

LIGHTING PLAN FOR THE SPRING VALLEY WIND ENERGY FACILITY

Prepared for

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and

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SWCA Project No. 14417

October 2010

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1.0 INTRODUCTION

This Lighting Plan has been developed on behalf of Spring Valley Wind, LLC (SVW), and the Bureau of Land Management (BLM) Schell Field Office for the proposed Spring Valley Wind Energy Facility (SVWEF). The project area is located approximately 32 km (20 miles) east of the existing Ely Airport (Yelland Field). This plan addresses lighting for wind turbine generators (WTGs), meteorological and microwave towers, maintenance facilities, and substations related to the SVWEF.

2.0 LIGHTING PLAN

The guidelines for lighting WTGs and other structures over 61 m (200 feet) high are set by the Federal Aviation Administration (FAA)—as documented in FAA Advisory Circular (AC) 70/7460-1K “Obstruction Marking and Lighting” (FAA 2007). Additional measures are provided in previous FAA AC reports (FAA 2000, 2006), the FAA’s *Development of Obstruction Lighting Standards for Wind Turbine Farms* (FAA 2005), and the BLM *Programmatic Environmental Impact Statement for Wind Development on BLM-Administered Lands in the Western United States* (BLM 2005). An initial lighting design based on those guidelines has been completed for the Proposed Action and Resource Avoidance Alternative (Figures 1 and 2, respectively) and will be submitted to the FAA for approval following a decision record for the project. Lighting for the SVWEF will include the following measures:

- Consultations with the FAA, state, and other federal regulatory agencies will be conducted as necessary.
- The project will comply with FAA regulations, including lighting requirements, and avoid potential safety issues associated with proximity to airports, military bases or training areas, or landing strips (BLM 2005).
- All activities will be monitored for compliance by the BLM and/or authorized inspector. Notices of Proposed Construction or Alteration will be submitted to the FAA for review.
- Red obstruction lighting will be installed as documented in the FAA notice of “Determination of No Hazard to Air Navigation” for each WTG.
- Light fixtures will be placed as high as possible in order to be visible from 360 degrees (FAA 2007).
- Not all turbines need to be lit. The periphery of the area needs to be clearly defined and lit. Internal lighting is not as important unless there are higher plateaus or ridges within the area (FAA 2007).
- A light will be placed at the end of every string of turbines and spaced evenly along that string, spaced no more than 805 m (2,640 feet) apart (FAA 2007).
- If the turbines are painted white, daytime illumination is not required. If daytime lighting is required, use flashing white (L865) lights for tall tower lighting with a minimum intensity of 20,000 candelas (FAA 2005).
- All lights must be synchronized to flash simultaneously. Synchronization of the lights can be accomplished through radio frequency devices, hard-wired control cables, or independently mounted global positioning system (GPS) synchronizer units (FAA 2005).
- The light fixtures should flash at the rates and for the durations specified in AC 150/5345-43F (FAA 2006).

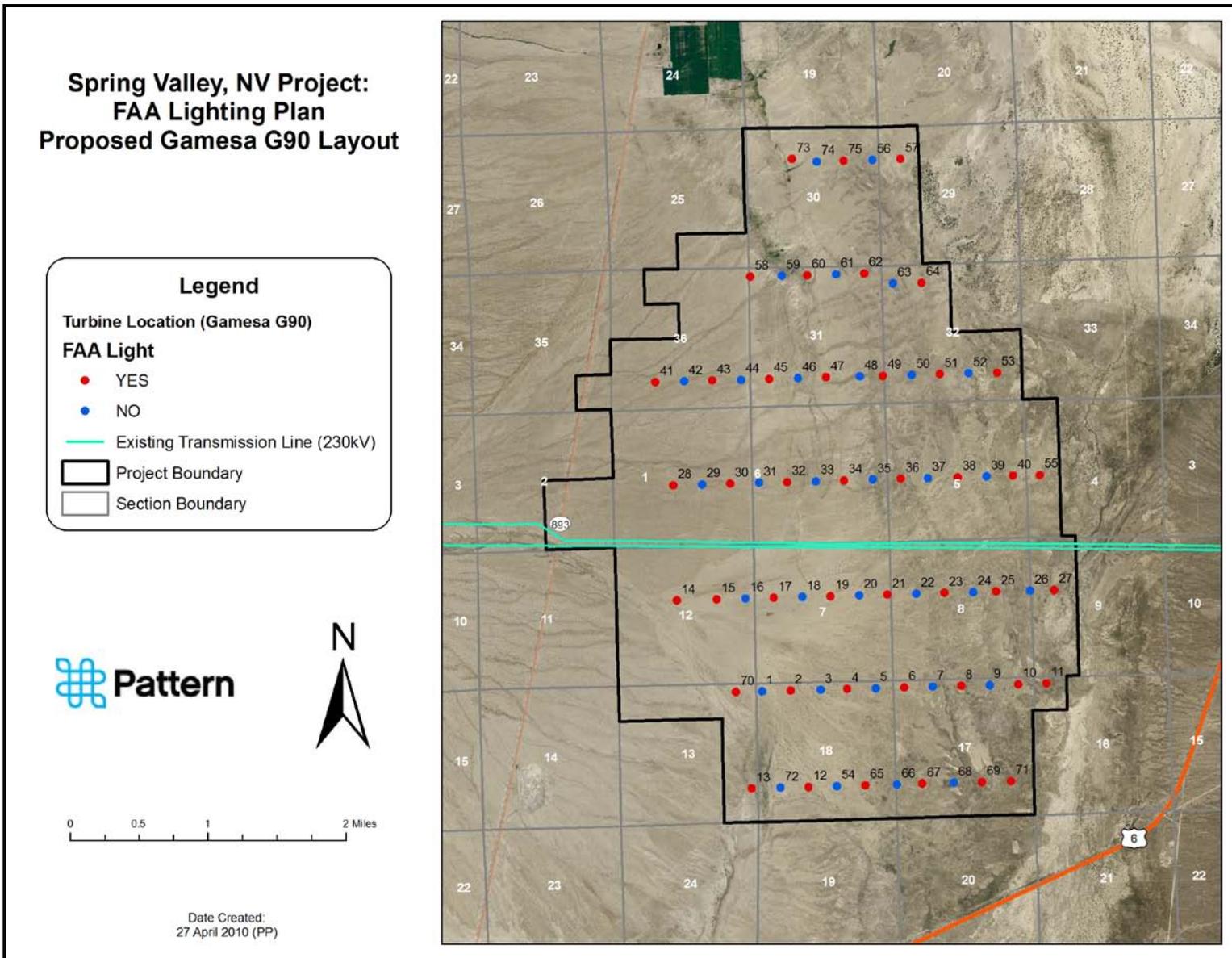


Figure 1. Proposed layout.

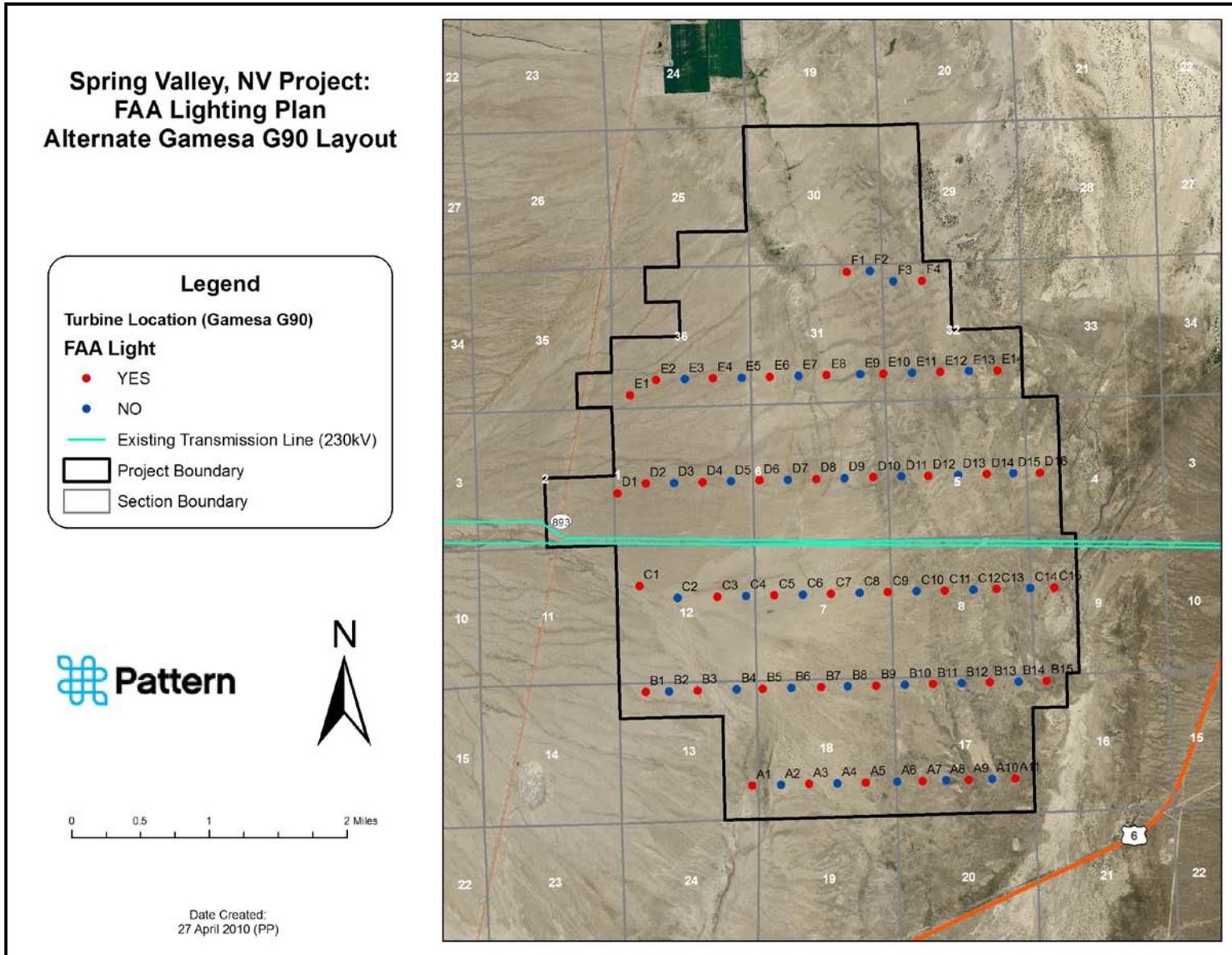


Figure 2. Alternate layout.

- The proper authorities will be notified if the synchronizer unit fails and the turbine farm is no longer in a synchronized state. The notification process will occur if the unit is out of service for more than 36 hours (FAA 2005).
- During construction activities, cranes and other construction equipment that exceed 61 m (200 feet) high will comply with FAA regulations for lighting, including operation of lighting 24 hours per day until construction is complete, but may be temporarily shut off if interfering with construction personnel (FAA 2000).
- Site design should be accomplished to make security lights nonessential. Such lights increase the contrast between a wind energy project and the night sky, especially in rural/remote environments, where turbines would typically be installed. Where they are necessary, security lights will be extinguished except when activated by motion detectors (e.g., only around the substation) (BLM 2005).
- Substation and maintenance building lighting will be down-shielded in order to keep the light within the site boundary.
- In order to reduce attraction of migratory birds, the use of sodium vapor lights at site facilities will be minimized or avoided. All unnecessary lighting will be turned off at night to limit attracting migratory birds (BLM 2005).
- Any modifications to the FAA (2007) guidelines will be reviewed and approved by the FAA prior to implementation.

3.0 LITERATURE CITED

Bureau of Land Management (BLM). 2005. Final Programmatic Environmental Impact Statement on Wind Energy Development on BLM-Administered Lands in the Western United States. U.S. Department of the Interior, Bureau of Land Management. June.

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