

Bingham Wind Project Information Regarding Fire Suppression

1. Do all the proposed turbine manufacturers have similar or equivalent fire suppression systems? If not, the applicant should provide information how other design, operational or maintenance issues may reduce fire risk in the model of turbine without fire suppression.

The Bingham Wind Project will either install Vestas or Siemens turbines. The principal design difference between these turbines that relates to potential fire risk is the location of the main electrical infrastructure (transformers and inverters). In the Vestas model these components are located in the nacelle. In the Siemens model, the transformer is located on the ground outside of the turbine. The inverters are located in the tower at its base. Because of the increased challenge in extinguishing a fire in the nacelle, above the ground, the Vestas turbines are proposed to be equipped with an active fire suppression system. Because the primary electrical components are located at ground level in the Siemens turbines, potential fires can be readily extinguished without the need for an active fire suppression system.

Both the Siemens and Vestas turbines proposed for the Bingham Wind Project include a monitoring system that provides continuous monitoring of external and internal turbine conditions, and which instantly detects deviations from normal operating conditions, including temperature changes. The turbines are monitored remotely 24 hours a day, 7 days a week by personnel located in Boston, Massachusetts, with a back-up monitoring facility in California. The Siemens turbines also include smoke detection systems with sensors located in the nacelle, tower top, base of the tower, and within electrical panels. If these smoke detection systems fail or detect smoke or heat, the turbine automatically stops operating.

Both the Vestas and Siemens turbines are also monitored remotely by the manufacturer.

Both the Vestas and Siemens models include state-of-the-art lightning protection systems, which reduce the risks of fires associated with a lightning strike. Prior to operation, the grounding system is certified to be designed and constructed by the turbine manufacturer. Inspections and maintenance activities ensure that the system is operating properly.

Siemens and Vestas have provided the attached letters that identify some of the fire safety features of their turbines. These letters were provided by the turbine manufacturers for the Bowers Wind Project, but also apply to the Bingham Wind Project.

2. The applicant should address how the National Fire Protection Association (NFPA) Code 850, Chapter 10 and other applicable chapters, applies to the project. The applicant should also note if there are other national codes, standards, or best management practices that address fire safety in wind turbines.

National Fire Protection Association (NFPA) Code 850, Chapter 10 provides recommended fire protection practices specific to wind turbine generating facilities. In addition, NFPA 850 Chapters 4-7, 15 and 16 provide recommended fire protection practices for electrical generating plants in general, some of which may be relevant to wind power projects.

By its own terms, NFPA 850 is a guidance document containing recommendations rather than specific regulatory requirements. See NFPA 850 Ch. 1.2.1, 1.2.2, 1.3.3. NFPA 850 is a model code that has not been legally adopted in Maine. As a result, the recommendations contained in NFPA 850 are not formally applicable to the Bingham Wind Project. However, the proposed equipment, design, construction, and operation of the Bingham Wind Project are consistent with the NFPA 850 guidance. Foremost, the Bingham Wind Project proposes to utilize turbines that have been designed and built to minimize the risk of fire. As indicated in the attached information provided by Siemens and Vestas (the manufacturers of the two types of turbines proposed for the Bowers and Hancock Wind Projects), these turbines are designed and built with materials and systems consistent with NFPA recommendations. As detailed below and per the NFPA 850 guidance, the Bingham Wind Project will develop its own fire response plan and coordinate training with local emergency responders. In fact, representatives from First Wind have already met with members of the Bingham Fire Department regarding the proposed Project. There were few concerns addressed by the Fire Department at that meeting, but First Wind committed to trainings once the Project is operational.

The project has also been designed and will be constructed and operated consistent with the fire protection principles contained in NFPA 850, Chapter 5 (General Plant Design), Chapter 6 (General Fire Protection Systems and Equipment), Chapter 10 (Identification and Protection of Hazards for Wind Turbine Generating Facilities), Chapter 16 (Fire Protection for the Construction Site), and Chapter 17 (Fire Risk Control Program).

3. The applicant should submit a copy of its fire protection plan, if it's not already in the application materials.

Attached is a template of both the Emergency Preparedness and Emergency Action and Fire Protection plans.

4. If not already supplied, the applicant should establish an emergency communications and response protocols with emergency response providers. A copy of these protocols should be submitted to the Department for inclusion in the record. Also, the Department requests that the applicant provide written notification to the project manager or appropriate Bureau of Land and Water Quality staff within 48 hours of any fire event that causes one or more turbines to not generate electricity.

The specific emergency response protocols will be finalized and implemented following construction of the Project, and submitted to the Department. By way of example, in the spring of 2013, First Wind had a comprehensive meeting with first responders to identify potential emergency response scenarios at the Bull Hill facility, including a fire response scenario. A summary of that meeting, a list of attendees, and the table top exercise provided by Hancock County Emergency Management Agency that outlined the exercise, are attached. A representative from the Department was present for this exercise. Similar meetings with local emergency responders will be offered once the Bingham Wind Project is operational.

As requested, the Applicant will notify the Bureau of Land and Water Quality staff within 48 hours of any fire event that causes one or more turbines to not generate electricity.