

# Fire Safety Requirements



# SHASTA COUNTY FIRE DEPARTMENT

MEMORANDUM

DATE: May 22, 2008  
BW

TO: Russ Mull, Director  
Department of Resource Management

FROM: Mike Chuchel  
Shasta County Fire Warden

SUBJECT: 14 FIRE PREVENTION  
14.3 Fire Safety and Land Use Planning  
Use Permit 06-16 / Hatchet Ridge Wind LLC

PROJECT LOCATION: Hatchet Mountain  
PROJECT DESCRIPTION: Wind Energy Project

The above referenced project is located within the California Department of Forestry and Fire Protection / Shasta County Fire Department (CAL FIRE / SCFD) jurisdiction. CAL FIRE / SCFD has reviewed the proposal and submits the following requirements. (Note: The Resource Management Division of CAL FIRE will also be submitting comments.)

## CONDITIONS

- Roadways and turnarounds shall be constructed in accordance with Section 6.12 of the Fire Safety Standards prior to the construction of any portion of the proposed facility.
- The facility shall be identified with a street address marker located on the proposed building and adjacent to facility access road at Highway 299. The address numbers shall be a minimum of four inches in height, reflectorized, and shall contrast in color with the background. The address shall be clearly visible at all times.
- Roofing shall have a Class A rating as per the Shasta County Fire Safety Standards and the California Building Code.
- All buildings constructed on parcels one acre or larger in size shall be setback a minimum of 30 feet from all property lines and road easements in accordance with the Shasta County Fire Safety Standards, but a 100 foot setback is recommended in order to comply with the defensible space requirement.
- 7.9 Chimneys and flues shall be equipped with an approved spark arrester as defined in Section 6.53 of the Fire Safety Standards.

- Fire protection water for the proposed buildings shall be in compliance with Section 6.43 of the Fire Safety Standards.
- Due to the large size of the proposed project, vegetation cleared for construction and/or land development purposes shall be disposed of on a regular basis. Accumulation of vegetation debris shall be minimized. Disposal shall be in accordance with Air Quality Management Regulations and State or local Fire Department Burning Permit Regulations. Prior to the final inspection by the Shasta County Building Division and CAL FIRE / SCFD, all cleared vegetation shall be properly disposed of.
- 7.16 Storage, use, and dispensing of flammable/combustible liquids shall be in accordance with the adopted edition of the California Fire Code. Plans shall be submitted to CAL FIRE / SCFD for review and approval prior to construction, storage, or use.
- 7.19 Portable fire extinguisher(s) for the proposed buildings shall be provided in accordance with the adopted edition of the California Fire Code.
- All welding and storage of cylinders shall be in accordance with the adopted edition of the California Fire Code. In addition to welding, other high risk activities such as cutting and grinding shall require welding curtains, and shall be restricted based on fire weather indices as determined by the CAL FIRE / SCFD.
- 7.23 Accumulations of waste paper, weeds, combustible waste material, waste petroleum products, tires, or rubbish of any type shall be prohibited.
- 7.24 Rags, cloth, or paper towels saturated with oil, solvent, or petroleum products shall be kept in a metal can with a tight fitting cover.
- The applicant shall provide and maintain "Defensible Space" around all buildings in accordance with Public Resources Code 4291.
- 7.26 All mobile and stationary equipment with non-turbocharged internal combustion engines shall be equipped with a properly functioning, approved spark arrestor.
- All field work vehicles, including sub-contractors, which engage in field operations, and routinely access the site, shall be provided with:
  1. A means for reporting emergencies.
  2. At least one round point shovel at least 46 inches in length.
  3. One 5 gallon backpack water pump.

4. A minimum of one 2-A:10-B:C fire extinguisher.

----- Vehicles shall not travel off-road or upon roads which have not been maintained free of flammable vegetation except when necessary because of an immediate hazard to life or property.

7.28 The CAL FIRE / SCFD shall sign the improvement plans for this project.

7.29 Advisory note: The project is located in an area designated as a "VERY HIGH" Fire Hazard Severity Zone under Section 4203 of the Public Resources Code of the State of California.

----- If applicant installs an automatic fire extinguishing system in the proposed buildings, plans shall be submitted for CAL FIRE / SCFD review as part of the building permit.

----- All fires shall be reported immediately to CAL FIRE even though they may have been extinguished.

----- Applicant shall provide the following vegetative modification:

1. Turbine Ridge Road (TRR):

- Provide a 100 foot shaded fuel break on the western side of the TRR.
- From the centerline of the TRR going east, provide a 50 foot clear zone.
- From the easternmost edge of the clear zone, provide an additional 100 foot shaded fuel break.

2. Turbines:

- From the outer edge of each tower, going in all directions, provide a 30 foot clear zone
- From the outer edge of the clear zone, going in all directions, provide an additional 70 foot shaded fuel break.

3. Definitions:

- Turbine Ridge Road (TRR) is a 20 foot wide surfaced road with 5 foot shoulders on both sides. It is the easternmost road within the project that is adjacent to all of the turbines located on Hatchet Ridge. For the purposes of this condition, TRR does not access the cluster of 5 turbines located west of the Hatchet Ridge.
- Clear zone: Remove all brush, trees and slash.
- Shaded fuel break:
  - Trees planted at 20 foot spacing.
  - Existing tree stands to be reduced to 20 foot spacing.
  - Tree pruning:
    - Begins when the trees are 18 feet tall.
    - Prune one-third of the live crown or up to 12 feet, whichever is less.
  - Brush and slash must be kept less than one foot high.

----- Applicant shall provide the necessary equipment and necessary training (or funding for equipment and training) to CAL FIRE / SCFD for the training of employees for the extinguishment of facility specific fires and rescue. The rescue equipment shall include items such as ropes, hardware, harnesses, personal protective safety gear, and rescue basket. The applicant shall provide a secure on-site location for the storage of the rescue equipment, to be accessible by CAL FIRE / SCFD personnel only. The purchased property shall become the property of CAL FIRE / SCFD, and the equipment shall be maintained by CAL FIRE / SCFD. Replacement equipment shall be purchased by the current owner and provided to CAL FIRE / SCFD as necessary. This shall continue for the life of the facility.

----- All electrical systems shall be designed and maintained in accordance with the California Public Utilities General Order 95 and corresponding underground standards.

----- All electrical distribution and collection components shall be underground where possible. Where above ground installations are necessary, the latest standards for raptor and rodent protection shall be incorporated.

----- In accordance with PRC 4292, all electrical distribution and collection components

shall be “exempt” if existing, and designed for high wind conditions.

- Water storage facilities of not less than 5,000 gallons shall be provided for firefighting purposes in strategic locations within the site. Such locations shall be noted on the road map plan. The number and location of such water supplies shall be determined in cooperation with CAL FIRE / SCFD and the applicant. The risk of freezing shall be considered when determining the type and location of water storage facilities.
  
- The applicant shall provide CAL FIRE / SCFD a current copy of the facility fire prevention plan. CAL FIRE / SCFD will review this plan and if necessary require modification. The elements of the plan shall include the following:
  - 1. A description of the operating area along with a map showing major access routes, significant hazards, firefighting water supply locations, and a 24 hour emergency contact phone number.
  - 2. An analysis of fire causes going back a minimum of five years, or to the first day of construction, whichever is less. List any trends indicated by the fire causes along with a plan of correction/proposed solutions for preventing these fire causes. Provide an implementation and completion date for all plans and correction.
  - 3. Procedures pertaining to reporting of emergencies, curtailment of hazardous activities during high and very high fire danger periods, weather monitoring for establishing the fire danger, and company action for fire suppression.
  - 4. The training/orientation program for the facility employees and contactors pertaining to fire safety, fire suppression, and emergency notification.
  - 5. A list of state and local fire laws applicable to the facility operations, and any conditions of approval pertaining to fire safety along with the facility operating procedures which indicate your compliance with these laws and/or conditions of approval.
  - 6. Staffing and equipment assignment and inventories as follows:
    - a. Company emergency incident manager and 24 hour contact telephone number.
    - b. General staff and specialist responsibilities.
    - c. Available motorized equipment for firefighting and support operations.

d. Location, type and number of firefighting tools and equipment.

----- No person shall conduct any hazardous operation (mowing, welding, cutting, grinding, or other tool or equipment from which a spark, fire or flame may originate), or operate any motor, engine, any time flammable vegetation exists (such as dry grass and dead vegetative litter), without meeting all of the following requirements: (This condition does not apply to: 1) the operation of the wind turbine, 2) the operation of the electrical transmission system, 3) the regular maintenance of the turbines within the area cleared of vegetation, and 4) the use of motorized vehicles to access the turbines on the maintained access road system.)

1. Vegetation clearances of 15 feet shall be provided in all directions around the area of operation. An additional 15 feet shall be cleared or wet down. If wetting down is chosen, the area shall be maintained wet throughout the operation and the water used for wetting shall not diminish the backpack pumps capacity.
2. Two serviceable round point shovels at least 46 inches in length and a minimum of two 5 gallon water backpack fire pumps shall be maintained within 25 feet of the operation.
3. A fire watch shall be maintained within 25 feet of the hazardous operation. The fire watch shall have a radio or equivalent shall be available at the operation site in which to report emergencies.

Hazardous operations (as defined above) shall not be permitted in during the following periods:

1. Anytime flammable ground vegetation exists (unless mitigated as specified above) and if any one of the following conditions exist:
  - a. The air temperature is 90 degrees Fahrenheit or greater.
  - b. The wind speed is 8 miles per hour (mph) or greater.
  - c. The relative humidity is 20% or less.
- d. Exceptions:
  - i. When the wind speed is 15 mph or less and the relative humidity is 60% or greater.

ii. When the wind speed is 15 mph or greater and the relative humidity is 80% or greater.

2. Anytime during the declared fire season when the wind speed is 25 mph or greater.
3. Anytime during the declared fire season when the relative humidity is 10% or less.
4. Anytime CAL FIRE declares a Red Flag Warning.

----- Applicant shall provide a "Risk Manager" to be available on site whenever construction activities are in progress. The Risk Manager shall have oversight authority and shall be the point of contact for the CAL FIRE / SCFD.

----- Smoking shall only be permitted in vehicles parked in areas cleared of flammable vegetation and in designated smoking areas at building sites.

----- Prior to each fire season and upon hire of new employees or sub-contractors, an orientation concerning fire hazards, fire safety, emergency notification procedures, use of fire safety equipment, fire safety rules and regulations, and the conditions of approval shall be provided by the employer.

----- Any installation which results in a fire hazard, shall be addressed by the applicant or designee, and measures shall taken to prevent or mitigate the problem. CAL FIRE / SCFD may also require measures to mitigate or correct any such problem.

----- All initial project clearing shall be done between November 1<sup>st</sup> and May 1<sup>st</sup>. Extensions may be allowed based on weather conditions as determined by the CAL FIRE Battalion Chief assigned to that area.

----- Applicant shall provide to CAL FIRE / SCFD the telephone number of the control center that has the ability to shut down the windmills. When the control center is notified by CAL FIRE / SCFD, the control center shall immediately shut down facility as necessary when in the opinion of the Incident Commander, the continued use of the windmills is detrimental to the mitigation of an incident located in proximity of the windmills.

----- Nothing in these conditions are intended to diminish the responsibility of the applicant or their designee from taking any additional responsibility and reasonable measures necessary to preclude the ignition and rapid spread of fire.

Further questions or comments may be directed to County Fire Marshal Jim Diehl at (530) 225-2423.

Sincerely,

Mike Chuchel  
County Fire Warden

By

Jim Diehl  
County Fire Marshal

cc: RES American Developments, Hughes



STATE OF CALIFORNIA THE RESOURCES AGENCY

ARNOLD SCHWARZENEGGER, *Governor*



DEPARTMENT OF FORESTRY AND FIRE PROTECTION

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May 27, 2008

Bill Walker  
Shasta County Department of Resource Management  
1855 Placer Street, Suite 103  
Redding, Ca. 96001

**Subject:** Hatchet Ridge Wind Project, SCH # 2007042078

Dear Mr. Bill Walker,

On May 13, 2008, CAL FIRE and Shasta County Fire met with the project proponents. The purpose of the meetings was to discuss the concerns of CAL FIRE and Shasta County Fire's pertaining to the above referenced project. The meeting resulted in an agreement between all parties to the fire protection concerns of CAL FIRE and Shasta County Fire. CAL FIRE is in concurrence with the letter dated May 16, prepared by Jim Diehl, Shasta County Fire Marshall.

Item 8 of my original letter dated January 29, 2008 is still correct. The statement on page 3.2-5," The project area, or portions of the project area may be determined to be exempt from TCP requirements upon evaluation by Cal Fire under 14 CCR 1104.1(b) or (c), which allows for the "harvesting of trees in order to construct or maintain a right of way by a public agency, public or private utility that is exempt from the requirements to obtain a TCP or file a THP.", is correct and several portions of the project have defined right-of-way clearances established in 14 CCR 1104.1 (d), (e), (f), and (g). Other portions of the project do not have established right-of-way widths (the turbines), and some portions of the project may not be covered by the exemption (permanent roads outside the right-of-ways and the O&M building). A Timber Conversion Permit (TCP) may still be required. The project proponent will need to obtain the appropriate timber harvesting permits prior to project construction.

Sincerely,

Benjamin Rowe  
Forester I, RPF #2686  
CAL FIRE, Shasta-Trinity Unit  
(530)225-2508

