim fire-hazard maps pending the development of maps that are specifically designed to identify high fire-hazard areas.

In D.14-01-010, the Commission approved a work plan for the first step of a two-step process for the development of a statewide fire-hazard map. The goal of the first step was to develop a scientifically based fire-hazard map that depicts the environmental conditions associated with an elevated potential for the ignition and spread of power-line fires (“Fire Map 1”). The second step was to develop a statewide map that depicts utility fire-hazard zones where the fire-safety regulations adopted in R.08-11-005 for high fire-hazard areas would apply (“Fire Map 2”). Decision D.14-01-010 also accepted the California Department of Forestry and Fire Protection’s (Cal Fire) offer to lead the development of Fire Map 1 using an independent expert team (IET) selected by Cal Fire and funded by several electric utilities. The same decision directed the Commission’s Safety and Enforcement Division (SED) to provide administrative support to Cal Fire and the IET.

On May 7, 2015, the Commission issued Order Instituting Rulemaking (OIR) 15-05-006 as a successor proceeding to R.08-11-005. The scope of R.15-05-006 includes:

1. Develop and adopt Fire Map 1. The purpose of Fire Map 1 is to depict the environmental conditions associated with an elevated potential for utility-associated wildfires.

2. Develop and adopt Fire Map 2. The purpose of Fire Map 2 is to delineate the boundaries of a new High Fire-Threat District where stricter fire-safety regulations adopted in R.08-11-005 and R.15-05-006 will apply.
3. Determine the need for new fire-safety regulations in light of Fire Map 2. These new regulations may include, for example, new standards for the design and operation of overhead utility facilities in the High Fire-Threat District.
4. Assess whether any of the new fire-safety regulations adopted pursuant to Item 3 should apply to existing facilities in the High Fire-Threat District based on cost-benefit considerations and Rule 12 of General Order (GO) 95 and, if so, develop a plan, timeline, and cost estimate for upgrading existing facilities to meet the new regulations.
5. Consider proposals related to the “multiply by” provision in Rule 48 of GO 95, provided that such proposals are consistent with the primary purpose of this proceeding of enhancing the fire safety of overhead utility facilities.<sup>1</sup>
6. Revise GO 95 to include (a) the new High Fire-Threat District, (b) maps of the High Fire-Threat District, and (c) fire-safety regulations developed pursuant to Items 3 - 5.
7. Implementation issues associated with the previous Items, including cost recovery and the timeframe for implementing any new regulations.

Today’s decision addresses the adoption of Fire Map 1 (Item 1, above) that was developed by Cal Fire and the IET working in close collaboration with SED and the many parties in this proceeding.

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<sup>1</sup> D.14-02-015, as modified by D.14-12-089, states at page 69: “To the extent practical, Rule 48 and related rules should reflect location-specific fire hazards. For example, Rule 44 currently specifies a single statewide wind-load safety factor of 4.0 for new Grade A wood poles. We anticipate the fire-threat map(s)... will allow a more granular and cost effective wind-load standard that better protects public safety... We expect that some areas of the State may need to retain the existing standard, some areas may need a higher standard, and in other areas a lower standard may be reasonable.”

### **3. Procedural Background**

The development of Fire Map 1 took much longer than initially anticipated. The first product was delivered on September 3, 2015, when SED served the Draft Fire Map 1 Review and Development Report (hereafter, the “Draft Fire Map 1 Report”) prepared by Cal Fire and the IET.<sup>2</sup> Written comments on the draft report were filed on October 29, 2015, by the Mussey Grade Road Alliance (MGRA), San Diego Gas & Electric Company (SDG&E), and jointly by the following investor-owned electric utilities, communications infrastructure providers, and others (collectively, the “Joint Parties”):

- Bear Valley Electric Service (Bear Valley)
- Liberty Utilities (CalPeco Electric) LLC (Liberty Utilities)
- Pacific Gas and Electric Company (PG&E)
- PacifiCorp d/b/a Pacific Power
- Southern California Edison Company (SCE)
- AT&T California and New Cingular Wireless PCS (AT&T)
- Comcast Phone of California, LLC (Comcast)
- Crown Castle NG West, Inc., LLC (Crown Castle)
- CTIA-The Wireless Association® (CTIA)
- The California Cable & Telecommunications Association (CCTA)
- Consolidated Communications
- The Small Local Exchange Carriers
- Sunesys, LLC (Sunesys)
- Time Warner Cable Information Services (California), LLC
- Verizon California Inc.
- Frontier Communications

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<sup>2</sup> The IET includes experts in the fields of fire science, fire weather climatology, rare events statistics, mechanical engineering, and spatial modeling. (Final Fire Map 1 Report at 8.)

- Sprint Telephony PCS, L.P., and affiliates
- T-Mobile West LLC d/b/a T-Mobile

Reply comments were filed on November 9, 2015, by the City of Laguna Beach, MGRA, and SDG&E.

A two-day public workshop was held on November 12 - 13, 2015, to review the Draft Fire Map 1 Report.<sup>3</sup> The workshop included presentations by the IET, Reax Engineering (Reax) representing many of the Joint Parties, and SDG&E regarding methodologies and datasets for preparing Fire Map 1.

The parties resolved several technical issues during the workshop but could not reach a consensus on the IET's initial version of Fire Map 1. At the conclusion of the workshop, the assigned Administrative Law Judge (ALJ) encouraged parties to work collaboratively to resolve outstanding issues and reach a consensus.

Following the workshop, Cal Fire, the IET, Reax, SED, and the parties expended considerable effort in collaboratively resolving technical issues regarding Fire Map 1.<sup>4</sup> On February 3, 2016, an all-party status conference was held with the assigned ALJ to review progress on Fire Map 1. On February 16, 2016, SED filed and served the Final Map Review and Development Report (hereafter, "Final Fire Map 1 Report"), which included the final "print" version of Fire Map 1 and the datasets and models that comprise Fire Map 1.<sup>5</sup>

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<sup>3</sup> OIR 15-05-006 at 11, directed SED to "convene public workshops where: (1) Cal Fire and its experts will explain their recommendations, and (2) stakeholders may present alternative recommendations."

<sup>4</sup> Reax's participation in this proceeding has been very constructive with respect to correcting, refining, and improving Fire Map 1.

<sup>5</sup> The datasets and computer models that comprise Fire Map 1 were filed on a hard drive.

On February 29, 2016, SED filed and served the report for the workshops held on November 12 - 13, 2015 (hereafter, the "Workshop Report"). SED submitted the Workshop Report on behalf of itself and the following parties: AT&T; Bear Valley; CCTA; Cal Fire and the IET; California Municipal Utilities Association; City of Laguna Beach; Comcast; Crown Castle; CTIA; Desert Research Institute; Liberty Utilities; Los Angeles County Fire Department; Los Angeles Department of Water and Power; Modesto Irrigation District; MGRA; PG&E; PacifiCorp; SDG&E; Spatial Informatics Group; SCE; Sunesys; and The Utility Reform Network.

Written comments on the Workshop Report were filed on March 10, 2016, by the Joint Parties and the City of Laguna Beach. Reply comments were filed on March 21, 2016, by MGRA, SDG&E, and SED on behalf of itself, Cal Fire, and the IET. The deadline to file motions for evidentiary hearings was March 28, 2016. No such motions were filed.

#### **4. Summary of Fire Map 1**

The purpose of Fire Map 1 is to depict those areas of California where environmental conditions pose an elevated hazard for the ignition and rapid spread of power-line fires.<sup>6</sup> To achieve this objective, Fire Map 1 divides California into a grid in which each cell is 2 kilometers (km) by 2 km, or 4 km<sup>2</sup>. The IET used the Weather Research and Forecasting (WRF) model and historical weather data for the ten-year period of 2004 - 2013 to reconstruct each cell's hourly fire weather over the ten-year period using the Fosberg Fire Weather Index (FFWI) for temperature, humidity, and wind gusts. The IET extracted the

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<sup>6</sup> OIR 15-05-006 at 6; and D.14-01-010 at 2 and 10.

73 maximum daily FFWI values (top 2%) for each cell over the 10-year period to describe the nature and likelihood of severe fire weather across space.<sup>7</sup> The 73 records for each cell are referred to as the “fire-weather dataset.”

Next, the IET developed the Ignition Potential Index (IPI) to estimate the likelihood of utility-related fires during severe fire-weather conditions. The IPI uses (1) wind force as a proxy for the likelihood that overhead utility facilities might produce a spark that could ignite a fire, and (2) the Schroeder Ignition Probability to describe the likelihood that an ember will ignite vegetation fuel beds. The IPI was calculated using the maximum hourly wind gust for each of the 73 records in the fire-weather dataset for each cell. All 73 IPIs were averaged to create the cell’s final IPI.<sup>8</sup>

To model the spread of fires ignited by overhead utility facilities, the IET developed the Fire Spread Potential Index (FSPI). The FSPI uses a model called GridFire to simulate fire spread based on specified terrain, vegetation fuel complexes, and weather conditions. To determine the FSPI for each cell, the IET randomly selected 1,000 discrete ignition points in each cell coupled with a random draw from the 73 records in the cell’s fire-weather dataset. Each discrete ignition served as the initial condition to simulate fire spread over a one-hour period by the GridFire model. For each model run, the IET created a three-dimensional index equal to the area burned (in acres) multiplied by the average

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<sup>7</sup> The Final Fire Map 1 Report at 20, Figure 10, provides a statewide map that shows the average value of the FFWI for each cell based on the 73 records for each cell in the fire-weather dataset.

<sup>8</sup> The Final Fire Map 1 Report at 23, Figure 11, provides a statewide map that shows the IPI for each cell.

flame length (in feet) to arrive at fire volume (acre-feet). The FSPI for each cell is the average fire volume for all 1,000 simulations.<sup>9</sup>

The final step in the development of Fire Map 1 was to calculate the Utility Fire Threat Index for each cell, which is equal to the IPI multiplied by the FSPI. Fire Map 1 is a visual depiction of the Utility Fire Threat Index for each cell.<sup>10</sup>

A print copy of Fire Map 1 is contained in Appendix A of today's decision. The yellow to red colors on Fire Map 1 are areas in the top 50% of the Utility Fire Threat Index. All areas in the top 50% have a history of large fires.<sup>11</sup>

This simplified description of Fire Map 1 should not obscure the enormous effort needed to develop Fire Map 1. Cal Fire and the IET, in collaboration with Reax, SED and the parties, had to identify, obtain, and merge huge datasets for weather, topography, vegetation, and other variables.<sup>12</sup> They also had to develop or modify complex models that employed these datasets. Running one of the models required supercomputers at the Argonne National Laboratory.<sup>13</sup>

Cal Fire and the IET acknowledge that Fire Map 1 has several limitations that constrain its usefulness as a tool for designating areas where stricter fire-safety regulations should apply. These limitations include:

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- <sup>9</sup> The Final Fire Map 1 Report, at page 32, Figure 15, provides a statewide map that shows the FSPI for each cell.
- <sup>10</sup> The Final Fire Map 1 Report at 36, Figure 17, provides a statewide map that shows the Utility Fire Threat Index for each cell.
- <sup>11</sup> The Final Fire Map 1 Report at 35.
- <sup>12</sup> One of the datasets is approximately 1,240 terrabytes.
- <sup>13</sup> Final Fire Map 1 Report, at pages 12 and 15. Letters from assigned Commissioner Florio and the Commission's Executive Director helped to secure access to supercomputer resources.

- The spatial resolution of Fire Map 1 is 4 km<sup>2</sup> for each cell, and Fire Map 1 assigns a single Utility Fire Threat Index rating to each cell. However, within a cell there may be variation in the actual Utility Fire Threat Index.
- The climate reconstruction model used to produce the Fosberg Fire Weather Index (FFWI) for each cell makes several simplifying assumptions regarding the maximum wind-gust speed that occurred in a cell during each hour over a ten-year period. There is likely much greater special variation in wind-gust speeds than assumed by Fire Map 1, and wind-gust speeds may be underestimated by 20% or more in some areas.
- The FFWI for each cell is based on historical weather data for spatial scales that exceed the cell size of 4 km<sup>2</sup>. The FFWI for each cell was not validated at scales smaller than 4 km<sup>2</sup> against historical observations at Remote Automatic Weather Stations.
- The FFWI for each cell is based on ten years of historical weather data, which may not adequately represent the frequency and magnitude of severe fire weather.
- Fire Map 1 was not validated against historical fires.
- Fire Map 1 is based on a snapshot of weather and vegetation patterns that need to be updated periodically.

## **5. Summary of the Workshop Report**

The Workshop Report provides background information regarding the development of Fire Map 1, a summary of Fire Map 1, and a brief description of resolved issues and outstanding issues.

### **5.1. Resolved Issues**

#### **5.1.1. Climatology Data**

The historical climatology data used to prepare Fire Map 1 contained errors, which the IET corrected in coordination with Reax. With these corrections, the parties agreed to use the IET's dataset to prepare Fire Map 1.

### **5.1.2. Wind Input**

The parties agreed to use wind gusts in the Ignition Potential Index. This index is defined as the Schroeder Ignition Probability multiplied by wind-gust speed squared. The parties further agreed to use wind gust speed at 10 meters above ground level, as determined by the WRF model, multiplied by 1.62.<sup>14</sup>

### **5.1.3. Surface Fuel Input**

Fire Map 1 uses surface fuel data from a dataset known as LANDFIRE. While generally correct, the parties agreed to modify LANDFIRE to increase the accuracy of Fire Map 1's fire-spread model. Specifically, the parties agreed to use Wildlife Habitat Relationships attributes in a statewide vegetation dataset maintained by Cal Fire to replace certain fuel classifications in LANDFIRE.

### **5.1.4. Live Fuel Moisture Input**

The fidelity of Fire Map 1's ignition model and fire-spread model depends, in part, on accurate maps of live fuel moisture. However, accurately mapping live fuel moisture is a challenge because there is considerable variation in vegetation moisture, both seasonally and across California.

The IET and Reax developed a dataset for the variation of live fuel moisture using measured fuel moisture data from approximately 175 weather stations across California. The IET and Reax averaged the fuel moisture data from 2012 - 2015 for the months of July, August, September, and October; spatially interpolated the averaged data to 20 km<sup>2</sup> resolution; and incorporated this information into Fire Map 1.

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<sup>14</sup> The wind-gust speeds used to prepare Fire Map 1 are not intended to be a design standard for utility structures.

#### **5.1.5. Adoption of Fire Map 1**

With the exception of the City of Laguna Beach, all parties support the Commission's adoption of Fire Map 1, provided that it is clear that Fire Map 1 may be refined and adjusted during the development of Fire Map 2.

#### **5.1.6. Update Cycle for Fire Map 1**

The parties agreed that Fire Map 1, with any additional refinements and adjustments that are implemented as part of the development of Fire Map 2, would not need to be updated for at least ten years.

#### **5.1.7. Action Items for Fire Map 2**

Cal Fire, the IET, Reax, and the parties agreed to address the following issues as part of the planning and development of Fire Map 2:

- Examining vegetation issues in low wind areas.
- Including utility knowledge of local conditions in setting the boundaries of the High Fire-Threat District.
- Investigating whether wind should be a factor in the definition of the High Fire Threat District and whether wind should apply differently in Northern California and Southern California.

#### **5.2. Unresolved Issue - Fire Spread Modeling**

The parties did not reach full agreement on the Fire Map 1 model for fire spread and fire volume. This issue includes bias in wind direction, linkage between surface fire and crown fire, and fire spread in response to wind direction. The parties agreed to consider further work on fire-spread modeling when drafting the Fire Map 2 Work Plan.

## **6. Summary of Comments on the Workshop Report**

### **6.1. City of Laguna Beach**

The City of Laguna Beach (hereafter, “City” or “City of Laguna Beach”) objects to Fire Map 1 because the map shows the City is in a low fire-hazard area. The City declares that contrary to Fire Map 1, the City faces a very high fire risk because of challenging topography, older development patterns, and 16,000 acres of open space surrounding the City. Compounding the fire risk is a highway adjacent to the open space that is lined with SCE utility poles that have been associated with at least 46 vehicle accidents and several fires in recent years.

The high fire risk the City faces is demonstrated by a fire in 1993 that burned 14,333 acres, damaged and destroyed 441 homes, and caused approximately \$838 million in damage. In addition, there have been at least five fires in recent years that involved power-line facilities, including a 15-acre fire on July 3, 2015, that was caused by downed power lines.

The City does not contest that Fire Map 1 accurately depicts open spaces full of dry vegetation as having a high wildfire risk. The problem, according to the City, is that Fire Map 1 depicts developed areas such as the City as having a very low wildfire risk, despite a history of fires. The City believes the Commission should not adopt Fire Map 1 without correcting what appears to be the exclusion of developed communities from high wildfire risk categories.

The City also asks the Commission to state that Fire Map 1 is only an interim step for the development of Fire Map 2 and should not be used for public policy decisions or the allocation of resources. Otherwise, utilities may use Fire Map 1 to claim that communities like the City are not at risk for wildfires.

Lastly, the City urges the Commission to encourage utilities to enter into wildfire safety partnerships with at-risk communities, such as the City, for the purpose of taking steps to reduce the consequences of wildfires.

## **6.2. Joint Parties**

The Joint Parties aver that Fire Map 1 is a major step forward in developing a spatial fire-hazard model. However, the Joint Parties contend that Fire Map 1 has several limitations and unresolved issues that need to be considered during the development of Fire Map 2.

First, the Joint Parties state that Fire Map 1 has not been validated against historical fires and local knowledge of fire hazards. Therefore, the Workshop Report's statement that "the parties... reached consensus on the IET's version of Fire Map 1,<sup>15</sup>" while accurate, needs clarification. The Joint Parties believe that adjustments to reflect historical fires and local knowledge must be considered in the development of Fire Map 2.

Second, Fire Map 1 uses live fuel moisture as variable for both fire ignition and fire spread. For modeling purposes, the live fuel moisture for each grid cell is the average moisture for the cell during the 4-month period of July - October. The problem with this approach, according to the Joint Parties, is that it uses a static measure of live fuel moisture instead of continually changing moisture levels. For example, live fuel moisture is likely higher in July than September, and likely higher than the 4-month average. Consequently, using a 4-month average for live fuel moisture with worst-case fire weather may occur in spring, before fuels have dried, would overestimate the fire hazard. For these reasons,

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<sup>15</sup> Workshop Report at 4.

the Joint Parties recommend that during the development of Fire Map 2, the dates associated with the top two percent of the climatology that drives both the fire ignition and fire spread models be reviewed to see how these dates compare with the 4-month window used to develop average live fuel moisture.

Third, the Joint Parties state that the LANDFIRE surface fuel dataset used in Fire Map 1 may overstate the fire hazard in some areas because it assumes continuous vegetation. In reality, there are areas where vegetation is sparse or discontinuous and therefore propagate fire slowly, if at all, such as desert shrub lands. The Joint Parties request that this issue be further analyzed during the development of Fire Map 2.

Fourth, as noted in the Workshop Report, the parties did not reach full agreement regarding Fire Map 1's model for fire spread and fire volume. For example, simulated ignition points near ridge tops exhibited counterintuitive fire spread behavior. The Joint Parties recommend further analysis of fire spread and fire volume during the development of Fire Map 2.

Fifth, the Joint Parties submit that the development of Fire Map 2 needs to recognize that Fire Map 1 has a resolution of 4 km<sup>2</sup>. As noted in Section 9 of the Final Fire Map 1 Report, "while results are a huge step forward in understanding spatially explicit details of existing fire hazard across California, results are still much coarser than those desired by many stakeholders that need to make management and planning decisions at highly localized scales."<sup>16</sup>

Sixth, Fire Map 1 includes non-burnable area such as large bodies of water (e.g., Lake Tahoe) and Central Valley agricultural areas. The Joint Parties

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<sup>16</sup> Final Fire Map 1 Report at 36.

recommend that evaluation of excluded areas and addition of new excluded areas be considered during the development of Fire Map 2.

Finally, the Joint Parties acknowledge the concern expressed by the City of Laguna Beach that Fire Map 1 places the City in a low fire-hazard area. The Joint Parties believe the City's concern can be addressed during the development of Fire Map 2, which will consider local knowledge of fire hazards.

### **6.3. Mussey Grade Road Alliance**

MGRA states that while all parties agree that certain types of adjustments and validation may be appropriate during the development of Fire Map 2, it is important to ensure that these are carefully overseen. To this end, MGRA recommends that Cal Fire have a supervisory role in the development of Fire Map 2. This will ensure that adjustments are developed collaboratively with Cal Fire and are applied in a consistent and scientifically sound manner.

MGRA acknowledges the concern raised by the City of Laguna Beach that Fire Map 1 assigns a low wildfire hazard to developed communities, even though developed communities such as Laguna Beach face a high risk for the consequences of wildfires. MGRA responds that Fire Map 1 is purposely limited to identifying areas where there is an elevated potential for utility-related fires to ignite and spread rapidly. MGRA agrees with the Joint Parties that addressing the consequences of wildfires should be deferred to Fire Map 2.

MGRA opines that the data cited by the City to support its claim that Laguna Beach faces a higher fire risk than shown on Fire Map 1 suggests that the City may not understand that the intent of this proceeding is to reduce the risk of catastrophic fires ignited by utility facilities. Specifically:

- The cause of the catastrophic 1993 Laguna Fire cited in the City's comments is listed by Cal Fire as "arson",<sup>17</sup> not power lines.
- Among the fire ignition causes listed by Laguna Beach are transformer fires and vehicle-pole collisions, which are probably not correlated with severe fire weather that causes small power-line fires to grow into catastrophic fires.
- Frequent ignition of power-line fires under normal conditions is not unique to Laguna Beach. For example, there were 289 power-line fires in SDG&E's service territory during the period of 2003 - 2015.

MGRA asserts that the most catastrophic power-line fires in California history ignited in less developed areas and then grew explosively under severe fire-weather conditions characterized by strong winds, low humidity, and elevated temperatures. For instance, the Witch Fire in 2007 was ignited by overhead utility facilities in a remote area and travelled 29 miles from its ignition point. MGRA submits that the primary goal of this proceeding is to ensure that utility fires do not become megafires by specifically addressing utility infrastructure in areas with abundant fuels and severe fire weather.

That said, MGRA agrees that power-line fires that ignite in developed areas under fire-weather conditions can pose a grave risk to communities. MGRA concurs that this is an appropriate topic for Fire Map 2. However, MGRA cautions against artificially inflating fire risk in developed areas because megafires typically do not start where people live.

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<sup>17</sup> Cal Fire; Top 20 Most Damaging California Wildfires; [http://www.fire.ca.gov/communications/downloads/fact\\_sheets/Top20\\_Damaging.pdf](http://www.fire.ca.gov/communications/downloads/fact_sheets/Top20_Damaging.pdf); downloaded 3/20/2016.

#### **6.4. Safety and Enforcement Division**

SED filed reply comments on behalf of itself, Cal Fire, and the IET. SED states that the Joint Parties' comments erroneously focus on issues relating to Fire Map 2. The issue before the Commission, SED asserts, is whether to adopt Fire Map 1. SED requests that the Commission adopt Fire Map 1 as is and address Fire Map 2 issues during the development of Fire Map 2.

SED represents that Cal Fire and the IET broadly agree with the Joint Parties that Fire Map 1 should be validated against historical fire records as part of the development of Fire Map 2. However, SED cautions that validation against most historical fires is relevant only to assessing Fire Map 1's fire-spread model, as most historical fires were not ignited by utility facilities.

SED also advises against spending too much effort in fine-tuning the influence of live fuel moisture on fire spread as suggested by the Joint Parties. SED reports that it is Cal Fire and the IET's expert opinion that the effect of live fuel moisture on fire spread is modest compared to other factors.

In response to the concerns raised by the City of Laguna Beach, SED opines that the City misconstrues Fire Map 1 as a "fire risk" map. In reality, Fire Map 1 depicts the potential for utility-related fires to ignite and spread rapidly, not risks to lives and property. SED adds that the City's concerns about fire risks specific to its location can be addressed during the development of Fire Map 2.

#### **6.5. SDG&E**

SDG&E avers that Fire Map 1 is a good starting point for development of Fire Map 2. SDG&E recommends the following steps to transform Fire Map 1 into Fire Map 2:

1. **Display Fire Map 1 by Fire-Threat Tiers** across the utility's service territory. SDG&E suggests a three or four Tier system.
2. **Layer electric facilities** against the backdrop of Fire-Threat Tiers.
3. **Adjust the Tier boundaries** with the following in mind:
  - Local fire history.
  - Areas known to have extreme winds during the local fire season.
  - Areas with a history of weather-related outages.
  - Areas with a history of car-pole accidents.
  - Downwind risk to communities.
  - When adjusting Tier boundaries, err on the side of enlarging the higher Fire-Threat Tier.
4. **Adjust Tier Boundaries Based on Fire Impacts.**
  - Threats to life, property, infrastructure, and the environment.
  - Access and travel times for firefighting resources.
  - Societal costs such as evacuations and employment disruption.
5. **Tier Boundaries Should Make Operational Sense.**
  - All of a circuit should be in the same Tier when the fire-threat logic of doing so is defensible. This will provide for efficient and effective inspection, maintenance, mapping, etc.
  - There should be logical isolation points on circuits that cross Tier boundaries such as switches, fuses, etc.
6. **Process and Documentation.**
  - Additions and exclusions of high fire-hazard areas relative to Fire Map 1 should follow a clearly defined process of selection and justification. All exclusions and significant inclusions should be documented.

SDG&E agrees with the Joint Parties that (1) Fire Map 2 should incorporate local knowledge of terrain, vegetation, weather, and other factors; and (2) the City of Laguna Beach's issues can be addressed in Fire Map 2.

## **7. Discussion**

### **7.1. Adoption of Fire Map 1**

The main issue in today's decision is whether to adopt Fire Map 1. The purpose of Fire Map 1 is to accurately depict areas of the State where environmental conditions pose an elevated hazard for the ignition and rapid spread of power-line fires. Once adopted, Fire Map 1 will be the foundation for the development of Fire Map 2, which will designate the boundaries of a newly created High Fire-Threat District where stricter fire-safety regulations adopted in R.08-11-005 and possibly this proceeding will apply.<sup>18</sup> The ultimate objective is to prevent devastating power-line fires like those in October 2007.

In October 2007, strong Santa Ana winds swept across Southern California and caused dozens of wildfires. The resulting conflagration burned more than 780 square miles, killed 17 people, and destroyed thousands of homes and buildings. Hundreds of thousands of people were evacuated at the height of the fire siege. Transportation was disrupted over a large area for several days, including many road closures. Portions of the electric power network, public communication systems, and community water sources were destroyed. Several of the worst wildfires were reportedly ignited by power lines. These included the Grass Valley Fire (1,247 acres), Malibu Canyon Fire (4,521 acres), Rice Fire

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<sup>18</sup> The fire-safety regulations adopted in R.08-11-005 are currently being implemented using interim fire-hazard maps adopted by D.12-01-032.

(9,472 acres), Sedgewick Fire (710 acres), and Witch Fire (197,990 acres). The area burned by these five power-line fires exceeded 334 square miles.

These power-line fires were reportedly ignited when strong Santa Ana winds damaged overhead utility facilities in remote locations with flammable vegetation. Once ignited, the fires spread uncontrollably in severe fire-weather conditions of strong winds, low humidity, and elevated temperatures.

Fire Map 1 is specifically designed to identify areas where environmental conditions pose an elevated hazard for the ignition and rapid spread of the power-line fires. Cal Fire supervised the development of Fire Map 1 by a team of experts working collaboratively with SED, Reax, and the many parties in this proceeding. Except for the City of Laguna Beach, all parties agree that Fire Map 1 is scientifically sound and should be adopted by the Commission.<sup>19</sup>

We conclude that it is reasonable to adopt Fire Map 1 as the foundation for the development of Fire Map 2. The adopted map may be adjusted by the Commission during the development of Fire Map 2.

The Joint Parties identified several issues regarding Fire Map 1 that they believe should be addressed during the development of Fire Map 2. We will defer these issues to the Fire Map 2 Work Plan described below.

We emphasize that Fire Map 1 adopted by today's decision is an interim product. As described in more detail below, our development of the final product – Fire Map 2 – will address fire hazards associated with historical power-line fires besides the October 2007 fires in Southern California. These

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<sup>19</sup> We acknowledge the City's position that Fire Map 1 incorrectly assigns a low Utility Fire Threat Index rating to the City of Laguna Beach. We will consider this matter further during the development of Fire Map 2, as described in Sections 7.3 and 7.5.1, below.

other power-line fires include the Butte Fire that burned 71,000 acres in Amador and Calaveras Counties in September 2015.

## **7.2. No Need to Re-Submit Fire Map 1**

In OIR 15-05-006, the Commission anticipated that following its decision adopting Fire Map 1, the map would be finalized to incorporate any changes necessitated by the decision and submitted to the Commission via a Tier 1 advice letter.<sup>20</sup> We conclude that it is not necessary to submit Fire Map 1 via an advice letter because today's decision does not alter the Fire Map 1 that was filed on February 16, 2016, as part of the Final Fire Map 1 Report.

The Fire Map 1 that was filed on February 16, 2016, shall serve as the map adopted by today's decision. A visual depiction of the adopted Fire Map 1 is contained in Appendix A of today's decision and the Final Fire Map 1 Report. The datasets and models that comprise Fire Map 1 are contained on the hard drive that was filed on February 16, 2016, as part of the Final Fire Map 1 Report.

## **7.3. Interim Use of Fire Map 1**

Decision 12-01-032 adopted interim fire-hazard maps that designate high fire-hazard areas where stricter fire-safety regulations adopted in R.08-11-005 apply. Electric utilities and communications infrastructure providers shall continue to use the interim fire-hazard maps for this purpose until the interim maps are replaced by Fire Map 2.

The purpose of Fire Map 1 is to serve as the foundation of Fire Map 2. Despite this limited purpose, we decline to adopt the City of Laguna Beach's recommendation to prohibit the use of Fire Map 1 to identify areas where stricter

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<sup>20</sup> OIR 15-05-006 at 11 – 12 and Appendix A.

fire-safety measures should be implemented pending the development and adoption of Fire Map 2. The City does not contest that areas on Fire Map 1 with a high Utility Fire Threat Index rating have an elevated hazard for the ignition and rapid spread of power-line fires.<sup>21</sup> We believe it would be reckless to prohibit electric utilities and communications infrastructure providers (CIPs) from using Fire Map 1 to protect public safety in areas that are identified by the map as having an elevated hazard for power-line fires.

For the previous reasons, we conclude that it is reasonable to authorize, but not require, electric utilities and CIPs to use Fire Map 1 to supplement the interim fire-hazard maps adopted by D.12-01-032. For example, if Fire Map 1 depicts an area with a high Utility Fire Threat Index rating, utilities may implement in this area the stricter fire-safety regulations adopted in R.08-11-005, even if the area is not labeled as a high fire-hazard area on the interim maps.

We acknowledge the City's position that Fire Map 1 incorrectly assigns a low Utility Fire Threat Index rating to the City of Laguna Beach. We will consider this matter during the development of Fire Map 2. The City will have an opportunity at that time to show that historical fires and other factors demonstrate that the City of Laguna Beach should be designated as a high fire-hazard area on Fire Map 2.<sup>22</sup>

Finally, consistent with the City's recommendation, we encourage utilities to engage in dialog with communities that face an elevated fire risk. If SCE has not done so already, we encourage SCE to meet with City officials to explain the

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<sup>21</sup> City of Laguna Beach Comments at 1 and 3.

<sup>22</sup> SDG&E suggests that high fire-hazard areas may be expanded relative to Fire Map 1 to reflect utility-related fire hazards associated with developed areas, such as vehicle-pole accidents.

fire-safety regulations in GO 95, GO 165, and GO 166,<sup>23</sup> and to discuss what additional measures may be warranted for the Laguna Beach area.

#### **7.4. Coordination with the Governor's Proclamation**

On October 30, 2015, Governor Brown issued a Proclamation of a State of Emergency (Proclamation) regarding an epidemic of tree mortality caused by severe drought and a massive bark beetle infestation, resulting in worsened wildfire risk in much of the State, among other significant impacts. To cope with the emergency, the Proclamation directs Cal Fire and other State agencies to identify areas that represent high hazard zones for wildfire and falling trees (hereafter, "high hazard zones") and to endeavor to remove dead or dying trees in high hazard zones. Among the Proclamation's other directives are orders for the Commission to use its authority to direct electric utilities to procure energy from bioenergy facilities that use feedstock from the high hazard zones and to facilitate interconnection of the same.<sup>24</sup> The Commission is currently implementing its directives via Resolution E-4770 (March 17, 2016), R.15-02-020,<sup>25</sup> and other means.

The high hazard zones designated by Cal Fire pursuant to the Governor's Proclamation depict areas where there is elevated tree mortality close to infrastructure or resources that would be harmed by wildfire and/or falling

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<sup>23</sup> These fire-safety regulations include (i) shorter inspection intervals, stricter vegetation management standards, and priority of repairs in high fire-hazard areas; and (ii) a requirement to submit plans to prevent power-line fires during extreme fire weather.

<sup>24</sup> Proclamation, at Ordering Paragraphs 1, 2, and 8 - 10.

<sup>25</sup> See, for example, the ALJ ruling issued in R.15-02-020 on February 12, 2016.

trees. However, these zones are not equivalent to Fire Map 1.<sup>26</sup> Nonetheless, because high hazard zones represent areas where recent vegetation mortality has resulted in a worsened wildfire risk and a statewide emergency, we conclude that these zones should inform the development of Fire Map 2 as noted in Section 7.5.1, below.

Fire Map 1 adopted by today's decision does not affect or supersede the map of high hazard zones prepared by Cal Fire pursuant to the Proclamation. More generally, today's decision should not be interpreted in a way that impedes or delays any actions that may be taken by the Commission, Cal Fire, electric utilities, or others to implement the Proclamation.

## **7.5. Next Steps**

### **7.5.1. Development of Fire Map 2**

As required by OIR 15-05-006, the Fire Safety Technical Panel<sup>27</sup> (Panel) shall convene as soon as practical to prepare a detailed work plan for the development, adoption, and implementation of Fire Map 2. All parties may participate in the Panel. The Panel shall be co-chaired by SED, SCE, and any other parties designated by SED and SCE.

The Fire Map 2 Work Plan shall address:

- The matters identified in the *Assigned Commissioner's Amended Scoping Memo and Ruling* that was issued in R.08-11-005 on May 15, 2013 at 10 - 12, to the extent these matters pertain to Fire Map 2.

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<sup>26</sup> High hazard zones can be viewed via the online map viewer on the Tree Mortality Task Force website, <http://www.fire.ca.gov/treetaskforce>.

<sup>27</sup> The duties of the Fire Safety Technical Panel are identified in OIR 15-05-006 at 11 - 13, and in the *Assigned Commissioner's Amended Scoping Memo and Ruling* that was issued in R.08-11-005 on May 15, 2013 at 7 - 12.

- Validation of Fire Map 1 against historical fires.
- Incorporating into Fire Map 2 additional factors and conditions that affect fire hazards associated with overhead utility facilities generally and at specific locations (e.g., Laguna Beach). Such factors and conditions may include the parties' knowledge of (i) terrain; (ii) vegetation (e.g., potential contact between trees and power lines in low-wind areas); (iii) areas designated as high hazard zones pursuant to the Governor's Proclamation of a State of Emergency in response to widespread tree mortality; (iv) microclimates; (v) historical power-line fires besides the October 2007 fires in Southern California (e.g., the September 2015 Butte Fire in Amador and Calaveras Counties); (vi) other historical fires; and (vii) other factors and conditions.
- Other matters deemed appropriate by the parties.

The Panel shall prepare the Fire Map 2 Work Plan using the same process that was used to prepare the Fire Map 1 Work Plan that is attached to D.14-01-010 unless directed otherwise by the assigned Commissioner and/or the assigned ALJ.<sup>28</sup>

We believe the public interest was well served by the collaborative approach used by Cal Fire, the IET, SED, Reax, and the parties to develop Fire Map 1. We strongly encourage all parties to collaborate in the development of the Fire Map 2 Work Plan.

#### **7.5.2. Role of Cal Fire and the IET**

In OIR 15-05-006, the Commission anticipated "that the knowledge and experience gained by Cal Fire and [the IET] during the development of Fire Map 1 may be useful in the development of Fire Map 2 and in advising the

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<sup>28</sup> OIR 15-05-006 at 12 - 13.

Commission regarding any disputes that may arise pertaining to the development, adoption, or implementation of... Fire Map 2.<sup>29</sup> To this end, OIR 15-05-006 established a mechanism to fund Cal Fire's and the IET's ongoing participation in this proceeding.<sup>30</sup>

We are impressed by Cal Fire's and the IET's work on Fire Map 1, and we are grateful that they are willing to assist in the development of Fire Map 2 in the manner described by the Final Fire Map 1 Report:

The IET, in as much as it is available, feels a duty to facilitate Fire Map 2 development, and at least provide ongoing insight into how Fire Map 1 may or may not comport with specific regulatory requirements. At a minimum, Cal Fire will continue to act both as party and as technical representative of the IET regarding issues concerning quantification of fire hazards, their application to spatial modeling routines, and emerging new science that provides insight into wildland fire potential. (Final Fire Map 1 Report at page 42.)

We strongly encourage Cal Fire and the IET to participate actively in the development of Fire Map 2. We expect their expertise will be accorded great weight by the parties and the Commission.

### **7.5.3. New Fire-Safety Regulations**

Concurrent with the development of Fire Map 2,<sup>31</sup> the Fire Safety Technical Panel shall convene at least quarterly to:

- Consider the need for new fire-safety regulations based on Fire Maps 1 and 2.

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<sup>29</sup> OIR 15-05-006 at 15.

<sup>30</sup> OIR 15-05-006 at 5 - 16.

<sup>31</sup> OIR 15-05-006 at 13 - 14.

- If appropriate, develop a menu of potential fire-safety regulations for the design, construction, operation, and/or maintenance of overhead utility facilities in the new High Fire-Threat District.
- Develop criteria regarding: (i) where the fire-safety regulations developed pursuant to the previous bullet should apply with respect to new installations and reconstruction in the High Fire-Threat District; and (ii) whether existing facilities in the High Fire-Threat District should be retrofitted or replaced to conform to the new regulations developed pursuant to the previous bullet. These criteria should include methods for: (a) estimating the costs and safety benefits of proposed fire-safety regulations, and (b) weighing the costs and safety benefits.
- Consider and, if appropriate, develop proposed revisions to the “multiply by” provision in GO 95’s Rule 48 in accordance with the guidance provided by Ordering Paragraph 5 of D.14-02-015.

Panel meetings should be conducted in a manner consistent with (1) the instructions in the *Assigned Commissioner’s Amended Scoping Memo and Ruling* that was issued in R.08-11-005 on May 15, 2013, at 7 - 8; and (2) the workshop protocols in Appendix D of the Fire Safety Technical Panel Report that was filed in R.08-11-005 on September 23, 2013.

#### **7.5.4. Prehearing Conference**

The assigned ALJ shall convene a prehearing conference (PHC) as soon as practical to address (1) the schedule and procedures for preparing the Fire Map 2 Work Plan; (2) the role of Cal Fire and the IET with respect to the development of Fire Map 2; and (3) any other matters deemed appropriate by the assigned Commissioner and the assigned ALJ.

## **8. Comments on the Proposed Decision**

The proposed decision of the assigned ALJ in this matter was mailed to the parties in accordance with Section 311 of the Public Utilities Code, and comments were allowed pursuant to Rule 14.3 of the Commission's Rules of Practice and Procedure. Comments were filed on May 16, 2016, by the City of Laguna Beach and MGRA. Reply comments were filed on May 23, 2016, by SCE.

The City of Laguna Beach and MGRA generally support the proposed decision. Neither party identified any factual, legal, or technical errors in the proposed decision.

MGRA comments that the development of Fire Map 2 should address the fire hazards associated with the Butte Fire that burned 71,000 acres, killed two people, and destroyed hundreds of homes in Amador and Calaveras Counties in September 2015. Cal Fire's investigation of the Butte Fire found that the fire ignited when an improperly maintained tree contacted power lines in light wind conditions of 4 to 5 miles per hour.<sup>32</sup> In contrast, the catastrophic power-line fires that ravaged Southern California in October 2007 ignited when strong Santa Ana winds were blowing.

We agree with MGRA that the development of Fire Map 2 should address the fire hazards associated with the Butte Fire. As stated in the proposed

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<sup>32</sup> MGRA Comments on the Proposed Decision, at 3 - 4, citing Cal Fire's Investigation Report on the Butte Fire, Case No. 15CAAEU024918. Cal Fire's Investigation Report is dated April 25, 2016 (Report at page 29), the same date the proposed decision was issued. We take official notice of the Butte Fire pursuant to Rule 13.9 of the Commission's Rules of Practice and Procedure and Evidence Code Section 452(h). We take official notice of the existence of Cal Fire's Investigation Report pursuant to Rule 13.9 and Evidence Code Sections 452(c), (g), and (h). Other than noting that the Butte Fire was reportedly caused by contact between an improperly maintained tree and power lines in light wind conditions, today's decision does not reach any conclusions about the cause of the Butte Fire.

decision, it is our intent that the development of Fire Map 2 should address not only the October 2007 fires in Southern California, but other historical fires, too.<sup>33</sup> We have revised today's decision to better express our intent that the Butte Fire and other historical fires should be considered in the development of Fire Map 2.

## **9. Assignment of the Proceeding**

Michel Peter Florio is the assigned Commissioner for this proceeding and Timothy Kenney is the assigned ALJ.

### **Findings of Fact**

1. The purpose of Fire Map 1 is to depict the areas of California where there is an elevated hazard for the ignition and rapid spread of power-line fires due to strong winds, abundant dry vegetation, and other environmental conditions.

These are the environmental conditions associated with the catastrophic power-line fires that burned 334 square miles of Southern California in October of 2007.

2. Fire Map 1 provides a scientifically sound foundation for the development of Fire Map 2, which will delineate the boundaries of a new High Fire-Threat District where utility infrastructure and operations will be subject to stricter fire-safety regulations.

3. D.12-01-032 adopted interim fire-hazard maps that designate areas where (i) there is an elevated hazard for power-line fires, and (ii) the stricter fire-safety regulations adopted in R.08-11-005 apply.

4. It would be reckless to prohibit electric utilities and CIPs from using Fire Map 1, in addition to the interim fire-hazard maps adopted by D.12-01-032,

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<sup>33</sup> Proposed decision at 26 and Ordering Paragraph 3.

to identify areas where (i) there is an elevated hazard for power-line fires, and (ii) the stricter fire-safety regulations adopted in R.08-11-005 should apply.

5. Fire Map 1 adopted by today's decision was filed on February 16, 2016, as part of the Final Fire Map 1 Review and Development Report. There is no need for parties to submit a Tier 1 advice letter that contains Fire Map 1 adopted by today's decision as was contemplated in OIR 15-05-006.

6. On October 30, 2015, Governor Brown issued a Proclamation of a State of Emergency regarding an epidemic of tree mortality. The Proclamation directs Cal Fire and other State agencies to identify areas that represent high hazard zones for wildfire and falling trees (hereafter, "high hazard zones") and to endeavor to remove dead or dying trees in high hazard zones. Among the Proclamation's other directives are orders for the Commission to use its authority to direct electric utilities to procure energy from bioenergy facilities that use feedstock from the high hazard zones and to facilitate interconnection of the same. The Commission is currently implementing its directives via Resolution E-4770 (March 17, 2016), R.15-02-020, and other means.

7. The high hazard zones designated by Cal Fire pursuant to the Governor's Proclamation depict areas where there is elevated tree mortality close to infrastructure or resources that would be harmed by wildfire and/or falling trees. These high hazard zones are not equivalent to Fire Map 1.

8. In September 2015, the Butte Fire burned 71,000 acres, killed two people, and destroyed hundreds of homes in Amador and Calaveras Counties. The Butte Fire reportedly ignited when an improperly maintained tree contacted overhead power lines in light wind conditions.

9. Cal Fire and the IET have knowledge and expertise that is relevant to the development of (i) Fire Map 2, and (ii) new fire-safety regulations based on Fire Map 2.

### **Conclusions of Law**

1. Fire Map 1 that was filed on February 16, 2016, as part of the Final Fire Map 1 Review and Development Report, should be adopted as the foundation for the development of Fire Map 2.

2. Fire Map 1 adopted by today's decision should be subject to adjustment by the Commission during the development of Fire Map 2.

3. There is no need to submit Fire Map 1 adopted by today's decision via a Tier 1 advice letter as contemplated by OIR 15-05-006.

4. Today's decision does not affect the requirement in D.12-01-032 to use the interim fire-hazard maps adopted by that decision to identify areas where the stricter fire-safety regulations adopted in R.08-11-005 apply.

5. Utilities should be authorized, but not required, to use Fire Map 1 to supplement the interim fire-hazard maps adopted by D.12-01-032 to identify areas where stricter fire-safety regulations should apply.

6. Fire Map 1 adopted by today's decision does not affect or supersede the map of high hazard zones prepared by Cal Fire pursuant to Governor Brown's Proclamation of a State of Emergency that was issued on October 30, 2015.

7. Today's decision should not be interpreted in a way that impedes or delays any actions that may be taken by the Commission, Cal Fire, electric utilities, or others to implement Governor Brown's Proclamation of a State of Emergency that was issued on October 30, 2015.

8. The high hazard zones designated by Cal Fire pursuant to the Governor's Proclamation should inform the development of Fire Map 2.

9. The Fire Safety Technical Panel (Panel) should convene as soon as practical to prepare a detailed work plan for the development, adoption, and implementation of Fire Map 2. All parties should be allowed to participate on the Panel. The Panel should be co-chaired by SED, SCE, and any other parties designated by SED and SCE. The Panel should follow the same process that was used to prepare the Fire Map 1 Work Plan unless directed otherwise by the assigned Commissioner and/or the assigned ALJ.

10. The Fire Map 2 Work Plan should address the matters identified in the body of today's decision.

11. OIR 15-05-006 established a mechanism to fund Cal Fire's and the IET's ongoing participation in this proceeding.

12. OIR 15-05-006 requires the Fire Safety Technical Panel to convene at least quarterly to consider the need for new fire-safety regulations based on Fire Maps 1 and 2.

13. The assigned ALJ should convene a PHC to address (i) the schedule and procedures for preparing the Fire Map 2 Work Plan; (ii) the role of Cal Fire and the IET with respect to the development of Fire Map 2; and (iii) any other matters deemed appropriate by the assigned Commissioner and the assigned ALJ.

14. The following order should be effective immediately so that the preparation of the Fire Map 2 Work Plan can commence forthwith.

## O R D E R

**IT IS ORDERED** that:

1. Fire Map 1 that was filed on February 16, 2016, as part of the Final Fire Map 1 Review and Development Report, is adopted. A visual representation of Fire Map 1 is in Appendix A of today's decision. The adopted Fire Map 1 may be adjusted by the Commission during the development of Fire Map 2.

2. Electric utilities and communications infrastructure providers are authorized, but not required, to use Fire Map 1 to supplement the interim fire-hazard maps adopted by Decision 12-01-032 to identify areas where the stricter fire-safety regulations adopted in Rulemaking 08-11-005 should be implemented.

3. The Fire Safety Technical Panel ("Panel") shall convene as soon as practical to prepare a detailed work plan for the development, adoption, and implementation of Fire Map 2. All parties may participate on the Panel. The Panel shall be co-chaired by the Commission's Safety and Enforcement Division (SED), Southern California Edison Company (SCE), and any other parties designated by SED and SCE. The Panel shall follow the same process that was used to prepare the Fire Map 1 Work Plan that is attached to Decision 14-01-010 unless directed otherwise by the assigned Commissioner and/or the assigned Administrative Law Judge. The Fire Map 2 Work Plan shall address:

- i. The matters identified in the *Assigned Commissioner's Amended Scoping Memo and Ruling* that was issued in Rulemaking 08-11-005 on May 15, 2013, at 10 - 12, to the extent these matters pertain to Fire Map 2.
- ii. Validation of Fire Map 1 against historical fires.

- iii. Incorporating into Fire Map 2 additional factors and conditions that affect fire hazards associated with overhead utility facilities generally and at specific locations (e.g., Laguna Beach). Such factors and conditions may include the parties' knowledge of (A) terrain; (B) vegetation (e.g., potential contact between trees and power lines in low-wind areas); (C) areas designated as high hazard zones pursuant to the Governor's Proclamation of a State of Emergency issued on October 30, 2015; (D) microclimates; (E) historical power-line fires besides the October 2007 fires in Southern California (e.g., the September 2015 Butte Fire in Amador and Calaveras Counties); (F) other historical fires; and (G) other factors and conditions.
  - iv. Other matters deemed appropriate by the parties.
4. The Fire Safety Technical Panel shall convene at least quarterly to consider the need for new fire-safety regulations based on Fire Maps 1 and 2.
5. The assigned Administrative Law Judge (ALJ) shall convene a prehearing conference to address (i) the schedule and procedures for preparing the Fire Map 2 Work Plan; (ii) the role of the California Department of Forestry and Fire Protection and its Independent Expert Team with respect to the development of Fire Map 2; and (iii) any other matters deemed appropriate by the assigned Commissioner and the assigned ALJ.

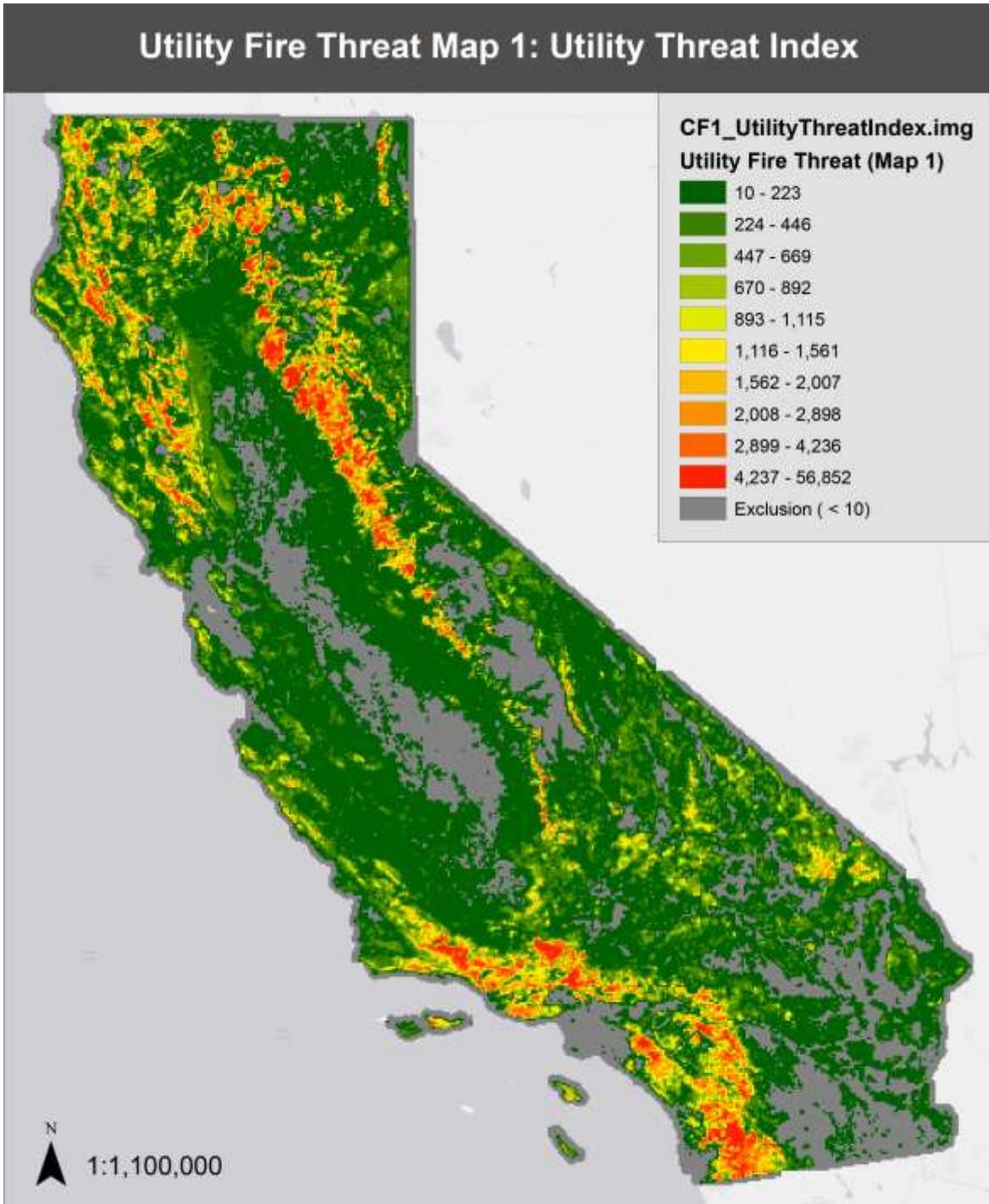
6. This proceeding remains open to address the matters set forth in Order Instituting Rulemaking 15-05-006.

This order is effective today.

Dated May 26, 2016, at San Francisco, California.

MICHAEL PICKER  
President  
MICHEL PETER FLORIO  
CATHERINE J.K. SANDOVAL  
CARLA J. PETERMAN  
LIANE M. RANDOLPH  
Commissioners

### Appendix A: Adopted Fire Map 1



A Report to the California Public Utilities Commission  
Pursuant to R.08 – 11-005 AND R.15-05-006 Date: 2/10/2016