

April 10, 2023

Leonidas Payne, Project Manager  
California Energy Commission  
Environmental Office, 715 P Street, MS-15  
Sacramento, CA 95814  
[Leonidas.Payne@energy.ca.gov](mailto:Leonidas.Payne@energy.ca.gov)

Re: Fountain Wind Project (23-OPT-01)

Dear Mr. Payne,

This letter is respectfully submitted by three pilots involved in aerial firefighting, including the recent Chairman of the National Associated Aerial Firefighters, the former CDF Deputy Chief in charge of air operations for 30 years, and a current retardant pilot who has flown DC-10's to fight wildfires from the air in three different countries on two continents, including some fires in wind farms and including many of California's most recent large fires. A fire and forestry expert also joined us.

We want to alert the California Energy Commission (CEC) to the serious impediments to aerial firefighting in Eastern Shasta County that would be posed if the Fountain Wind Project is built. We hope you and your staff will carefully read this and each of our comments in the four Exhibits that follow. For example, as stated by Dave Wardall, a consulting aircraft structures engineer to the NTSB and retired CDF Deputy Chief of air tanker operations for 34 years: "We have examined the proposed project and determined it is an accident looking for a place to happen." (See full Statement, attached as **Exhibit. A.**) All of the signatories to this letter testified before the Shasta County Planning Commission

and/or Shasta County Board of Supervisors in connection with the permit application for this same project that was denied by Shasta County. The testimony of the aerial firefighters and other fire experts that supported the denial of the Fountain Wind permit application, also later supported, for many of the same reasons, the later zoning amendment that effected a ban by Shasta County on all such future projects in the unincorporated areas of Shasta County.

Our preliminary review of the CEC's February 10, 2023 Deficiency Letter leads us to believe that the CEC is unaware of the serious impediments to aerial firefighting posed by the existence of such a wind turbine project in Shasta county on the proposed site. As described herein, such a project would make it impossible to fight a wildfire, regardless of the cause of the fire, with air tankers (as well as rotor aircraft) anywhere in or near the project site and surrounding areas. The very existence of the wind turbines, which we understand may each exceed 700 feet in height (each therefore roughly twice as tall as the Statue of Liberty, and taller than Shasta Dam), would effectively create a "no fly" zone that would greatly increase the risk that any wildfire that either began in the project site or spread into the project site from any surrounding area, could not be quickly contained, and would likely grow beyond the project area to out-of-control proportions. Such a fire could easily then become an out-of-control wildfire covering tens of thousands, if not hundreds of thousands of acres, such as the Delta, Hirz, Carr, Camp, and Dixie fires of recent years. Such a fire, if not able to be contained from the air, because the turbine field is in the way, would not only burn the project itself, causing a toxic mess and obviating any benefits of having the project there, but would probably also burn through the surrounding communities of Montgomery Creek, Round Mountain, Oak Run and Moose Camp. And, if the fire spread beyond the immediate inter-mountain area, because it could not be quickly contained from the air,

such a fire could spread to even larger communities, such as Burney to the East, or Shingletown, Palo Cedro and Redding to the West, resulting in massive property damage and potentially even greater loss of life.

Shasta County has suffered several catastrophic wildfires in recent years, including the Carr, Zogg, Hirz, Fawn, Dixie and Delta fires, all of which occurred since this project was first proposed. Indeed, this very project site has burned once before in 1992, in the Fountain Fire, which burned over 60,000 acres of timberland (over 100 square miles), as well as hundreds of homes and businesses in the nearby towns of Montgomery Creek and Round Mountain, causing \$225 million in losses and suppression costs (in 2021 dollars), at the time the most expensive fire to contain in California history. As far as we know, the “Fountain Wind” project is the only wind turbine project to ever be named after a catastrophic wildfire (the “Fountain Fire”) that burned the very site on which it is proposed to be built. The site burned once before and will no doubt burn again and again.

Now, after the replanting of a timber plantation following the Fountain Fire, the project site is of even higher fire danger than before. Indeed, this project site carries the highest fire danger level in the entire State of California. The site is mostly covered now with a tree plantation covering tens of thousands of acres, composed of densely packed, highly flammable pine trees that have grown in the last 30 years to be about 40-50 feet tall, surrounded by mixed forest for miles in every direction of pine, fir, and oak woodlands.

To understand the magnitude of the impediments to aerial firefighting posed by the proposed Fountain Wind project, and described in this letter, you must begin by picturing two Statue of Liberties stacked one on top of the other (the Statue of Liberty is approximately 300 feet tall, the

proposed turbines may exceed 700 feet tall). Near the top of each turbine tower will be a nacelle, which will contain flammable fossil fuels (grease and oil) that can catch on fire (like a torch, to extend the Statue of Liberty analogy), on top of a superstructure rising out of the forest like a giant lightning rod (and turbine towers do attract lightning).

As stated by Mark Baird who has flown DC10's to fight fires on two continents and who has experience fighting wildfires near wind turbine projects: "The turbines themselves are potential ignition sources, which would compound the existing danger. Fires like the Dixie burned so hot the turbines themselves may combust and then sling burning debris as much as a quarter mile away. We wait until the fires, which are usually started by the turbines, burn well outside the perimeter of the project before we attempt suppression efforts." (**Exhibit B.**)

Most wildfires in Shasta County are caused by either lightning or human negligence/accidents. But even two Statue of Liberties stacked on top of each other does not convey the magnitude of these impediments to aerial firefighting, or the full extent of the problem, as even the Statue of Liberty does not have blades spinning around, nearly two football fields in diameter, and traveling at hundreds of miles an hour at the blade tips as they sweep a huge circle reaching even higher in the air than the nacelle. Now imagine such structures, essentially 70 story buildings, with their spinning blades, wholly or partially obscured by smoke in the midst of a wildfire sweeping through the tens of thousands of trees on the ground between and among the turbines. The turbines, of course, will have been placed intentionally on high points of the landscape, where there are frequently high winds which also typically accompany wildfires in Shasta County. And then picture 48 of these 700 foot plus tall turbines spread over several thousands of acres of densely packed pine trees (each of the 48 a massive skyscraper in its own right, each taller than anything north of downtown San Francisco).

It is not clear that any turbines this tall have ever been built before in California.

No mitigation of the problems posed by the existence of such extremely tall turbines in heavily forested, high fire danger areas is possible. Coloring the turbine blades, putting lights on them, and telling Cal Fire the GPS locations of where they are, is just rearranging deck chairs on the Titanic. What you need to understand is that the very existence of the turbines will mean that air tankers—essential weapons that Cal Fire and other agencies have to contain wildfires in California—simply will not be able to fly anywhere near that area at all, greatly increasing the risk that a fire in Eastern Shasta County, anywhere in or near the project site, will likely be unable to be fought from the air at all, and will necessarily likely grow to become a catastrophic fire.

This project and projects like it simply have no place in heavily forested, severe high fire danger areas such as the proposed project site, which is one of the main reasons why Shasta County has banned all such projects in the unincorporated areas of Shasta County (nearly all of Shasta County is forested and rated as being located in high or very high fire danger zones). Denying the present permit application, as both the Shasta Planning Commission and Board of Supervisors did before you, will likely save lives. We have lost over 100 lives in Northern California wildfires in recent years, including many women and children who were literally burned alive. To add the impairment to aerial firefighting of dozens of 700 foot tall wind turbines scattered through the forest to the already difficult task of containing catastrophic wildfires in high fire danger areas is beyond irresponsible. To do so would invite even greater tragedy by unnecessarily increasing the potential for additional loss of life that could occur as a result of wildfires in heavily forested Shasta County that could not be effectively contained by the use of air tankers and rotor aircraft.

**1. Aerial firefighting with fixed wing aircraft is the most effective way to contain wildfires quickly, support ground forces, and keep wildfires from growing to out-of-control proportions.**

The most effective way to quickly contain wildfires in California is with the use of fixed wing aircraft that drop fire retardant. Cal Fire and all other agencies depend heavily on aerial firefighting to contain fires, create fire lines, and otherwise protect lives, homes, businesses, and in many cases entire communities. As stated in the Proponent's own "experts" report, "it has been noted that in the vicinity of turbines, there will be a reduction of available airspace for fixed-wing aircraft...."

In Shasta County, such fixed wing air tankers use the Redding air tanker base to rapidly fight fires as and when needed. Such fixed wing air tankers have been used to fight all the major wildfires in Shasta County in recent years, including the Carr, Zogg, Hirz, Delta and Dixie fires, and many others. Most recently, fixed wing air tankers were used to contain the Fawn fire near Lake Shasta, and keep it from burning into the City of Redding. Had there been a wind turbine development in the way, such that fixed wing air tankers could not have been used to quickly contain the Fawn fire, that fire would have easily burned into Shasta Lake City and Redding and would have likely burned thousands of additional homes and businesses to the ground. As it was, there are no wind turbines there or near there, and air tankers were used to lay down retardant to create fire lines and fire breaks, and to save hundreds if not thousands of homes (and likely many lives too).

**2. Air Tankers Need to Drop Retardant From Only 100 to 200 Feet Above the Ground.**

As stated by the Chief: "Most effective drop height is 150' above the ground and lower crossing ridge tops not over 700'. I urge you to consider that flying heavily laden aircraft (fixed and rotor wing) with poor

visibility from smoke and very tall obstructions with whirling, immense blades is a **prescription for a fatal accident** both in the air and on the ground. No consideration for huge vortexes produced downwind from the turbines was taken.” (**Exhibit A, emphasis in original.**) So, in addition, for fires nearby, an air tanker must have some running room to drop to that low of an altitude before releasing retardant, and some additional running room to return to a higher altitude before returning to the airport to reload. Thus, if there were to be several thousands of acres sprinkled with 700 foot tall wind turbines in or near to any flightpath that an air tanker would otherwise take to attack a wildfire, the impediment to aerial firefighting would extend far beyond the project site itself and would not be limited to the footprint of the wind turbine project itself.

As mentioned above, if an air tanker were compelled to fly a safe distance above the top of the turbine blades, the drop height would be around 900 feet from the ground. Drops at this height are ineffective and simply disperse in the wind. Worse, wind turbines are often located on top of ridges or other high points. This means that a fire burning in a lower area--canyon bottom or on the slope--within or near the turbine project, along a flight approach line, could be well over 1000 to 2000 feet or more below the height of the safe flight path. Drops at this height would have no effect on fire on the ground whatsoever.

### **3. The Project Area and Surrounding Area Would Likely Be Deemed a “No Fly” Zone for Aerial Firefighting in the Event of A Wildfire In or Near The Project.**

A former interagency Type 1 (large fire) Plans Chief, Fire Behavior Analyst, and fifteen year National Fire Instructor, has concluded: “I would never recommend assignment of fixed wing aerial attack to this project area and would greatly restrict the use of rotor aircraft.” (**Exhibit C.**)

Thus, the likely impact of a project such as the proposed Fountain Wind Project would be to create a “No Fly” zone for aerial firefighting in Eastern Shasta County beyond the project because of flight path issues mentioned above. The effect would be, in a wildfire situation, to exclude air tankers from that general area of Shasta County entirely.

We expect a similar result would also apply to helicopters. When considering helicopters, it is important to note at the outset that the capacity of an initial attack Cal Fire helicopter to hold water or retardant is a fraction of the capacity of an air tanker. So if use of air tankers is completely eliminated by the existence of a turbine field, it might be possible for limited use of helicopters outside the boundaries of the turbine field, some safe distance away. The existence of the wind turbine project in the area has still, nonetheless, greatly diminished the effectiveness of any potential air attack on the fire while greatly increasing the likely outcome that the fire is not contained and grows out-of-control to become a catastrophic fire.

Even the potential limited use of helicopters around the fringes of the project site is problematic when such large obstructions are in the area. Such large turbines with massive turbine blades could easily be hidden or partially hidden by smoke, and the area between the turbines will also be subject to great turbulence. Helicopters are often grounded on very smoky days, or when there is an inversion layer present. Helicopters would be grounded more days or more often if the fire was in an area sprinkled with 700-foot-tall wind turbines. When you add the likely additional factor of not only some smoky conditions, but also very high winds, and/or swirling winds (created by weather, by the fire itself, and turbine vortexes or all three), the use of helicopters, even outside of the turbine field in surrounding areas might also be precluded or greatly diminished.



#### **4. With Such Large Turbines In the Way, Helicopter Rescues of Trapped or Injured Citizens and Firefighters on the Ground May Also Be Precluded.**

Proponent's own "experts" wrote that there would be "a reduction of airspace for rotor-wing aircraft used to deliver water/foam/gel/retardants, supplies and firefighters to wildfires." While one might suppose that without any air support, a wildfire in the project area or surrounding area could nonetheless be fought by fire trucks and crews on the ground, even this becomes more problematic due to the existence of the turbines. In wildfires in forested areas, citizens who live on ranches or in houses outside of heavily populated areas, or even citizens in towns (like Paradise, CA where over 80 lives were lost) that are in forested areas, can become trapped, injured, or otherwise in need of rescue or evacuation during a wildfire. Such rescues can sometimes be done by fire crews on the ground, but often need to be done by helicopter. In or near a huge wind turbine project, this may not be possible, further endangering the lives of firefighters and citizens on the ground, who may not be able to be rescued from the air if injured, further increasing the potential for loss of life.

#### **5. The Impediments to Aerial Firefighting Posed by the Turbines will likely mean that the Communities of Montgomery Creek, Round Mountain, Moose Camp, and Oak Run, at A Minimum, Will Burn in a Wildfire In or Near The Project Site, And Access To And Egress From These Communities Could Also Be Blocked By Fire Causing Substantial Loss of Life.**

As noted, the existence of 48 turbines in the project area will likely create a "No Fly" zone in Eastern Shasta County. This means that without the ability to contain a fire from the air using air tankers and possibly helicopters, any fire in that area will likely spread to burn the nearby

communities of Montgomery Creek, Round Mountain, Moose Camp, and Oak Run. The project is also close to Highway 299 and other rural roads that go from residential areas out to Highway 299. Without the ability to lay down retardant from the air, such a fire may also potentially block Highway 299, which is the only way in or out of the area for these rural communities, causing even further loss of life and property.

#### **6. No Satisfactory Mitigation Is Possible With The Extreme Fire Danger Posed By The Fuel and Terrain In And Around The Project Site.**

The problem is the existence of the turbines. Coloring the blades, putting lights on them, and informing Cal Fire of their GPS locations does not solve or mitigate the problem. Air tankers won't be able to fly there at all, so the problem is not identification of the turbines so they can be avoided by planes and helicopters. The problem is their very existence, their great height, turbulence and the insanity of placing them in a high fire danger, heavily forested area, where they don't belong.

Listen to the immediate past Chairman of the Associated Aerial Firefighters with 30 years of experience of fighting fires in this area, as well as fires in and around wind farms, as he warns:

“This appears to be a very unsafe proposal to adjacent communities and aerial firefighters.... The strategy was to not use fixed wing aircraft in the turbine fields at all. In Altamont and Tehachapi most of the turbine field was contained within light flashy fuels such as vast stands of grass lands. The proposed Fountain Project would be located in an area containing large stands of Pyrophytic fuels such as chaparral, manzanita, digger pines, and mixed conifers. The heat generated by such a fire, especially if it

is wind driven would be significantly greater than the heat produced by the fast-moving grass fire. This would pose a greater risk to ground firefighters because of the lack of ability to provide them effective air support and the adjacent homesteads surrounding the communities of Round Mountain, Montgomery Creek and Hillcrest. The threat of fatal damage to the tower structures is also worthy of consideration. Not only because of material losses but as an additional hazard that could endanger firefighters on the ground.” **(Exhibit D.)**

For all of the foregoing reasons, we respectfully request the following. First, if the application is not withdrawn or dropped by the applicant in its entirety, as it should be, we ask that the CEC review every wildfire in California in the last 5 years in which air tankers were used to contain or slow the growth of the fire, and estimate the additional fire spread that would have occurred if air tankers were unable to be used to fight and contain each such fire, including potential additional lives lost and millions of dollars of additional property damage that would or could have been suffered if air tankers could not have been used. Second, we ask that all of the issues addressed in this letter be fully addressed by the CEC in the CEQA process, including in any EIR that might be prepared in connection with the proposed Fountain Wind Project. And third and finally, we respectfully request that the CEC deny the application for a permit for the Fountain Wind Project and any similar project that may be proposed to be located in heavily forested Shasta County.

The Shasta County Planning Commission and Board of Supervisors denied a permit for this project for many of the foregoing reasons, and others, and later enacted a zoning ordinance banning all such industrial wind turbine projects in heavily forested Shasta County. They expressly took such actions to protect the health, safety and welfare of the citizens of Shasta County, and made specific findings of fact, supported by

the evidence and testimony of experts and citizens alike, that the Fountain Wind Project would be detrimental to the health, safety and welfare of the citizens of Shasta County. We believe that the Shasta County Planning Commission and Board of Supervisors acted responsibly and correctly. We hope that you will concur and deny the requested permit.

Sincerely,

/s/ Dave Wardall

Dave Wardall

Cal Fire Air Ops., Retired

Current Chair Associated

Aerial Firefighters

/s/ Stephen Fitch

Stephen Fitch

Forest Supervisor, Retired

/s/Mark Baird

Mark Baird

Air Attack Pilot

/s/ Jim Barnes

Jim Barnes

Former Pilot and Chair

Associated Aerial Firefighters

## EXHIBIT A

### Statement of David Wardall

- Chairman-Associated Aerial Firefighters
- Former Deputy Chief CDF air tanker operations for 34 years.
- Consulting engineer to the NTSB on aerial firefighting accidents.
- Involved in around 200 fatal and serious injury aircraft incident/accidents investigations.
- FAA Airline Transport pilot..

The Associated Aerial Firefighters with approximately 100 members represents pilots from across the country and provide a forum to advocate for safety, effectiveness, and efficiency in wildland aerial firefighting. I have examined the proposed Fountain Wind Project and determine it is an accident looking for a place to happen and testified in person at the Planning Commission Hearing where it was unanimously rejected.

The planning and analysis gone into this project is **seriously** flawed—  
Let me explain:

1. Real world dispatch and safety issues created by these huge turbines at over 600-ft AGL are many.
2. No consideration for huge vortexes produced downwind from the turbines was taken.
3. The movement of the turbine blades will produce sunlight reflections that will impair visual see and avoid for maneuvering among turbines.
4. Most effective drop height is 150' above the ground and lower crossing ridge tops **not** 600 to 750 feet.

I urge you to consider that flying heavily laden aircraft (fixed and rotor wing) with poor visibility from smoke and very tall obstructions with whirling, immense blades is a **prescription for a fatal accident** both in the air and on the ground.

**AND** understand how important Air Attack has been over the years. Recently Air Attack was key in saving numerous communities from Tulare to Redding.

**Finally**, consider the threat you would be imposing on the 3 communities immediately adjacent to this proposal by eliminating the possibility of fixed wing air attack.

Don't just take my word for it listen closely to Jim Barnes, former Chairman of the Board of Associated Aerial Firefighters. He has flown out of the Redding Air Tanker Base **AND** flown Wind Farm Fires.

/s/ Dave Wardall  
4/1/23  
davidwardall@gmail.com

## **EXHIBIT B**

### Statement of Mark Baird

- I have 23,000 hours with type ratings in the DC-10, MD-11 and B744 (747) supertanker
- Was an instructor in both the DC-10 and 747 supertankers
- Have spent the last 7 years flying the DC-10 (Very Large Air Tanker).
- Have flown fires all over the United States, Australia and Chile.
- Have flown the DC-10 on several large fires in the Shasta County area including the Dixie-largest fire in recent California history

As I testified to the Shasta Board of Supervisors, in my humble opinion the area adjacent to the ridge lines, spur ridges, and approaches to or escape routes away from heavy fuel fire would be rendered useless by the turbines. (Fountain Wind Project)

The communities near the development would be indefensible by air assets, particularly Large Air Tankers, or Very Large Air Tankers. Further, the turbines themselves are potential ignition sources, which would compound the existing danger. Fires like the Dixie burned so hot the turbines themselves may combust and then sling burning debris as much as a quarter mile away.

These projects built in flashy fuels are indefensible by air. We wait until the fires, which are usually started by the turbines, burn well outside the perimeter of the project before we attempt suppression efforts. Remember air tankers are prohibited from dropping anywhere near power lines or associated infrastructures unless we are given specific permission and the subject infrastructures have been de-energized. Retardant weighs nine pounds per gallon and might be traveling as fast as 150 mph when it hits a structure. Retardant dropped directly on a structure will crush it.



All said and done the proposed project is a dangerous and unproductive risk to the environment, communities and their citizens.

/s/ Mark Baird

4/1/23

mcbair@me.com

## EXHIBIT C

### Statement of Stephen Fitch

- Former Forest Supervisor and District Ranger of the adjacent Shasta Trinity National Forest
- Formerly responsible for 7 National Forests and 10 million acres in 3 states
- Past type 1 (large fire) Planning Section Chief & Fire Behavior officer on fires across US
- Served 15yrs on Advanced Fire & Resource Mgt. training Cadre training US, Canadian, Mexican forest managers.
- Congressional Fellow and adviser to U.S. Senate Energy & Natural Resource Committee Chairman on fire and resource matters 100th Congress.
- On the team that developed and tested the Incident Command System used on all fires today.
- Was responsible for the largest Air Tanker base in California at Ontario International Airport

Why am I concerned with this project?—As the former Forest Supervisor and District Ranger of the National Forest located adjacent to this project on two sides, I consider this project a threat to the area I spent 11yrs of my life protecting. I have been responsible for reviewing and approving or denying similar projects that threaten or enhance 7 National Forests in 3 states. A fire escaping from within or near this project would immediately threaten the Shasta Trinity National Forest.

Foremost I'm concerned about the effect on wildfire suppression and protection of the adjacent communities. These concerns emanate from having served in the positions listed above.

As you review this proposal please consider that no matter how many **experts** the **proponents** bring in to justify this project they will **never** be able to explain how to make up for the loss of what has become a key to keeping fires small and saving communities, homes and **lives** from big fires. **Air Tankers**

This Project is an absolute **design for disaster** for at least 3 communities a major power distribution system and the many homes scattered adjacent to the project.

This Project sits in a dense stand of young conifers forming continuous horizontal and vertical (ladder) fuels. It is bordered on the West and North by Highway 299 with high potential for fire starts from vehicular accidents. Homes and many other ignitions sources surround the project and within-the turbines themselves and support systems.

The most devastating fires in this area come from the North East during strong gradient winds. **Our Forests fuels have changed** and under these conditions we've learned fires jump with ease roads and forest openings. The devastating Carr fire jumped the Sacramento River in two places.

This means **ALL** the fire fighting tools must be present for us to be successful.

This proposal sets up a condition that cannot be mitigated. 700 foot towers and blades scattered over thousands of acres combined with power lines **virtually eliminates** the option for using fixed wing aerial attack over a broad area making the adjacent communities and homes **indefensible** from fast moving large wildfires.

As a former Planning Section Chief I would never recommend assignment of fixed wing aerial attack to this project area and would greatly restrict the use of rotor aircraft.

**It couldn't have been made more clear recently** how absolutely critical it is to have **bombers** help save lives and communities. The condition of our Forests has changed so that **backing off and burning out and protecting structures has become routine. All with much much greater dependency on aircraft.**

This County has recently experienced 2 deadly and costly fires, the Carr and the Zogg. There was a recent headline article in the Record Searchlight about **Shasta County** filing suit against PG&E to recover costs incurred from the Zogg Fire. As you consider the benefits this project might bring to the State, I hope you will also **weigh** the costs. Recent Carr, Zogg, Camp, Fawn, Hirz and Dixie fires in this area have cost the State dearly. What are the potential costs, liability and **LOSS OF LIVES** that could result from **your** decision on this **DESIGN FOR DISASTER?**

**Finally**

**Remember Shasta County's General Plan sets "preserving quality of life, especially in rural areas and "safety of citizens and communities" as its paramount precepts. Therefore, the Commission must reject the proposed project already carefully reviewed and denied by Shasta County. The untenable alternative would be to ask the County to remove "Safety" as its plan precept.**

**/s/ Stephen Fitch**

**4/1/23**

**svfitches@yahoo.com**

**EXHIBIT D**

## Statement of Jim Barnes

- Past chairman of the Associated Aerial Firefighters
- Have been a Forestry Air Tanker Pilot for over thirty years.
- Have flown air attack on California wind farms.
- Have flown Air Attack from the Redding Air Attack Base protecting the vicinity of the current turbine proposal
- Have testified in Shasta County concerning the Fountain Wind Project before the Planning Commission and Board of Supervisors

I am Jim Barnes the immediate past chairman of the Associated Aerial Firefighters. The Associated Aerial Firefighters with over 100 members represents pilots from across the country and provide a forum to advocate for safety, effectiveness, and efficiency in wildland aerial firefighting. As an air tanker pilot myself for over 30ys. I have flown fires all over California including on **wind farm fires** and frequently flew out of the Redding Air Attack base as initial attack on fires all over Shasta County.

We in the Association have become aware of the recent Fountain Wind Project proposal, carefully reviewed it, and hope the Commission will consider our comments as they directly affect the safety of our pilots, several communities and the forests in Shasta County, This appears to be a very unsafe proposal to adjacent communities and aerial firefighters. Let me explain:

Aerial Firefighting in and around turbines presents a set of unique challenges that are problematic to say the least. I have worked fires at Altamont pass and in Tehachapi pass. The strategy employed in both cases was to not use fixed wing air tankers in the turbine fields at all except around the borders. At Altamont we almost always stopped the fire af-

ter it burned completely through the field usually at highway I-5. Except for one occasion when it spotted across the highway exposing about a mile of parked cars on the road to a burn over.

At Altamont and Tehachapi most of the turbine field was contained within light flashy fuels such as vast stands of grass lands. The proposed Fountain Project would be located in an area containing large stands of pyrophytic fuels such as chaparral, manzanita, digger pines and mixed conifers. The heat generated by such a fire, especially if it is wind driven, would be significantly greater than the heat produced by a fast-moving grass fire. This would pose a greater risk to ground Firefighters because of the lack of ability to provide them effective air support and the adjacent homesteads surrounding the communities of Round Mountain, Montgomery Creek and Hill crest. The Threat of fatal damage to the tower structures is also worthy of consideration, Not only because of material losses but as an additional hazard that could endanger firefighters on the ground.

High towers and high winds are a situation that shouts watch out when it comes to **aerial firefighting**. At some point, winds above 30 knots, air tankers operations would be suspended but even winds below that flowing through the high towers would generate eddy currents that would contribute greatly to the danger for aircraft trying to conduct retardant or water drops above the turbine field. To be effective typical drop altitudes are 150ft above ground and a bit lower crossing a ridge top. Dropping retardant above these 700ft. towers with height and wind dispersal will have little to no effect on the fire. A state investigator and current chairma of our organization who has been involved with over 200 fatal and serious injury aircraft accident investigations advises that these structures over 700' scattered over thousands of acres and poor visibility from smoke would be a "prescription for a fatal accident". From an air tanker pilot's point of view fighting such a fire would be a no-win situation.

Please consider our thoughts as you review this proposal.

/s/Jim Barnes

Recent Past Chairman

Associated Aerial Fighters

4/1/23

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