From: Richard Genaille <richardgenaille@gmail.com>
Sent: Wednesday, December 5, 2018 11:20 AM
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Cc: Wanda Parrish; Patrick White; Judy Genaille
Subject: Richard Genaille Written Comments on Planning Commission Staff Report SUP18-0001

Supervisors, Commissioners,

I was pleased to see the Planning Commission Staff Report on SUP18-0001 includes several necessary conditions to mitigate potential fire hazards on SPower Site A. Unfortunately, the report did not include requirements for SPower to provide 24/7 on-site firefighting capability and a 300 foot firebreak around the periphery of the site. The lives of thousands of citizens and their property will be put at risk as a result.

The probability of a fire originating on the site will increase dramatically during construction and operation of the facility. There are approximately 2700 residences around the periphery. Due diligence dictates that the county plan for the eventuality of a worst case fire event occurring during construction and the 30 year operational life of the proposed mega PV solar facility with 1.8 million solar panels, hundreds of inverters, and miles of electrical cabling.

Given the size of Site A (4.7 miles by 2 miles) and distances to the nearest fires stations, the on-site 24/7 firefighting capability is necessary to insure a fire is contained and extinguished on site before it gets out of control.

The 300 foot firebreak around the periphery is necessary to provide local firefighting units time to reach the scene of the fire before it expands to the site boundary, and to protect the lives and property of citizens who live on the periphery of the site should the fire spread faster than firefighting units can respond.

The closest firefighting unit to Site A is Station 7 (Wilderness) which is 5 miles from the nearest entrance to the site.

Firefighting units would have to travel narrow, curvy paved and unpaved roads to reach the site entrance, then navigate their way through as much as 2 miles of narrow aisles between solar arrays to reach the fire location.

It may take as long 15 minutes or more to reach the scene if the fire is located in the eastern part of Site A.

Wildfires travel at a rate of 1 mile in 4 minutes, faster if driven by wind. At that rate a fire originating anywhere in Site A will reach homes on the periphery before firefighters arrive at the scene.

Anything less than a 300 foot wide firebreak would likely put residents and their property at risk of flying shrapnel and molten metal should a DC arc blast occur near the outer edges of the solar field.

The National Forest Service recommends a 300 foot wide firebreak on the downwind side of a controlled burn site. Since surface wind direction and speed vary significantly in our area over time, it is prudent to require a 300 foot wide firebreak around the periphery of Site A.

There are remaining forested areas in Site A that extend up to the property boundary. The trees in these areas are 60-80 feet tall. A 300 foot wide firebreak reduces the risk of a burning tree falling into a neighboring property, or fire traveling tree-to-tree beyond the site boundary.

There are also large areas of old growth forest bordering Site A. A 300 foot wide firebreak will reduce the risk of a burning tree falling into Site A and damaging/destroying solar panels or causing a fire inside the site.

I note also there are large forested areas to the south and east of Site A. That is old growth forest, part of which is a wildlife management area. There are no paved or gravel roads through there, only trails suitable for ATVs. If a fire spread from Site A to those areas, there would be no way to stop it before reaching West Catharpin Road.

Site A is covered by thousands of tons of flammable timber waste, new scrub growth, and approximately 2850 acres of remaining wooded natural areas.

Sparks or hot exhaust from heavy motorized earth moving equipment, trucks and generators, welding work, carelessly discarded cigarettes, lightning strikes, and open burning of timber waste would be probable sources of ignition.

Large, open spaces in isolated areas with high heat and humidity are known to attract lightning strikes. Lightning strikes are the leading cause of damage to solar power equipment. Lightning strikes are the cause of 20% of all wildfires in the US.

DC arc faults/flashes/blasts, although rare, are becoming more of a concern as the use of solar power expands.

PV solar panels generate up to 1500 volts of DC current as long as natural or artificial light is available. They can not be turned off. There are no fuses or circuit breakers that will de-energize a panel if a fault occurs.

Faults can and do occur for reasons that can not be completely controlled or eliminated. Causes of faults include manufacturing defects, improper or poor quality installation, connections and insulation that degrade over time due to rodent bites, corrosion, temperature changes, and UV damage, and water intrusion into panels, cabling and inverters.

DC arc faults/flashes/ blasts cause continuous arcing that can reach 5400 F, melt metal that will fall to the ground as slag, and may cause an explosion that will spew shrapnel and molten metal many feet at speeds great enough to penetrate the human body.

Typical firefighting agents such as water and chemical retardants will not extinguish a DC arc fault, and will put firefighters at risk of electrocution if used.

Very Respectfully,

Richard Genaille

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