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VIA ELECTRONIC FILING

Office of Energy Infrastructure Safety  
California Natural Resources Agency  
715 P Street, 20<sup>th</sup> Floor  
Sacramento, CA 95814

**RE: MUSSEY GRADE ROAD ALLIANCE COMMENTS ON WILDFIRE MITIGATION PLAN GUIDELINES FOR 2023-2025**

Dear Office of Energy Safety Infrastructure,

The Mussey Grade Road Alliance (MGRA or Alliance) files these comments pursuant to the instructions provided by the Office of Energy Infrastructure Safety (OEIS) via service list email on September 19, 2022,<sup>1</sup> inviting public comments on the Draft 2023-2025 Wildfire Mitigation Plan Guidelines by October 26, 2022.

The MGRA comments have been prepared by Joseph W. Mitchell, Ph.D.

## **1. INTRODUCTION**

The Mussey Grade Road Alliance has actively participated in utility wildfire plan development since MGRA's original proposal to the California Public Utilities Commission (CPUC or Commission) that the CPUC require utilities to prepare contingency plans for extreme fire weather.<sup>2</sup> The Commission adopted a modified version of the MGRA proposal requiring utilities to develop Fire Prevention Plans.<sup>3</sup> The original plans filed by utilities were limited in scope, complexity, and effectiveness. In the aftermath of the 2017 and 2018 fires, the legislature passed

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<sup>1</sup> Email, from [efiling@ENERGYSAFETY.CA.GOV](mailto:efiling@ENERGYSAFETY.CA.GOV); 2023 023 to 2025 Electrical Corporation Wildfire Mitigation Plans, 2023-2025-WMPs, Draft 2023-2025 Wildfire Mitigation Plan Guidelines; September 19, 2022; 4:18 pm.

<sup>2</sup> CPUC; R.08-10-007; MUSSEY GRADE ROAD ALLIANCE PROPOSED PHASE 2 RULES; December 16, 2009; p. 16.

<sup>3</sup> CPUC; D.12-01-032; pp. 48-55.

bills SB901, AB1054, and AB111 establishing the current framework of the Wildfire Mitigation Plans. MGRA has participated in the public process for the development of requirements for the 2019, 2020, 2021, and 2022 Wildfire Mitigation plans and in their subsequent review, making numerous contributions that have been accepted by the CPUC, Wildfire Safety Division (WSD), and OEIS. The size and complexity of the plans have increased as the utilities and regulators have come to terms with the magnitude of the utility wildfire problem and as their staffing dedicated to this critical issue has increased in size and technical expertise.

As the WMPs begin a new three year cycle, it is therefore appropriate that Energy Safety re-evaluate previous guidance and look for ways to both streamline the WMPs and to expand areas needing further technical detail. Specifically OEIS has been holding workshops on technical issues since late 2021. Some of these workshops may be approaching the point in which the issue reports and guidance. When they do, this guidance will need to flow into the Wildfire Mitigation Plans at the earliest opportunity and not have to wait to line up with another 3 year cycle.

The Templates and Guidelines for the 2023-2025 plans<sup>4</sup> are ambitious and expansive. As a whole, they are another step in the continuous evolution of the OEIS into an effective regulatory body. While MGRA does not have time to devote the full resources that this review deserves, we are pleased to provide feedback, particularly because many of our comments over the years have in one way or another incorporated into this document.

MGRA will adhere to the basic structure of the Guidelines when providing feedback. Recommendations will be summarized at the end.

## 2. SUMMARY OF RECOMMENDATIONS

- **The OEIS should ensure that all utility decisions are made through a *Risk-Informed Framework*.**
- **The current risk informed framework in use at the CPUC and OEIS is the “Risk Spend Efficiency”, or RSE. The RSE should be maintained as the risk metric and more widely utilized in the guidelines.**

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<sup>4</sup> WMPs 2023-2025; OFFICE OF ENERGY INFRASTRUCTURE SAFETY 2023-2025 WILDFIRE MITIGATION PLAN TECHNICAL GUIDELINES DRAFT; SEPTEMBER 19, 2022. (Guidelines)

- **Should the RSE be replaced with another metric this would require a mid-cycle guideline revision.**
- **Sufficiently severe rate impacts could have health risks which may need to be addressed in utility risk models.**
- **OEIS should collect utility fire data from all fire incidents where it is possible or alleged that the utility caused a fire rather than wait for full investigations, which can take years.**
- **The Guidelines need a mechanism by which utilities can incorporate emergent risks prior to the next triannual update. One example is likely to be wildfire smoke, which is likely to be a major if not primary contributor to health and safety risk.**
- **Ideally, Energy Safety should support utility risk analyses that break out “wind driven” events into a separate analysis category, as these will have significantly different causes and geographic locations than standard ignitions.**
- **MGRA strongly supports the development of extreme event scenarios, along with preventative and mitigating actions, and appropriate trigger points.**
- **The Guidelines must recognize that utility risk models currently have significant flaws and will likely be undergoing rapid development over the time frame of the guidelines. There must be a straightforward mechanism for a utility to update its risk model during the 2023-2025 time period.**

### **3. GUIDELINE DRAFT SECTIONS AND COMMENTS**

#### **4.3 Risk-Informed Framework**

“Risk-Informed Framework

The electrical corporation must adopt a risk-informed approach to developing its WMP. The purposes of adopting this approach are as follows:

*“• To develop a WMP that achieves an optimal level of life safety, property protection, and environmental protection, while also being in balance with other performance objectives (e.g., reliability and affordability)*

- *To integrate risk modeling outcomes with a range of other performance objectives, methods, and subject matter expertise to inform decision-making processes and the spatiotemporal prioritization of mitigations*

- *To target mitigation efforts that prioritize the highest-risk equipment, wildfire environmental settings, and assets-at-risk (e.g., people, communities, critical infrastructure), while still satisfying other performance objectives defined by the California Public Utilities Commission (CPUC)(e.g., reliability and affordability)*

- *To provide a decision-making process that is clear and transparent to internal and external stakeholders, including clear evaluation criteria and visual aids (such as flow charts or decision trees)*

*The OEIS proposal opens discussion on a number of areas related to the overall process and structure of the WMPs. These will all have substantial impact on both utilities and stakeholders and need to be carefully considered.”<sup>5</sup>*

MGRA is gratified to see unambiguous support for the Risk-based Decision-making Framework RDF, formerly the S-MAP process before the California Public Utilities Commission (Commission, CPUC).

This is a particularly opportune time for this support as PG&E, SDG&E, and SCE are passing through their RAMP and GRC cycles, and as we do we see the major utilities delegating risk-based decision-making to secondary or tertiary status when deciding what mitigations to pursue. To dramatize this, I quote from the cross examination of Carla Peterman by MGRA’s expert in the PG&E GRC rate case, who uses OEIS requirements to justify PG&E’s selection of undergrounding as its primary wildfire mitigation:

*“Q. So must wildfire be mitigated at any cost, or is there a limit to how much it's reasonable to spend to mitigate wildfire?”*

*A. [Carla Peterman, PG&E] Yeah. As you are aware, we submit our wildfire mitigation plan to the Office of Energy Infrastructure and Safety, and they have a very decisive role in saying what they think is sufficient mitigation. So with anything -- you know, we are not in a position to spend as*

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<sup>5</sup> Draft Guidelines; p. 15.

*much as we would want to spend to mitigate this risk, but our team has prioritized our risk mitigation portfolio to address as much risk as we can.*

*And again, it's really a part of that litigated outcome that comes out of energy safety about ultimately what we are required to do over the next few years.”<sup>6</sup>*

It is clear that OEIS understands the Commission’s role in determining affordability and reliability concerns, and OEIS’s support and mandate of a risk-informed framework. The utilities, on the other hand, seem to be moving away from making important decisions based upon their own dutifully constructed and calculated risk frameworks. The OIES and CPUC must be and apparently are of one mind about this issue. Utilities should be choosing the most cost-effective mitigations to battle wildfire and its attendant risks.

MGRA is also very pleased that Energy Safety proposes using a wide swath of performance objectives as inputs into the decision-making process:

*“...the evaluation and management of risk must include consideration of a broad range of performance objectives (e.g., life safety, property protection, reduction of social vulnerability, reliability, resiliency, affordability, health, environmental protection, public perception, etc.), integrate cross-disciplinary expertise, and engage various stakeholder groups as part of the decision-making process.”<sup>7</sup>*

MGRA is pleased that health and affordability are part of this mandate. MGRA, in the last WMP review cycle, has introduced the observation that high utility rates could potentially result in adverse health outcomes in vulnerable populations.<sup>8</sup> It was a concern that because OIES’s mandate is wildfire, that this particular source of public harm might be delegated to the Commission alone. Energy Safety’s broad interpretation allows for this type of analysis to be brought into the discussion prior to its going to the Commission, ensuring that a consistent and balanced treatment is afforded to ratepayers from both regulatory bodies.

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<sup>6</sup> A.21-06-021; Evidentiary Hearings Transcript; August 15, 2022; pp. 578.

<sup>7</sup> Draft Guidelines; p. 16.

<sup>8</sup> 2022-WMPS; MGRA Comments; pp. 57-60.

### 5.3. Environmental Settings

*“The electrical corporation must provide a high-level overview of the wildfire environmental settings within its service territory.”<sup>9</sup>*

Along with the map representations, OEIS should ensure that non-confidential data is provided in native GIS format and is available to the public, stakeholders and researchers

#### 5.3.2. Fire History

*“The electrical corporation must provide a brief narrative summarizing the utility-related wildfire history across its service territory as recorded by the electrical corporation, CAL FIRE, or another authoritative sources. For this section, utility-related wildfire history must be limited to fires that either caused at least one death, damaged over 500 structures, or burned over 5,000 acres. In addition, the electrical corporation must provide historical utility-related wildfire statistics across its service territory in tabular form, including the following key metrics:”*

It can take years for legal determination of whether a utility is culpable for an ignition, and the utility may deny its responsibility for the fire in the meantime. OEIS would be better served if it were to request data for wildfires in which utility involvement was “alleged” by a credible source. Waiting for investigations to be complete and all contested fires to be resolved would remove a number of well-known utility-related fires from the history.

### 6.2. Risk Analysis Framework

One issue encountered in the Risk Analysis Framework section<sup>10</sup> is that it does not contain any mechanism for emergent risks to be entered into the utility risk estimation process. Specifically, it appears that wildfire smoke may be a safety risk that may be larger than other health and safety risks from wildfire,<sup>11</sup> and there is no mechanism by which this risk can be included in the current framework. It seems highly likely that in the 2023-2026 time period the utilities will be accounting for wildfire smoke risks in some manner.

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<sup>9</sup> Draft Guidelines; p. 23.

<sup>10</sup> Draft Guidelines; p. 48.

<sup>11</sup> 2022-WMPs; MGRA Comments; pp. 47-51.

The guidelines should specify that in the event that an emergent risk is discovered or that methodologies need to change to incorporate new risks, In such a case, the yearly or quarterly update should include modifications to both the high-level and detailed overview of its risk framework to describe how the emergent risk is being incorporated into its risk model.

## 6.2.2. Risk and Risk Components Calculation

OIES attempts to provide a logical flow calculation schematic as an example to utilities. It is overall, a good diagram:

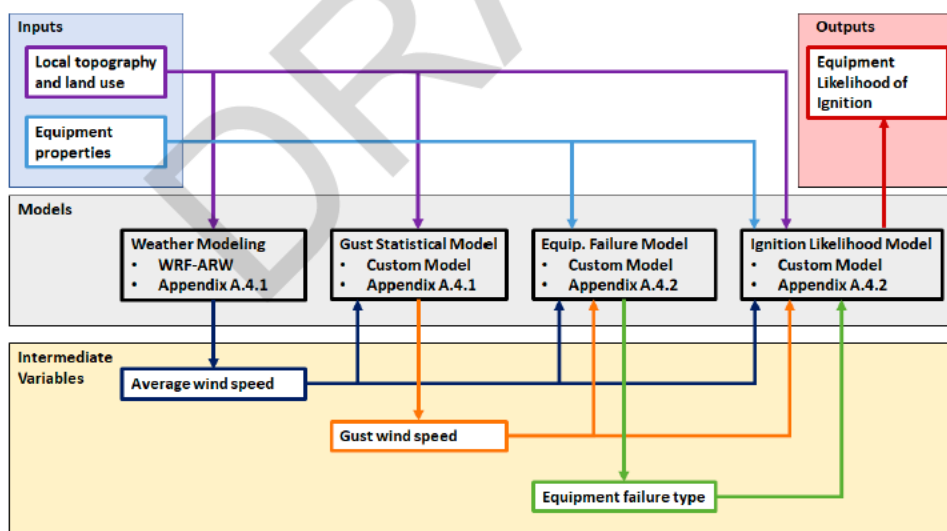


Figure 6.3 - Logical flow showing data inputs and outputs for risk calculations.<sup>12</sup>

One important shortcoming of this diagram is that it does not separate out the ignition likelihood from the outage/fault likelihood, instead showing “Ignition Likelihood Model” as one black box. This should be more suitably separated into “Outage Likelihood Model”, which calculates only likelihood of failure as a function of say Equipment type and gust wind speed, and “Ignition Model Given Outage”, to which other weather and vegetation variables would contribute. This is currently how PG&E’s ignition model is subdivided in its WDRM v3.<sup>13</sup>

<sup>12</sup> Draft Guidelines; p. 52.

<sup>13</sup> 2022-WMP MGRA Comments; pp. 25-26.

As we've noted in MGRA's 2022 WMP comments, this decomposition improves the risk model but does not correct or compensate for utilities' failure to use conditional probabilities to couple likelihood of failure and the extreme event days when weather consequences are calculated.<sup>14</sup>

### **6.3.1. Design Basis Scenarios**

OEIS suggests that *“One possible approach to the statistical weather analysis for fire behavior is Monte- Carlo simulation of synthetic fire seasons in accordance with approaches presented by the United States Forest Service. [fn 13] However, the electrical corporation must justify the selection of locally relevant data for use in this approach (i.e., Remote Automated Weather Systems data or historic weather reanalysis must be locally relevant).”*<sup>15</sup>

MGRA agrees that this could be a useful approach. It is essential that any such synthetic data, however, contain individual, realistic fire weather events with high winds and low humidity. MGRA has previously suggested that such an analysis could be treated separately from “standard” fire modeling, since the geographic locations and drivers involved in “random” wildfire starts and “wind driven” fire starts are very different.

### **6.3.2. Extreme-Event Scenarios<sup>16</sup>**

MGRA supports the development of extreme event scenarios. In fact our original 2009 Rulemaking proposal was for “wildfire contingency plans” that described how utilities would continue to be safe under extreme weather conditions.

An important component of these scenarios must be the measures, both preventative (engineering) and responsive (operational) would need to be put into place to prevent significant public harm occurring as a result of the extreme event.

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<sup>14</sup> Id.

<sup>15</sup> Draft Guidelines; p. 59.

<sup>16</sup> Draft Guidelines; p. 61.



For instance, the example of 10,000-year weather in the Draft Guidelines can potentially be addressed by widespread power shutoff. The utility would then have to specify how it would manage to reduce customer impacts if it was required to perform a widespread shutoff of such magnitude, and its plans for recovery especially given the high likelihood of widespread infrastructure damage.

For each scenario, clear “trigger points” should be specified that would alert the utility that the conditions were appropriate to carry out its extreme event contingency plan.

#### **6.4.2. Top Risk-Contributing Circuits/Segments**

*“The electrical corporation must rank its circuits/segments by circuit mile weighted risk score and identify each significant risk-contributing circuit/segment. A circuit/segment is risk significant if it individually contributes more than 1 percent of the total cumulative risk of the electrical corporation or contributes to the top 95 percent of cumulative risk when ranked.”<sup>17</sup>*

MGRA does not object to this ranking and it will be useful. However, OEIS needs to address some additional questions. MGRA’s work in the WMP and GRC cycles has convinced us that there are some significant remaining gaps in the utility risk models. These are:

- Lack of a conditional probability for different drivers describing how likely they are to occur during extreme weather events used in the consequence models
- Limitations on consequence models both from lack of fire suppression (larger, more frequent fires) and 8 hour spread limit (fires not large enough to simulate actual California catastrophic wildfires).
- Wildfire smoke effects are not included in the models, and this is likely causing the largest number of wildfire fatalities
- All PSPS risks have not yet been estimated and accounted for
- No estimate of how incremental utility rate increases affect public health.

What is important to understand, therefore, is that utility wildfire risk models are “works in progress”, and we should see continuous improvement in these models over the next few years.

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<sup>17</sup> Draft Guidelines; p. 63.

“Freezing” a utility wildfire risk model in place while waiting for the next WMP or GRC cycle to occur is not in the public interest.

OEIS should acknowledge then, that yearly updates to the WMPs may well incorporate risk model improvements, and that consequently circuit risk rankings may change more frequently than every major WMP update.

#### **4. APPENDIX B: SUPPORTING DOCUMENTATION**

##### **1.1.12.4. Likelihood**

As noted previously, some ignition sources are coupled to external drivers (specifically wind) and some are not. This section is intended to “*establish specific requirements that must be considered in the evaluation of each likelihood risk component.*”<sup>18</sup>

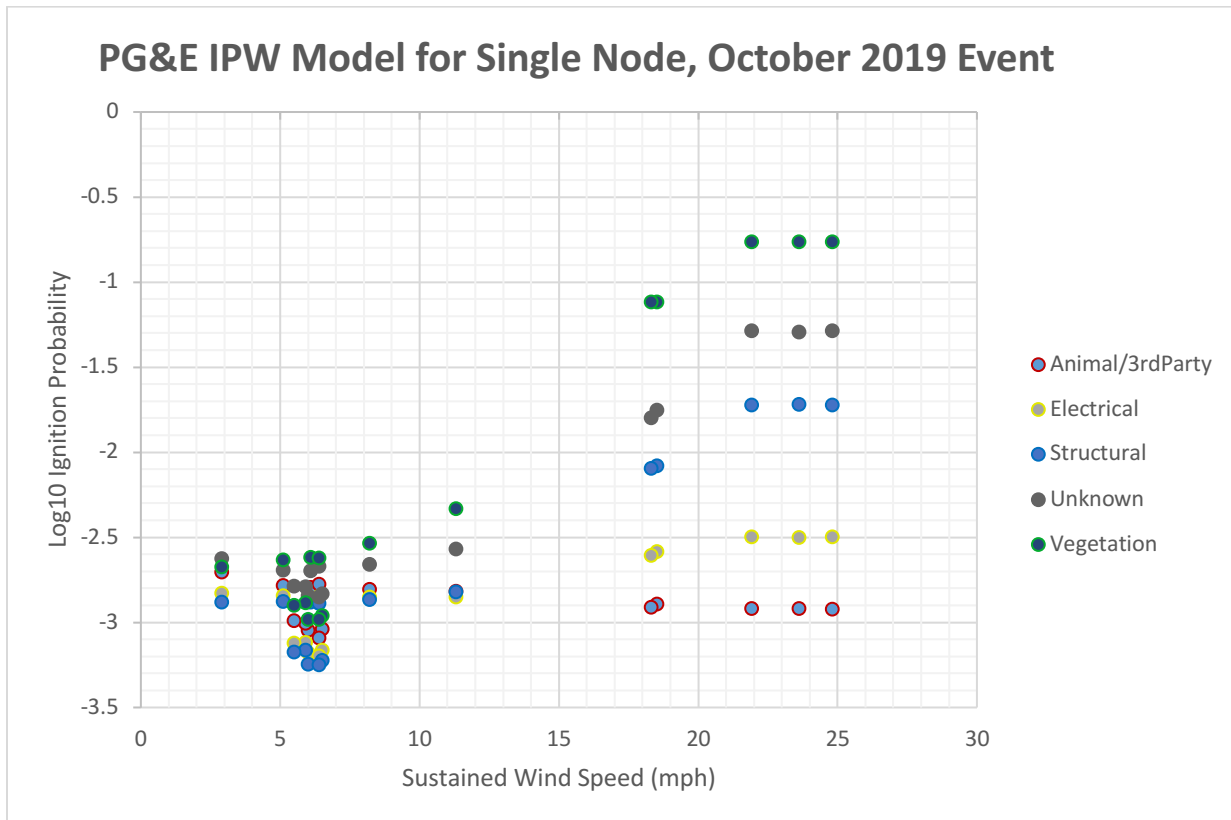
While the information collected must include “Local weather conditions”, this does not specify whether it is “average” weather conditions or whether it is the weather conditions at the time of the ignition.

For equipment failure, contact from object and for contact for vegetation, the utility should supply data on the likelihood of failure and/or ignition as a function of wind speed for each ignition driver.

As an example, the data below is from PG&E’s IPW model:

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<sup>18</sup> Draft Guidelines; App. B; p. 16.



**Figure 1** - Example data from PG&E's IPW model from one event from one node, showing ignition probability calculations for the October 8th/9th 2019 windstorm. Log10 of the probability for PG&E's five driver classes are shown plotted against sustained wind speed.<sup>19</sup>

This shows that different event drivers have very different likelihoods as a function of wind speed. When trying to characterize a “driver” ignition likelihood it is therefore important to decompose the driver into the “likelihood without wind” baseline and the “likelihood with wind component, which may be a function.” Accurate modeling then would require appropriate incorporation of wind events into fire season models. This decoupling would be useful for climate models, since some models are now predicting that the frequency of Santa Ana type events may reduce as other climate change effects intensify.<sup>20</sup>

## 5. CAPABILITY MATURITY MODEL

### C.3.2. Scoring Philosophies (Risk-Spend-Efficiency)

<sup>19</sup> 2022-WMPs; MGRA Comments; Appendix A: PG&E: WMP-Discovery2022\_DR\_MGRA\_002-Q12 and WMP-Discovery2022\_DR\_MGRA\_002-Q12Atch02; March 28, 2022.

<sup>20</sup> Guzman-Morales, J., Gershunov, A., 2019. Climate Change Suppresses Santa Ana Winds of Southern California and Sharpens Their Seasonality. *Geophysical Research Letters* 46, 2772–2780. <https://doi.org/10.1029/2018GL080261>

#### **7.1.4. Mitigation Selection Process**

As related in Section 4.3, OEIS has adopted efficiency as a prime input in determining how wildfire mitigations will be applied. Throughout the S-MAP, RAMP, and GRC processes and in previous WMP reviews, Risk-Spend Efficiency (RSE) has figured prominently as a metric that is used to determine how cost effectively various mitigations can be applied to reduce wildfire risk. RSE still figures prominently in the Capability Maturity Model. However, it has gone missing entirely from the main document. Most disturbing is its absence from Section 7.1.4 Mitigation Selection Process. While cost is discussed in 7.1.4, it is not put into any framework that would make it alternatives easy to compare. The entire goal of the RSE was to develop a metric of cost effectiveness, how much risk could be removed per dollar spent, so that different mitigations can be directly compared to each other.

Energy Safety's guidelines are highly prescriptive in almost all other aspects of utility wildfire plan specification, however it seems to have left the matter of cost open to interpretation. As a group that tried to interpret utility safety spending information prior to the introduction of the RSE, we believe that leaving this to utility discretion would be a major step backwards.

In any case, RSE calculations are required in the Capability Maturity Model, so it perfectly reasonable for OEIS to lay out details of what these should consist of in its Guidelines, specifically in Section 7.1.4.

There are currently discussions at the CPUC within the R.20-07-020 (RDF) working group that could potentially replace RSE with another cost/benefit metric. If that turns out to be the case, at that point OEIS should issue a modification of the Guidelines replacing RSE with the new metric, and the utilities could use that metric in subsequent WMPs and WMP updates. However, for now RSE is the best metric we have for mitigation cost efficiency and it should be incorporated into the body of the Guidelines.

## **6. CONCLUSION**

MGRA is pleased to contribute to the Office of Energy Infrastructure Safety's public process for the development of guidelines for the 2023 and future year Wildfire Mitigation Plans.

MGRA plans to participate and contribute to the 2023 Wildfire Mitigation Plan review process and looks forward to additional opportunities to provide input and to review and discuss Energy Safety's proposals.

Respectfully submitted this 26<sup>th</sup> day of October, 2022,

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